

2020 vegetable

RESOURCE GUIDE

 Canadian Edition



CHOOSE FROM
MORE THAN 500
HIGH-PERFORMANCE
SEED VARIETIES

NEW PRODUCTS FOR 2020



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Dear Grower,

It can't be said near often enough – on behalf of the entire team here at Rupp Seeds, thank you for your business.

Selecting the seed you plant is your first and best opportunity to affect the success of your growing season. We are honored that you choose us and we intend to do everything we can to earn and keep your trust.

This growing season brought significant challenges for many growers throughout the Midwest and Northeast. Many seeds were planted in less than ideal soil conditions and at later dates than most growers intended. Because of these conditions, early planted crop acres weren't typical, which impacted other crops. For example, in many areas, sweet corn faced higher pest pressure simply because alternative crops, such as field corn, weren't present on enough acres to host the pests.

Even though it was challenging, growers were still able to achieve success. I believe this a testament to the dedication of growers and their ability to identify problems and make critical adjustments in order to produce the best crop they can, under any circumstance. I tip my hat to you – thank you for helping feed the world.

While we can't do much to prevent these seasonal problems, we do work hard to identify varieties that will produce the yield and quality you need along with the defensive characteristics that are key in protecting the crop.

Our Product Development team is continually evaluating products so that we can provide you with "the best of the best". This year we have added 34 new varieties to our lineup, which you see featured here to the left. You'll want to give these items a look as you are preparing your order for this season.

Please let us know what we can do to serve you better as we partner together to help feed the world.

Sincerely,

Philip Rupp
President

P.S. We've worked hard to reduce shipping costs and we are glad to be able to pass that savings on to you. On orders under \$250 the shipping charge will be just \$10.00. Orders over \$250 still receive free shipping.

We welcome the opportunity to be a part of your success. Our sales and service team is ready to assist you in planning for this coming season. Feel free to contact the salesman in your area if you need their assistance. If you live in an area without a salesman, please contact the office and a representative will assist you.

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4 WAYS TO ORDER*

Phone: 1-800-700-1199 (Monday - Friday, 8 am - 5pm EST)

Fax: 419-337-5491

Mail: Rupp Seeds 17919 County Road B, Wauseon, OH 43567

Email: orders@ruppseeds.com

* Please pick only 1 method of ordering to avoid duplication of your order. (i.e. if faxing in your order, do not mail in a copy as well).

HOW TO ORDER

- Print clearly. Please correct any errors in your name and/or address and phone number. Be sure to provide both your billing address and your physical (911) address (where seed should be shipped) and phone number. If you have moved since your last order, please check mark the box for change of address and include your old address as well.
- For each item ordered, print the item number, quantity, package size (ex. 1/4lb. etc.), name of item and price for quantity ordered.
- Shipping and handling charge applies to each shipping address for orders under \$250.00.
- If the order is to be shipped to a different address, please indicate the name and address.
- Please include any required waivers or licensing information with your order.
- Please send check, money order, VISA, Mastercard, or Discover account number for payment. Prices and payments are in US Dollars. Do NOT send cash.
- To avoid delay in delivery, we advise ordering early. Our peak season runs from February through April. During this time orders received may take longer to be processed and shipped.

ORDERING INFORMATION

The majority of our seeds are **treated**. Items that are available untreated are indicated in the price tables with a 'U' at the end of the item number. Please be sure to include the 'U' when filling out your order form, if you desire untreated seed.

In case of either partial or total crop failure, we reserve the right to pro-rate delivery.

Prices are in US dollars. Prices are subject to change without notice.

Products are sold by the package size. For example: if you are ordering 7 pounds of sweet corn, you will need to order one - 5 pound package and two - 1 pound packages. These package sizes will be at different price breaks.

PAYING FOR YOUR ORDER

We accept payment via credit or debit card, check, and wire transfer. Open account terms and financing are available for qualifying customers. Payment discounts are available for select payment methods and products. See page 6 for more details on cash discounts and financing options.

Cash Discounts!
on orders
over \$250.00
see page 6 for details

SHIPMENT OF YOUR ORDER

All orders will be shipped after payment has been received. If you are paying by check, please allow 7-10 business days for your check to clear.

A \$10.00 shipping and handling charge will be added to all orders less than \$250.

Our preferred and standard method of shipping is UPS Ground.

Orders for priority shipping must be placed by 12:00 noon EST.

We reserve the right to ship your order via the most economical carrier, so in addition to UPS we also utilize our own delivery trucks, truck line and the US Postal Service.

Free Shipping!
on orders
over \$250.00

PICKING UP YOUR ORDER

If you would like to pick up your order, we require 24 hour advanced notice.

NOTICE TO BUYERS

VARIETY DESCRIPTIONS

Variety descriptions and images presented in this catalog serve as a guideline only. They are provided for comparison purposes to help you plan your crop program and can be expected to vary to some degree depending upon location, soil type, environmental conditions, crop management practices, pest or pathogen presence, and other uncontrollable factors that may affect the expected performance. Descriptions in the catalog are the result of favorable growing conditions and identical results are not guaranteed.

Statements regarding a variety's response to a specific pest, pathogen, or stress are based on evaluation under select conditions. These reactions can be affected by the factors mentioned above, as well as new pathogen races, pest types or vectors for disease. Therefore, we give no warranty, express or implied, for crop performance relative to the information given; nor do we accept any liability for any loss, direct or consequential, that may arise from any cause. Read all seed package labeling carefully as it contains terms and conditions of sale.

ON RECEIPT OF YOUR SHIPMENTS

DAMAGED SHIPMENTS

A small percent of shipments may get damaged during transit. If you receive a damaged shipment, please be prepared to take action so you can receive proper credit or replacement. Our Customer Service department will file a claim with the shipping company and will need some information from you.

Here are guidelines to keep in mind and actions you should take to help expedite a claim.

- Take time when unloading. Count the packages and pieces received and look for any damaged shipping containers and packages.
- Tell the driver to note any shortage or damage on all copies of the freight bill, take pictures, and to sign their full name clearly.
- Immediately contact our office at 800-700-1199 and fax a copy of the freight bill along with a description of the damage, along with any pictures of other documents to 419-337-5491, or email it to us at orders@ruppseeds.com or mail it to us within 10 days.
- Include a note identifying the name and quantity of each variety that is missing or damaged.

RETURNS

Rupp Seeds has no control over the handling and care of the seed once it leaves our warehouse. In order to ensure quality seed for all of our customers, **we will not accept any seed returns** except in situations where an error has been made in fulfilling your order. In the event of an error, contact our office within 15 days of receipt of the order to obtain approval for the return.

WARRANTY

WARRANTY & DISCLAIMER of WARRANTIES: Rupp Seeds, Inc. (Rupp) warrants that the products are labeled as required by law and conforms within tolerances to the label description. Rupp and its seed suppliers make no other express or implied warranty of merchantability, fitness for a particular purpose or otherwise. Any recommendations for use of these products are based on Rupp and their suppliers best judgment, but there is no warranty of results to be obtained in connection therewith.

LIMITATIONS of LIABILITY: The exclusive remedy for loss or damages due to breach of the foregoing warranty or contract or for negligence or other cause shall be limited to the purchase price of the product and shall not include any consequential damages. Claims for defects in this product must be presented to Rupp as soon as possible to enable Rupp to investigate the claim and in any event within 30 days after discovery.

NOTICE OF REQUIRED ARBITRATION: The seed laws of some states require Arbitration of disputes of allegedly defective seed as a prerequisite to maintaining a legal action of the seller.

Please contact your State Department of Agriculture for specific requirements as to filing procedures as soon as you learn the fact upon which a claim is based. Before any legal action is initiated, a pre-harvest inspection may be required.

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GLOSSARY

AAS - All America Selection winner.

Anthocyaninless - Recessive gene that blocks the expression of purple pigment.

Bitterfree - (cucumbers) The plant and fruit lack cucurbitacins, a chemical, which gives a bitter taste.

Bolting - When plant begins to produce flowers and set seed.

Concentrated Ripening/Set - (tomatoes) When 80-90% of the fruit ripen within a short period of time.

Confectionery - (sunflowers) Used for human consumption.

Days from transplant - This refers to maturity from when transplants are planted outside in the field. Time from seeding to transplant will need to be added to calculate overall maturity.

Determinate - Plant habit where vine will cease to grow once it reaches a particular size.

Dwarf Indeterminate - (tomatoes) Plant habit where vine central stem continues to grow in length, but lateral branches do not.

Expansion Rate - Under ideal conditions, the number of cups of popped corn for every cup of unpopped corn.

F1 - see Hybrid

F300 - FarMore® F300, an advanced fungicide seed treatment technology, delivers protection for a variety of small-seeded vegetable crops against a broad spectrum of seed and seedling diseases.

FI400 - FarMore® FI400 provides early-season protection to prevent or eliminate damage caused by cucumber beetles.

Green Shoulder (GS) - (tomatoes) The dark green shoulder on unripe fruit, often the last area of the fruit to ripen.

Gynoecious - (cucumbers) Plant with only female flowers.

Heritage Varieties - Varieties marked heritage varieties are long standing products that have been used for generations. Mainly open pollinated (OP) varieties.

Heterosis - The improved or increased function of characteristics in a hybrid offspring. A hybrid exhibits heterosis when its traits demonstrate significant enhancement over those of its parent varieties.

Heterozygous - When the parents in a sweet corn hybrid are of different types, i.e. SU x SE, the hybrid is heterozygous. Heterozygous hybrids have better vigor in cooler soils.

Holding Ability - The period of time a fruit will maintain marketability once it has reached maturity.

Homozygous - When both parents in a sweet corn hybrid are of the same type, i.e. SE x SE, they are considered homozygous. Homozygous hybrids typically have higher sugar content.

Hybrid (F1) - Hybrid seed is produced from the cross between two genetically pure varieties, typically from the same species. Hybrids are common in agriculture, especially for crops that benefit from heterosis, such as corn and rice. Hybrids are created as a means to combine the positive and valuable characteristics of the parent varieties into a new hybrid variety. Seed production of a hybrid occurs by controlling the pollination between its parents, such as hand pollination in cucurbits or de-tasseling in corn.

Indeterminate - Plant habit where vine continues to grow.

M - Is a unit of measure that equals 1,000. Seed sold by seed count is priced in multiples of 1,000. For example 5M, 10M, 25M which stands for 5,000 seeds, 10,000 seeds and 25,000 seeds.

Monoecious - (cucumbers) Plant with both distinct male and female flowers.

Naked Seeded - No hull on the seed. Easier to eat than normal hulled seeds.

Open Pollination - Open pollination is pollination by insects, birds, wind, or other natural mechanisms. Seeds of open-pollinated plants will produce new generations of those plants; however, because the pollination is uncontrolled and the pollen source is unknown, open pollination may result in plants that vary widely in genetic traits.

Grower Preferred All-Stars - Items marked with this symbol are "All Stars". They have been and will continue to perform consistently well for many growers across a wide geography. Growers really can't go wrong by planting these selections.

High Tunnel - Items marked with this symbol are recommended for high tunnel and protective culture production.

New - Most often this is a new release, but it can also be new to our lineup and not new in the market. Progressive growers that are producing other similar varieties in this product category should consider giving this a try to see if it works for them.

Open Pollinated (OP) - A variety is said to be open pollinated when it is a non-hybrid variety, meaning that seed is produced via self-reproduction. Seed production of an open pollinated variety occurs using the plants natural pollination mechanism but in a controlled environment to prohibit the introduction of outside, unrelated pollen sources. These controls insure that the open pollinated variety stays genetically pure and true to type.

Parthenocarpic - (cucumbers) Plants that set fruit without pollination.

Pelleted - Seed coating that improves the shape, size, and uniformity of raw seeds for more accurate sowing by hand and precision-sowing by machine. Pellets are made of inert materials which dissolve as they absorb moisture, allowing immediate access to oxygen for fast, uniform seedling emergence.

Pendant - Refers to how the pepper hangs on the plant.

Pithy - Fibrous, coarse texture.

Pungent - Refers to heat level of hot peppers; pungent = hot.

PVP - Plant Variety Protection. Seed may not be reproduced for sale without permission of the originator.

Sieve - Diameter of green bean pod.

Transgenic - Genetically modified.

Uniform Ripening (UG) - Has the gene for uniform ripening of the fruit. Fruit are typically lighter green prior to ripening.

Poncho - Items treated with Poncho seed treatment are marked with this symbol and highlighted in red in the price tables.

Rupp Logo - Our logo marks those varieties that have come from our research and development group as well as products for which we have exclusive marketing rights.

Sort Order - This symbol marks the column used to sort the information presented in each product description table. Usually alphabetical by item name or sorted by days maturity.

Vendor / Brand logos contained within are properties of their respective trademark holders.

ICON KEY

Cruiser - Items treated with Cruiser seed treatment are marked with this symbol and highlighted in purple in the price tables.



Documents Required

- This color coded icon marks varieties that need signed documents / waivers in order for the product to be shipped. A page number and color will direct you to the document in the back of the book.



FarMore - Items treated with FarMore seed treatment are marked with this symbol and highlighted in green in the price tables.



Game Changers - An item marked as a Game Changer is one that is gaining some traction with growers either through early release trialing or as a result of giving a new product a try. These products have the potential to become tomorrow's All Stars and bring something special to the table. These are "must try" products in this crop type.



Grower Preferred All-Stars

- Items marked with this symbol are "All Stars". They have been and will continue to perform consistently well for many growers across a wide geography. Growers really can't go wrong by planting these selections.



High Tunnel - Items marked with this symbol are recommended for high tunnel and protective culture production.



New - Most often this is a new release, but it can also be new to our lineup and not new in the market. Progressive growers that are producing other similar varieties in this product category should consider giving this a try to see if it works for them.



TERMS AND PAYMENT INFORMATION

PAYING FOR YOUR ORDER

All payments should be made payable to Rupp Seeds, Inc. in U.S. Dollars and to the following address:

Rupp Seeds, Inc.
17919 County Road B
Wauseon, OH 43567

We accept payment via credit or debit card, check, and wire transfer. Open account terms and financing is available for qualifying customers. Payment discounts are available for select payment methods and products.

Credit Card

We accept the following credit cards as payment: Discover, MasterCard, or VISA. Please indicate which card you wish to use and furnish a complete card number, expiration date, 3-digit verification code, name on card, and billing address of the account holder. Your credit card will not be charged until your order is shipped. Not eligible for cash discounts.

Check

We accept business or personal checks, money orders, and cashier's checks which are eligible for payment discounts. Please refer to the Cash Discount Program for details.

If paying by check, please allow 10 days for your check to clear the bank before your seed will be shipped.

A fee of \$25.00 will be charged for any check returned by the bank.

Wire Transfer

We do accept payment via wire transfers to our bank. Please contact our office for processing details.

There is a \$25.00 processing fee for wire transfers.

Open Accounts

Open account terms are available to qualifying customers. To establish credit terms, a customer must have a minimum of \$1000 in seed purchases, and a Rupp credit application must be completed and submitted for review. Please allow several weeks to process.

Payments on open account invoices are eligible for payment discounts. Please refer to the Cash Discount Program for details.

Invoice Terms

Payment in full is expected on or before the due date indicated on the invoice, not from the statement date.

Past due invoices will be charged a finance charge of 1.5% per month on the past due amount.

Any fees or legal expenses incurred in collecting unpaid accounts will be charged to the account to the extent permitted by law.

CASH DISCOUNT PROGRAM

Rupp Seeds offers a cash discount program as an incentive for early payment of your seed order or invoice. Cash discounts are available for orders over \$250.00.

Use the following table to determine your discount rate for the month in which you are sending payment.

December	6.0%	March	3.0%
January	5.0%	April	2.0%
February	4.0%		

Our cash discount program can be used in the following ways:

- A) Prepay on account – Make a payment on your account as prepayment for your expected purchases in the coming season.
- B) Pay with order – After you assemble and total your order, simply calculate and subtract the cash discount amount based on the month of payment and send a payment for the balance.
- C) Pay upon receipt of order acknowledgment – You can also receive a cash discount for payment after receipt of your order acknowledgment. Payment can occur at any time before your seed is shipped.

Please note the following details about cash discounts:

Cash discounts are only available on vegetable and grain seeds. Cash discounts are not available for non-seed items including: seed treatments, clothing, accessories, planter plates, popping corn, supplies, freight charges, etc.

Cash discounts are not available on orders less than \$250 or for credit card, debit card, and COD orders.

RECENTLY ASKED QUESTIONS

Do you offer any discounts that I would be eligible for?

Yes, we offer cash discounts on all seed orders over \$250.00. The cash discount is for orders paid for via check. You may prepay your seed order at anytime and we will add that months discount to your credit on account. The December discount is 6% and goes down a percentage each month through April. See page 6 for more details.

You offer more high quality varieties than most seed dealers. How do you decide which varieties to offer? And where do they all come from?

This edition of our catalog features over 500 varieties in over 43 vegetable crops. We consider most of these varieties as suitable for professional and commercial growers, while a few others are included because they're popular heritage varieties.

Deciding which varieties to offer is a challenging question and there are a number of factors that are considered, including:

- What market is a variety best suited for? For the shipper or fresh market? Or wholesale or retail trade?
- Does a new variety bring a game changing improvement over current varieties? Is it higher yielding? Does it produce more desirable, consistent or marketable fruit? Does produce from the variety offer any improvements in food quality or nutrition?
- Does the variety offer the grower any benefits in managing crop issues, weeds, insects or disease?

Many of these questions are answered in the product development trials we conduct every year on our farm. Our personal experience is important and our observations at the numerous vendor trials we visit also are a factor.

The reliability of the seed supplier is also important. Do they consistently have seed supply available? And is it high quality?

Our current vendor list is over 40 companies and includes:

Abbott & Cobb, American Takii, A.P. Whaley, Awald, BHN, Bisek Gardens, Condor, Crookham, De Ruitter, DP Seeds, Enza Zaden, Harris Moran, Harris Seeds, Hollar, Hybrid Seed Company, Illinois Foundation Seeds, Jersey Asparagus, Johnny's, Kimberly, Lark, Nunhems, PanAmerican Seed, Pure Line, Rispens, Rupp, Sakata, Schlessman, Seed Savers Exchange, Seeds By Design, SeedSense, Seedway, Seminis, Seneca Vegetable Research, Siegers, SPS Idaho, Sugar Hill, Syngenta, The Wax Company, Tozer, Treasure Valley Seed, US Agriseeds, US Seedless, Vilmorin, and Wild West.

I am preparing for a food safety audit. Can you help? Is Rupp Seeds GAP certified?

Yes, Rupp Seeds is GAP certified. A copy of the certificate can be found on page 125.

In recent years there have been several occurrences of food borne illness. These situations have prompted both the government and industry to respond to insure a safe food supply. Development of Good Agricultural Practices (GAP) and Good Handling Practices (GHP) for the produce industry help minimize these outbreaks, and voluntary audits help to insure the practices are defined and in use.

The U.S. Food and Drug Administration's "Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables" doesn't have specific guidance for seed companies. Even so, we recognize that many of our customers need our assurance that seeds are handled appropriately to minimize contamination.

We've consulted with food safety experts to understand what we can do to assist our customers with their audit preparations. They've recommended that we provide a Letter of Guarantee that briefly describes our practices and they've assured us this letter is acceptable in any food safety audit. We've included the letter in this catalog for your convenience. See page 126 for a copy.

Are all of your seeds treated?

Most of our seed is treated. We do have some varieties available untreated. These items are marked as untreated in the pricing tables. See the pricing table example below. Walker Deluxe is available untreated and has a 'U' at the end of the item number and the item number is red instead of black. When ordering, please put a "U" behind the item number to signify you are ordering untreated seeds. In addition, it's helpful to put "Untreated Seeds Only" on the top of your order form.

Pricing table example. "U" indicates untreated seed.

KALE	M=1,000 seeds			
	Priced per 1,000 seeds in these package sizes			
	1M	5M	25M	100M
28005 Black Magic	3.60	2.55	1.85	1.35
28504 Blue Ridge	10.40	9.35	8.65	8.15
28503 Winterbor	10.40	9.35	8.65	8.15
	Priced per package 4 oz.			
	Priced per pound in these package sizes			
	1#	5#	25#	
28004U Red Russian <small>Untreated</small>	13.80	30.70	30.20	29.95

What are GMOs? What does GMO stand for? And why do they exist?

A GMO, or Genetically Modified Organism, is a plant or variety that was developed to include a desired gene or selection of genes from another plant or organism.

GMOs were developed to enable a plant with a built-in ability to resist herbicides, insects and diseases, helping farmers produce more while reducing their use of chemicals. Recent developments in science are also improving the plants water and nitrogen utilization, which enable it to produce a crop even when these nutrients are in short supply.

My customers occasionally ask me if I raise and sell GMO vegetables. Can you tell me which products in your catalog are GMO?

GMO varieties of corn, soybeans and cotton have been widely accepted by farmers in the US and internationally. GMO developments in vegetable crops, on the other hand, have been pretty limited, in large part due to the high cost of research and development for crops that aren't widely grown. Currently, the only GMO vegetables available in our catalog are sweet corn and summer squash.

Of the roughly 68 varieties of sweet corn, 19 are GMO: the Performance Series, Attribute, Attribute Plus, and Attribute II varieties listed on pages 30 - 32.

Is there more information about GMOs that I can provide my customers if they are interested in learning more?

GMOAnswers.com is an excellent resource for anyone interested in learning more about GMOs. Visitors can ask questions and get answers from experts across a wide range of disciplines who will provide balanced, fact-based responses. These experts include conventional and organic farmers, agribusiness experts, scientists, academics, medical doctors and nutritionists from a wide range of studies.



DESPERADO **NEW**

BEANS

PLANTING

Plant green beans in soil temperatures of 65 degrees or greater. Planting depth should be ½" to 1". Row spacing should be 30" for hand-picking. There should be approximately 2" between plants. Some commercial growers are using 15" rows for late planted green beans that are going to be mechanically harvested.

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

MANAGEMENT

Weed pressure and insect pressure are the hardest things to control in green beans. If conditions are wet, diseases are more prevalent.

HARVEST

Harvest green beans when 50% of the beans are 3 - 4 sieve.

STORAGE

Store beans at 40 - 45°F and 95% humidity.

RUPP USE GUIDELINES

Home Garden and Farm Market varieties are considered to be high quality (gourmet) for fresh use or processing. They are low in fiber and more tender. As with most home garden varieties, pods set over a longer period for extended harvest.

Shipping varieties contain fiber that slows wrinkling under long distance shipping or longer time between picking and use on the stand. They are normally less tender than Home Garden or Farm Market varieties. Shipping varieties have a more concentrated pod set for mechanical harvest.

DISEASE CODES

A - Anthracnose
BBS - Bacterial Brown Spot
BV - Common Bean Mosaic Virus
CTV - Curly Top Virus
HB - Halo Blight
N# - Bean Mosaic Virus race number
NLB - Northern Leaf Blight
PM - Powdery Mildew
R - Rust
WM - White Mold

COLOR CODES

BY - Bright Yellow
DG - Dark Green
DY - Dark Yellow
GR - Green Red
LG - Light Green
MDG - Medium Dark Green
MG - Medium Green
MLG - Medium Light Green
P - Purple
VDG - Very Dark Green
Y - Yellow

BEAN SIEVE SIZE

1 sieve - 7/32"
2 sieve - 5/16"
3 sieve - 11/32"
4 sieve - 3/8"
5 sieve - 7/16"



WALKER DELUXE



ACHIEVER



BA0999



BRONCO



DESPERADO **NEW**

**SHIPPING
NOW ONLY
\$10⁰⁰**
Orders over \$250
are shipped free!



GRENOBLE



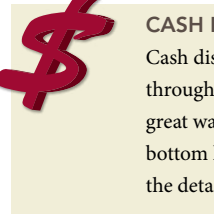
MOMENTUM



OUTLAW



SYBARIS ★



CASH DISCOUNTS

Cash discounts are available throughout the season and are a great way to add money to your bottom line. See page 6 for all of the details.

ASPARAGUS		Features
13007	Walker Deluxe ^{F1}	<i>Tight headed spears with slightly purple bracts. Impressive yields. High disease tolerance. Used for fresh market and processing.</i>

ASPARAGUS		M=1,000 seeds				
Priced per package		100 Seeds	500 Seeds			
Priced per 1,000 seeds in these package sizes				1M	5M	15M
13007U	Walker Deluxe ^{untreated}	13.45	55.95	97.25	84.55	73.50

BEANS		BUSH GREEN Fresh Market						Pricing on page 10
▲		Days	Pod Length	Pod Color	Seed Color	Use	Disease	Features
07014	Achiever	53	5 1/2"	VDG	White	FM	BV	<i>Early maturing variety that is well suited for high temperatures. Can be used as a rain gap filler. Excellent variety with extremely dark color to replace Lynx.</i>
07147	BA0999	50	5 1/2"	DG	White	FM, S	BBS, N	<i>This early bean has a pod that develops very quickly at maturity. Sieve size distribution is 65% in the 3-4 range and 35% in the 5's. This bean will work really well as a rain gap filler.</i>
07043	Bronco	58	5 1/2"	DG	White	FM, S	BV ¹	<i>High yielding. For market or shipping.</i>
NEW 07033	Desperado	53	5 1/2"	DG	White	FM, S	BV	<i>Desperado is a robust variety that produces high yields of high-quality straight pods, quick to mature. Well adapted for heat and stress tolerance with strong consumer appeal.</i>
07119	Grenoble	58	6"	VDG	White	S	A, BV ¹ , HB	<i>A Seminis variety with a concentrated set and slow seed development. 3-4 sieve size.</i>
07005	Momentum	56	5 3/4"	DG	White	FM, S	BV	<i>An upright bush style variety. Produces a concentrated set of straight pods with outstanding yields and is widely adapted to most growing regions.</i>
07024	Outlaw	57	5 1/4"	DG	White	FM, S	BV	<i>Extremely straight, glossy pods. Pods resist breaking and bruising. Plant does not lodge. Versatile across all growing regions. Excellent seed quality and germination. Use as a Prevail replacement.</i>
★ 07148	Sybaris	55	5 1/2"	VDG	White	FM, S	BV, R	<i>Sets shiny, high quality fruit even in upper region of the plant.</i>



JADE ★



GOLD DUST



SUNBURST



SV1003GF ★



BORSALINO

CASH DISCOUNTS

Cash discounts are a great way to add to your bottom line. See page 6 for details.

GROWER PREFERRED ALL-STARS ★ BEANS

Items marked with a gold star are "Grower Preferred All-Stars".

Growers throughout the Midwest and North East have been successful with these varieties. If you're looking to get started with a new crop or make a change in the varieties you are using, you can trust that Grower Preferred products will do the job.



BEANS BUSH GREEN

If you are looking for a hand-pick bean with very long pods, **Jade** is the one for you. Jade has been a standard variety for some time and will provide good yields in all weather conditions.

Dave Silveus
Vegetable Consultant

Sybaris is a green bean that has performed admirably over the past several seasons. This variety has proven itself to be one of the highest quality green beans on the market! The pods are a shiny, dark green color and the sieve size remains in the 3's and 4's. It will also hold longer in the field to give growers more flexibility at harvest time.

BEANS YELLOW

SV1003GF is a newer wax bean that delivers the same yields as Gold Dust with a slightly darker yellow pod. It is quickly becoming a favorite of wax bean growers who are also looking for longer pod length. SV1003GF averages around 5 1/2" in length.

BEANS GREEN RUNNER

Volunteer Half Runner is has become a favorite for growers planting half runner beans. It has very long 6" pods that sets a lot of beans!

BEANS		BUSH GREEN Heritage Varieties - Home Garden					
		Days	Pod Length	Pod Color	Seed Color	Disease	Features
★	07135 Jade	60	6-7"	DG	White	BV, CTV, R	Large, upright plants keep beans clean and straight. Heat tolerant and high yielding even when stressed by heat or cold.

BEANS		BUSH GREEN FLAT						
		Days	Pod Length	Pod Color	Seed Color	Use	Disease	Features
Fresh Market								
	07017 Roma II	58	5 1/2"	MG	White	FM, HG	BV ¹ , N ¹⁵	Good flavored Romano type for home or market.

BEANS BUSH GREEN Fresh Market		M=1,000 seeds				
Priced per 1,000 seeds in these package sizes		2M	10M	20M	80M	800M*
07014	Achiever Cruiser	3.45	3.20	3.00	2.75	
07147	BA0999 Cruiser	4.20	3.95	3.75	3.50	
07043	Bronco Cruiser	4.60	3.60	3.35	3.15	2.90
07033	Desperado Cruiser	4.50	3.50	3.25	3.05	2.80
07119	Grenoble Cruiser	5.00	4.00	3.75	3.55	3.30
07005	Momentum Cruiser	4.60	3.60	3.35	3.15	2.90
07024	Outlaw Cruiser	4.55	3.55	3.30	3.10	2.85
07148	Sybaris Cruiser	5.05	4.05	3.80	3.60	3.35

* Multiple packages may be used to fill orders for these quantities.

BEANS BUSH GREEN Heritage		M=1,000 seeds				
Priced per pound in these package sizes		1#	5#	25#	50#*	500#*
07135	Jade	5.90	4.90	4.65	4.50	4.35

* Multiple packages may be used to fill orders for these quantities.

BEANS BUSH GREEN FLAT		M=1,000 seeds			
Priced per pound in these package sizes		1#	5#	25#	50#
07017	Roma II	4.45	3.45	3.15	2.95

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BEANS		YELLOW WAX						
^		Days	Pod Length	Pod Shape	Pod Color	Seed Color	Disease	Features
<i>Fresh Market</i>								
08023	Gold Dust 	56	5"	Round	Y	White	BBS, BV, HB	<i>An attractive wax bean with high yield potential. The high quality yellow pods set high on an upright plant. Concentrated set.</i>
08019	Sunburst 	50	6"	Round	BY	White	BV, HB	<i>A Seminis variety for local market or shipping. Long straight pods that are an attractive bright yellow. Concentrated set.</i>
 08005	SV1003GF 	56	5 1/4"	Round	Y	White	BBS, BV	<i>Has better color and a slightly longer pod than Gold Dust with a more upright plant. Consistent yielder.</i>

BEANS		FRENCH FILET						
^		Days	Pod Length	Diameter	Pod Color	Seed Color	Disease	Features
08018	Borsalino <small>Baby Wax</small>	60	4"	1/4"	Y	White	A, BV	<i>A Vilmorin high quality baby wax bean with a deep gold color and a concentrated set for both hand or mechanical harvest. Sieve size 2 & 3.</i>

BEANS		GREEN RUNNER						
^		Days	Pod Length	Pod Shape	Pod Color	Seed Color	Disease	Features
 07118	Volunteer Half Runner	60	6"	Oval	LG	White	BV, R	<i>A strain of Half Runner developed by the USDA breeder, Dr. Mullins, at the University of Tennessee. The commercial favorite.</i>

BEANS		HORTICULTURAL <small>Heritage Varieties</small>						
^		Days	Pod Length	Pod Shape	Pod Color	Seed Color	Use	Features
07031	French Horticultural	68	7"	Flat	GR	Buff Red	FM, HG	<i>This strain produces runners though seldom staked. Young beans are frozen; mature are shelled green or dried.</i>

BEANS YELLOW WAX		M=1,000 seeds				
<i>Priced per 1,000 seeds in these package sizes</i>		2M	10M	20M	80M	800M*
08023	Gold Dust <small>Cruiser</small>	4.75	4.00	3.75	3.55	3.35
08019	Sunburst <small>Cruiser</small>	4.85	4.10	3.85	3.65	3.45
08005	SV1003GF <small>Cruiser</small>	4.90	4.15	3.90	3.70	3.50

* Multiple packages may be used to fill orders for these quantities.

BEANS FRENCH FILET		M=1,000 seeds			
<i>Priced per 1,000 seeds in these package sizes</i>		2M	10M	20M	100M
08018	Borsalino	5.85	5.10	4.85	4.60

BEANS GREEN RUNNER		Priced per pound in these package sizes			
		1#	5#	25#	50#
07118	Volunteer Half Runner	4.55	3.55	3.25	3.05

BEANS HORTICULTURAL		Priced per pound in these package sizes			
		1#	5#	25#	50#
07031U	French Horticultural <small>Untreated</small>	5.25	4.25	3.95	3.75




Cruiser® seed treatment insecticide guards against a broad spectrum of early season sucking and chewing insect pests in beans and sweet corn. By protecting the crop from the start, growers can improve stand establishment, enhance plant vigor and increase yield potential. <http://www.syngenta-us.com/crop-protection/seed-treatment/products>



Cruiser® treated items are highlighted in purple in the price tables. Look for this symbol in the product description tables marking Cruiser treated items.



TOUCHSTONE GOLD 

BEETS

PLANTING

Plant seed 1" apart and thin to 2" apart. Row spacing ranges from 15" - 24". Seed depth should be ¼" - ½" deep. Poor stands are often the result of planting too deeply or the soil's crusting after a heavy rain. The seedlings may emerge over a relatively long period of time, making a stand of different sizes and ages of seedlings.

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

MANAGEMENT

It is extremely important to thin beets because they are a multigerm seed meaning each seed will produce several plants. Beets that are thinned when they reach approximately 3" tall can be used as greens. Frequent and shallow cultivation is important to keep the soil loose around the growing beet to ensure uniform roots. Note: There is monogerm beet seed (Solo F1) available.

HARVEST

Beets can be harvested whenever they grow to the desired size. About 60 days are required for beets to reach 1½" in diameter, the size often used for cooking, pickling or canning.

STORAGE

Beets may be stored in a polyethylene bag in a refrigerator for several weeks. Cut off the tops of the beets one inch above the roots. Beets store the best at 32°F and 95% humidity. Do not freeze.



CAMARO



CHIOGGIA
GUARDSMARK



RED ACE



TOUCHSTONE
GOLD

Naturall™

Enhance root growth and increase seedling vigor for healthier plants and higher yields with Naturall™ for Vegetables.
See page 119 for rates and pricing.

BEETS		Days	Sugar	Features
Fresh Market				
14003	Camaro ^{F1}	50 - 55	15%	Good root quality, uniform size and shape. High marketable yield. Smooth skin, good internal and external color.
14105	Chioggia Guardsmark	60	12-15%	Candy-striped beet with alternating rings of dark red and white that are unique and beautiful, making this variety a popular choice for specialty markets. Increased uniformity and bolt tolerance. A strain of the popular Italian heirloom.
14011	Merlin ^{F1}	63	12 - 15%	A beet that replaces Pacemaker III with very similar qualities but more producible seed.
14002	Red Ace ^{F1}	53	12 - 15%	Early, sweet, red and resists zoning in hot weather. Excellent for garden, market or processing.
	14106 Touchstone Gold	55	12-15%	Offers higher germination rates, more uniform round roots and less zoning than standard golden types. Solid green tops are long, attractive, and quickly shade out weeds. Vibrant golden yellow flesh retains its color when cooked and is sweet and more mild than red beets.
Heritage Varieties				
14104	Cylindra	60	5 - 7%	Unique, long cylindrical shaped beet, excellent for slicing. Up to 8" long and 1 3/4" in diameter.
14101	Detroit Dark Red	58	5 - 7%	A very popular, tender, dark red beet used by many home gardeners.

BEETS	M=1,000 seeds			
	Priced per 1,000 seeds in these package sizes			
	5M	25M	250M	1,000M
14003 Camaro	1.03	0.94	0.88	0.84
14105 Chioggia Guardsmark ^{F300}	1.54	1.45	1.39	1.35
14011 Merlin ^{F300}	1.21	1.12	1.06	1.02
14002 Red Ace ^{F300}	1.21	1.12	1.06	1.02
14106 Touchstone Gold ^{F300}	2.70	2.61	2.55	2.51

Seed Size: 9 - 10 = 30,000 seeds per pound.

BEETS	M=1,000 seeds			
	Priced per package 4 oz.			
	Priced per pound in these package sizes			
	1#	5#	50#	
14104U Cylindra ^{Untreated}	3.65	9.70	9.45	9.20
14101U Detroit Dark Red ^{Untreated}	3.85	10.25	10.00	9.75



SAKATA

EASTERN CROWN **NEW**

BROCCOLI

PLANTING

For spring broccoli, plant in greenhouse in flats. Sow $\frac{1}{4}$ " to $\frac{1}{2}$ " deep. For fresh market broccoli, plant on 30" beds with trickle irrigation. On a 30" bed, plant two rows of broccoli. Plants should be 15" apart. When planting fall broccoli, count backward from the first fall frost in your area and add about 30 days from planting. This can be either started in a greenhouse or direct seeded into the field.

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

MANAGEMENT

Use starter fertilizer for transplants and side-dress with nitrogen fertilizer when the plants are half grown. Provide ample soil moisture, especially as the heads develop. Scout fields for aphids and cabbage worms.

HARVEST

Harvest when the head is large and firm, with a compact cluster of small flower buds. The buds should not have bright yellow flowers showing. Look for bright green or purplish-green heads. Yellow flowers and enlarged buds are signs of over-maturity.

STORAGE

Store the broccoli, unwashed, in loose or perforated plastic bags in the vegetable crisper of the refrigerator. Broccoli left unrefrigerated quickly becomes fibrous and woody.

Wet broccoli quickly becomes limp and moldy in the refrigerator—so wash it just before using. Store fresh broccoli in the refrigerator for 3 - 5 days. Old broccoli may look fine, but it develops strong undesirable flavors. It tastes best and is highest in nutritional value when storage time is brief.

DISEASE CODES

BS - Black Speck
BR - Black Rot
DM - Downy Mildew
HS - Hollow Stem
PB - Club Root



DURAPAK 16



EMERALD CROWN ★



GREEN MAGIC ★



IMPERIAL ★



MILLENNIUM ★



SORRENTO **NEW**

BROCCOLI		Days from Transplant***	Sowing Season	Head Size	Bead Size	Disease Code	Features
<i>Fresh Market</i>							
15005	Durapak 16 ^{F1}	90	Spring	Large	Small		<i>Syngenta hybrid that offers adaptability for both crown and bunching segments. Produces high quality, vigorous plant during summer harvest periods. Good heat tolerance.</i>
NEW 15009	Eastern Crown ^{F1}	74	Spring Summer	Medium	Small		<i>Eastern Crown is an outstanding variety for the East Coast. Small beads, blue-green head color and excellent heat tolerance. Perfect for the crown cut/short trim market (Asian cut). Performs well in long day length and moderate heat.</i>
★ 15051	Emerald Crown ^{F1}	78**	Spring	Medium	Medium Small	DM	<i>A Sakata variety specifically bred for high quality and high yield crown cuts. Very uniform, tight heads with beads that are blue green. Nice compliment to Green Magic.</i>
★ 15044	Green Magic ^{F1}	75	Spring	Medium	Medium Small	DM	<i>This summer type broccoli offers very good uniformity and holding ability. It is in the mid-early maturity class and has a wide adaptability. Has a semi-dome, tight head, with medium-small bead size and good plant habit.</i>
15001	Hancock ^{F1}	85	Spring Summer	Medium	Small		<i>A Seminis variety with raised heads for easier picking ability. Thin-stalked variety used for either crown cut or bunching use. Very good heat tolerance.</i>
★ 15049	Imperial ^{F1}	85*, **	Spring	Medium	Small	DM	<i>A Sakata variety that performs best during long day conditions. Good heat tolerance. Tight head with small, dark green beads.</i>
★ 15004	Millennium ^{F1}	88	Spring, Summer	Large	Extra Small		<i>A highly adaptable, crown cut type, yielding high-domed heads with very small beads and exceptionally uniform head maturity. It has a round shape, good heat tolerance and less side shoots. Is anthocyanin-free and has shown strong post-harvest color retention.</i>
NEW 15509	Sorrento ^{Broccoli Raab}	70	Spring, Fall	Uniform large florets			<i>Sorrento is a fast-growing, early maturing variety. Uniform large florets with blue-green narrow turnip-shape leaves. Tall upright plant, slow to bolt. A perfect variety for fresh market or home gardeners.</i>

* Day length sensitive, earlier maturity when day length is longer.

** Requires warmer night time temperatures to mature, growth rate dramatically slows down under cold temperatures.

*** Add 15-20 days for direct seeding.

BROCCOLI	M=1,000 seeds						
	Priced per package		Priced per 1,000 seeds in these package sizes				
	1 oz.	4 oz.	1M	5M	25M	100M	500M*
15509 Sorrento ^{Broccoli Raab}	10.30	16.45	49.35				
15005 Durapak 16	8.00	7.40	7.05	6.65	6.45		
15009 Eastern Crown	10.30	9.70	9.35	8.95	8.75		
15051 Emerald Crown	9.25	8.65	8.30	7.90	7.70		
15044 Green Magic	8.10	7.50	7.15	6.75	6.55		
15001 Hancock	8.45	7.85	7.50	7.10	6.90		
15049 Imperial	8.65	8.05	7.70	7.30	7.10		
15004 Millennium	9.70	9.10	8.75	8.35	8.15		

* Multiple packages may be used to fill orders for these quantities.

ALL-STARS ★ BROCCOLI

Emerald Crown is a perfect fit for 2nd pick spring and works for early fall harvest as well.

Green Magic is a great variety for early spring sowing.

Imperial has great heat tolerance and fits in the summer harvest slot.

Millennium is ideal for harvest in the fall to late fall time period.



Jeff Hess
Vegetable Consultant



CHURCHILL **NEW**

BRUSSELS SPROUTS

PLANTING

Start in the greenhouse and transplant in early to mid summer, when one would start long season cabbage. Seeds should be planted 4 - 5 weeks before transplanting. Allow 90 - 100 days for plants to mature. For summer harvest, you must plant transplants of an early, heat-resistant variety in very early spring. Sprouts maturing in hot weather or under dry conditions are more likely to develop bitterness. Fall production is the most desirable in a large portion of the country. Plant 24" - 36" apart in the row and 30" - 36" apart in rows.

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

MANAGEMENT

Brussels are grown much like cole crops, cabbage and broccoli.

HARVEST

Harvest sprouts when buds form heads one to two inches in diameter. Pick sprouts when they are firm. Lower sprouts mature first.

Natural

See page 119 for rates and pricing.



CHURCHILL **NEW**



RED BALL



SAVE WITH CASH DISCOUNTS

Cash discounts are available throughout the season and are a great way to add money to your bottom line. See page 6 for all of the details.

December.....	6%
January.....	5%
February.....	4%
March.....	3%
April.....	2%

BRUSSELS SPROUTS

	Days	Sprout Size	Plant Size	Features
<i>Fresh Market</i>				
16006 Capitola F1	90	1 ½"	38"	<i>Known for uniform, high quality sprouts. Adaptable, being well suited to fresh market and processing. It is harvestable either by hand or machine. Produces heavy yields.</i>
NEW 16007 Churchill F1	80	1 · 1 ¼"	30"	<i>A first early variety, maturing late August to October. Produces good yields of tight, evenly spaced buttons with superb flavor.</i>
16002 Jade Cross Regular F1	85	¾ - 1"	28"	<i>Popular early maturing variety. Deep green sprouts are spaced closely on medium sized plants. High yield of firm, oval-shaped, medium sized sprouts. Holds well in adverse weather.</i>
16502 Red Ball	100	1"	38"	<i>Specialty variety producing red sprouts which improve in color after cold weather. Best red variety available.</i>

BRUSSELS SPROUTS

M=1,000 seeds

	Priced per 1,000 seeds in these package sizes			
	1M	5M	25M	100M
16006 Capitola	21.10	20.45	20.15	19.70
16007 Churchill	14.00	13.35	13.05	12.60
16002 Jade Cross Regular	8.60	7.95	7.65	7.20
16502 Red Ball	5.10	4.45	4.15	3.70





STELLAR VANTAGE ★

CABBAGE

PLANTING

Transplant early cabbage soon enough that it matures before the heat of summer. Planting two or three varieties with different maturities can provide harvest over a longer period of time. Late cabbage must be started during the heat of mid-summer, but it develops its main head during the cooling weather of fall. It may be transplanted or direct seeded. Plants should be planted 12" - 24" apart depending on variety and the desired head size. Sow cabbage seeds ¼" - ½" deep.

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

MANAGEMENT

Use starter fertilizer when transplanting and side-dress with nitrogen after plants are half grown. Keep plants out of intense sunlight and heat of summer. Common problems are Yellow or Fusarium Wilt, as well as cabbage worms.

HARVEST

Cabbage can be harvested anytime after the head has formed. For highest yield, cut the cabbage heads when they are solid (firm to hand pressure) but before they crack or split. When heads are mature, a rain may cause heads to crack or split.

STORAGE

Fresh, uncut heads of cabbage can be stored in the refrigerator for up to two weeks. Cover loosely with a plastic bag or use perforated bags. Do not wash cabbage before storing; the extra moisture will hasten deterioration.

DISEASE CODES

ALS - Angular Leaf Spot
ALT - Alternaria Leaf Spot
BR - Black Rot
BS - Black Spec
CR - Crown Rot
DM - Downy Mildew
T - Thrips
TB - Tip Burn
YR - Yellows Resistant



FAST VANTAGE ★



XTREME VANTAGE



GRAND VANTAGE ★



STELLAR VANTAGE ★

Naturall™

Enhance root growth and increase seedling vigor for healthier plants and higher yields with Naturall™ for Vegetables. See page 119 for rates and pricing.

CABBAGE		HYBRID					
		Days from Transplant*	Head Weight pounds	Head Type	Color	Disease Code	Features
★	17069 Fast Vantage	50	2 ½	Round	Medium Green		A very uniform hybrid that is slightly earlier than Headstart for the early cool season.
	17005 Stonehead	60	3 - 4	Round	Gray Green	TB	A popular, early hybrid for home garden or market. Solid, slow to burst heads.
	17097 Platinum Dynasty	70	3 - 4	Round	Blue Green	BR, TB, YR	A Seminis fresh market hybrid with excellent uniformity in the early main season time slot. Performs well in the East & Midwest both in the summer and fall.
	17048 Cheers	80	4 - 6	Round	Blue Green	BR, YR	A hybrid with uniform heads, larger wrapper leaves. Disease resistant. Compare to Blue Vantage.
	17011 Xtreme Vantage	80	5 - 6	Round	Blue Green	BR, TB, YR	Very good uniformity in field. Has a good disease package.
★	17116 Grand Vantage	85	5 - 6	Round	Blue Green	TB, YR ¹	An exciting fresh market variety with attractive green to blue-green color. Very round head 7 x 7", heavy weight, dense solid interior and short core. Tight wrapper leaves. Good holding ability and excellent yield.
★	17009 Stellar Vantage	85	5	Round	Blue Green	BR, YR ¹	Mid-late maturity with compact heads and short cores. Offers nice, dense heads and has good field-holding ability.

* Add 10-15 days for direct seeding.

CABBAGE Hybrid	M=1,000 seeds				
	Priced per 1,000 seeds in these package sizes				
	1M	5M	25M	100M	500M*
17048 Cheers	6.25	5.65	5.05	4.45	4.35
17069 Fast Vantage	6.75	6.15	5.55	4.95	4.85
17116 Grand Vantage	8.00	7.40	6.80	6.20	6.10
17097 Platinum Dynasty	6.85	6.25	5.65	5.05	4.95
17009 Stellar Vantage	6.40	5.80	5.20	4.60	4.50
17005 Stonehead	6.40	5.80	5.20	4.60	4.50
17011 Xtreme Vantage	5.80	5.20	4.60	4.00	3.90

* Multiple packages may be used to fill orders for these quantities.

ALL-STARS ★ CABBAGE

Fast Vantage Look no further for your early cool season planting.

Grand Vantage is a great all around main season cabbage. Very good producer.

Stellar Vantage A later season variety which holds in the field very well.



Jeff Hess
Vegetable Consultant



RED DYNASTY



TOY CHOY



SAVE WITH CASH DISCOUNTS

Cash discounts are available throughout the season and are a great way to add money to your bottom line. See page 6 for all of the details.

December	6%
January	5%
February	4%
March	3%
April	2%

CABBAGE		SPECIALTY Hybrid					
		Days from Transplant*	Head Weight pounds	Head Type	Color	Disease Code	Features
17090	Red Dynasty	72	3 1/2 - 5	Slightly Flat Round	Red	BR, TB	A Seminis red cabbage with the right size for fresh market plus intermediate black rot resistance.
17070	Red Jewel	75	3 - 5	Round	Purple Red	TB	Sakata hybrid that is widely adaptable with very good holding ability. Excellent uniformity and yield potential.
17082	Huron	115	10 - 15	Round	Green	T, YR	A high quality, long term storage hybrid from Seminis. Large frame, medium cores, exceptional yields.

* Add 10-15 days for direct seeding.

CABBAGE SPECIALTY Hybrid		M=1,000 seeds				
Priced per 1,000 seeds in these package sizes		1M	5M	25M	100M	500M
17082	Huron	12.70	12.10	11.50	10.90	10.80
17090	Red Dynasty	9.85	9.25	8.65	8.05	7.95
17070	Red Jewel	9.15	8.55	7.95	7.35	7.25

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ONLINE VEGETABLE PRODUCTION RESOURCES

https://ag.purdue.edu/btny/midwest-vegetable-guide/Documents/2019/ID-56_2019.pdf

The 2019 edition of Purdue University's "Midwest Vegetable Production Guide for Commercial Growers" which includes spacing, fertilizing and harvesting information, as well as information on diseases, pest management and weed control.



<https://njaes.rutgers.edu/pubs/publication.php?pid=e001>

The 2019 edition of the Mid-Atlantic Commercial Vegetable Production Recommendations.



<http://vegnet.osu.edu/>

The Ohio State University Extension Vegetable Crops website with research reports on many crops. The site also includes a listing of vegetable team members by expertise and how to contact them.



<http://urbanext.illinois.edu/veggies/index.cfm>

University of Illinois Extension Vegetable Gardening Basics.



<https://www.canr.msu.edu/ipm/agriculture/vegetables>

Michigan State University's guide for Integrated Pest Management in commercial vegetable production.



<http://www.ncsu.edu/sustainable/>

North Carolina State University's Department of Horticulture Science website.



<http://plantpath.psu.edu/extension>

Penn State University's Department of Plant Pathology, Vegetable Disease Identification.



CABBAGE		CHINESE					
		Days from Transplant*	Head Weight pounds	Head Type	Color	Disease Code	Features
<i>Fresh Market</i>							
18010	Blues ^{F1}	57	4 - 5	Napa	Green	ALS, BS, DM	<i>Extra slow bolting, high disease tolerance, superior performance in spring or early fall.</i>
18017	Yuki ^{F1}	67	4 - 5	Napa	Green	BS, CR, TB	<i>Yuki is a medium maturing, China Pride type hybrid. Good uniformity and size.</i>

* Add 10-15 days for direct seeding.

CABBAGE		CHINESE Pak-Choi				
		Days	Head Type	Color	Features	
49013	Toy Choy ^{F1}	30 - 35	Celery	White	<i>A compact hybrid Cantonese Pak Choi with thick, broad, milky white petioles and glossy, dark green leaves. Perfect for growers servicing Asian markets.</i>	

CABBAGE CHINESE		M=1,000 seeds			
<i>Priced per 1,000 seeds in these package sizes</i>		1M	5M	25M	100M
18010	Blues	3.75	3.15	2.85	2.25
18017	Yuki	5.20	4.60	4.30	3.70

CABBAGE CHINESE Pak-Choi		M=1,000 seeds			
<i>Priced per 1,000 seeds in these package sizes</i>		1M	5M	25M	100M
49013	Toy Choy	3.75	3.15	2.85	2.25



SAKATA

HERCULES **NEW**

CARROTS

When deciding what variety of carrot to plant one must determine two things: "What is my target audience?" and "What kind of soil do I have?" Growers need to define if they are selling to fresh or storage markets. Most of the carrots available from Rupp are geared towards fresh market. If high tunnels or cold frames are used in your operation, you may want to consider carrots as part of your rotation due to their ability to resist cold weather.

There are five main types of carrots: Nantes, Chantenay, Baby, Imperator, and Danvers.

- Nantes are easily and widely adapted; straight cylindrical roots ranging 5" - 7" long. They tend to have a sweet flavor and crisp texture, but have a limited storage potential. Nantes are grown in loose sandy soils or in raised beds.
- Chantenay have conical roots with broad shoulders and rounded tips. They have a rich, sweet flavor and also possess a good storage potential. They are an excellent type to grow from summer to fall and are adapted to various soil types. They usually size up well in clay soils with high organic matter content.

- Baby carrots have a root less than 5" long with a crisp texture and are frequently quite sweet when mature. They also are grown in any well drained soil and can be used to separate different types of salad greens. They tend to have limited storage potential.
- Imperator are long with a tapered root shape, stocky shoulders and strong tops. They tend to have a fibrous texture and store well. This type of carrot sizes up best in deep, sandy loam.
- Danvers have a thick rooted cylindrical shape with a yellowish core. This type is mainly used for processing, juicing, and storage.

PLANTING

Carrots can be planted in soils as cool as 40°F with the ideal temperature ranging from 50 to 75°F. They take anywhere from 7 - 21 days to emerge from the soil depending on soil temperatures. Spring carrots are planted 2 - 3 weeks before the last frost. For fall harvest, plant carrots 10 - 12 weeks before the first frost. Seed carrots ¼" - ½" deep and 15" between rows. Using seed tapes or pelleted seed will help prevent over seeding.

See "Germination Chart" on page 121 for additional information on germination rate and

days to germination at various soil temperatures.

MANAGEMENT

Soil nutrients are very important. Test the soil to check for optimal levels. Also scout for insect and fungal infestations. Root quality is best when soil temperatures are 60 - 70°F. The shape of the root is determined within the first few weeks after germination when the new plant extends its taproot deep into the soil. Sometimes growers will mix radish seed with carrot seed to help with emergence. Radishes tend to have the ability to break through soil crusting which in turn helps the carrots emerge.

HARVEST

Fresh market carrots are harvested when they are ¾" - 1½" in diameter.

STORAGE

Store carrots at 32 - 34°F and at 98 - 100% humidity. Store clean carrots away from other fruits and vegetables.



ENTERPRISE



GOLD NUGGET



HERCULES **NEW**



MUSICO



OLYMPUS



VIPER

CARROTS		Hybrid				
		Maturity	Size	Type	Interior	Features
19026	Enterprise	Early Main	12 - 14"	Chantenay	Dark Orange	A Seminis fresh processing cut and peel or slicing carrot with long, smooth, dark orange roots with a small core. Resists cracking. Strong top with good leaf blight tolerance.
19014	Gold Nugget	Medium Early	7.5 - 8"	Nantes	Yellow	Sweet flavor. Very uniform with high production. Medium vigor. Erected with a strong top and good aptitude for harvesting by top lifting.
NEW 19005	Hercules	Early	7 - 7.5"	Chantenay	Orange	An early-maturing, extremely smooth Chantenay-Kuroda type with strong tops. High yielder. Excellent juicing carrot. Average Brix 8.5-9.
19006	Musico	Early	7 - 8"	Nantes	Dark Orange	A uniform, cylindrical root with well-rounded tips at maturity. Strong attachment for harvest by lifting or bunching. Very good internal quality. A good replacement for Primo.
19007	Olympus	Main	7 - 9"	Imperator	Dark Orange	Outstanding for bunching. Great color combined with a smooth finish. Very crisp texture and excellent flavor. Classy hybrid with high yield potential.
19009	Viper	Main	12 - 14"	Imperator / Cut & Peel	Bright Orange	Was bred for higher density plant populations and maintains its long length to maximize yield for two inch pieces. Small, indistinctive core and incredible top strength with good stem attachment for easy harvesting. Combines a great flavor profile and very crisp texture.

CARROTS		OP				
		Maturity	Size	Type	Interior	Features
19505	Little Finger	Early	3 - 4"	Baby	Bright Orange	Used for baby carrots.

CARROTS Hybrid		M=1,000 seeds			
Priced per 1,000 seeds in these package sizes		10M	100M	1,000M	5,000M
19026	Enterprise	1.01	0.66	0.61	0.58
19014	Gold Nugget	1.29	0.94	0.89	0.86
19005	Hercules F300	0.82	0.47	0.42	0.39
19006P	Musico Pelleted	1.27	0.92	0.87	0.84
19007	Olympus F300	0.91	0.56	0.51	0.48
19009	Viper	0.93	0.58	0.53	0.50

CARROTS OP		Priced per package			
		1 oz.	4 oz.	1#	5#
Priced per pound in these package sizes					
19505U	Little Finger Untreated	5.00	7.95	21.00	20.50



FLAME STAR

CAULIFLOWER

PLANTING

Cauliflower is best started from transplants for both spring and fall crops. Do not transplant sooner than 2 - 3 weeks before the average frost free date in the spring. Cauliflower is more sensitive to the cold than its cabbage-family relatives. It is important to start cauliflower early enough that it matures before the heat of the summer, but not so early that it will be injured by the cold. Transplant autumn cauliflower and cabbage at the same time. Use starter fertilizer when transplanting. Start the transplants so that they grow actively until transplanting and never cease growth. Space transplants 18 - 24" apart in the row. Use wider spacing for fall plantings.

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

MANAGEMENT

Cauliflower plants should be kept growing vigorously from the seedling stage through harvest. When the heads begin to form (shows 2 to 3" of white curd at the growing point), it is ready to blanch. Tie the outer leaves together over the center of the plant to protect the head from sunburn, to keep it from turning green and developing an off-flavor. When selecting cauliflower choose varieties that are self wrapping. This will help in the blanching process.

HARVEST

The curd develops rapidly under proper growing conditions. It grows 6 - 8" in diameter and is ready to harvest within 7 - 12 days after blanching begins. The mature heads should be compact, firm, and white. Harvest the heads by cutting the main stem. Leave a few green outer leaves attached to protect the heads. Cut the heads before they become over mature and develop a coarse "ricey" appearance. Once individual florets can be seen, quality deteriorates rapidly.



DEPURPLE



SYNERGY ★



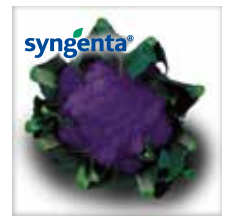
FLAME STAR



SHAKARIS ★



CHEDDAR



GRAFFITI

CAULIFLOWER							
		Days from Transplant	Head Type	Plant Size	Self Wrapping	Sowing Season	Features
★	20015 Minuteman F1	60	Deep Dome	Medium	Good	Spring	An early and widely adapted hybrid from Seminis that has performed well when harvested in the summer heat and early fall. Superior head quality.
	20005 Candid Charm F1	65	High Dome	Large Semi Erect	Good	Spring Summer	A second early, heavy yielding hybrid for spring sowing.
	20013 DePurple F1	68	Domed	Medium, Erect	Very Good	Spring, Summer	Lavender/pink variety that offers uniform maturity and consistent performance under a variety of environmental conditions. Ideal for the specialty color market.
	20020 Freedom F1	70	Domed	Large	Excellent	Spring Summer	A mid season hybrid from Seminis with more uniformity for harvest.
★	20009 Synergy F1	75 - 80	Domed	Medium	Excellent	Spring	An Enza variety especially suited for summer production. Will give good covering for nice white curds in the heat.
	20014 Flame Star F1	80	Semi Dome	Medium, Erect	Good	Spring, Summer	Beautiful semi-orange variety targeted to the specialty color market. Produces medium-size plant with high yields of smooth, dense, well-shaped heads. Versatile for fresh market or processing markets.
★	20006 Shakaris F1	80 - 85	Domed	Compact	Very Good	Spring Summer	Great for fresh market and processing. Consistent head size with abundant yield potential. Notable white curd.
	20021 Cheddar F1	85 - 90	Domed	Medium	Poor	Summer Only	A Seminis orange cauliflower that holds well in the field. Brighter when lightly cooked. A market attention getter.
	20025 Graffiti F1	85 - 90	Domed	Medium, Erect	Fair	Spring Summer	A unique deep purple hybrid from Syngenta which needs sunlight to obtain full color. Works well raw or steamed - add a small amount of lemon juice when cooking to retain the color.

CAULIFLOWER		M=1,000 seeds				
	250 Seeds	1M	5M	25M	100M	500M*
20005 Candid Charm	13.10	12.45	12.00	11.55	11.45	
20021 Cheddar	22.90	70.40	69.40	68.40	67.40	67.15
20013 DePurple	22.45	68.95	67.95	66.95	65.95	65.70
20014 Flame Star	22.45	68.95	67.95	66.95	65.95	65.70
20020 Freedom	11.00	33.80	32.80	31.80	30.80	30.55
20025 Graffiti	22.45	68.95	67.95	66.95	65.95	65.70
20015 Minuteman	16.20	15.55	15.10	14.65	14.55	
20006 Shakaris	16.55	15.90	15.45	15.00	14.90	
20009 Synergy	18.20	17.55	17.10	16.65	16.55	

* Multiple packages may be used to fill orders for these quantities.

ALL-STARS ★ CAULIFLOWER

Minuteman A very nice, early variety that's perfect for summer harvest.

Synergy handles the heat very well for late summer harvest.

Shakaris is perfect for fall harvest and also has a fantastic self-wrapper.

Jeff Hess
Vegetable Consultant



HUDSON **NEW**



VICTORIA



TOP BUNCH 2.0



VATES

**SHIPPING
NOW ONLY
\$10⁰⁰**

Orders over \$250
are shipped free!

CELERY						
		Maturity	Color	Plant Height	Stalk Length	Features
NEW	21003 Hudson F1	Mid season	Dark Green	26"	14-16"	A tall, compact, high yielding celery with an excellent petiole count. Excellent fusarium tolerance. A popular mid-season variety.
	21001 Victoria F1	Early / main season	Medium Green	25"	14"	Tall with fleshy petioles. Quick growing with good standing ability and is slow to bolt in early plantings. Performs well under adverse spring conditions.

COLLARDS		
	Days	Features
22501 Top Bunch 2.0 F1	70	Early maturing variety that resembles Top Bunch with wavy, lightly savoyed leaves that regrow quickly after harvest.
22001 Vates	75	A popular non-heading, slow bolting collard with large blue-green leaves. Frost-resistant greens especially suited to the Mid-Atlantic region.

CELERY	M=1,000 seeds		
	1M	10M	25M
21003P Hudson Pelleted	6.55	6.10	5.75
21001P Victoria Pelleted	6.55	6.10	5.75

COLLARDS	Priced per package		Priced per pound	
	1 oz.	4 oz.	1#	5#
22501 Top Bunch 2.0	34.90	99.60	295.00	294.00
22001 Vates		5.15	16.55	16.30

HIGH TUNNEL & PROTECTED CULTURE INDEX

B	M
Beets	Mustard 61
Chioggia Guardsmark 13	
Red Ace 13	P
Touchstone Gold 13	Peppers Bell Green to Red
C	Sprinter 69
Cabbage	Peppers Bell Other Colors
Chinese 21	Milena 70
Cauliflower 25	Peppers Bell Yellow
Collards 26	Abay 70
Cucumbers	Dicaprio 70
Protected Culture 45	Peppers Miscellaneous Hybrid
K	Edes 72
Kale 55	Peppers Miscellaneous Sweet. 71
Kohlrabi 55	R
	Radish 91

S	T	Look for this symbol for items that are recommended for high tunnel and protective culture production.	
Squash Summer Green	Tomato Cherry		
Kopana 93	Chocolate Sprinkles. 110		
	Montesino 110		
	Sweet Canary 110		
	Toronjina. 110		
	Tomato Fresh Market		
	Carolina Gold 108		
	Mountain Spring 109		
	Rocky Top 109		
	Tomato Greenhouse. 110		
	Tomato Home Garden / Bedding		
	Big Beef 107		
	Early Girl 107		

HIGH TUNNEL PRODUCTION

A high tunnel is a naturally heated enclosed structure that is used to grow produce while extending the growing season and controlling agronomic conditions. Also known as “hoop houses”, high tunnels are typically constructed with tubular steel frames covered by plastic, and their use is rapidly gaining popularity across the Midwest and Northeast. High tunnels significantly increase the average daily temperature of the growing environment while protecting crops from wind, rain, snow, hail, insects and diseases.

A primary advantage of high tunnels over other protection systems is that they are large enough to allow crops to be grown to full maturity and allow sufficient space for cultivation, spraying, and harvesting with the tunnels intact. By extending the season, most crops grown within a high tunnel are harvested at least a month earlier or later than field grown crops, which will earn growers a premium in the marketplace.

Which crops are typically grown within a high tunnel?

Any crop where premiums for availability of early or late fresh produce is a good candidate for high tunnel production. Crops which have an early premium such as tomatoes, peppers, cucumbers or salad greens are particularly suitable, with tomatoes being the #1 crop grown in high tunnels. We recommend choosing crops with a high yield potential and high value per unit in order to recoup your investment.

How many crops can be produced within a high tunnel per year?

At least three cropping cycles are realistic for high tunnels in most climates. Two warm season and one cool season crops within a 12 month period are feasible. With intercropping (the growing of two or more crops simultaneously), the combination of crops is almost infinite.

Planning for your high tunnel

High tunnel production carries with it a modest learning curve for growers experienced with open field production. There are several key factors that should be considered when planning to grow produce in a high tunnel.

Variety Selection

Choosing the right variety for your high tunnel is important. Varieties that perform well in the open field will not necessarily perform the same in a high tunnel.

While some growers have learned how to adapt their cropping practices in order to use open field varieties in high tunnels, going this path will require some trial and error. We have highlighted several varieties in our catalog that have a proven track record in high tunnel production.

Fertility

The proper nutrient program is important since you are dealing with crops that are demanding high input to produce above average yields. If you are planting in soil, take a soil test to see what nutrients need to be added. If you're using soil bags, make sure to keep them flushed so that the salt index does not get too high.

The first priority in your fertility program is to focus on building plant structure. Once that is established, concentrate on the flowering and fruit production of the plant. Fertility directly increases at the rate the structure, biomass and fruit production increases. Switching fertility programs mid-season or adding new materials from another program can cause an imbalance in your soil medium and increase risks and production costs. For more information on specific fertility needs, contact Miller Chemical and Fertilizer LLC at 800-233-2040 or www.millerchemical.com.



Pruning and Trellising

The training process begins as soon as the plants are planted in the soil medium. Building the structure and correct biomass of the plant is essential for optimal fruit production and disease prevention. This is one of the biggest learning curves when growing in the high tunnels because it depends on crop type and variety.

For example, growers that are growing indeterminate tomatoes will trellis their tomatoes on a one-leader system, whereas determinate varieties are trellised on a two-leader system. Pruning requirements will vary by variety depending on how vigorously that variety's plant grows. Determining the correct bio-mass of the plant for optimal fruit production is an ongoing learning curve. Consult with high tunnel crop advisors, as well as your seed rep, for advice on pruning practices for certain hybrids.

Pollination

A number of vegetable crops require pollinators such as bees to be present in order for pollination to take place and

fruit to set. These crops include melons, some cucumbers and squash. If wild bees are present, they may enter the high tunnel naturally. Planting cover crops such as hairy vetch, dill and alyssum around a high tunnel will help attract pollinators. If bees are not naturally present, many growers either hand-pollinate or purchase pollinators for release in the high tunnel.



Contact Koppert Biological at 810-632-8750 or www.koppertus.com if you need to purchase pollinators.

Some cucumber varieties that are targeted for high tunnel and greenhouse production are parthenocarpic, meaning that they will set fruit without pollination, and thus don't require pollinators. All the varieties listed in the cucumber protected culture section are parthenocarpic.

Air Circulation

Circulation is vital to suppress disease. Increased disease pressure comes with stagnant and humid air, which is prevalent in a high tunnel setting. Typically, high tunnels have sides that can be rolled up, but for vertical production, fans should be installed in the upper regions of the structure to provide complete air flow movement.

Pest Management and Scouting

There are certain diseases that should be scouted for on a regular basis such as: grey leaf mold (boytritus), white mold and powdery mildew. In addition, pests such as spider mites, thrips and white flies could also be present and should be included in the scouting plan. Check with your local extension agent or crop protection advisor for products that may help you control any identified disease and pest issues.

High tunnel production is growing and crop practices continue to develop as growers gain experience with production in protected culture environments. The knowledge and experience of our staff is also continuing to develop in this area and we look forward to providing support to our customers and learn from them as we grow together.

Look for this symbol in the product description tables marking items that work well in high tunnel / protected culture use.





SIGNATURE XR **NEW**

CORN

PLANTING

Plant seeds 8 - 12 inches apart on 30 inch rows to achieve optimum yield. Seed depth should be ¾" - 1½" depending on soil conditions, and genetic type. Plant when soil temperature is 60° F plus. Planting in blocks will also help increase uniformity in pollination.

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

SEEDING RATE

18,000 - 22,000 seeds per acre or one seed every 8 - 12 inches. To achieve this singulation use a finger or air seed delivery system.

MANAGEMENT

Be sure to read "Managing Insects in Sweet Corn" on page 43. Also take a look at our "Insect Scouting Resources" on page 41. Scout field every 7 days to check for insect, weed, and disease pressure. For identification of weeds, insects, and diseases consult your local extension office or view the Midwest Vegetable Production Guide.

https://ag.purdue.edu/btny/midwest-vegetable-guide/Documents/2019/ID-56_2019.pdf

ISOLATION

For all high quality sweet corn varieties, maintaining an isolation is required to protect the high sugar and flavor characteristics of the sweet corn as cross pollination from other types of sweet corn or different types of corn will result in starchy kernels.

SE/Synergistic types and SH2/Improved Super Sweet types should be isolated both from each other and from other types of corn including field corn, popcorn, and ornamental corn.

An isolation can be achieved either by distance or by a difference in maturity. Preferable isolations would require 700 – 1000 feet distance from other corns, or 10 – 14 days between pollination.

RELATIVE MATURITY

Sweet corn maturities are publicized as days to relative maturity. This information comes from supplier data, as well as our trial observations in the Midwest. Prolonged excessive heat or cool temperatures can cause maturity dates to fluctuate to some degree. Monitor your crop through the growing season in order to pick at optimum freshness.

HARVEST

Harvest sweet corn when the end kernels of the ear feel developed. Approximately 21 - 25 days after half silk. Sample sweet corn to ensure quality.

STORAGE

Pre-cool cob temperature to 50°F. After pre-cooling store at 34°F and 95% humidity.

DISEASE CODES

MDM - Maize Dwarf Mosaic
NLB - Northern Leaf Blight
SLB - Southern Leaf Blight

DISEASE RATINGS

R - Resistant
M - Moderate Resistant
MS - Moderately Susceptible
S - Susceptible

USE RECOMMENDATIONS

FM - Fresh Market
HG - Home Garden
P - Processing
S - Shipping

GROWER PREFERRED ALL-STARS ★ CORN

PERFORMANCE SERIES

Anthem II (BC SH2 page 30) One of our best performing hybrids for its agronomics and eating quality throughout the season. By carrying the Performance Series trait for both weed control and added rootworm protection, this variety is enabled to perform well under both dry and wet conditions.

SV9010SA (BC SH2 page 30) is the Performance Series version of EX08767143. It has the same characteristics with the addition of Roundup herbicide resistance and ECB, earworm and fall army worm protection. Good variety for machine harvest.

SV9014SB (BC SYN page 30) is a great mid-season corn with good flavor and eating quality, nice husk package and tip cover. Good for roadside and local markets. It also has Roundup herbicide resistance and ECB, earworm and fall army worm protection.

ATTRIBUTE II INSECT PROTECTED

Milky Way (WH SYN page 32) A conversion of WH 0809 and Avalon with added stacked Attribute II traits. This variety has glyphosate and glufosinate herbicide tolerance as well as increased protection to European corn borer, corn earworm, armyworm, and Western bean cutworm.

Remedy (BC SYN page 32) A conversion of BC 0805 and Providence providing the same eating quality with added stacked Attribute II traits. This variety has glyphosate and glufosinate herbicide tolerance as well as increased protection to European corn borer, corn earworm, armyworm, and Western bean cutworm.

SH2 / EXTRA SWEET

7143 ^{EX08767143} (BC SH2 page 37) is an improved version of Obsession with better tip cover, rust package, and eating quality. It's generally suited for shippers because of its tight husk, good flags and short shank but can be used for roadside stands in end of season plantings. Good variety to machine harvest.

SH2 / IMPROVED SUPER SWEETS

Anthem XR (BC SH2 page 38) One of our most top performing varieties for its cold soil vigor, agronomics, and eating quality. With its strong rust resistance and moderate resistance against NCLB, Anthem XR performs well in the early season and goes late into the season.

Enchanted (BC SH2 page 39) Strong vigor in the late season and performs well in adverse conditions, especially in drought conditions. Nice tall plant with high ear placement and good eating quality. Good variety for the maturity and late season.

Kickoff XR (BC SH2 page 38) Currently one of the earliest maturing higher eating quality sh2's on the market. Excellent cold soil vigor with excellent agronomics to grow through the cold spring, producing a nice husk package, high yields, ear, and great eating quality for that first early market.

Nirvana (BC SH2 page 38) - For those looking for a tender, high eating quality sweetcorn, Nirvana is one that has raised the bar for eating quality for many of our customers. Good vigor with consistent plant type and quality.

Xtra Tender 274A (BC SH2 page 38) has proven to be the best cold soil tolerant variety in the SH2 category. With excellent eating quality and flavor, it does well in roadside and local markets.

SH2 / IMPROVED SUPER SWEETS CONTINUED

Glacial (W SH2 page 40) has taken the white sweetcorn market by storm with its very high eating quality, tenderness, and ear size. Strong plant type and grows well through adverse conditions producing a consistent plant type and ear size.

Summer Sweet MultiGlow 7401 Imp (W SH2 page 40) has been a trifecta hit with our growers. With its very tender kernel, high eating quality, strong and healthy plant type, excellent husk package and cover, this variety has had both roadside growers and shippers coming back for more.

SYNERGISTIC

Allure (BC SYN page 37) is an excellent replacement for Kristine for a mid-season corn. Allure has the full package: good early vigor, nice husk package and excellent flavor.

Cappuccino (BC SYN page 37) a 73 day variety with great cold soil tolerance for first and second harvest. Strong disease package to hold up against NCLB and Rust as well as being a good rain gap planting in the mid to late season with later maturing varieties while still holding your markets eating quality.

Essence (BC SYN page 37) has a darker husk package and cover than Providence. Definitely one to try for main season roadside/ local markets!

Montauk (BC SYN page 37) is a proven variety with high yields and excellent flavor. It is a farmer's market favorite for yield and customer satisfaction.

Primus (BC SYN page 37) is an improved Providence with higher sugars.

Providence (BC SYN page 37) is our #1 selling bi-color synergistic. It is the roadside growers choice for consistent sweetness and overall quality

Mirage (WH SYN page 40) is the white version of Essence, which makes this one of our highest eating quality white synergistic sweet corns. Tall, strong, and healthy plant type with good flavor and holdability in the field. Excellent, dark green husk package and good husk cover.

Honey Select (Y SYN page 41) is one of the highest eating quality yellow varieties on the market today.



Jeff Werner
Vegetable Consultant



TEMPTATION II



ANTHEM II ★



ANTHEM XR II



OBSESSION II



PASSION II



SV9010SA ★

CORN PERFORMANCE SERIES™ Can be sprayed with Roundup brand agricultural herbicide.

SE	Relative Maturity	Color	Ear Size length x diameter	Kernel Rows	Rust	Stewart's	NLB	Use	Eating Quality	Features
02138	Temptation II	72	Bi-Color 7 1/2 - 8 x 1.9"	16 - 18	M	R	M	FM	Good	Compare to Temptation. Has excellent cold soil tolerance for first or second early plantings.
SH2										
★ 03032	Anthem II	73	Bi-Color 8 x 1.8"	16 - 20	MS	M	MS	FM, S	Best	Compare to Anthem. Good stalk standability with excellent yields. Excellent eating quality.
03132	Anthem XR II	74	Bi-Color 8 x 1.8"	14 - 18	R			FM, S	Best	Enjoy all the benefits of Anthem XR and Anthem II, combined in one hybrid. Brings the best of both worlds; the rust protection offered by Anthem XR, in tandem with Anthem II's Roundup and BT Performance Series traits.
03080	Obsession II	80	Bi-Color 8 - 8 1/2 x 1.8"	16 - 20	M	M	M	FM, S	Best	Compare to Obsession. Straight SH2 type that eats very similar to many improved supersweets. High-end yields.
03082	Passion II	81	Yellow 8 x 1.7"	18 - 20	M	S	S	FM, S	Better	Compare to Passion. High quality SH2 with excellent shipping ability. Yellow Obsession.
★ 03084	SV9010SA	81	Bi-Color 8 x 1.9"	18 - 20	R	M	M	FM, S	Best	Compare to 7143. Improved version of Obsession with better rust package and husk package eye appeal.
03098	Devotion II	82	White 8 x 1.7"	16 - 18	-	M	-	FM, S	Better	Compare to Devotion. White Obsession type.
03086	SV9012SD	83	Yellow 8 x 2"	18 - 20	R	S	S	FM, S	Better	Compare to 1336. An improved Passion with better tip cover.
Synergistic										
★ 04026	SV9014SB	78	Bi-Color 7.8 x 1.9"	18 - 20	R	M	M	FM	Best	Maintains the same great taste and eating quality of other high quality synergistic varieties.

Performance Series™ sweet corn varieties are the only fresh market sweet corn products featuring the unique weed control benefits of Roundup WeatherMAX® and Roundup PowerMAX® agricultural herbicides. Be sure to read the label and confirm that the chemical you are spraying is 100% glyphosate with no other active ingredients.



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DEVOTION II



SV9012SD



SV9014SB ★



INOCULANT FOR SWEET CORN

SabrEX™ root inoculant is available for sweet corn. Apply at a rate of .5 oz. per 50 pounds of seed. See page 119 for more information and pricing.



Seminis® Performance Series™ sweet corn hybrids; another innovation that performs all season long.

Growing sweet corn might be something your family has done for generations. Or maybe it's the beginning of a new tradition. Either way, when you plant Seminis® Performance Series® sweet corn, you and your family will enjoy a great-tasting ear that you can eat fresh from the field. Performance Series® sweet corn contains the same great Roundup Ready® technology and protection from select above- and below-ground insect pests that row crop farmers are already familiar with.

Key Management Practices to Maximize Quality and Yield

- Scouting for Corn Earworm should begin prior to first silk & continue through harvest
- Use traps to monitor & count adult moths in the area
- Spray programs will be needed to maximize marketable yield

Additional information can be found in Monsanto's Technology Use Guide found at the following link: <http://tug.monsanto.com>

Note: Performance Series sweet corn packages cannot be repackaged or resold. Customers need to be licensed and must be the operator/grower for all fields where the seed will be planted. Not available for purchase or use in certain counties of Oregon and Idaho.

Documents Required:



In order to purchase Performance Series sweet corn, you must have a valid Monsanto Technology License. If you are licensed, please include your license number on the order form in the space provided. **If you**

are not licensed you may visit www.accelerate.com or call 1-800-768-6387 ext. 3 to register or we can mail you a 2020 Monsanto Technology/Stewardship Agreement to fill out prior to us shipping your seed. Allow 3 - 4 weeks for mailed application to be processed.

CORN PERFORMANCE SERIES™		M=1,000 seeds	
Priced per 1,000 seeds in these package sizes		25M	100M
SE			
02138 Temptation II Cruiser		14.63	14.63
5H2			
03032 Anthem II Cruiser		16.47	16.47
03132 Anthem XR II Cruiser		16.60	16.60
03098 Devotion II Cruiser		16.07	16.07
03080 Obsession II Cruiser		16.76	16.76
03082 Passion II Cruiser		16.43	16.43
03084 SV9010SA Cruiser		16.77	16.77
03086 SV9012SD Cruiser		16.20	16.20
Synergistic			
04026 SV9014SB Cruiser		15.05	15.05



Cruiser® seed treatment insecticide guards against a broad spectrum of early season sucking and chewing insect pests in beans and sweet corn. By protecting the crop from the start, growers can improve stand establishment, enhance plant vigor and increase yield potential. <http://www.syngenta-us.com/crop-protection/seed-treatment/products>

Cruiser® treated items are highlighted in purple in the price tables. Look for this symbol in the product description tables marking Cruiser treated items.

INSECT RESISTANCE // HERBICIDE TOLERANCE				
	Seminis Performance Series™	Syngenta Attribute® I	Syngenta Attribute® Plus	Syngenta Attribute® II
Key Sweet Corn Pest				
European Corn Borer	E	E	E	E
Corn Earworm	VG*	F-G*	E*	E*
Fall Armyworm	E	G	E	E
Black Cutworm			VG	VG
Additional Above-Ground Pests				
Southwestern Corn Borer	x		x	x
Sugarcane Corn Borer	x		x	x
Common Stalk Corn Borer	x		x	x
Southern Cornstalk Corn Borer	x		x	x
Beet Armyworm			x	x
Dingy Cutworm			x	x
Western Bean Cutworm			x	x
Additional Below-Ground Pests				
Western Corn Rootworm	x			
Northern Corn Rootworm	x			
Mexican Rootworm	x			
Protein	Cry1A.105, Cry2Ab	Cry1Ab	Vip3A, Cry1Ab	Vip3A, Cry1Ab
Herbicide Tolerance	Glyphosate	Glufosinate	Glufosinate	Glufosinate

* Depending on ear worm population [flight counts] additional scouting and spraying may be needed. Learn more by reading "Managing Insects in Sweet Corn" on page 43.

Key: E= excellent, VG= very good, F-G= fair to good, G= good

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BSS 0977



WH 0809



BC 0528



BC 0805



BSS 0761



PATRIARCH

CORN		ATTRIBUTE® Insect Protection										Can be sprayed with glufosinate herbicide.
SH2		Relative Maturity	Color	Ear Size length x diameter	Kernel Rows	Rust	Stewart's	NLB	Use	Eating Quality	Features	
03137	BSS 0977	78	Bi-color	8 x 1.8"	14 - 16	R	M	M	FM, S	Good	A mid-season fresh market shipper. Has an attractive ear with excellent tip fill, plus disease and ear worm control.	
<i>Synergistic</i>												
04018	WH 0809	80	White	8 1/2 x 1.9"	16	R	M	S	FM	Best	A white Triplesweet from Syngenta with good eating quality and disease protection. Avalon BT.	
04207	BC 0528	81	Bi-color	8 1/4 x 1.9"	16 - 18	-	-	-	FM, HG	Best	Bt version of Primus	
04019	BC 0805	82	Bi-color	8 x 1.9"	16 - 18	R	S	S	FM, S	Best	A rust resistant, Bt version of Providence.	

Attribute® varieties are resistant to Liberty herbicides. They may be sprayed with conventional corn herbicides as well as Liberty (glufosinate) herbicides. Be sure to read the label and confirm that the chemical you are spraying is 100% glufosinate with no other active ingredients.

CORN		ATTRIBUTE® PLUS Insect Protection										Can be sprayed with glufosinate herbicide.
SH2		Relative Maturity	Color	Ear Size length x diameter	Kernel Rows	Rust	Stewart's	NLB	Use	Eating Quality	Features	
03101	BSS 0761	80	Bi-color	8 x 1.8"	16 - 18	-	-	-	FM, S	Best	Offers exceptional eating quality and is ideal for the high end shipper and local markets. Has built-in insect protection and tolerance to Liberty herbicide through the Attribute trait stack.	
03108	Patriarch	79	Bi-color	8 x 2	16	-	-	-	FM, S	Better	Augmented supersweet variety with excellent adaptability. Possesses girthy ear with great tip fill. Robust Attribute Plus package.	

Attribute® varieties are resistant to Liberty herbicides. They may be sprayed with conventional corn herbicides as well as Liberty (glufosinate) herbicides. Be sure to read the label and confirm that the chemical you are spraying is 100% glufosinate with no other active ingredients.

CORN		ATTRIBUTE® II Insect Protection										Can be sprayed with glufosinate and/or glyphosate herbicides.
Synergistic		Relative Maturity	Color	Ear Size length x diameter	Kernel Rows	Rust	Stewart's	NLB	Use	Eating Quality	Features	
	04034 Aspire	80	Yellow	8 1/2 x 1.8"	14 - 16	R	-	-	FM, HG	Best	Offers similar characteristics to GH 0851 with improved insect resistance through the Attribute II trait stack. This trait also provides tolerance to Liberty and Touchdown herbicides for added flexibility in weed management programs.	
	04042 Milky Way	82	White	8 1/4 x 1.8"	16	M	-	-	FM, HG	Better	The next generation of market-leading Triple-Sweet varieties. Offers improved insect resistance and tolerance to Liberty and glyphosate herbicides through the Attribute II trait stack.	
	04051 Pursuit	82	Bi-color	8 x 2	16-18	-	-	-	FM, S	Best	Compare to Remedy. Does not exhibit the tassels and/or glumes under stress conditions that Remedy reveals. Has lighter green husk with a few flags.	
	04043 Remedy	82	Bi-color	8 1/2 x 1.9"	16	R	-	-	FM, HG	Best	Remedy is a BC 0805 type with improved insect resistance through the Attribute II trait stack, providing built-in control of key pests. This product is tolerant to glyphosate and glufosinate herbicides approved for application over the top of Attribute® II Sweet Corn.	

Agreement Needed: Under certain stress conditions, Remedy sweet corn may exhibit tassels and/or glumes growing out of the ear. An additional agreement needs to be signed for this variety. See page 138.

Attribute II® varieties may be sprayed with conventional corn herbicides or either Liberty (glufosinate) herbicides and glyphosate herbicides. Be sure to read the label and confirm that the chemical you are spraying is 100% glufosinate or 100% glyphosate with no other active ingredients.





ASPIRE



MILKY WAY



PURSUIT



REMEDY

SHIPPING
NOW ONLY
\$10⁰⁰

Orders over \$250
are shipped free!



High Quality, Picture Perfect Ears

Attribute®, Attribute Plus and Attribute II trait stacks from Syngenta are a viable crop strategy for sweet corn growers throughout the country. Commercially grown since 1998, Attribute sweet corn seeds provide a high level of above-ground protection against European corn borers and corn earworms throughout the growing season. With Attribute sweet corn, growers have another option for harvesting outstanding yields of high-quality sweet corn that meets market needs. When managed in accordance with the recommendations outlined in the stewardship agreement, Attribute sweet corn can be a valuable addition to your crop management strategy for many years to come.

Attribute Plus sweet corn seeds further extends the high-yielding potential for sweet corn growers with added Vip3A. This additional trait features greater spectrum of insect control providing a high level of above-ground protection against European corn borers and corn earworms. In addition to improved insect control, Attribute Plus also features tolerance to glufosinate herbicide for added field advantage.

Documents Required:



If you purchase Attribute sweet corn, you are required by the EPA to fill out and sign a Stewardship Agreement for your farm. If you already have an Attribute license, please include your license number on your order form in the package provided.

The introduced Attribute II trait stack continues the Syngenta tradition of providing high performance traits to sweet corn growers, and now it has the added power of Vip3A – a unique mode of action proprietary to Syngenta. The combination of Vip3A with Cry1Ab, the protein found in Attribute sweet corn varieties, offers excellent control of key yield-robbing insects including European corn borer, corn earworm and fall armyworm and Western bean cutworm.

Additional information on the Attribute products can be found at the following link: <http://www.syngenta-us.com/seeds/vegetables/commercial-sweet-corn>

Attribute® is a registered trademark of a Syngenta Group Company. LibertyLink®, Liberty® and the Water Droplet logo are registered trademarks of Bayer.

The Attribute Grower Stewardship Agreement can be found on page 137. You may also obtain your Attribute license by visiting www.agcelerate.com or call 1-800-768-6387 ext. 3 to register.

CORN ATTRIBUTE® Insect Protection		M=1,000 seeds	
Priced per 1,000 seeds in these package sizes		25M	100M
<i>SH2</i>			
03137 BSS 0977 Bi-Color Cruiser		12.38	12.38
<i>Synergistic</i>			
04207 BC 0528 Bi-Color Cruiser		12.11	12.11
04019 BC 0805 Bi-Color Cruiser		11.66	11.66
04018 WH 0809 White Cruiser		11.59	11.59

CORN ATTRIBUTE II® Insect Protection		M=1,000 seeds	
Priced per 1,000 seeds in these package sizes		25M	100M
<i>Synergistic</i>			
04034 Aspire Yellow Cruiser		15.08	15.08
04042 Milky Way White Cruiser		15.08	15.08
04051 Pursuit Bi-Color Cruiser		15.21	15.21
04043 Remedy Bi-Color Cruiser		15.18	15.18

CORN ATTRIBUTE PLUS® Insect Protection		M=1,000 seeds	
Priced per 1,000 seeds in these package sizes		25M	100M
<i>SH2</i>			
03101 BSS 0761 Bi-Color Cruiser		14.18	14.18
03108 Patriarch Bi-Color Cruiser		16.70	16.70

Cruiser® seed treatment insecticide guards against a broad spectrum of early season sucking and chewing insect pests in beans and sweet corn. By protecting the crop from the start, growers can improve stand establishment, enhance plant vigor and increase yield potential. <http://www.syngenta-us.com/crop-protection/seed-treatment/products>

Cruiser® treated items are highlighted in purple in the price tables.

Look for this symbol in the product description tables marking Cruiser treated items.

Sweet Corn Genetic Types

Sweet corn is one of the most popular vegetables grown in the United States. Sweet corn hybrids, like many vegetable varieties, have seen improvements that enhance eating quality in the areas of sugar content, flavor, tenderness and appearance. Commercial growers also experience benefits of these improved hybrids with higher yields, disease resistance, better plant structure, insect and herbicide resistance, etc.

Producing and preserving the eating quality potential of the hybrids is a key factor for the grower's success in his market. Knowing the genetic type of each hybrid is essential as the grower prepares a cropping plan. Each genetic type has some risks of cross pollination with other types, which can negatively impact eating quality in the crop produced. Maintaining an isolation between types or selecting hybrids within compatible genetic type groups will ensure that the eating quality of each hybrid has been preserved.

Our 2020 Vegetable Resource Guide includes nearly 80 sweet corn hybrids in the 6 genetic types shown here. Several of these types are related, so from a variety selection and crop planning perspective, we view them as 3 genetic type groups. Each group has slightly different recommendations for the other types they need to be isolated from. Please see the genetic type groups to the right for more information on the characteristics of each group and its isolation requirements.

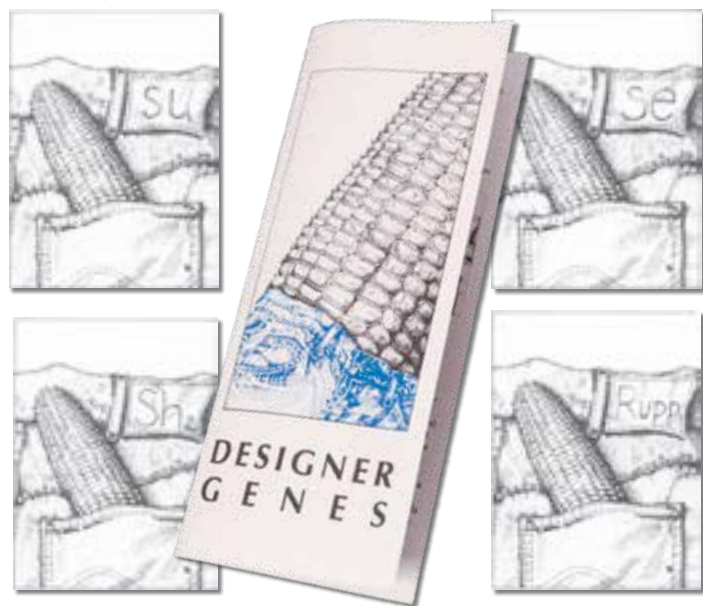
ISOLATION

For all **high quality** sweet corn varieties, maintaining an isolation is required to protect the high sugar and flavor characteristics of the sweet corn as cross pollination from other types of sweet corn or different types of corn will result in starchy kernels.

SE/Synergistic types and SH2/Improved Super Sweet types should always be isolated both from each other and from other types of corn including field corn, popcorn, and ornamental corn.

An isolation can be achieved either by distance or by a difference in maturity. Preferable isolations would require 700 – 1000 feet distance from other corns, or 10 – 14 days between pollination.

Helping growers produce the best sweet corn for their markets has been a priority for us since we started in the vegetable business. These graphics are from a "Designer Genes" brochure we published in the early 1980s.



SU NORMAL

- Traditional sweet corn genotype (SU gene)
- Exceptional seed vigor and germination
- Strong, old fashion corn flavor
- One day window where sugars are at their peak before converting to starch

For best flavor, isolate from SH2 and Improved Super Sweet types and dent corn, popcorn, and ornamental corn.

SE

- Sugary enhancer (SE) gene
- Sweetness, flavor, and texture are improved over SU types
- Three day window where sugars are at their peak before converting to starch
- Typically used for freezing

SYNERGISTIC

- Tender kernels with higher sugars than SE
- Long shelf life than SE
- Approximately five days from when sugars are at their peak before converting to starch
- Great for local and roadside markets seeking the balance between that old fashion flavor and the high sugar corns.

For best flavor, isolate from SU, SH2, and Improved Super Sweet types and also dent corn, popcorn, and ornamental corn.

SH2

SH2 EXTRA SWEET

- Shrunken (SH2) gene raises the sugar levels and field holding ability.
- Increased shelf life improves ease of distribution
- Harder kernel gives a snap bite
- Less damage during harvest
- Ten day window where sugars are at their peak before converting to starch
- Needs warmer soils (65° F or higher) for germination

IMPROVED SUPER SWEETS

- A perfect blend of tender SE type kernel with the high sugar flavors of SH2
- Ten day window where sugars are at their peak before converting to starch
- Needs warmer soils (65° F or higher) for germination

For best eating quality, isolate from SU, SE, and Synergistic types as well as dent corn, popcorn, and ornamental corn.

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SWEET CORN INDEX

BI-COLOR	Relative Maturity	Genetic Type	Page #
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Catalyst XR	66	Improved Super Sweets	38
Fastlane	67	SE	36
Latte	68	Synergistic	37
Kickoff XR	69	Improved Super Sweets	38
Solstice	70	Improved Super Sweets	38
Tempress	70	Synergistic	37
Hero XR	71	Improved Super Sweets	38
Profit	72	Synergistic	37
Signature XR	72	Improved Super Sweets	38
Temptation	72	SE	36
Temptation II	72	SE	30
Xtra Tender 2472 XR	72	Improved Super Sweets	38
Anthem II	73	Sh2	30
Anthem XR	73	Improved Super Sweets	38
Cappuccino	73	Synergistic	37
Xtra Tender 20173	73	Improved Super Sweets	38
Anthem XR II	74	Sh2	30
Super Surprise	74	Improved Super Sweets	38
Xtra Tender 274A	74	Improved Super Sweets	38
Allure	75	Synergistic	37
Caliber XR	75	Improved Super Sweets	38
Luscious TSW	75	SE	36
Nectar	75	Synergistic	37
Nirvana	75	Improved Super Sweets	38
Summer Sweet MultiSweet			
SS2742	75	Improved Super Sweets	38
American Dream	77	Improved Super Sweets	38
Cumberland	77	Improved Super Sweets	39
Accord	78	SE	36
ACes	78	Improved Super Sweets	39
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Essence	78	Synergistic	37
SV9014SB	78	Synergistic	30
Enchanted	79	Improved Super Sweets	39
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Patriarch	79	Sh2	32
7143 <small>EX08767143</small>	80	Sh2 Extra Sweet	37
BSS 0761	80	Sh2	32
Obsession II	80	Sh2	30
BC 0528	81	Sh2	32
Primus	81	Synergistic	37
SV9010SA	81	Sh2	30
BC 0805	82	Sh2	32
Providence	82	Synergistic	37
Pursuit	82	Synergistic	32
Remedy	82	Synergistic	32
Serendipity	82	Synergistic	37
Cameo	84	Synergistic	37
Delectable	84	SE	36

WHITE	Relative Maturity	Genetic Type	Page #
Summer Sweet MultiGlow			
7401 Imp	75	Improved Super Sweets	40
Glacial	76	Improved Super Sweets	40
Mirage	78	Synergistic	40
WH 0809	80	Sh2	32
Devotion II	82	Sh2	30
Milky Way	82	Synergistic	32

YELLOW	Relative Maturity	Genetic Type	Page #
Café	68	Synergistic	41
Takeoff <small>XTH 1570</small>	69	Improved Super Sweets	42
Xtra Tender 1572	72	Improved Super Sweets	42
Inferno	74	Synergistic	41
Bodacious RM	75	SE	41
Gold Nuggets	75	SE	41
Honey Select	79	Synergistic	41
SV1077SD	79	Sh2 Extra Sweet	42
Aspire	80	Synergistic	32
Passion II	81	Sh2	30
SV9012SD	83	Sh2	30
Incredible R/M	85	SE	41



FASTLANE



TEMPTATION



LUSCIOUS TSW



ACCORD



VITALITY



LATTE



TEMPTRESS



PROFIT



CAPPUCCINO



NECTAR



ALLURE



ESSENCE

CORN		BI-COLOR SE									
		Relative Maturity	Ear Height	Ear Size length x diameter	Kernel Rows	Rust	Stewart's	NLB	Use	Eating Quality	Features
02189	Fastlane	67	14"	7 x 1.7"	14 - 16	M	S	S	FM, HG	Good	A first early variety with good cold soil vigor, very attractive ear.
02137	Temptation	72	18"	8 x 1.8"	16	S	S	S	FM	Good	A Seminis product for the first early slot. Has excellent cold soil emergence.
02178	Luscious TSW	75	15"	8 x 1.9"	16 - 18	M	M	M	FM, HG	Better	A hybrid that produces an attractive blunt ear on an excellent plant package.
02167	Accord	78	16"	8 1/2 x 1.9"	18 - 20	M	M	M	FM, HG	Better	A widely adapted hybrid with classy ears. A clean sturdy plant.
02132	Delectable	84	26"	9 x 2.1"	18	M	M	M	FM, HG	Better	Bi-color version of Incredible. Large ear, dark green husk.

CORN BI-COLOR SE		M=1,000 seeds				
Priced per pound in these package sizes		1#	5#	25#	50#	100#*
02132	Delectable	15.60	14.35	14.00	13.60	13.30
Priced per 1,000 seeds in these package sizes		2.5M	10M	25M	100M	500M*
02167	Accord Cruiser	8.60	7.95	7.55	7.10	7.00
02189	Fastlane Cruiser	9.40	8.75	8.35	7.90	7.80
02178	Luscious TSW Cruiser	6.60	5.95	5.55	5.10	5.00
02137	Temptation Cruiser	8.75	8.10	7.70	7.25	7.15

* Multiple packages may be used to fill orders for these quantities.

CORN BI-COLOR SH2 Extra Sweet		M=1,000 seeds				
Priced per 1,000 seeds in these package sizes		2.5M	10M	25M	100M	500M*
03199	7143 EX 08757143 Cruiser	11.05	10.35	9.95	9.50	9.40

* Multiple packages may be used to fill orders for these quantities.

CORN BI-COLOR Synergistic		M=1,000 seeds				
Priced per 1,000 seeds in these package sizes		2.5M	10M	25M	100M	500M*
04009	Allure Cruiser	10.25	9.55	9.15	8.70	8.60
04029	Cameo Cruiser	9.65	8.95	8.55	8.10	8.00
04044	Cappuccino Cruiser	10.20	9.50	9.10	8.65	8.55
04039	Essence Cruiser	10.25	9.55	9.15	8.70	8.60
04032	Latte Cruiser	10.55	9.85	9.45	9.00	8.90
04021	Montauk Cruiser	11.80	11.10	10.70	10.25	10.15
04052	Nectar Cruiser	10.80	10.10	9.70	9.25	9.15
04210	Primus Cruiser	10.60	9.90	9.50	9.05	8.95
04214	Profit Cruiser	9.30	8.60	8.20	7.75	7.65
04014	Providence Cruiser	8.45	7.75	7.35	6.90	6.80
04013	Serendipity Cruiser	7.80	7.10	6.70	6.25	6.15
04049	Temptress Cruiser	10.00	9.30	8.90	8.45	8.35
04204	Vitality Cruiser	9.15	8.45	8.05	7.60	7.50

* Multiple packages may be used to fill orders for these quantities.

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MONTAUK ★



PRIMUS ★



PROVIDENCE ★



SERENDIPITY



CAMEO



7143 EX08767143 ★

CORN BI-COLOR Synergistic Pricing on page 36

		Relative Maturity	Ear Height	Ear Size length x diameter	Kernel Rows	Rust	Stewart's	NLB	Use	Eating Quality	Features
04204	Vitality	65	18"	7 x 1.6"	14	S	M	S	FM	Better	A Seminis hybrid with excellent plant and ear qualities, plus vigor to be a very good first early variety.
04032	Latte	68	20"	7 1/2 - 8 x 1.7"	12 - 16	-	-	-	FM	Better	First early variety with excellent ear length in this class. Very good eating corn with a dark green husk package.
04049	Tempress	70	16"	7 3/4 x 2"	14 - 16	R	-	M	FM, HG	Better	First "Quad Sweet" variety in our sweet corn lineup. Has an attractive ear with an eye-catching husk package. Moderately good cool soil emergence.
04214	Profit	72	22"	8 x 1.8"	14	M	M	M	FM, HG	Best	Proved itself in recent multiple locations as one of the year's favorites. Very large ears with attractive flags, good husk cover and tip fill. Great eating quality.
★ 04044	Cappuccino	73	17"	7 1/2 - 8 x 1.9"	16	M	M	M	FM, HG	Best	Superb eating quality. Plant mid to late season or for rain gap filler. Excellent disease package.
04052	Nectar	75	18"	8 1/4 x 1.9"	14 - 16	-	-	MR	FM, HG	Best	Very good eating quality. Excellent ear size for roadside markets. High quality package includes dark husk color and flags. Stalk has solid standability.
★ 04009	Allure	75	25"	8 x 1.8"	16	R	R	R	FM, HG	Best	A Seneca Vegetable Research hybrid with good early vigor. Nice husk package with great eating quality and flavor.
★ 04039	Essence	78	18"	8 x 1.8"	16 - 18	M	M	M	FM	Best	Excellent eating quality. High row count for a refined kernel. Compare to Providence with a few days earlier maturity.
★ 04021	Montauk	79	18"	8 x 1.8"	16 - 20	S	M	M	FM	Best	A widely adapted hybrid with good vigor, high yields and excellent flavor.
★ 04210	Primus	81	18"	8 x 2"	14 - 16	M	M	S	FM	Best	A proven TripleSweet PLUS variety from Syngenta with approximately 15% higher sugar than Providence. Performs well under plastic and in late plantings.
★ 04014	Providence	82	18"	8 1/2 x 1.9"	16 - 18	R	S	S	FM	Best	A rust resistant version of Serendipity with excellent eating quality.
04013	Serendipity	82	18"	8 x 1.9"	16 - 18	S	S	S	FM, HG	Best	A variety with an added supersweet kick for extended shelf life and higher eating quality.
04029	Cameo	84	18"	9 x 2.1"	18	M	M	M	FM	Better	A synergistic version of Delectable with a tremendous boost in eating quality.

CORN BI-COLOR SH2 Extra Sweet

		Relative Maturity	Ear Height	Ear Size length x diameter	Kernel Rows	Rust	Stewart's	NLB	Use	Eating Quality	Features
★ 03199	7143 EX08767143	80	26"	8 x 1.9"	18 - 20	R	M	M	FM, S	Best	An improved version of Obsession that has a better rust package, eye appeal and eating quality.



CATALYST XR **NEW**



KICKOFF XR ★



SOLSTICE **NEW**



HERO XR



SIGNATURE XR **NEW**



XTRA TENDER
2472 XR

CORN

BI-COLOR Improved Super Sweets

			Relative Maturity	Ear Height	Ear Size length x diameter	Kernel Rows	Rust	Stewart's	NLB	Use	Eating Quality	Features
NEW	03117	Catalyst XR	66	27	7.5-8.25 x 1.6-1.8"	16-18	R	-	-	FM, S	Best	<i>Catalyst XR is the earliest supersweet on the market. Has admirable ear size, strong tip fill, as well as outstanding kernel color and sweetness. Perfect for early fresh market and shipping.</i>
★	03038	Kickoff XR	69	28"	8 ¼ x 1.9"	16-18	M	-	-	FM	Best	<i>Impeccable eating quality for early in the season. Very good white to yellow kernel contrast. Strong tip fill.</i>
NEW	03109	Solstice	70	20"	7.5" x 1.8"	16	-	-	M	FM	Best	<i>Solstice is an early 70 day maturity. Has strong emergence, good ear size, a strong husk covered tip and exceptional tip fill. A quick snap for ease in picking and a short shank for packaging.</i>
	03037	Hero XR	71	23"	7 ¾ x 1.8"	14-16	R	-	MS	FM, S	Better	<i>Excellent early variety with great husk protection. Kernels fill beautifully to form a very attractive ear early in the season.</i>
NEW	03215	Signature XR	72	27	7.5-8.25 x 1.85-1.95	16-18	R	-	-	FM, S	Best	<i>Signature XR has phenomenal IFSI Reserve eating quality. An attractive husk, excellent holding ability in the field, strong husk cover and great ear size make Signature XR the choice for quality driven fresh markets.</i>
	03013	Xtra Tender 2472 XR	72	24"	8 ½ x 1.6"	14-16	R	S	S	FM, S	Best	<i>Rust resistant version of Xtra Tender 2170.</i>
★	03003	Anthem XR	73	24"	8 x 1.8"	16-20	R	M	M	FM, S	Best	<i>Excellent yield potential and better than average lodging tolerance. Superb eating quality. Great all season long.</i>
	03173	Xtra Tender 20173	73	24"	7 ½ x 2"	16	R	M	-	FM, S	Best	<i>Rust resistant version of Xtra Tender 2573.</i>
	03035	Super Surprise	74	22"	7 ¾ - 8 ½ x 1.8"	16-20	M	R	M	FM, S	Best	<i>Excellent late season compliment to 274A. Whereas 274A can be planted in the 1st and 2nd early slots, Super Surprise can be planted later in the year for better rust tolerance and tolerance to tip blanking. Slightly smaller ear than 274A and can be used for roadside markets or shipping.</i>
★	03174	Xtra Tender 274A	74	23"	8 x 2"	18-20	S	M	S	FM, HG	Best	<i>An IFSI bi-color hybrid with excellent cold soil vigor and fantastic eating quality. Has medium long husk protection.</i>
	03091	Caliber XR	75	21"	8 ¼ x 1.8"	16-18	M	-	-	FM, HG	Best	<i>Superb eating quality with refined kernels for excellent texture. Plants are healthy and very clean for easier picking.</i>
★	03025	Nirvana	75	24"	8 x 1.8"	16	M	-	R	FM	Best	<i>Combination of great vigor and emergence along with fantastic flavor and texture.</i>
	03027	Summer Sweet MultiSweet SS2742	75	34"	8 x 1.9"	16-18	R	-	M	FM, S	Better	<i>Has brilliant bi-color kernel color and great kernel contrast. In addition, it has improved germination and vigor, especially under most stressful conditions. This SSW[®] variety also includes MultiSweet[®] attributes, boasting excellent eating quality.</i>
	03058	American Dream	77	26"	7 ¼ x 1.9"	16-18	-	-	M	FM, S	Best	<i>Trim ear with extraordinary tip fill. Eats exceptionally well. Beautiful flag leaves for improved marketability. An AAS winner.</i>

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ANTHEM XR ★



XTRA TENDER
20173



SUPER SURPRISE



XTRA TENDER ★
274A



CALIBER XR



NIRVANA ★



SUMMER SWEET
MULTISWEET SS2742



AMERICAN DREAM



CUMBERLAND



ACES



AP358



ENCHANTED ★

CORN		BI-COLOR Improved Super Sweets									
		Relative Maturity	Ear Height	Ear Size length x diameter	Kernel Rows	Rust	Stewart's	NLB	Use	Eating Quality	Features
03102	Cumberland	77	30"	8 x 1.9"	16-18	R	-	-	FM, S	Best	<i>Prolific new Harris Moran variety with attractive ear and husk package. Sweet flavor and fantastic texture. Ideally grown for retail stands and farm markets.</i>
03023	ACes	78	28"	8 x 1.9"	16-18	R	R	MS	FM, S	Best	<i>No fear of getting lost in the shuffle, this variety has been smoking good in trials the past couple of years. High marks across the board. A game changer.</i>
03007	AP358	78	20"	8 x 1.9"	16-18	M	M	M	FM	Best	<i>Crookham variety that sets a new standard for eating quality in the improved SH2 category. The AP in the name refers to Augmented PLUS. With easy snap, good tip fill and attractive husk package.</i>
★ 03039	Enchanted	79	28"	8 x 2"	18-20	M	M	M	FM, S	Best	<i>Offers all the flavor and texture you would expect from an augmented farm market hybrid. Plump, sweet kernels.</i>

CORN BI-COLOR Improved Super Sweets		M=1,000 seeds				
Priced per 1,000 seeds in these package sizes		2.5M	10M	25M	100M	500M*
03023	ACes ²⁰⁶⁰ Cruiser	9.30	8.60	8.20	7.75	7.65
03058	American Dream Cruiser	11.40	10.70	10.30	9.85	9.75
03003	Anthem XR Cruiser	11.55	10.85	10.45	10.00	9.90
03007	AP358 Cruiser	11.75	11.05	10.65	10.20	10.10
03091	Caliber XR Cruiser	10.80	10.10	9.70	9.25	9.15
03117	Catalyst XR Cruiser	11.55	10.85	10.45	10.00	9.90
03102	Cumberland Cruiser	10.85	10.15	9.75	9.30	9.20
03039	Enchanted Cruiser	10.25	9.55	9.15	8.70	8.60
03037	Hero XR Cruiser	10.85	10.15	9.75	9.30	9.20
03038	Kickoff XR Cruiser	11.35	10.65	10.25	9.80	9.70
03025	Nirvana Cruiser	11.70	11.00	10.60	10.15	10.05

CORN BI-COLOR Improved Super Sweets		M=1,000 seeds				
Priced per 1,000 seeds in these package sizes		2.5M	10M	25M	100M	500M*
03215	Signature XR Cruiser	11.40	10.70	10.30	9.85	9.75
03109	Solstice Cruiser	11.20	10.50	10.10	9.65	9.55
Summer Sweet						
03027	MultiSweet SS2742 Cruiser	11.20	10.50	10.10	9.65	9.55
03035	Super Surprise Cruiser	11.05	10.35	9.95	9.50	9.40
03174	Xtra Tender 274A Cruiser	10.85	10.15	9.75	9.30	9.20
03013	Xtra Tender 2472 XR Cruiser	10.50	9.80	9.40	8.95	8.85
03173	Xtra Tender 20173 Cruiser	11.35	10.65	10.25	9.80	9.70

* Multiple packages may be used to fill orders for these quantities.



MIRAGE ★



SUMMER SWEET ★
MULTIGLOW 7401
IMP



GLACIAL ★



SAVE WITH CASH DISCOUNTS

Cash discounts are available throughout the season and are a great way to add money to your bottom line. See page 6 for all of the details.

December	6%
January	5%
February	4%
March	3%
April	2%

CORN		WHITE Synergistic									
		Relative Maturity	Ear Height	Ear Size length x diameter	Kernel Rows	Rust	Stewart's	NLB	Use	Eating Quality	Features
★	04016 Mirage	78	18"	8 x 1.8"	16 - 18	M	M	M	FM	Best	Excellent eating quality. High row count for a refined kernel. High yield potential. White version of Essence.

CORN		WHITE Improved Super Sweets									
		Relative Maturity	Ear Height	Ear Size length x diameter	Kernel Rows	Rust	Stewart's	NLB	Use	Eating Quality	Features
★	03049 Summer Sweet MultiGlow 7401 Imp	75	28"	8 x 1.8"	16 - 18	M	R	M	FM, HG	Best	Bright kernel color. Good husk package. Fantastic flavor.
★	03100 Glacial	76	26"	8 x 1.9"	16 - 18	-	-	-	FM, P	Better	Has incredible white kernels that actually stay white! Very good tip fill and eating quality. Fine addition to a white corn planting program.

CORN WHITE Synergistic		M=1,000 seeds				
Priced per 1,000 seeds in these package sizes		2.5M	10M	25M	100M	500M*
04016	Mirage <small>Cruiser</small>	9.70	9.00	8.60	8.15	8.05

* Multiple packages may be used to fill orders for these quantities.

CORN YELLOW SE		Priced per pound in these package sizes				
		1#	5#	25#	50#	100#*
02055	Bodacious RM	15.05	13.80	13.45	13.05	12.75
02007	Gold Nuggets	15.20	13.95	13.60	13.20	12.90
02056	Incredible R/M	14.90	13.65	13.30	12.90	12.60

* Multiple packages may be used to fill orders for these quantities.

CORN WHITE Improved Super Sweet		M=1,000 seeds				
Priced per 1,000 seeds in these package sizes		2.5M	10M	25M	100M	500M*
03100	Glacial <small>Cruiser</small>	10.15	9.45	9.05	8.60	8.50
03049	Summer Sweet MultiGlow 7401 Imp <small>Cruiser</small>	10.25	9.55	9.15	8.70	8.60

* Multiple packages may be used to fill orders for these quantities.

CORN YELLOW Synergistic		M=1,000 seeds				
Priced per 1,000 seeds in these package sizes		2.5M	10M	25M	100M	500M*
04045	Cafe <small>Cruiser</small>	10.35	9.65	9.25	8.80	8.70
04012	Honey Select <small>Cruiser</small>	7.00	6.30	5.90	5.45	5.35
04008	Inferno <small>Cruiser</small>	9.15	8.45	8.05	7.60	7.50

* Multiple packages may be used to fill orders for these quantities.

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BODACIOUS RM



GOLD NUGGETS



INCREDIBLE R/M



CAFÉ



INFERNO



HONEY SELECT★

CORN		YELLOW SE									
		Relative Maturity	Ear Height	Ear Size length x diameter	Kernel Rows	Rust	Stewart's	NLB	Use	Eating Quality	Features
02055	Bodacious RM	75	20"	8 x 1.8"	18	R	M	M	FM, HG	Better	<i>A rust resistant Bodacious, same flavor, superior plant and yield. Give this a try.</i>
02007	Gold Nuggets	75	24"	8 x 2"	20	M	M	M	FM, HG	Best	<i>The best eating SE, large eared, superior holding. Good for freezer corn.</i>
02056	Incredible R/M	85	30"	9 x 2"	18	R	M	M	FM, HG	Better	<i>Rust resistant and MDM resistant Incredible.</i>

CORN		YELLOW Synergistic									
		Relative Maturity	Ear Height	Ear Size length x diameter	Kernel Rows	Use	Eating Quality	Features			
04045	Café	68	15"	7 ½ - 8 x 1.7"	14	FM, HG	Best	<i>Yellow version of Latte.</i>			
04008	Inferno	74	18"	8 ¼ x 1.8"	14 - 16	FM, HG	Best	<i>Has excellent husk cover with a dark green plant and flag leaves, creamy flavor with the right balance of texture.</i>			
★ 04012	Honey Select	79	18"	8 ½ x 2"	18 - 20	FM, HG	Best	<i>A Syngenta AAS winner with similar genetic type to Serendipity only yellow kernels. Easy to grow, good vigor, high sugars.</i>			

INSECT SCOUTING RESOURCES

www.insectforecast.com

Learn more about current corn insect pressure.



http://www.pestwatch.psu.edu/sweet_corn.htm

Pest Watch is a great resource to track insect movements nationwide. They also have a complete library of fact sheets about all of the different pest found in vegetable production.



<http://sweetcorn.nysipm.cornell.edu>

This is a link to the NY Sweet Corn Trap Network Report. It also contains a mountain of information on best management practices for sweet corn growers. They also have several fact sheets on individual pest as well as videos on how to set up and maintain your own Trap and Monitoring system.



SWEET CORN PRODUCTION RESOURCES

<https://www.extension.purdue.edu/extmedia/id/id-405.pdf>

This is a resource from the Great Lakes Vegetable Working Group in addition to some of the leading researchers in the vegetable industry. It helps identify profit taking weeds and insects, and discusses best management practices for sweet corn.



<https://ag.umass.edu/vegetable/fact-sheets/corn-sweet>

This page from the University of Massachusetts offers information about multiple sweet corn pests and diseases.



<http://ipm.illinois.edu/ifvn/contents.php?id=7>

Developed by Rick Weinzierl this link goes into discussing the difference between traps and economics of scouting.





SV1077SD



TAKEOFF



XTRA TENDER 1572

CORN		YELLOW SH2 Extra Sweet									
		Relative Maturity	Ear Height	Ear Size length x diameter	Kernel Rows	Rust	Stewart's	NLB	Use	Eating Quality	Features
03011	SV1077SD	79	24"	8 x 1.9"	16 - 18	R	M	M	FM, S	Better	<i>A high quality yellow sweet corn hybrid for the fresh market. It offers great yield potential and flavor.</i>

CORN		YELLOW Improved Super Sweets									
		Relative Maturity	Ear Height	Ear Size length x diameter	Kernel Rows	Rust	Stewart's	NLB	Use	Eating Quality	Features
03120	Takeoff XTH 1570	69	28"	7 1/2 - 8 1/2"	16 - 18	-	-	MS	FM, S	Best	<i>Incredible eating quality with excellent husk package. Impressive ear shape and size for early maturity. Strong seedling vigor. Yellow version of Kickoff.</i>
03031	Xtra Tender 1572	72	20"	7 1/2 - 8 x 1.9"	16 - 18	M	-	MS	FM, S	Better	<i>Very good eating quality with dark green husk package and excellent flags. Overall high quality hybrid for roadside or shipping. Yellow version of Anthem.</i>

CORN YELLOW SH2 Extra Sweet		M=1,000 seeds				
Priced per 1,000 seeds in these package sizes		2.5M	10M	25M	100M	500M*
03011	SV1077SD Cruiser	10.50	9.80	9.40	8.95	8.85

* Multiple packages may be used to fill orders for these quantities.

CORN YELLOW Improved Super Sweets		M=1,000 seeds				
Priced per 1,000 seeds in these package sizes		2.5M	10M	25M	100M	500M*
03120	Takeoff Cruiser	11.20	10.50	10.10	9.65	9.55
03031	Xtra Tender 1572 Cruiser	11.55	10.85	10.45	10.00	9.90

* Multiple packages may be used to fill orders for these quantities.

CONTENTS SETTLE SHAKE CONTAINER WELL BEFORE MEASURING

Application rate: SabrEx for corn can be used for field corn, popcorn, sweet corn and sunflowers at a rate of 0.5 oz. per 50 lb. of seed.

Directions for use: Apply as a dry seed treatment prior to planting. Mix until uniform coverage is obtained.

Compatibility: SabrEx is compatible with many common fungicides and insecticides. For current compatibilities, contact your ABM representative or call 877-617-2461.

Product specifications: Contains proprietary and crop-specific combination of patent-pending strains of Trichoderma microorganism spores formulated with an 80/20 talc/graphite carrier.

Minimum specifications: 7x10⁷ cfu/gm.

CONTAINS LIVING ORGANISMS. STORE IN A COOL DRY PLACE OUT OF SUNLIGHT.

Made in the USA

Net Contents: 1 oz.

ABM ADVANCED BIOLOGICAL MARKETING | P.O. Box 222 | Van Wert, OH 45891 | USA | 877.617.2461 | ABM1st.com

For details and pricing on SabrEx inoculant, see page 119

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SAVE WITH CASH DISCOUNTS	December6%
Cash discounts are available	January5%
throughout the season and are a	February4%
great way to add money to your bottom line.	March3%
See page 6 for all of the details.	April2%

**SHIPPING
NOW ONLY
\$10⁰⁰**

Orders over \$250
are shipped free!

MANAGING INSECTS IN SWEET CORN

Everyone enjoys insect free corn. Corn earworm is potentially the greatest threat to sweet corn production for our customers. 2019 once again proved challenging with high insect counts. We also heard from growers that pyrethroid insecticides such as Warrior and Mustang Max didn't provide the control they needed with corn earworm this past season, while Coragen, Lannate, and/or Radiant seemed to provide better control.

We have put together several "Insect Scouting Resources" on page 41 to help monitor and combat this profit robbing insect. As well as other Lepidoptera that can cause severe damage to sweet corn such as: European corn borer, fall army worm and Western bean cut worm.

MONITORING EUROPEAN CORN BORER AND CORN EARWORM

One of the keys to successfully managing European corn borers and corn earworms on sweet corn is to determine when the insects are active. European corn borers can be monitored effectively with blacklight traps and field observations, and corn earworms can be monitored with pheromone traps. When moths are being caught in the traps, it means they are laying eggs.

Corn borer eggs are laid on leaves, usually on the undersides, in the region of the ear. Larvae feed on the leaves and later may migrate to the ears (if present).

Corn earworm moths lay their eggs directly on green silks. The larvae that hatch from those eggs will follow the silks down into the tips of the ears.

Because these two insects' egg laying behavior differ, control strategies also differ. Corn borers can be controlled by spraying during the late whorl, tasselling, and silking stages. The migrating larvae should contact a lethal dose of insecticide while moving to the ear zone. Corn earworms must be controlled by directing sprays at the silks so larvae will immediately contact the insecticide after hatching.

For corn borers, treat during the late whorl stage if 20 percent or more of the plants show larval feeding. The presence of large numbers of moths in light traps also justifies treatment. One

application during the late whorl stage, followed by additional treatments every five days up until seven days of harvest, usually provides adequate control.

For corn earworms, treatment is justified if fresh green silks are present and moths are being caught in pheromone traps. In general, the higher the moth catches, the shorter the interval between sprays. If fewer than five moths are being caught per night, a five-day spray interval should be adequate. As moth catches approach 50 to 100 per night, a two- to three-day spray interval would be more appropriate. Determining the spray interval exactly depends on many factors, including how much damage you can tolerate, the crop's value, and the cost and effectiveness of the insecticide. Stop treating for corn earworms when 90 percent of the silks are brown.

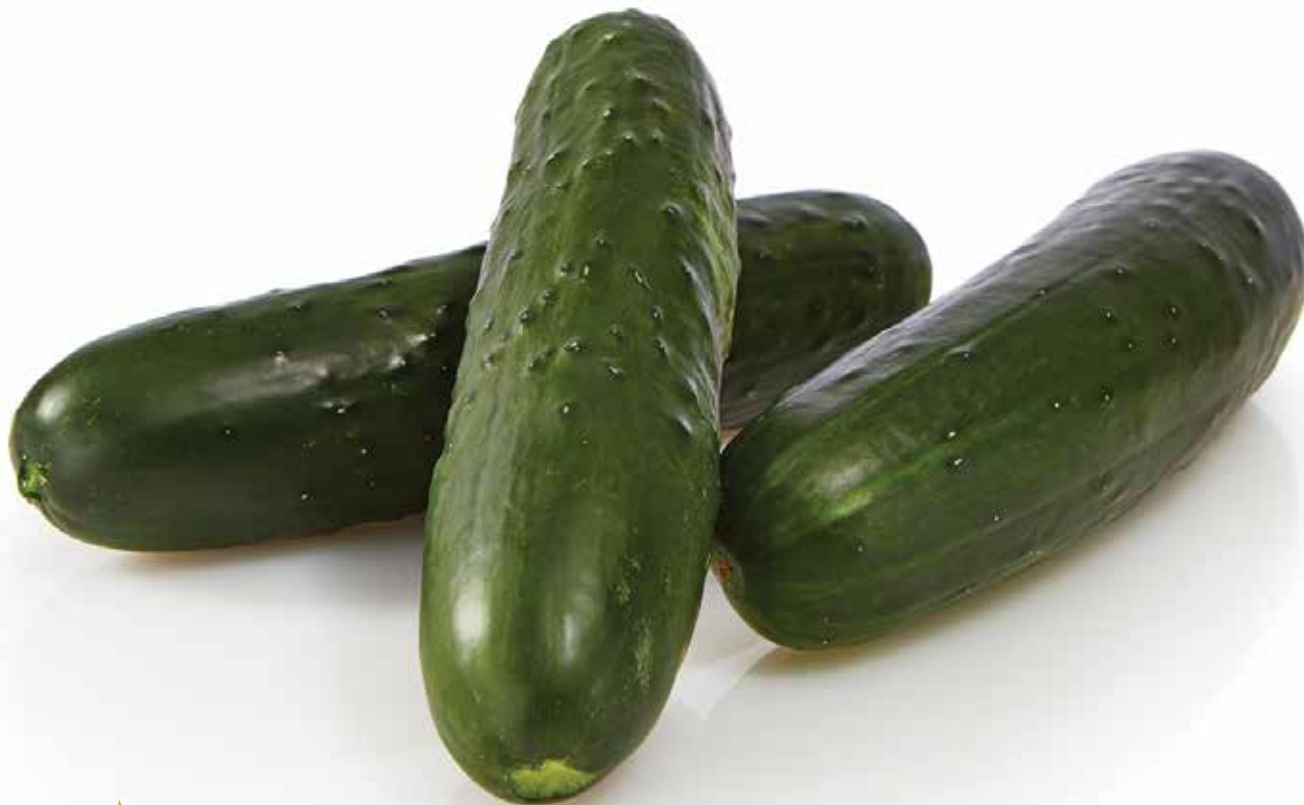
Obviously, growers should not treat separately for these two pests. Some of the insecticides recommended here are effective against both species. Choose insecticides that are more effective against the particular pest that is most prevalent at the time of application. If both pests are present, choose an insecticide that will adequately control both.

INSECT PROTECTED VARIETIES

Insect protected sweet corn varieties such as Syngenta's Attribute and Attribute II Insect Protected corn and the Performance Series from Seminis should be considered as they will allow the grower to decrease the number of sprays that need to be applied. **While these products have a built in resistance to some insects, they do not eliminate the need for insect scouting and occasional spraying.** Using these varieties in combination with a reduced spray program will lead to great results. The extra investment in seed cost pays off in reduced spray and fuel costs as well as less time in the fields, making insect protected varieties an interesting alternative.

Wire traps and lures are available from several sources. A quick search on-line will guide you to many retailers including Gempler's.





BRISTOL 

CUCUMBERS

PLANTING

Direct seed ½" - 1" soils with 60°F+ temperatures. Row spacing should range from 30" - 36" apart. Space plants 12" apart in the row.

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

MANAGEMENT

Scout fields weekly to make sure weed, insect, and disease pressure are kept in check.

HARVEST

Harvest every other day. Slicing cucumbers should be picked when diameter is approximately 2". Cucumbers should be approximately 7 - 8" long and have a smooth surface. Pickling cucumbers should be 3" long by 1" wide when ready to pick.

STORAGE

Store at 50 - 55° F and 90 - 95% humidity to ensure long shelf life.

DISEASE CODES

A - Anthracnose
 ALS - Angular Leaf Spot
 Cca - Corynespora Cassicola
 Ccu - Cladosporium Cucumerium
 CMV - Cucumber Mosaic Virus
 CVYV - Cucumber Vein Yellowing Virus
 DM - Downy Mildew
 PM - Powdery Mildew
 PRSV - Papaya Ringspot Virus
 S - Cucumber Scab
 TLS - Target Leaf Spot
 WMV - Watermelon Mosaic Virus
 ZYMV - Zucchini Yellow Mosaic Virus

COLOR CODES

DG - Dark Green
 G - Green
 MG - Medium Green
 MDG - Medium Dark Green
 VDG - Very Dark Green
 W - White

HABIT TERMS

GY - Gynoecious
 Refers to all female sex expression when grown under ideal environmental conditions. Various stresses can cause more male flowers.

MO - Monoecious
 Refers to sex expression; having both male and female flowers on the same plant.

P - Parthenocarpic
 Refers to the tendency of a plant to set fruit without pollination.

PF - Predominately Female
 Refers to the blossoms produced by the plant as predominately female.



CORINTO



SABER EZ



CITADEL



EUREKA ★



SUPREMO

**SHIPPING
NOW ONLY
\$10⁰⁰**

Orders over \$250
are shipped free!

CUCUMBERS		PROTECTED CULTURE Parthenocarpic					Pricing on page 46
▲	Season	Plant	Length	Color	Disease	Features	
23576 Corinto F1	Spring /Autumn	Vigorous	8 - 10"	DG	CMV, CVVY, PM	<i>A very consistent dark green, cylindrical protective culture cucumber with a very low cull rate. Produces tight sets on a compact plant with excellent shelf life both on and off the plant.</i>	
23573 Saber EZ F1	Spring /Autumn	Compact / Vigorous	7 - 8 "	DG	Cca, Ccu, CMV, CVVY	<i>This slicer has strong, vigorous vines with good side shoot development and excellent recuperation after cold periods.</i>	

CUCUMBERS		PICKLING					Pricing on page 46
▲	Days	Habit	Plant	L/D Ratio	Color: Spine-Fruit	Disease	Features
23005 Citadel F1	50	GY	Medium	3.1	W-DG	A, ALS, CMV, DM, PM, S	<i>Industry-leading disease package includes intermediate resistance to Downy Mildew. Excellent option for machine harvest due to concentrated fruit set.</i>
★ 23014 Eureka F1	53	MO	Compact	3.1	W-DG	A, ALS, CMV, PM, PRSV, S, WMV	<i>A monoecious hybrid with unique disease tolerances. Compare with your current favorite.</i>
23003 Supremo F1	43	MO	Vigorous	3	W-DG	A, ALS, CMV, PM, PRSV, S, WMV, ZYMV	<i>High quality dark green fruit with thick skin and a small seed cavity. Ideal for processing or fresh market. Can be staked or on the ground.</i>
23025 Vlasstar F1	52	P	Vigorous	3	W-MDG	A, ALS, CMV, PM, S	<i>A medium dark, blocky pickle that picks over a sustained multiple harvest.</i>

GROWER PREFERRED ALL-STARS ★ CUCUMBERS

PICKLING

Still continuing to rise, **Eureka** remains our #1 pickling variety, both in the number of customers that purchase and amount of seed sold. Eureka's high disease package and ideal length to diameter ratio provide an ideal product for grower and consumer alike. For tried and true, use Eureka!

SLICER

Bristol is an exciting up and coming downy mildew tolerant slicing hybrid. Bristol yields a high percentage of fancy grade fruit due to plant health from multi-virus tolerance and the latest commercial strain of downy mildew tolerance. Use Bristol in late season plantings when downy mildew pressure is the highest.

Remaining strong, with the highest percentage of purchasing customers in the slicing cucumber section, is **Darlington**. Plant health and fruit quality are two of Darlington's greatest assets. While some varieties wilt under disease pressure like downy mildew, Darlington seems to power through due to its vigorous plant. Use Darlington...proven and powerful!



Pete Dinius
Product Development



BRISTOL ★



COBRA



DARLINGTON ★

FarMore® F1400
Cucurbits

The early-season insect protection offered by FarMore Technology can prevent or eliminate damage caused by cucumber beetles. <http://www.syngenta-us.com/seed-treatment/farmore-fi400-cucurbits>



FarMore treated items are highlighted in green in the price tables. Look for this symbol in the product description tables marking FarMore treated items.

CUCUMBERS		SLICERS						
▲	Days	Habit	Plant	L/D Ratio	Color	Disease	Features	
★ 23512 Bristol ^{F1}	54	GY	Moderately Vigorous	8 1/4 x 2 1/4"	DG	A, ALS, CMV, DM, PM, PRSV, S, ZYMV	Early maturing, second generation hybrid with intermediate resistance to downy mildew plus multi-virus tolerance that delivers an improved disease package when compared to SV3462CS and SV4719CS. High number of fancy fruit that allows the grower to potentially experience higher marketable yields.	
23004 Cobra ^{F1}	60	GY	Vigorous	9.5 x 2"	DG	A, ALS, CMV, PM, PRSV, S, WMV, ZYMV	Productive hybrid with an excellent disease package and outstanding fruit quality. Can be used on open ground or plastic production. Holds its length well even during periods of stress.	
★ 23568 Darlington ^{F1}	62	GY	Vigorous	8 - 9 x 2"	DG	A, ALS, CMV, PM, PRSV, S, TLS, WMV, ZYMV	A Seminis multi-virus tolerant variety that holds up well under foliar disease pressure. Consistent yield of select fruit that are straight and have excellent color. Maintains optimum length under Northeast conditions.	

CUCUMBERS PROTECTED CULTURE			
Priced per package	100 Seeds	500 Seeds	1000 Seeds
23576 Corinto	31.95	106.50	177.45
23573 Saber EZ	25.95	86.40	143.95

CUCUMBERS SLICERS		M=1,000 seeds				
Priced per package	100 Seeds					
Priced per 1,000 seeds in these package sizes	1M	5M	15M	75M*	350M	
23512 Bristol ^{F1400}	17.80	16.30	15.30	14.55	13.55	
23004 Cobra ^{F1400}	20.50	19.00	18.00	17.25	16.25	
23568 Darlington ^{F1400}	6.80	24.55	23.05	22.05	21.30	

* Multiple packages may be used to fill orders for these quantities.

CUCUMBERS PICKLING		M=1,000 seeds			
Priced per package	100 Seeds				
Priced per 1,000 seeds in these package sizes	1M	5M	15M	75M*	
23005 Citadel ^{F1400}	3.00	10.40	8.65	7.65	6.90
23014 Eureka ^{F1400}	3.50	15.40	13.65	12.65	11.90
23003 Supremo ^{F1400}	3.70	17.45	15.70	14.70	13.95
23025 Vlasstar ^{F1400}	8.95	7.20	6.20	5.45	

* Multiple packages may be used to fill orders for these quantities.

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FAIRY TALE



HANSEL



WHITE STAR

VEGETABLE ROOT INOCULANT
Naturall™ for Vegetables contains proprietary and patent pending biologicals that colonize the root system of plants. Crop stress such as disease and dry weather can be alleviated, and often systemically, so that root colonization by this treatment can affect the physiology of the whole plant resulting in higher yields. **See page 119 for application rates and pricing.**

EGGPLANT		Days	Plant Size	Fruit Shape	Color	Features
24505	Epic ^{F1}	64	36"	Oval	Purple Black	Commercial grower variety. Resistant to Tobacco Mosaic Virus.
24526	Fairy Tale ^{F1}	50	18 - 24"	Slender	Lavender	An AAS winner. Fruit are bright lavender, up to 5" long, good to eat, on a dwarf plant. Can be grown in pots, planters or on your patio.
24525	Hansel ^{F1}	55	18"	Slender	Purple	AAS winning Japanese eggplant from Seminis. Fruit are dark glossy purple, born in finger-like clusters and have a bright green calyx. Yields are much higher than similar sized Little Fingers.
24524	Nadia ^{F1}	70	24 - 30"	Oval Long	Black	An attractive purple black hybrid from Vilmorin. Fruit are 9" long by 4½" around. Colors early, sets under cool conditions with a durable plant for frequent pickings.
24516	Santana ^{F1}	80	30"	Elongated Oval	Glossy Black Purple	A high yielding hybrid from Syngenta that performs where it matters most; yield, size and quality! One of the best for heat tolerance without fruit fading problems. Has reduced spines to prevent fruit scar.
24510	White Star ^{F1}	75	30 - 36"	Teardrop	White	Classic tapered teardrop shape. Creamy white fruit are smooth when mature. Approximately 5 to 7 inches in length with a diameter of 2 inches at top and 3.5 to 4 inches at bottom.

ENDIVE / ESCAROLE		Days	Features
<i>Endive - narrow, finely cut, curly leaves</i>			
25010	Tres Fine Maraichere	45	A finely cut, lovely green and very fine baby endive with outstanding flavor for the truly French gourmet salads. A petite, fern-like mound.

EGGPLANT	M=1,000 seeds				
	500 Seeds	1M	5M	25M	100M
Priced per package					
Priced per 1,000 seeds in these package sizes					
24505 Epic	6.85	10.95	9.85	9.45	8.90
24526 Fairy Tale	30.60	48.95	47.85	47.45	46.90
24525 Hansel	39.90	63.80	62.70	62.30	61.75
24524 Nadia	11.90	19.00	17.90	17.50	16.95
24516 Santana	9.35	14.90	13.80	13.40	12.85
24510 White Star	8.85	14.15	13.05	12.65	12.10

ENDIVE / ESCAROLE CHICORY	M=1,000 seeds		
	10M	100M	400M
Priced per 1,000 seeds in these package sizes			
25010U Tres Fine Maraichere ^{Untreated}	0.55	0.50	0.40



GIZMO 

GOURDS

PLANTING

Direct seed in soils that are above 70° F. Plant gourds ½" - 1" deep. For a general rule of thumb plant seed the depth of three times the thickness of the seed. Plant spacing varies depending on fruit size. For small and miniature gourds plant at approximately 5 - 10 sq. ft. per plant. For large gourds plant them at 30 sq. ft. per plant.

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

MANAGEMENT

Scout fields every 7 days to ensure crop health. Look for insect, weed, and disease pressure. The first three weeks focus on weeds and insect pressure. Then focus on disease pressure. For weed, insect, and disease identification and treatments consult the Midwest Vegetable Production Guide: https://ag.purdue.edu/btn/midwest-vegetable-guide/Documents/2019/ID-56_2019.pdf or your local extension. Place pollinators in field to ensure maximum fruit set.

HARVEST

Harvest when fruit have developed deep vibrant color or when plants start to die down. Clean gourds of dirt, then dip them in a 5% chlorine solution to ensure long shelf life.

STORAGE

Place gourds in a dry place that will have good air circulation to prevent rotting.



AUTUMN WINGS
LARGE SWAN



AUTUMN WINGS
MEDIUM



AUTUMN WINGS
BLEND



GALAXY OF STARS




















GIZMO



GOBLIN EGGS

GOURDS		LAGENARIA SICERARIA	
▲		Days	Features
26034	Birdhouse Martinhouse	100	A purified strain of the original birdhouse gourd. 10" diameter by 15" tall. Tan, smooth and hard shelled.
26002	Bushel	120	12 - 18" diameter with fruit weighing from 30 - 100 lbs. Excellent for arts and crafts when cured.
26035	Extra Long Handled Dipper	120	A dipper gourd with a 3 - 4' long handle. Grow on trellis for straight gourds.
26033	Large Speckled Apple	120	A large true apple shaped gourd 4 - 5" in diameter and 6 - 7" tall. Great for table decorations.
26025	Miniature Bottle	100	A miniature sized bottle gourd, 2" in diameter by 4" long.
NEW 26004	Mixed Large Types	100 - 130	A new mix of large types that are favorites of Rupp growers including; Birdhouse Martinhouse, Calabash, Extra Long Handled Dipper, Large Bottle, Large Speckled Apple and Speckled Swan.
26027	Speckled Swan	100	A large, crookneck gourd whose tip looks like a swan's head; 14 - 18" long with a 6" base.

GOURDS		PEPO		Pricing on page 50
▲		Days	Features	
26051	Autumn Wings Large Swan  	100	A unique gourd of many colors with wings, warts, and the fruit shape of a swan gourd. Its bulb size is 2 1/2 or 3" in diameter with a neck up to 12" long. A grand addition to our other fancy ornamental selections for the ornamental trade.	
26052	Autumn Wings Medium  	100	A unique gourd of many colors with the fruit shape of a spoon but with wings. Its bulb size is 2 1/2 or 3" in diameter with a neck up to 6" long. A grand addition to our other fancy ornamental selections for the ornamental trade.	
26053	Autumn Wings Small  	100	A unique gourd of many colors with wings and fruit shape of a swan pear. Its bulb size is 2 1/2 or 3" in diameter with a neck up to 4 - 5" long. Has great potential for the shipper if the wings can be protected from breakage.	
26510	Autumn Wings Blend 	100	A blend of 50% Autumn Wings Small, 25% Autumn Wings Medium, and 25% Autumn Wings Large.	
26042	Galaxy of Stars ^{F1}  	90 - 100	An exciting Rupp hybrid gourd mixture in the shape of a 5 point star in many colors that can be mechanically washed. A unique gourd for table decorations.	
 26009	Gizmo  	90 - 100	A Rupp winged gourd mix, which is unique for its bush plant type, offers fruit with rich colors including dark green, orange, yellow, light green, and white. This hard-shelled variety yields fruit that are 3 - 5" tall by 6 - 8" wide at the tip of the wings. Is sure to be another great addition to your fall decoration lineup.	
26039	Goblin Eggs	90 - 100	A Hollar product that produces a multitude of egg shaped gourds in a rainbow of colors and stripes. The logical replacement for Nest Egg gourd.	
 26012	Hoargarth  	90	A distinctive orange and dark green gourd that will add texture to your fall displays. The wart covered fruit are 7" wide by 5" high and grow on an intermediate bush plant.	
26041	Koshare Yellow	95 - 100	A Hollar product that is like a small spoon gourd with a black-green background with up to 5 yellow bands.	
26043	Lunch Lady	110	A one-of-a-kind large warted gourd. It produces an array of shapes & colors with fruit sizes from 3-10 lbs, all hard shells with warts.	
26010	Pear Bi-Color	90	A pear shaped fruit that is smooth and hard, yellow on the upper half, green bottom half, yellow stripes.	
26026	Rupp Fancy Warted 	100	A mixture of warted gourds with shapes like spoons, pears, and rounds; all warted and very colorful.	
26005	Rupp Small Formula Blend 	90 - 100	A blend of fancy small types with a few plain varieties. Includes Shenot Crown of Thorns, Rupp Fancy Warted and Small Spoon.	



HOARGARTH 



KOSHARE YELLOW



LUNCH LADY



RUPP FANCY WARTED



RUPP SMALL FORMULA BLEND

SHIPPING NOW ONLY \$10⁰⁰
Orders over \$250 are shipped free!

GOURDS LAGENARIA SICERARIA

	Priced per package		Priced per pound		Seeds /lb.
	1 oz.	4 oz.	1#	5#	
26034 Birdhouse Martinhouse	8.70	20.45	58.00	57.00	3,500
26034U Birdhouse Martinhouse <small>Untreated</small>	8.70	20.45	58.00	57.00	3,500
26002U Bushel <small>Untreated **</small>	12.65	29.65	84.00		1,800
26035 Extra Long Handled Dipper	9.05	21.25	60.25	59.25	4,500
26033 Large Speckled Apple	10.10	23.65	67.05	66.05	2,400
26025 Miniature Bottle	9.40	22.05	62.45	61.45	5,000
26004 Mixed Large Types	10.00	23.50	66.65	65.65	2,400
26027 Speckled Swan	9.05	21.25	60.25	59.25	2,200

** 15 seeds for \$4.50

GOURDS PEPO

M=1,000 seeds Descriptions on page 49

	Priced per package		Priced per pound		Seeds /lb.
	1 oz.	4 oz.	1#	5#	
26043 Lunch Lady	19.85	46.60	136.00	133.00	3,300
26010 Pear Bi-Color	9.90	23.20	67.65	64.65	10,100
26026 Rupp Fancy Warted	13.85	32.50	94.80	91.80	8,600
26005 Rupp Small Formula Blend	10.20	23.90	69.70	66.70	9,300

	Priced per package		Priced per 1,000 seeds		Seeds /lb.
	250 Seeds	1M	5M	25M	
26501 Autumn Wings Large Swan	8.20	23.55	22.55	21.55	7,300
26501 Autumn Wings Large Swan <small>F400</small>	10.25	29.40	28.40	27.40	7,300
26501U Autumn Wings Large Swan <small>Untreated</small>	8.20	23.55	22.55	21.55	7,300
26502 Autumn Wings Medium	8.20	23.55	22.55	21.55	8,000
26502 Autumn Wings Medium <small>F400</small>	10.25	29.40	28.40	27.40	8,000
26502U Autumn Wings Medium <small>Untreated</small>	8.20	23.55	22.55	21.55	8,000
26503 Autumn Wings Small	8.20	23.55	22.55	21.55	7,800
26503 Autumn Wings Small <small>F400</small>	10.25	29.40	28.40	27.40	7,800
26503U Autumn Wings Small <small>Untreated</small>	8.20	23.55	22.55	21.55	7,800
26510 Autumn Wings Blend	8.20	23.55	22.55	21.55	7,900
26042 Galaxy of Stars	26.60	76.45	75.45	74.45	10,000
26042 Galaxy of Stars <small>F400</small>	28.60	82.30	81.30	80.30	10,000
26042U Galaxy of Stars <small>Untreated</small>	26.60	76.45	75.45	74.45	10,000
26009 Gizmo <small>F400</small>	31.40	90.35	89.35	88.35	6,600
26039 Goblin Eggs	25.95	74.55	73.55	72.55	14,200
26012 Hoargarth <small>F400</small>	31.40	90.35	89.35	88.35	3,500
26041 Koshare Yellow	25.95	74.55	73.55	72.55	11,000

FarMore® FI400
Cucurbits

The early-season insect protection offered by FarMore Technology can prevent or eliminate damage caused by cucumber beetles. Additionally, the insecticide component has shown a remarkable ability to improve plant vigor and growth under certain environmental conditions. This patented vigor effect leads to more advanced crop development and superior performance that is especially important when pumpkin crops are under stress. <http://www.syngenta-us.com/seed-treatment/farmore-fi400-cucurbits>



FarMore® treated items are highlighted in the green in the price tables.

Look for this symbol in the product description tables marking FarMore treated items.

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ELEONORA



EMILY

EVERLEAF
GENOVESE **NEW**

GENOVESER



STARO



GREEN SLEEVES

HERBS		Pricing on page 53	
	Annual / Perennial	Features	
Basil			
27003	Eleonora	A	Intermediate resistance to downy mildew. Big, lightly serrated leaves. For open field and in pots.
27035	Emily	A	A compact Genovese type basil with medium to large leaves. Because of improved shelf life Emily is recommended for summer production and year round in hot climates; works well in the field or greenhouse. Excellent performance against Fusarium.
NEW 27006	Everleaf Genovese	A	The first basil bred for season-long performance and continual harvesting. Flowers up to 8 weeks later than standard basil. Compact, highly branched plant perfect for in-ground and potted plant production. Robust Genovese flavor, perfect for pesto and other sauces. IR to downy mildew and R to Fusarium.
27033	Genoveser	A	A special, high yielding strain, dark green, cup shaped selection, glossy leaf, recommended for field production.
27012	Italian Large Leaf	A	Leaves are broad, oval and crinkly with spicy flavor. Used in perfumes, Italian seasonings, and soups.
27017	Lemon	A	Pleasing citrus aroma, excellent in vinegars or with fish.
27018	Purple	A	Has a plant with intense purple leaves used for ornamental plantings and seasonings.
27030	Siam Queen	A	An improved cultivar of ornamental and aromatic Thai basil. Has 3" leaves, distinctive purple stems, and is an eye catching addition with flowers for an edible landscape accent. Has an exotic flavor.
Catnip			
27509	Catnip	P	A vigorous growing mint loved by cats. Grayish green leaves have a strong mint-like flavor.
Chervil			
27005	Chervil	A	The fine cut, deep green leaves look like a delicate, lacy version of parsley. Flavor is a mild anise/parsley and goes well with fish, seafood, eggs or in salads. At its best fresh from the garden.
Chives			
27514	Staro	P	Extra thick, dark green leaved variety for all growing purposes. Excellent for forcing and pot growing as well as field production.
Coriander / Cilantro			
27002	Calypso	A	British bred coriander has excellent bolting resistance and can be cut back and allowed to re-grow at least 3 times throughout the summer due to its extremely low growing point. This quick growing annual herb is best grown for its delicious foliage that can be added to salads, curries and soups.
Dill			
27516	Green Sleeves	A	A very stable, fast growing, medium fine leafed variety of dark green dill for production of fresh bundles. Strong bolt resistance. 2 - 2 ½ feet tall.
Lavender			
27502	Lavender ^{Vera}	P	Great for dried flowers, perfuming linens, and repelling moths. Hardy.

Additional Herbs can be found on the next page --->.



OREGANO
VULGARE



GIGANTE D'ITALIA



SAGE



SUMMER SAVORY

HERBS

Pricing on page 53

	Annual / Perennial	Features
Oregano		
27503 Oregano <small>Vulgare</small>	P	<i>Purple flowered. Seasons tomato sauces, fish, salad dressings and pizza.</i>
<i>Parsley additional Parsley on page 65</i>		
35012 Gigante d'Italia	A	<i>A plain, dark green, large leaf sized variety; very aromatic and high yielding with multiple cuts.</i>
Peppermint		
27504 Peppermint	P	<i>Leaves used as mint tea and as a meat garnish. In addition, the mint oil has many other uses.</i>
Rosemary		
27505 Rosemary	P	<i>Leaves are used in seasoning meats, sauces, and wonderful for potpourri.</i>
Sage		
27506 Sage	P	<i>Most widely used herb. Seasons poultry, sausage, etc.</i>
Summer Savory		
27011 Summer Savory	A	<i>Fresh or dried, used as seasonings in gravies and stews.</i>
Thyme		
27508 German Winter	P	<i>Excellent seasoning for soups, i.e. clam chowder, as well as poultry, stews, sauces, pickles and salads.</i>

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SAVE WITH CASH DISCOUNTS

Cash discounts are available throughout the season and are a great way to add money to your bottom line. See page 6 for all of the details.

December.....	6%
January.....	5%
February.....	4%
March.....	3%
April.....	2%

HERBS FOR THE PROFESSIONAL

M=1,000 seeds

	Priced per package			Priced per pound in these package sizes		
	1/4 oz	1 oz.	4 oz.	1#	5#	25#
Basil						
27035 Emily	2.60	5.85	17.05	45.40	44.40	43.40
27033 Genoveser	2.60	4.65	13.45	35.80	34.80	33.80
Italian Large Leaf						
27012U Untreated	2.55	3.15	9.05	24.05	23.05	22.05
27017U Lemon Untreated	3.00	9.55	27.95	74.50	73.50	
27018U Purple Untreated	3.20	10.20	29.95	79.75	78.75	
27030U Siam Queen Thai Untreated	6.55	20.90	61.45	163.75	162.75	
Priced per 1,000 seeds in these package sizes						
	1M	10M	100M	500M	1000M	
27003 Eleonora	0.70	0.55	0.45	0.40	0.35	
27006 Everleaf Genovese	19.25	19.10	19.00	18.95	18.90	
Priced per package in these package sizes						
	1/4 oz	1 oz.	4 oz.	1#	5#	25#
Catnip						
27509U Catnip Untreated	2.55	7.00	20.50	54.60		
Chervil						
27005U Chervil Untreated		2.70	6.70	17.80	16.80	
Chives						
27514 Staro	3.15	9.95	29.25	78.00	77.00	76.00
Coriander / Cilantro						
27002U Calypto Untreated		2.75	3.90	10.30	9.30	8.30
Dill						
27516 Green Sleeves		2.60	7.80	20.80	19.80	18.80
Lavender						
27502U Lavender Vera Untreated	7.00	22.25	65.35	174.25	173.25	
Oregano						
27503U Oregano Vulgare Untreated	7.00	22.25	65.35	174.25	173.25	

HERBS FOR THE PROFESSIONAL

M=1,000 seeds

	Priced per package			Priced per pound in these package sizes		
	1/4 oz	1 oz.	4 oz.	1#	5#	25#
Parsley						
35012 Gigante d'Italia		4.65	6.45	18.30	17.30	16.30
Peppermint						
27504U Peppermint Untreated	16.60	53.05	155.95	415.75	414.75	
Rosemary						
27505U Rosemary Untreated	31.45	100.55	295.70	788.50	787.50	
Sage						
27506U Sage Untreated		11.55	33.85	90.25	89.25	
Summer Savory						
27011U Summer Savory Untreated		3.90	11.25	29.90	28.90	
Thyme						
27508U German Winter Untreated	5.95	18.90	55.50	148.00	147.00	





BLACK MAGIC

KALE

PLANTING

Plant rows 2' - 3' apart with plants 8" - 16" apart. Seeding rate should be approximately 2 to 4 pounds per acre. Preplant fertilizer should be 60 pounds per acre of nitrogen, 0 - 60 pounds of phosphorus, and 0 - 200 pounds of potassium per acre depending on soil test results.

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

MANAGEMENT

Sidedress 30 - 60 pounds of nitrogen after transplants are established. Use crop rotation to help combat disease pressure. Scout fields for disease, mildew, and insects.

HARVEST

Kale can be harvested three ways: whole plant, bunched leaves, or "stripped" leaves. "Stripped" kale is pre-packaged for fresh market in all methods; yellow or damaged leaves must be removed before packing.

STORAGE

Leafy greens can be stored close to 32°F. At this temperature, they can be held for 10 - 14 days.



BLACK MAGIC



QUICKSTAR

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KALE		Height	Features
<i>Fresh Market</i>			
28005	Black Magic	12 - 14"	Winter hardy Tuscan type with darker, savoyed leaves than conventional kales. Flavor improves with frost. Harvest early to use baby leaf as a savoyed brassica. Mature leaves grow as a rosette rather than on a true stem.
28504	Blue Ridge ^{F1}	12 - 14"	A superior quality kale that is slow to bolt and yields a highly frilled leaf suitable for both processing or fresh market bunching.
28503	Winterbor ^{F1}	18 - 24"	A Vates Blue Curled type with tall stems that allow easier stripping.
<i>Heritage Varieties</i>			
28004	Red Russian	24 - 36"	The most tender, mild flavored kale variety. Will wilt soon after harvest; should be cooled or consumed promptly.

KOHLRABI		Days	Features
<i>Fresh Market</i>			
29004	Quickstar ^{F1}	49	A Sakata variety that is slow to bolt. Slightly broad dark green leaves. Extremely uniform fruit.

KALE	M=1,000 seeds			
	Priced per 1,000 seeds in these package sizes			
	1M	5M	25M	100M
28005 Black Magic	3.60	2.55	1.85	1.35
28504 Blue Ridge	10.40	9.35	8.65	8.15
28503 Winterbor	10.40	9.35	8.65	8.15
	Priced per package 4 oz.			
	Priced per pound in these package sizes			
	1#	5#	25#	
28004U Red Russian ^{Untreated}	13.80	30.70	30.20	29.95

KOHLRABI	M=1,000 seeds			
	Priced per 1,000 seeds in these package sizes			
	1M	5M	25M	100M
29004 Quickstar	8.40	7.85	7.35	6.85



TADORNA



ALKINDUS



BARILLA **NEW**



BERGAM'S GREEN



RED MIST



BREEN

LEEK			
		Days	Features
30908	Tadorna	100	An Enza variety that grows upright with a long white shaft and dark blue green foliage. Excellent quality for fall harvest, but can be over wintered where moderate winter conditions prevail. Good field holding ability and very easy to clean.

LETTUCE			
			Features
Butterhead			
30309	Alkindus ^{Red}		A mid-sized variety with beautiful dark red color which is suitable for full season production.
NEW 30504	Barilla ^{Green}		A medium to dark green, thick-leaved lettuce with a strong base and good volume. It is strong against internal tip-burn and appropriate for late spring and early autumn crops.
Iceberg			
30703	Deuce ^{Green}		Extremely short core with abundant weight. Has performed well for processing and export markets.
Leaf			
30304	Bergam's Green ^{Green}		A non-heading, dark green variety.
30016	New Red Fire ^{Red}		The premier red lettuce for market growers. Superior appearance. Mosaic indexed.
30013	Red Mist ^{Red & Green}		Early variety with nice color contrast between red and green and high bolting tolerance. Also has moderate cold tolerance and strong tolerance to heat. Harvest summer to fall. Adapted for all major lettuce growing regions.
Romaine			
30214	Breen ^{Red}		A unique variety due to its brilliant purple-red exterior color and the interior green color. Top closes nicely, resulting in a perfect formed heart. Great tasting with excellent shelf life.
30211	Coastal Star ^{Green}		Taller and darker plant for spring and fall harvest. Early maturing and produces large and heavy heads.
Romaine Heart			
30203	Arroyo ^{Green}		A commercial introduction suitable for carton, fresh market and heart production. Shiny dark green. Broad seasonal adaptability.



ARROYO

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SHIPPING NOW ONLY \$10⁰⁰
 Orders over \$250 are shipped free!

Naturall™ VEGETABLE ROOT INOCULANT
 Naturall™ for Vegetables contains proprietary and patent pending biologicals that colonize the root system of plants. Crop stress such as disease and dry weather can be alleviated, and often systemically, so that root colonization by this treatment can affect the physiology of the whole plant resulting in higher yields. See page 119 for application rates and pricing.

LEEK	M=1,000 seeds			
	Priced per 1,000 seeds in these package sizes			
	1M	10M	100M	500M*
30908P Tadorna Pelleted	5.60	5.35	5.15	5.00

* Multiple packages may be used to fill orders for these quantities.

LETTUCE	M=1,000 seeds		
	Priced per 1,000 seeds in these package sizes		
	5M	100M	500M
Butterhead			
30309P Alkindus Red Primed/Pelleted	5.80	5.45	5.20
30504P Barilla Primed/Pelleted	3.65	3.30	3.05
Iceberg			
30703P Deuce Green Pelleted	2.15	1.80	1.55
Leaf			
30304P Bergam's Green Primed/Pelleted	2.10	1.75	1.50
30016P New Red Fire Pelleted	2.30	1.95	1.70
30016 New Red Fire	1.30	0.95	0.70
30013P Red Mist Primed/Pelleted	2.35	2.00	1.75
Romaine			
30214P Breen Red Pelleted	4.65	4.30	4.05
30211P Coastal Star Green Pelleted	2.10	1.75	1.50
Romaine Heart			
30203P Arroyo Pelleted	2.50	2.15	1.90





SUGAR RUSH

MELONS

PLANTING

When direct seeding plant $\frac{1}{2}$ " - 1" deep. Soil temperature should be 75 - 85°F. Five to six feet is the recommended row spacing with 18 - 24 inches between plants. If starting with transplants sow 3 - 5 weeks prior to planting outside.

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

MANAGEMENT

To ensure high yield place pollinators near fields. A melon needs to be visited by a bee three times to ensure proper pollination. Scout every seven days for weed, insect, and disease pressure. Contact your local extension agent or consult the Midwest Vegetable Production Guide for identification and treatment options. https://ag.purdue.edu/btny/midwest-vegetable-guide/Documents/2019/ID-56_2019.pdf

HARVEST

Harvest 30 - 35 days after pollination. If shipping, pick at half slip. When picking for fresh market, pick at $\frac{3}{4}$ to full slip. Wash fruit in peroxyacetic acid (peroxide and acetic acid), as a non-chlorine sanitizing option.

STORAGE

Cool to at least 70°F and at 95% humidity. Shelf life is based on storage temperature. Do not cool below 32°F.

DISEASE CODES

A - Anthracnose
DM - Downy Mildew
F - Fusarium
GSB - Gummy Stem Blight
PM - Powdery Mildew
PRSV - Papaya Ring Spot Virus
WMV - Watermelon Mosaic Virus
ZYMV - Zucchini Yellow Mosaic Virus



ACCOLADE



AFTERGLOW ★



APHRODITE ★



ASTOUND



ATHENA ★



ATLANTIS

MELONS		CANTALOUPE Hybrid					Pricing on page 60
▲	Days	Fruit Size pounds	Net / Sutures	Flesh Color	Disease	Features	
31015 Accolade	73	6	Medium Net / Light Sutures	Orange	F ^{0,1,2} , PM	Improved internal fruit quality for extended shelf life. Enhanced vine strength. Tight seed cavity with firm flesh.	
★ 31017 Afterglow	78	5 - 7	Medium Net / Deep Green Sutures	Orange	F ^{0,1,2} , PM ^{1,2}	Late sutured melon with high Brix and firm flesh for extended holdability.	
★ 31071 Aphrodite	75	6 - 8	Coarse Net / Light Sutures	Salmon	F ^{0,1,2} , PM ^{1,2}	Today's standard for Eastern shipping melons. Larger and better holding ability than the former standard, Athena.	
31016 Astound	75	6	Medium Net / Light Sutures	Orange	F ^{0,1,2} , PM	Another new Syngenta release with improved flesh firmness. Very similar to Accolade while maturing approximately 2 days later.	
★ 31050 Athena	80	5 - 7	Medium Net / Light Sutures	Salmon	F ^{0,1,2} , PM ^{1,2}	Athena delivers the sweet flavor and texture consumers demand. Athena melons stay firm even when harvested at full slip.	
★ 31084 Avatar	75	7 - 9	Full Net	Orange	F ^{0,1,2} , PM ^{1,2}	Large Eastern shipper with medium open cavity. Firm, flavorful orange flesh. Exterior is light green and turns to a yellow-tan when fully ripe. Ideal for higher latitudes.	
31014 Cleopatra	70	4 - 6	Medium Net / Light Sutures	Orange	F ^{0,1,2} , PM ^{1,2}	Consistent early fruit set. Tight seed cavity and great quality for an early variety. Suitable for local delivery, roadside stands and fresh market. Great as a first early or to plant with Goddess.	
★ 31075 Goddess	68	5 - 6	Medium Net / Light Sutures	Orange	F ^{0,1,2} , PM ^{1,2}	An extremely early Athena type with good disease tolerance and good holding ability.	
31006 Infinite Gold	84	5 - 7	Heavy Net / No Sutures	Deep Orange	F ^{1,2} , PM ²	This melon has been bred for strong performance and long shelf life, without sacrificing great flavor and fruit quality. Offers strong vines, high yield potential, uniform size and shape.	

Additional Cantaloupe Melons can be found on the next page -->.

GROWER PREFERRED ALL-STARS ★ MELONS

These melons continue to be the top performing varieties for growers. If you are looking to add melons to your operation you can't go wrong with these All-Stars.

CANTALOUPE

Afterglow is an extremely dependable 1/2 Tuscan melon with high sugars and firm flesh. Afterglow will keep your customers coming back for more.

The most widely grown melon in the North and Midwest is **Aphrodite**. It is still the standard for many of our growers. This melon yields with the best of them.

Athena is the most widely grown melon in the Eastern U.S. With its excellent disease tolerance and sought after quality, it is well known in the marketplace.

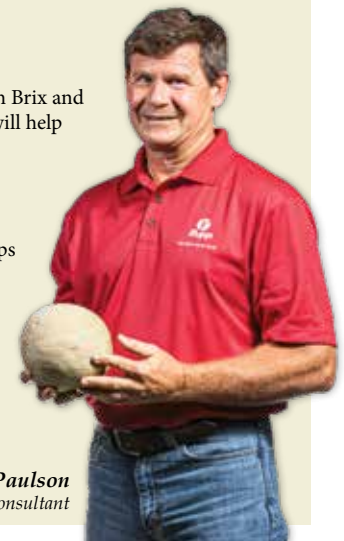
Flavor, size and yield have combined to make **Avatar** a favorite of many of our growers. For those of you who are looking for a large eastern type melon, this is one to try.

Goddess is an early Athena type with good disease tolerance and shipping ability. In the early category, this is the one you need to include in your program.

Shockwave is a long shelf life melon with high Brix and excellent flavor. It's color change at maturity will help indicate its peak quality at picking.

PERSONAL SIZED

If you are looking for a personal sized hybrid, look no further than **Sugar Cube**, with perhaps the best eating quality of any melon on the market (high Brix, firm flesh, great flavor). Sample this one at your market and it will sell itself. It is also just the right size for smaller households or the CSA box. This melon slips easily and will hold and ship without losing quality. The perfect personal sized melon!



Brad Paulson
Vegetable Consultant



AVATAR ★



CLEOPATRA



GODDESS ★



INFINITE GOLD



SHOCKWAVE ★



SOLSTICE

MELONS		CANTALOUPE Hybrid				Pricing on page 60	
▲	Days	Fruit Size pounds	Net / Sutures	Flesh Color	Disease	Features	
★ 31009	Shockwave	85	4 - 6	Medium Net / No Sutures	Deep Orange	F ^{0,1,2} , PM ^{1,2}	Outstanding eating quality with an average Brix of 15%. Has firm flesh with a very small seed cavity. This melon has an extended holdability for a controlled pick. Slips when mature.
31085	Solstice	78	7 - 12	Heavy Net / Deep Sutures	Orange	F ^{0,1,2} , PM ^{1,2}	A Seneca Vegetable Research release similar to old "Eastern" types. Has great sugar, flavor and yield. Very large fruit. Great disease package.
31018	Sugar Rush	75	4	Medium Net / No Sutures	Orange	F ^{0,1,2} , PM ^{1,2}	Quality meets size. This is the big brother to Sugar Cube. Productive plant and high Brix.
31019	Sun Blushed	82	4 - 6	Heavy Net / Light Sutures	Deep Orange	F ^{0,1} , PM	Extended shelf life (ESL) western type hybrid with excellent flavor. Firm and attractive flesh with extremely high Brix.
31083	Tirreno	83	4 - 6	Medium Net / Deep Green Sutures	Orange	F ^{1,2,5} , PM ^{1,2,3}	Possesses beautiful firm flesh and offers excellent holding ability. Also has shown tremendous plant health in the field for excellent yield potential. Very good eating quality.

MELONS CANTALOUPE Hybrid		M=1,000 seeds				
Priced per package	100 Seeds	500 Seeds	1M	5M	15M*	90M*
Priced per 1,000 seeds in these package sizes						
31015 Accolade ^{F300}	14.50	57.40	82.00	78.90	76.90	75.90
31017 Afterglow	10.80	42.80	61.10	58.00	56.00	55.00
31071 Aphrodite ^{F300}	13.10	51.95	74.20	71.10	69.10	68.10
31016 Astound ^{F300}	14.20	56.30	80.40	77.30	75.30	74.30
31050 Athena ^{F300}	13.40	53.00	75.70	72.60	70.60	69.60
31084 Avatar ^{F300}	11.40	45.05	64.30	61.20	59.20	58.20
31014 Cleopatra	10.90	43.15	61.60	58.50	56.50	55.50
31075 Goddess	12.05	47.75	68.15	65.05	63.05	62.05
31006 Infinite Gold ^{F300}	20.20	80.00	114.25	111.15	109.15	108.15
31009 Shockwave	15.15	60.00	85.70	82.60	80.60	79.60
31085 Solstice	10.85	43.00	61.40	58.30	56.30	55.30
31018 Sugar Rush	12.20	48.30	68.95	65.85	63.85	62.85
31019 Sun Blushed	12.65	50.05	71.50	68.40	66.40	65.40
31083 Tirreno	21.05	83.45	119.20	116.10	114.10	113.10

* Multiple packages may be used to fill orders for these quantities.

MELONS MIXED/SPECIALTY Hybrid		M=1,000 seeds			
Priced per package	100 Seeds	500 Seeds	1M	5M	15M*
Priced per 1,000 seeds in these package sizes					
31704 Ambassador	11.45	45.35	64.75	61.65	59.65
31011 Earli-Dew ^{F300}	12.65	50.15	71.60	68.50	66.50

* Multiple packages may be used to fill orders for these quantities.

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SUGAR RUSH



SUN BLUSHED



TIRRENO



AMBASSADOR



SUGAR CUBE ★

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NOW ONLY
\$10⁰⁰

Orders over \$250
are shipped free!

MELONS		MIXED/SPECIALTY Hybrid					
Days	Fruit Size pounds	Net / Sutures	Flesh Color	Disease	Features		
31704	Ambassador	76	6 - 8	Heavy Net / Slight Sutures	Ivory / Green	F ^{0,1,2} , PM ^{1,2}	Larger than other galia melons with high Brix and enhanced fruit firmness for excellent storage ability. Ideal for main season when great tasting melons are desired.
31011	Earli-Dew	85	3 - 4	No Net / No Sutures	Lime Green	F	Early Honeydew type. Slips when mature.

MELONS		PERSONAL SIZE Hybrid					
Days	Fruit Size pounds	Net / Sutures	Flesh Color	Disease	Features		
★ 31078	Sugar Cube	80	2	Medium Net / Light Sutures	Deep Orange	F ^{0,1,2} , PM ^{1,2} , PRSV, WMV, ZYMV	A personal size melon with deep orange flesh, amazing quality (14% Brix), with excellent shelf life. In addition, has the best disease resistance package. Fruit size is around 4".

MUSTARD		Days	Features
Fresh Market			
32005	Savannah <small>F1 Mustard Spinach</small>	35	An early maturing, broadleaf, tendergreen mustard. Faster growing and slower bolting than OP's.

OKRA		Days	Features
33003	Dwarf Long Green Pod	55	2 - 3' tall plant with dark green, tender pods.

MELONS PERSONAL SIZE Hybrid		M=1,000 seeds			
Priced per package	100 Seeds	500 Seeds	1M	5M	15M*
Priced per 1,000 seeds in these package sizes					
31078 Sugar Cube	11.90	47.05	67.20	64.10	62.10

* Multiple packages may be used to fill orders for these quantities.

MUSTARD		Priced per package 4 oz.			
Priced per pound in these package sizes	1#	5#	50#		
32005 Savannah	59.60	105.95	104.95	103.95	

OKRA		Priced per package 1 oz. 4 oz.		
Priced per pound in these package sizes	1#	5#		
33003U Dwarf Long Green Pod <small>Untreated</small>	5.15	7.90	7.65	



CANDY

ONIONS

PLANTING

Onions are mostly direct seeded in the field, although some are transplanted as seedlings or sets. Transplants are sometimes used to improve bulb size, as well as to hasten maturity, or to avoid infection by some plant diseases, but this method of crop establishment is more expensive. Planting occurs from late March through early May. Between-row spacing varies considerably depending upon weed and foliar disease management, seeder capability, and harvesting equipment. In-row spacing also varies depending upon variety, desired bulb size, between row spacing, soil type, and other management considerations.

Bunching Onions - Direct seed in spring when the soil reaches 50°F. Plant seed ¼" deep and approximately ½" apart.

Bulb Onions/Short Day - Typically short day onions are direct seeded in the southern region of the United States. In order to grow short day onions in the northern region of the United States the seed has to be sown in greenhouses and then transplanted into the field. Use pelleted seed if direct seeding to help achieve better singulation.

Bulb Onions/Intermediate Day - Direct seed intermediate day onions as soon as soil allows in April or early May. Sow seed 2" apart and thin to 3 - 4" apart for larger onions. Seeding depth should be approximately ¼" deep. If

transplanting seed in flats in late February to mid March, tops may be clipped to 5" tall. Use pelleted seed if direct seeding to help achieve better singulation.

Bulb Onions/Long Day - Direct seed long day onions as soon as soil allows in April or early May. Sow seed 2" apart and thin to 3 - 4" apart for larger onions. Seeding depth should be approximately ¼" deep. If transplanting seed in flats in late February to mid March, tops may be clipped to 5" tall. Use pelleted seed if direct seeding to help achieve better singulation. Plant long day onions in the northern latitudes.

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

MANAGEMENT

Keep onions well weeded with shallow cultivation. Onions are shallow rooted and grow best in moist soil; irrigation may be required. Keep direct seeded onions away from onion sets because onion sets are more prone to disease. Long day onions should be planted in northern latitudes because of daylight requirements for bulbing.

HARVEST

Onions are ready to harvest when tops approximately have 50 - 75% fallen over and the skins have dried. Pull the bulbs by hand or use equipment such as a potato digger or under-cutter to cut the roots and lift the bulbs. Wait until all the leaves are dead and dry. It is likely the outer skins will loosen. Pulling onions too green will make them difficult to cure and will affect storing them. Harvest when the weather is dry.

STORAGE

Cure onions at 65 - 85°F at 70% humidity. Curing decreases the incidence of neck rot, reduces water loss during storage, prevents microbial infection, and is desirable for development of good scale color. Curing can be done in the field, preferably when the weather is warm and dry. If it rains let them dry fully before handling. A greenhouse or hoop house also provides good conditions for curing. Temperatures in the 80's will enhance the bronze color in the skins. Sunshine is good as long as it is not too hot. Extreme sun can produce sunscald. Store onions out of the sun; exposure to light after curing will induce greening of outer scales. Optimum temperature for long term storage of onions is 32°F with 65 - 70% humidity. It is important to cool them down slowly. Using cool late summer and fall temperatures works great to cool onions down slowly.



CHIANTI



CANDY



GREAT WESTERN



SAVE WITH CASH DISCOUNTS

Cash discounts are available throughout the season and are a great way to add money to your bottom line. See page 6 for all of the details.

December	6%
January	5%
February	4%
March	3%
April	2%



GREAT WHITE



SPANISH MEDALLION



GENESIS



RED DEFENDER



SV4643NT



RED BUNCHING

ONIONS		Pricing on page 64				
		Maturity	Color	Bulb Shape	Storage	Features
Bulb Onions / Short Day						
34046	Chianti ^{F1}	125	Red	Flattened Globe		Produces high yields under normal conditions. The red color moves inside as the bulb matures and the interior is red after curing.
Bulb Onions / Intermediate Day						
34020	Candy ^{F1}	100	Yellow	Globe	Short	A mild flavored Seminis onion that will perform well when plants are transplanted for extra large to jumbo sizes. Short term storage only.
34004	Great Western ^{F1}	110	Yellow	Globe	Short	Can be grown in all intermediate growing areas. Has good firmness with good skin retention. It will cut a high percentage of single centers and can be direct seeded or transplanted. This variety has strong plant growth with sizes that range from colossal to jumbo.
34021	Great White ^{F1}	103	White	Globe	Medium	<i>Crop failure for 2020.</i> Great yield potential for its maturity. Has attractive, luminescent white package with a high rate of single centers.
34039	Spanish Medallion ^{F1}	115	Yellow	Globe	Short	This Sweet Spanish type yellow onion is firm with excellent skin retention. It is globe to tall globe shape and jumbo to colossal in size. It is tolerant to pink root and fusarium basal rot.
Bulb Onions / Long Day						
34051	Genesis ^{F1}	100	Yellow	Globe	Medium	An early maturing hybrid that produces uniform globe shaped bulbs with golden brown coloring. Boasts good tolerance to both pink root and fusarium.
34045	Red Defender ^{F1}	125	Red	Globe	Long	Very dark red interior and exterior with uniform bulbs. Good for transplanting.
34000	SV4643NT ^{F1}	112	Red	Flattened Globe	Long	Bold red colored variety with excellent yield potential. Has both superb interior and exterior color. Stores very well.
Bunching Onions						
34510	Ishikura Improved Bunching	120	White			A Tokyo Long type with fancy, lengthy, white stalks. A good shipper.
34036	Red Bunching ^{F1} DPS 3047	55	Red			A red skinned, white fleshed bunching onion with an attractive deep color. This onion makes a striking presentation in the market.



AMERICAN WAY



EARTH TONES



FIESTA



INDIAN ART
RED FIRE

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ORNAMENTAL		CORN	
		Days	Features
05535	American Way	115	A very large eared 10 - 13" variety that has become popular with fresh market growers.
05536	Earth Tones	105	Has marvelous shades of blue and green as well as traditional reds and oranges. Can be ground into cornmeal.
05507	Fiesta	100	A variety developed by the University of New Hampshire. Early maturing with 8" ears and kernels that are variegated and of many colors.
05101	Indian Art Red Fire	105	Newest release in the "Indian Art" series. Comprehensive hybrid red stalk and red husk package. Kernels are deeper red when compared to Bloody Butcher. 8 - 10" ear.
GCA1133	Maze Corn Rupp XR E10-10	110	Rupp XR E10-10 is a medium-tall hybrid from Rupp Seeds Grain and Forage Division with solid stalks that performs very well for farmers. An excellent choice for a long standing maze, 8 to 10 feet plant height. Can be harvested for grain once the maze is used.
VSHOCK	Rupp Shock Corn ^{F1}	103	We list this corn in our vegetable catalog for those that sell corn shocks for ornamental purposes. This hybrid is a tall plant and its plant health and standability are the best we have ever seen in any early mid-season hybrid. Has loads of eye appeal both in the field or shock. Medium maturity.

See page 79 for Ornamental Popcorn

ONIONS	Descriptions on page 63. M=1,000 seeds		
	5M	25M	100M
34020 Candy ^{F300}	4.60	3.80	2.80
34020P Candy ^{F300 Pelleted}	5.30	4.40	3.25
34046P Chianti ^{F300 Pelleted}	5.45	4.95	4.85
34051U Genesis ^{Untreated}	3.40	2.80	2.05
34004 Great Western	5.55	4.60	3.40
34021P Great White ^{F300 Pelleted}	Crop Failure for 2020		
34036 Red Bunching ^{DPS 3047}	4.80	4.30	4.20
34045 Red Defender	4.50	3.75	2.75
34039 Spanish Medallion ^{F300}	5.20	4.30	3.15
34000 SV4643NT ^{F300}	6.20	5.15	3.80
	Priced per package		
	1 oz.	4 oz.	1#
34510 Ishikura Improved Bunching	5.25	13.90	34.65

ORNAMENTAL CORN	M=1,000 seeds				
	Priced per package 4 oz.		Priced per pound in these package sizes		
	1#	5#	25#	50#*	
05535 American Way	5.55	21.70	14.45	14.20	13.95
05536U Earth Tones ^{Untreated}	6.65	25.95	17.30	17.05	16.80
05507 Fiesta	4.00	15.55	10.35	10.10	9.85
05101 Indian Art Red Fire	7.05	27.55	18.35	18.10	17.85
	Priced per package		10M	25M	80M
GCE1010 Maze Corn Rupp XR E10-10					221.15
VSHOCK Rupp Shock Corn			56.35	113.65	310.40

Maze and Shock corn prices include shipping.

* Multiple packages may be used to fill orders for these quantities.

FarMore® F300
Onion

FarMore F300, an advanced fungicide seed treatment technology, delivers protection for a variety of small-seeded vegetable crops against a broad spectrum of seed and seedling diseases. With the active ingredients mefenoxam (Apron XL), fludioxonil (Maxim 4FS) and azoxystrobin (Dynasty), FarMore F300 enhances seedling emergence, plant stand establishment, plant health, early-season vigor and yield potential. <http://www.syngenta-us.com/seeds/vegetables/farmore/farmore.aspx>

FarMore treated items are highlighted in green in the price tables. Look for this symbol in the product description tables marking FarMore treated items.



COLORED UPRIGHTS



MIXED COLORS

VEGETABLE ROOT INOCULANT
Naturall™ for Vegetables contains proprietary and patent pending biologicals that colonize the root system of plants. Crop stress such as disease and dry weather can be alleviated, and often systemically, so that root colonization by this treatment can affect the physiology of the whole plant resulting in higher yields. See page 119 for application rates and pricing.

ORNAMENTAL		SORGHUM / BROOMCORN	
▲		Days	Features
05534	Colored Uprights	120	A colored sorghum with colors similar to Mixed Colors broomcorn but much more compact heads and shorter broom fiber. Colors are intense and vibrant. Very useful ingredient for the floral industry in arrangements and bouquets. Seeds hold well in heads.
05513	Mixed Colors	120	Similar to our other broomcorn but having mixed broom colors of black, red, purple, brown and yellow.

PARSLEY			
▲		Days	Features
35012	Gigante d'Italia	75	A plain, dark green, large leaf sized variety; very aromatic and high yielding with multiple cuts.

PARSNIPS			
▲		Days	Features
36005	Javelin F1	110	A hybrid developed in Europe for the pre-pack market with high marketable yield in the desired size range. Roots have level crowns and wash easily. Superior quality and marketability vs. OP varieties.

ORNAMENTAL SORGHUM / BROOMCORN			
Priced per package		4 oz.	
Priced per pound in these package sizes		1#	5#
05534U	Colored Uprights <small>Untreated</small>	9.90	26.80
05513U	Mixed Colors <small>Untreated</small>	9.90	26.80

PARSLEY					
Priced per package		1 oz.		4 oz.	
Priced per pound in these package sizes		1#	5#	25#	
35012	Gigante d'Italia	4.65	6.45	18.30	16.30

PARSNIPS					
Priced per 1,000 seeds in these package sizes		M=1,000 seeds			
		5M	50M	100M	500M
36005P	Javelin <small>Primed, Pelleted</small>	4.90	4.35	4.10	3.75



PLS595 

PEAS

PLANTING

Direct seed 1½" - 2" deep in soils that are at least 40° F. Plant in rows that are 30" - 36" apart and 1" - 2" between the plants.

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

MANAGEMENT

Scout field for insect, weed, and disease pressure.

HARVEST

Harvest peas when ripe. In shelling peas, pods should be filled out and able to feel individual peas. Pea pods should be harvested before seed develops inside the pod.

STORAGE

After harvest store peas at 50 - 60°F with 95% humidity to ensure quality.

DISEASE CODES

MV - Enation Mosaic Virus
F - Fusarium
NW - Near Wilt
PM - Powdery Mildew
RR - Root Rot
W - Common Wilt Race 1
WP - Western Pea Streak Virus
YM - Bean Yellow Mosaic

PEAS		Days	Height	Pod Length	Peas per Pod	Disease	Features
<i>Fresh Market</i>							
12033	Legacy	67	26"	3 1/2"	7 - 9	F, PM	<i>A Bolero replacement, one day earlier with resistance to Powdery Mildew.</i>
12003	Maestro	61	18"	4"	9	MV, PM, W, YM	<i>Heavy crops, very disease resistant.</i>
12008	PLS595	67	30"	3.6"	9 - 10	F, PM	<i>Fresh market or processor. High yields. Great taste.</i>
12035	Sabre	65	24"	3 1/2"	9 - 10	F, RR, PM	<i>Sabre is a normal vine type with long pods. The dark green berries produce wonderful yields of frozen, canned or fresh product.</i>

PEAS		SNOW PEA Flat Oriental	
Days	Features		
12102	Oregon Sugar Pod II	68	<i>30" vine with 4" pods, disease resistant.</i>

PEAS		SUGAR SNAP	
Days	Features		
12206	Cascadia	67	<i>A snap pea with unusually thick pod walls on a 30" vine. Pods remain tender and sweeter longer than other cultivars. Flavor improves until seeds are over mature. Has outstanding disease tolerance, eating quality and yielding ability.</i>
12201	Sugar Ann	60	<i>Earliest and shortest snap pea. 18" vine. Can be shelled.</i>
12209	Sugar Sprint	62	<i>A variety from Syngenta which replaces Sugar Ann. Has resistance to powdery mildew and tolerant to Pea Enation Mosaic Virus. 3" sweet and stringless pods with a plant height of 26".</i>

PEAS		Priced per pound in these package sizes				
		1#	5#	25#	50#*	500#*
12033	Legacy	5.45	3.60	3.35	3.10	3.00
12003	Maestro	5.30	3.50	3.25	3.00	2.90
12008	PLS595	5.55	3.65	3.40	3.15	3.05
12035	Sabre	5.45	3.60	3.35	3.10	3.00

* Multiple packages may be used to fill orders for these quantities.

PEAS SNOW PEA		Priced per pound in these package sizes				
		1#	5#	25#	50#*	500#*
12102	Oregon Sugar Pod II	5.30	3.50	3.25	3.00	2.90

* Multiple packages may be used to fill orders for these quantities.

PEAS SUGAR SNAP		Priced per pound in these package sizes				
		1#	5#	25#	50#*	500#*
12206	Cascadia	5.30	3.50	3.25	3.00	2.90
12201	Sugar Ann	5.90	3.90	3.65	3.40	3.30
12209	Sugar Sprint	6.95	4.60	4.35	4.10	4.00

* Multiple packages may be used to fill orders for these quantities.



OUTSIDER **NEW**

PEPPERS

PLANTING

Sow in the greenhouse 7 - 9 weeks before desired planting date. Allow plants to harden 7 days before transplanting. Plant transplants halfway between rootball and bottom leaves. This will help prevent lodging.

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

MANAGEMENT

Scout every 7 days to ensure crop development. Consult the Midwest Vegetable Production Guide:

https://ag.purdue.edu/btny/midwest-vegetable-guide/Documents/2019/ID-56_2019.pdf or your local extension agent for identification and treatments.

HARVEST

Cut or break pepper off the plant but leave at least 1" of the stem attached to the pepper.

STORAGE

Clean and wax peppers. Pre-cool at 45°F. Store at 45 - 50°F with 90 - 95% humidity; this will ensure the longest shelf life.

DISEASE CODES

BLS - Bacterial Leaf Spot
CMV - Cucumber Mosaic Virus
PHY - Phytophthora Root Rot
PMV - Pepper Mottle Virus
PVY - Potato Virus Y
S - Stip
TEV - Tobacco Etch Virus
TMV - Tobacco Mosaic Virus
TSW - Tomato Spotted Wilt

USE RECOMMENDATIONS

FM - Fresh Market
P - Processing
PP - Place Pack



ARISTOTLE X3R® ★



BAYONET



OUTSIDER **NEW**



PS09941819 ★



SPRINTER



TURNPIKE X5R® ★

PEPPERS		BELL GREEN TO RED Hybrid				
		Days	Flesh	Disease	Use	Features
★	37125 Aristotle X3R™	72	Thick	BLS ^{1,2,3} , PVY, TMV	FM	A Seminis hybrid with heavy set, thick walls, excellent disease protection and enormous fruit size. 3 - 4 lobed. The industry standard.
	37001 Bayonet	72	Thick	BLS ^{1,2,3,4,5,7,8,9} , PHY, TMV	FM, PP	A Syngenta hybrid with large blocky fruit. Excellent fruit color, fruit firmness, shoulder appearance, fruit uniformity and wall thickness. High yield potential.
NEW	37036 Outsider	Early	Thick	BLS ¹⁻¹⁰ , TSW,	FM, PP	Outsider is the "box-filling pepper" that delivers great yield and quality. Produces early concentrated sets of jumbo and XL fruit. Strong disease and virus resistance package.
★	37161 PS 09941819 with XSR®	75	Thick	BLS ^{1,2,3,4,5} , PHY	FM	The largest sized pepper we carry. Produces a continuous set of large to extra-large, 3 and 4 lobed fruits on a small to medium sized plant. Fruits are anthocyaninless and appear to have good field tolerance for epidermal separation.
	37119 Red Knight X3R™	63	Thick	BLS ^{1,2,3} , PVY	P	A Seminis medium to large blocky hybrid. Early to red, like North Star, with resistance to BLS races 1, 2 and 3.
	37014 Sprinter	Early	Medium Thick	TMV ⁰⁻³	FM, PP	Produces quality yields of uniform fruit over a long harvest window. Compact plants. It sets fruit well under row cover. Strong against blossom-end rot and russetting. Turns red early.
★	37023 Turnpike with XSR®	72	Thick	BLS ^{1,2,3,4,5,7,9} , PHY, TMV	FM	Extra large sized fruit with massively thick walls. Provides industry leading potential for yield.

PEPPERS BELL GREEN TO RED Hybrid		M=1,000 seeds					
Priced per package		100 Seeds	500 Seeds				
Priced per 1,000 seeds in these package sizes				1M	5M	25M	50M
37125	Aristotle X3R™ F300	15.85	70.10	100.10	92.65	88.20	84.80
37125P	Aristotle X3R™ F300 Pelleted	16.10	71.05	101.45	93.90	89.40	85.95
37001	Bayonet	9.65	42.50	60.65	56.15	53.45	51.35
37036	Outsider	14.40	63.55	90.75	84.00	80.00	76.90
37161P	PS 09941819 with XSR F300 Pelleted	16.85	74.50	106.40	98.50	93.80	90.15
37119	Red Knight X3R™	11.55	51.00	72.85	67.45	64.20	61.70
37014	Sprinter	47.45	209.80	299.65	277.45	264.20	254.00
37023	Turnpike X5R™	16.65	73.65	105.20	97.40	92.75	89.15

* Multiple packages may be used to fill orders for these quantities.



ABAY



DICAPRIO



SUMMER SWEET #8610 ★



CHOCOLATE BEAUTY



DELIRIO



GARFIELD ★

PEPPERS		BELL YELLOW Hybrid				
▲		Days	Flesh	Disease	Use	Features
37015	Abay	80	Medium Thick	BLS ¹⁻⁵	FM	A newer variety with strong bacterial leaf spot resistance. Very strong plant with high yield potential. Outstanding coloration. Excellent firmness and fruit quality. Continuous setting.
37034	Dicaprio	80	Medium Thick	TMV ^{0,3} , TSW	FM	New variety for high tunnels or unheated greenhouses from Enza Zaden.
37108	Early Sunsation X3R	70	Thick	BLS ^{1,2,3} , PVY, TMV	FM	A Seminis hybrid with Bacterial Leaf Spot 1, 2 and 3 resistance. Is early with dark green blocky fruit turning golden and sweet at maturity. Maintains firmness in mature stage and has heat setting ability.
★ 37003	Summer Sweet #8610	73 Green / 83 Yellow	Thick	BLS ^{1,2,3} , PVY, TMV	FM	A nice yellow bell with large, deep, blocky, early maturing fruit. It is thick walled and very smooth.

PEPPERS		BELL OTHER COLORS Hybrid					Pricing on page 70
▲		Days	Flesh	Disease	Use	Features	
37083	Bianca	66	Thick	TMV ⁰	FM	Bianca means white in Italian. Larger and whiter than competitive varieties. Very early and slow coloring from white to light red. 3 - 4 lobe.	
37029	Chocolate Beauty	67	Thick	TMV ⁰	FM	Three to four lobed beautiful brown colored fruit that adds an additional color dimension to the farm stand bell pepper display.	
37090	Delirio	68	Thick	TMV ⁰	FM, PP	An early maturing, medium to large blocky, dark green to vivid bright orange, sweet bell pepper. Good holding quality.	
★ 37011	Garfield	75	Thick	TMV ⁰	FM	Just like the famous cat, this variety is large, vividly orange and beautifully bold. Round out your bell pepper selection with this excellent variety.	
37013	Milena	Early	Thick	PVY, TMV ^{0,3} , TSW	FM, PP	Thick walls and uniform 3-4 lobed fruit. Peppers average ½ lb and 3" x 4" in size. Vigorous open plant habit with good yield and solid set, even under hot conditions. Plants average 28" tall and are upright and sturdy. Works well in the greenhouse, unheated tunnels or open field. Strong disease package.	
37088	Tequila	68	Thick	TMV ⁰	FM	Larger and better quality than its other lilac competitors. Matures from lilac to a medium red color. 3 - 4 lobe.	

PEPPERS BELL YELLOW Hybrid		M=1,000 seeds					
Priced per package		100 Seeds	500 Seeds				
Priced per 1,000 seeds in these package sizes				1M	5M	25M	50M
37015	Abay	14.60	64.55	92.15	85.30	81.20	78.05
37034	Dicaprio	71.50	316.35	451.90	418.40	398.45	383.10
37108	Early Sunsation X3R	11.35	50.05	71.45	66.15	63.00	60.55
37003	Summer Sweet #8610	10.40	45.85	65.45	60.60	57.70	55.45

* Multiple packages may be used to fill orders for these quantities.

PEPPERS BELL OTHER COLORS Hybrid		M=1,000 seeds					
Priced per package		100 Seeds	500 Seeds				
Priced per 1,000 seeds in these package sizes				1M	5M	25M	50M
37083	Bianca	17.60	77.75	111.05	102.80	97.90	94.10
37029	Chocolate Beauty	9.40	41.50	59.25	54.85	52.20	50.15
37090	Delirio	15.75	69.65	99.45	92.05	87.65	84.25
37011	Garfield	13.25	58.60	83.65	77.45	73.75	70.90
37013	Milena	49.10	217.20	310.25	287.25	273.55	263.00
37088	Tequila	17.95	79.25	113.20	104.80	99.80	95.95

* Multiple packages may be used to fill orders for these quantities.

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MILENA



BELCANTO



CORNITO GIALLO



ORANOS



SWEETIE ORANGE

CASH DISCOUNTS

Cash discounts are a great way to add to your bottom line. See page 6 for details.



SWEETIE RED



SWEETIE YELLOW



YELLOW SPARKLER



ORANGE YOU SWEET



RIGHT ON RED



YES TO YELLOW!

PEPPERS MISCELLANEOUS SWEET Hybrid Pricing on page 72

	Days	Flesh	Color	Shape	Disease	Features
Super Sweet Cones						
37173 Belcanto	70	Thick	Red	1 1/2 x 6 - 7"	TMV ^{0,1,2,3}	An early maturing red <i>Copia</i> sweet pepper. It produces two-lobed fruit on a compact plant structure and is suitable for field and high tunnel production. Sets well in the heat.
37195 Cornito Giallo	80		Yellow	1 1/2 x 5"		Exceptionally sweet and attractive. Half-size corno di toro. Perfect for grilling and roasting. An AAS winner.
37174 Oranos	70	Medium	Orange	1 1/2 x 7"	TMV ⁰	The most outstanding orange conical hybrid available! A very early variety that produces vigorous plants with fruit that are especially appreciated for their unique flavor and product presentation. Sets well in the heat.
37179 Conical Blend	70	Medium	Red, Orange, Yellow	1 1/2 x 8"		A multi-colored blend of the three conical peppers listed above. Only available in 100 seed packs.
Miniature Sweet Cones - Snack Peppers						
37190 Sweetie Orange	70 from transplant	Thick	Orange	2 1/2 - 3" long		These peppers are extremely sweet and the perfect size for snacking. Uniform fruit feature an open seed cavity. They grow great in both open field and protected culture.
37194 Sweetie Purple	70 from transplant	Thick	Purple	2 1/2 - 3" long		
37191 Sweetie Red	70 from transplant	Thick	Red	2 1/2 - 3" long		
37192 Sweetie Yellow	70 from transplant	Thick	Yellow	2 1/2 - 3" long		
37193 Sweetie Blend	70 from transplant	Thick	Orange, Purple, Red, Yellow	2 1/2 - 3" long		A multi-colored blend of the four Sweetie Peppers. Only available in 100 seed packs.
37176 Yellow Sparkler	70	Medium	Yellow	1 x 3"	TMV ⁰	Sweet mini "snack" pepper with fantastic flavor. Two lobed fruit with very few seeds. Performs well in low to mid-tech protected culture as well as open field.
Hungarian Cheese						
37181 Orange You Sweet	Very Early	Medium Thick	Orange	Flat Round		Very early maturing, has a mid to strong plant vigor with continuous setting ability. The fruit mature from dark green to deep orange. This variety is well suited for stuffing and pickling.
37182 Right on Red	Very Early	Thick	Red	Flat Round		A very early maturing pepper that has mid plant vigor with continuous setting ability. Right on Red matures from dark green to deep red. This variety is well suited for stuffing and pickling.
37183 Yes to Yellow!	Very Early	Thick	Yellow	Flat Round		A very early maturing pepper with strong plant vigor and continuous setting ability. The fruit mature from dark green to deep yellow. Yes to Yellow! is well suited for stuffing and pickling.



LOLA



SV3782PP X3R® ★



EDES

VEGETABLE ROOT INOCULANT
Naturall™ for Vegetables contains proprietary and patent pending biologicals that colonize the root system of plants. Crop stress such as disease and dry weather can be alleviated, and often systemically, so that root colonization by this treatment can affect the physiology of the whole plant resulting in higher yields. **See page 119 for application rates and pricing.**

PEPPERS		MISCELLANEOUS Hybrid				
		Days	Flesh	Color	Disease	Features
Banana						
37038	Lola	60 - 65	Thick	Light Green to Red	BLS ^{0-3,7,8} , TSWV	Widely adapted variety well suited where bacterial leaf spot or TSWV are a concern. High yield potential of large and extra-large fruit. Plants are medium strong and vigorous with good cover.
★ 37082	SV3782PP X3R®	70	Thick	Light Yellow to Red	BLS ^{0-3,7,8}	AKA Sweet Sunset, this variety has won the AAS. Used for 2nd early in the processing industry.
Hungarian						
37017	Edes	70	Thick	Creamy White to Red	TMV	A pyramid shaped Hungarian Sweet with very uniform yields of a creamy white fruit. Excellent for stuffing, fresh market or processing.

PEPPERS MISCELLANEOUS SWEET Hybrid		M=1,000 seeds				
Priced per package	100 Seeds	500 Seeds				
Priced per 1,000 seeds in these package sizes			1M	5M	25M	50M
Super Sweet Cones						
37173 Belcanto	37.50	165.80	236.85	219.30	208.85	200.80
37195 Cornito Giallo	13.20	58.40	83.40	77.20	73.50	70.65
37174 Oranos	37.50	165.80	236.85	219.30	208.85	200.80
37179 Conical Blend	30.80					
Miniature Sweet Cones - Snack Peppers						
37190 Sweetie Orange	28.05	124.05	177.20	164.05	156.20	150.15
37194 Sweetie Purple	30.90	136.65	195.20	180.70	172.05	165.40
37191 Sweetie Red	28.05	124.05	177.20	164.05	156.20	150.15
37192 Sweetie Yellow	28.05	124.05	177.20	164.05	156.20	150.15
Sweetie Blend ^{Orange, Purple, Red, Yellow}						
37193	30.00	134.45	192.05	177.80	169.30	162.75
37176 Yellow Sparkler	12.75	56.40	80.55	74.55	71.00	68.25
Hungarian Cheese						
37181 Orange You Sweet	9.45	41.70	59.55	55.10	52.45	50.40
37182 Right on Red	9.45	41.70	59.55	55.10	52.45	50.40
37183 Yes to Yellow!	9.45	41.70	59.55	55.10	52.45	50.40

* Multiple packages may be used to fill orders for these quantities.

PEPPERS MISCELLANEOUS Hybrid		M=1,000 seeds				
Priced per package	100 Seeds	500 Seeds				
Priced per 1,000 seeds in these package sizes			1M	5M	25M	50M
Banana						
37038 Lola	8.85	39.10	55.80	51.65	49.15	47.25
37082 SV3782PP X3R®	11.90	52.55	75.05	69.45	66.10	63.55
Hungarian						
37017 Edes	10.85	47.80	68.25	63.15	60.10	57.75

* Multiple packages may be used to fill orders for these quantities.

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SHIPPING
NOW ONLY
\$10⁰⁰

Orders over \$250
are shipped free!



SAVE WITH CASH DISCOUNTS

Cash discounts are available throughout the season and are a great way to add money to your bottom line. See page 6 for all of the details.

December	6%
January	5%
February	4%
March	3%
April	2%

GROWER PREFERRED ALL-STARS ★ PEPPERS

GREEN TO RED BELLS

Aristotle X3R[®] is the best overall performer with a consistent early set of large sized fruit. A favorite with many growers – a real money-maker!

If you are concerned about Phytophthora pressure, consider using **Turnpike X5R[®]**. It has one of the strongest tolerances of any bell pepper that we carry and the fruit quality is exceptional. It also provides the grower with X5R bacterial leaf spot resistance.

PS09941819 X5R[®] is the one for you if your customers are looking for a jumbo sized bell! It also has a very dark green color and X5R Bacterial Leaf Spot resistance.

OTHER COLORED BELLS

Summer Sweet 8610 is a very nice yellow bell. It will turn a deep yellow without streaking, is resistant to BLS 1-3, and will attain a large size.

Garfield is the best fresh market orange bell we've offered in a long time. If you are looking for sweet flavor in a large orange blocky bell, Garfield is the variety for you. Fruits mature uniformly and yields are very good.

SWEET BANANAS

SV3782PP X3R[®] has fruit quality similar to Ethem but it also has resistance to bacterial spot races 0-3, 7 and 8. Fruits are 8" x 1 1/2" and very smooth.

ANCHO / POBLANO

Tiburón has the quality your customers expect in this category. Pungency levels are milder and will work very well in Mexican dishes. Tiburón is a poblano (turns red).

JALAPEÑO

One of my favorites for all around use is **Centella**. It combines medium to hot pungency with a great yield potential. Centella has a nice dark color and it has very little cracking.



Dave Silveus
Vegetable Consultant

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BOMBITA **NEW**

HOT PEPPER TYPES

ANAHEIM

(Hatch - New Mexican) chili. Fruit are from 4 - 12" long and 2" wide, green to red at maturity, but also may be yellow, orange to brown. Many different varieties abound. Range from sweet to hot. Use green as fresh, canned or frozen. Mature are usually dried and ground into chili powder or paprika if sweet. Also used in salsas.

ANCHO

(Poblano) The fruit are heart shaped, pointed, thin walled with an indented stem attachment. Immature fruit are dark green with mature fruit being either red or brown. Fruit are 3 - 4" long and about 2" wide and are mildly pungent. The pepper of choice to make chili rellenos.

CAYENNE

Mature red fruit are 5 - 10" long and wrinkled. Irregular in shape, highly pungent, often used as dried, ground powder. Also used fresh in salads, sauces and dishes.

CHERRY

Like the name suggests, round or slightly flattened, green to red, hot or sweet. Similar use to wax pepper.

CHINENSE

(Habanero-Scotch Bonnet- Bahamian-Jamaican) In this species, diversity is enormous. Popular in Jamaica, Yucatan and Brazil. Very, very hot and persistent, but aromatic. Fruit are 1 - 2½" long and 1 - 2" wide. Green to variable mature colors of yellow, orange, red or white. Use dried as a spice, fresh or processed. Plant starts slower than most other pepper types.

GHOST

Subconical to conical shape measuring 2.5 to 3.5 inches in length. Approximately three times hotter than typical habaneros. Red is the most common color at maturity, with orange, yellow and chocolate as rarer varieties.

JALAPEÑO

Fruit are thick walled, conical shaped, dark green when immature turning red at maturity and most cultivars are highly pungent. Fruit may show cracking or corkiness which is a desirable trait in Mexico. Length vary widely. Use canned, pickled, salsas or fresh. When dried, by smoking, they are called chipotle.

ORNAMENTALS

Peppers classified as ornamentals do not carry a characteristic that makes them in-edible. They are individuals from the many groups previously listed that happen to have leaves and fruit that are particularly attractive and give them ornamental value.

PASILLA

Pod length is 6 - 12" long and 1 - 2" wide. Fruit color is dark green, turning brown at maturity. Usually dried before use in moles and salsas.

RED CHILI

Fruit are 2½" long by ½" wide, green when immature changing to red at maturity. Fruit have thin walls, taper to a point and are used for drying, processing and sauce. Hot!

SERRANO

Fruit are ½" wide and 2 - 3" long. Medium walls and shaped similar to Jalapeño and is the pepper of choice in Salsa Verde and other southwestern relishes.

THAI HOT

Green fruit to red at maturity, very hot, tiny 3/8" wide by 1" long fruit. Popular in oriental markets.

WAX

Yellow when immature, orange-red at maturity. Can be pungent or non-pungent. Vary from 2 - 8" long and about 2" wide. Use pickled or fresh in salads and relishes.



CHARGER



SPITFIRE



CARRANZA



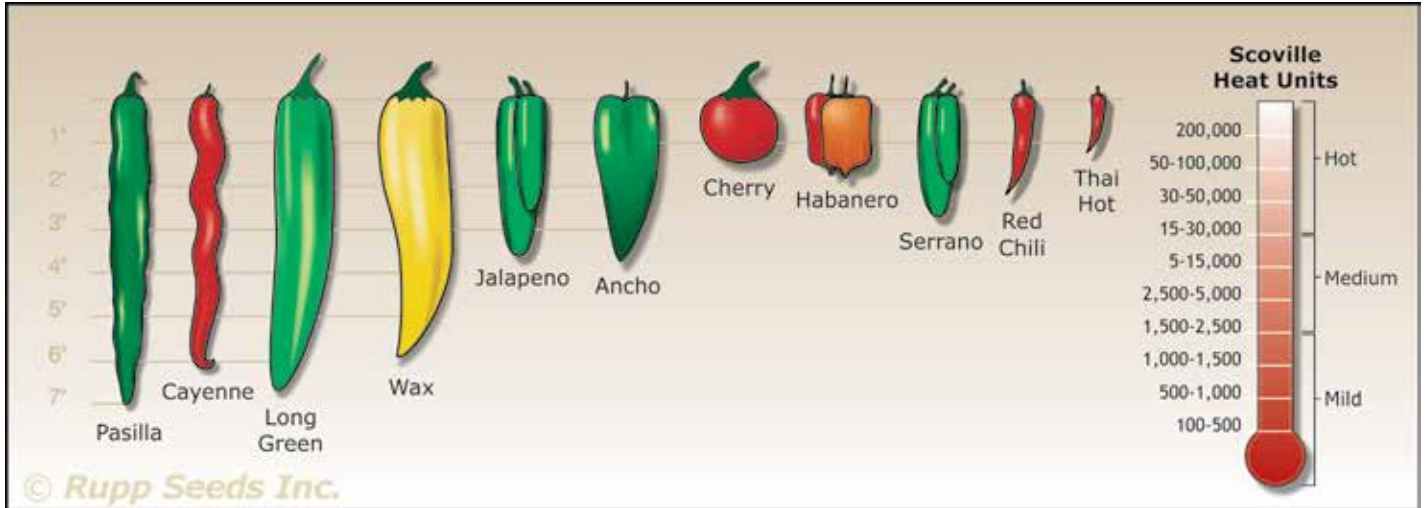
TIBURON★



TRIDENT



ARAPAHO



PEPPERS		HOT Hybrid		Pricing on page 76				
	Days	Flesh	Color	Relative Scoville Rating	Disease	Use	Features	
Anaheim								
37412	Charger	75	Thick	Green to Deep Red	1,000 to 2,000	TSW	FM	The leader in Anaheims with large, smooth, two lobed fruit. Vigorous, erect plant with excellent foliage cover protecting the fruit.
37462	Spitfire			Green to Red	90 to 130	PHY	FM	Only known Anaheim hybrid with phytophthora resistance. Large fruit size.
Ancho								
37463	Carranza			Dark Green to Red	200 to 300		FM	Selected for its performance in heat. Main use is for fresh when green and dried when red.
★ 37455	Tiburón	73	Thick	Very Dark Green to Red	1,000 to 3,000		FM	A true poblano producing excellent yields of extra large fruit for stuffing (chile rellenos) or drying; continuous fruit set.
37425	Trident	80 - 85	Thick	Very Dark Green to Red	250 to 1,500	TMV	FM	Extra-large glossy fruit. Suited for multiple harvests where it has the ability to maintain fruit size. The fruit are mid-long tapering, firm, straight and have a high percentage of two lobes. Has a good dry weight ratio and is well suited for the fresh and drying market.
Cayenne								
37458	Arapaho <small>Cheyenne</small>	70	Thick	Light Green to Red	2,000 to 4,000		FM, P	A cayenne with large, long, narrow fruit. Produces high yields of early maturing fruit; compact plant. Medium pungency.
Habanero								
37423	Kabal	95	Thin	Green to Orange	300,000		FM	High yielding variety with a vigorous, healthy plant that has a continuous set throughout harvest. Fruit average 1.5 - 2 inches in length with typical habanero shape.
37432	Rey Pakal	135	Thin	Green to Red	200,000	CMV	FM	Vigorous plant that provides for prolonged, high yielding harvests. Demonstrates the ability to reach full maturity with exposure to less than optimal heat units.

Additional Hot Peppers can be found on the next page --->.



BOMBITA **NEW**



TIME BOMB **NEW**



KABAL



REY PAKAL



BLAZING BANANA



CENTELLA **★**



MAMMOTH



RINGLEADER **NEW**



TALON



TZOTZIL



BECAN



CRACKLE

PEPPERS		HOT Hybrid				Pricing on page 76		
	Days	Flesh	Color	Relative Scoville Rating	Disease	Use	Features	
<i>Hot Cherry</i>								
NEW 37467	Bombita	68		Green to Red	-		FM, P	<i>Bombita is the perfect shape, 1.25-1.5" average, for pickling, stuffing and processing. Great tasting and easy to pick.</i>
NEW 37417	Time Bomb	65		Green to Red	1,000	TMV	FM, P	<i>Produces red, hot cherry peppers with a light smoky flavor. Fruit is 1.6 x 1.6". Has light heat and are great pickled, processed or chopped into salsas.</i>
<i>Hot Wax</i>								
37422	Blazing Banana	60 - 70	Thick	Yellow to Red	6,000 to 6,500	BLS ^{1,2,3}	FM, P	<i>Outstanding early maturing variety that displays a strong branched plant with excellent fruit coverage. Fruit size of 9 x 1.75 - 2".</i>

PEPPERS HOT Hybrid		M=1,000 seeds					
Priced per package	100 Seeds	500 Seeds	Priced per 1,000 seeds in these package sizes				
			1M	5M	25M	50M	
<i>Anaheim</i>							
37412	Charger	13.65	60.35	86.15	79.75	75.95	73.00
37462	Spitfire	10.50	46.30	66.10	61.20	58.25	56.00
<i>Ancho</i>							
37463	Carranza	9.50	41.85	59.75	55.30	52.65	50.60
37455	Tiburón ^{F300}	7.55	33.20	47.40	43.85	41.75	40.10
37425	Trident ^{F300}	9.90	43.60	62.25	57.60	54.85	52.70
<i>Cayenne</i>							
37458	Arapaho ^{Cheyenne}	10.15	44.75	63.90	59.15	56.30	54.10
<i>Habanero</i>							
37423	Kabala	12.75	56.40	80.55	74.55	71.00	68.25
37432	Rey Pakal	12.75	56.40	80.55	74.55	71.00	68.25
<i>Hot Cherry</i>							
37467	Bombita	15.50	68.40	97.70	90.45	86.10	82.75
37417	Time Bomb	12.55	55.45	79.15	73.25	69.75	67.05
<i>Hot Wax</i>							
37422	Blazing Banana	11.00	48.65	69.45	64.30	61.20	58.80

PEPPERS HOT Hybrid		M=1,000 seeds					
Priced per package	100 Seeds	500 Seeds	Priced per 1,000 seeds in these package sizes				
			1M	5M	25M	50M	
<i>Jalapeño</i>							
37459	Centella	5.30	23.35	33.30	30.80	29.30	28.15
37448	Mammoth	11.10	49.05	70.05	64.85	61.75	59.35
37468	Ringleader	11.70	51.60	73.65	68.15	64.90	62.40
37451	Talon	10.00	44.20	63.10	58.40	55.60	53.45
37430	Tzotzil ^{F300}	10.30	45.55	65.05	60.20	57.30	55.05
<i>Miscellaneous Hot</i>							
37464	Becan	13.60	60.10	85.80	79.40	75.60	72.65
37421	Crackle	7.50	33.00	47.10	43.60	41.50	39.90
37465	Potosi	9.40	41.55	59.35	54.95	52.30	50.25
37402	Super Chili	8.55	37.80	53.95	49.95	47.55	45.70
37420	Takara	11.00	48.65	69.45	64.30	61.20	58.80
<i>Specialty Hot Blends</i>							
37480	Flamethrower Blend	17.50	77.25	110.30	102.10	97.20	93.45
37470	Fresno Blend	24.65	109.05	155.75	144.20	137.30	132.00
37490	Skinny Hot Blend	24.65	109.05	155.75	144.20	137.30	132.00

* Multiple packages may be used to fill orders for these quantities.



POTOSI



TAKARA



FLAMETHROWER BLEND



FRESNO BLEND



SKINNY HOT

SHIPPING NOW ONLY \$10⁰⁰
Orders over \$250 are shipped free!

PEPPERS | **HOT Hybrid** | Pricing on page 76

		Days	Flesh	Color	Relative Scoville Rating	Disease	Use	Features
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Jalapeño									
★	37459	Centella	60	Very Thick	Dark Green	4,000 to 6,000	BLS ^{1,2,3} , PMV, PVY, TMV	FM, P	An extremely prolific variety with high quality, uniform, jumbo, dark green fruit that resists cracking. It has a medium to tall plant with an excellent canopy.
	37448	Mammoth	72	Very Thick	Dark Green	3,000 to 5,000	PVY, TMV	FM, P	Produces high quality, uniform, dark green fruit making it ideal for fresh and processing. Truly "mammoth" in size, this jumbo jalapeño is very adaptable for the most discerning markets. Superior yields complement its excellent fruit quality. Continuous set provides for extended harvest window.
NEW	37468	Ringleader	75		Dark Green	1,000 to 2,000	BLS ¹⁻⁵	FM, P	Master the processing market with Ringleader. It's slender, cylindrical fruit allows for uniform cross-section rings. Ideal mild heat, 3.75-4", dark green fruit on a medium-tall, bushy, upright plant.
	37451	Talon	75-80	Thick	Dark Green to Red	3,500 to 6,000	BLS ^{1,2,3}	FM, P	Consistently produces high yields of fruit that are tolerant to anthocyanin and cracking. Vigorous plant. Very adaptable.
	37430	Tzotzil	60	Very Thick	Dark Green to Red	750 to 1,000	BLS ^{0,3,7,8} , PHY	FM, P	Phytophthora tolerant version of PS 11435810. Fruit may be a little longer and slightly more narrow than the 5810.

Miscellaneous Hot

	37464	Becan			Pale Yellow to Red	800 - 1,000	PHY	FM	Santa Fe Grande type hybrid which is used mainly for stuffing. Phytophthora tolerant conversion of Rio de Oro.
	37421	Crackle	65	Thin	Green to Red	1,500 to 3,000		FM	"Finger Hot" type with length of 4 - 5 inches. Multiple harvests with fruit maintaining good size.
	37465	Potosi				4,000 to 4,500	BLS ^{0,3,7,8} , N, TMV	FM	A hybrid Serrano type with large fruit size and classic shape. Very productive.
	37402	Super Chili	75	Thin	Green to Orange Red	40,000 to 50,000		FM, HG	AAS winner. Early, very productive. Home garden. An excellent substitute for Asian cooking.
	37420	Takara	60	Thin	Bright Green to Bright Red	50 to 200		FM	Typical shishito type pepper with small fruit and mild but rich flavor. The compact plant has a spreading habit, short internodes, is well branched and has high production potential. The fruit uniformity is superior to OP strains. The peduncle holds well to the fruit.

Specialty Hot Blends

	37480	Flamethrower Blend		Thin	Brown, Orange, Pink, Red, White, Yellow	200,000		FM	Diverse blend of six vividly colored habanero varieties. Give your customers color options for their hot, hot salsa!
	37470	Fresno Blend		Thin	Red, Orange, Yellow	5,000		FM	Assorted mixture of three brightly colored fresno type varieties. Beautiful on the farm stand.
	37490	Skinny Hot Blend		Thin	Red, Orange, Yellow	3,000 - 4,000		FM	Varied combination of three brilliantly colored, moderately long and narrow varieties. Not overbearingly hot.

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R98114W

POPCORN

EATING QUALITY

No popcorn varieties are hullless. Eating quality is a measurement of flavor, kernel tenderness and hulls that are thin and break and disperse during popping. Thicker hulled hybrids retain the hull in the popped product and tend to remain in your teeth after eating. Factors influencing popcorn quality include kernel moisture and expansion ratio, processing procedures, home storage and handling. Good popcorn should provide at least 98% popped kernels with well under 2% unpopped kernels. Proper care at the processing level helps to assure this.

EATING QUALITY RATING

Good to Poor

EXPANSION

Refers to the increase in volume of unpopped corn after it is popped. To illustrate, if a given volume of unpopped corn expanded to a 40 rating when popped, the volume increase was 40 times. All data is collected on the standard test popper.

LODGING

The percentage of stalks broken below the ear at harvest time.

MUSHROOM SHAPE

The popped shape that is the most desirable for manufacturing caramel corn etc. due to tougher more durable shape after popping. Always less desirable as eating corn.

YIELD

Pounds of shelled corn adjusted to 13.5% moisture.

STORAGE

To maintain the best quality popcorn, store at 13 - 14.5% moisture content.

PEPPERS		HOT OP Heritage Varieties						
▲		Days	Flesh	Color	Class Type	Relative Scoville Rating	Use	Features
37507	Cayenne Large Thick	75	Medium Thick	Green to Red	Cayenne	30,000 to 50,000	P	The commercial variety of the long thin pepper used as a dried ground powder.
37502	Cayenne Long Slim	72	Thin	Green to Red	Cayenne	30,000 to 50,000	P	Very productive, pungent, home garden variety.
37501	Hungarian Yellow Wax	70	Medium Thick	Yellow to Red	Wax	750 to 3,000	FM, P	Cylindrical fruit are 6 to 8" long x 1 1/2 - 2" diameter fruit.
37512	Red Cherry ^{Large}	75	Medium Thick	Medium Green to Red	Cherry	3,500	FM, P	Processing, home garden, and pickling.

POPCORN		Commercial Varieties							
▲		Color	Days	Lodging	Yield per Acre	Expansion	Eating Quality	Mushroom	Features
06039	R98114W ^{F1}	White	105	2%	5000 lbs. +	45	Good	0	An excellent eating-quality white popcorn that yields as well as many yellow hybrids. Strong stalks and roots help resist lodging. It provides high resistance to common rust and intermediate resistance to Goss' Wilt.
06040	R997 ^{F1}	Yellow	105	2%	5000 lbs. +	46	Good	0	A mid-season butterfly popcorn It has long cylinder - shaped ears with easy shelling large, orange kernels and improved stalk strength. It provides high resistance to Grey Leaf Spot and intermediate resistance to Common Rust, Northern Corn Leaf Blight, and Drought.
06027	Ruby Red ^{F1}	Red	100	5%		38	Good	0	A true breeding, glossy burgundy red hybrid with no white kernels. Has stalk strength, yield and expansion equal to the best white hybrids. One of the best eating popcorns.
06026	Shaman's Blue ^{F1}	Dark Blue	105	5%		43	Good	0	Dark blue popcorn hybrid. Has glossy dark blue kernels, large 8" ears, high expanding, tender flakes. Good stalk strength.

ORNAMENTAL		POPCORN	
▲		Days	Features
06006	Little Indian	100	A popular variety with 4 - 5" multi-colored ears. Also very tender eating.
06005	Strawberry	100	A popular variety with strawberry shaped ears for either decoration or popping.

PEPPERS HOT OP Heritage Varieties		M=1,000 seeds			
Priced per package		1/2 oz	1 oz.	4 oz	1#
37502	Cayenne Long Slim	4.30	6.25	19.40	56.20
37501	Hungarian Yellow Wax	4.60	6.70	20.85	60.40
37512	Red Cherry ^{Large}	6.05	8.80	27.40	79.30
Priced per package		250 Seeds	500 Seeds		
Priced per 1,000 seeds in these package sizes				1M	5M
37507	Cayenne Large Thick	5.55	7.55	10.05	6.70

* Multiple packages may be used to fill orders for these quantities.

POPCORN		M=1,000 seeds			
Priced per 1,000 seeds in these package sizes		2.5M	10M	25M	100M
Commercial Varieties					
06039	R98114W ^{White}	4.10	3.60	3.35	3.10
06040	R997 ^{Yellow}	3.95	3.45	3.20	2.95
06027	Ruby Red	7.30	6.80	6.55	6.30
06026	Shaman's Blue	7.85	7.35	7.10	6.85

* Multiple packages may be used to fill orders for these quantities.

ORNAMENTAL POPCORN		Priced per package 4 oz.			
Priced per pound in these package sizes		1#	5#	25#	50#
06006	Little Indian	7.20	19.65	13.10	12.85
06005	Strawberry	5.65	15.45	10.30	10.05



CARBONADO GOLD 

PUMPKINS

PLANTING

Plant pumpkins ½" - 1" deep. For a general rule of thumb plant seed the depth of three times the thickness of the seed. Plant spacing varies depending on fruit size. If planting a large pumpkin give plant approximately 72 sq. ft. of space. Medium sized pumpkins require 30 sq. ft. of space. Pie pumpkins require 24 - 30 sq. ft. of space. Miniature pumpkins require 10 - 24 sq. ft. of space. See the "Pumpkin Planting/Harvesting Timing Chart" on page 85 for additional information.

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

MANAGEMENT

Scout fields every 7 days to ensure crop health. Look for insect, weed, and disease pressure. The first three weeks focus on weeds and insect pressure. Then focus on disease pressure. For weed, insect, and disease identification and treatments consult the Midwest Vegetable Production Guide: https://ag.purdue.edu/btny/midwest-vegetable-guide/Documents/2019/ID-56_2019.pdf or your local extension. Place pollinators in field to ensure maximum fruit set.

HARVEST

Harvest when fruit has developed deep color. Handles will appear dry. Cut handles with shears to protect handles from being broken off.

STORAGE

Clean fruit of dirt and wash in 5% chlorine solution. Let air dry and cure for 10 - 12 days. Make sure air is able to circulate around fruit. It is important to keep fruit dry.

POWDERY MILDEW RATINGS

HR - High Resistance
IR - Intermediate Resistance
T - Tolerant

PLANT SPACING

Each variety or type of pumpkin has an optimum plant spacing for its best performance. If plants are too close, stress and competition can decrease fruit size and possibly even reduce the number of female flowers. Under extreme stress, tight spacing may eliminate the crop entirely.

- Optimum spacing for maximum yield, especially for jack-o-lantern pumpkins, will not necessarily be the best spacing for large fruit size. For large fruit, we would suggest reducing plant density to the next recommended plant population.

PLANT SPACING (CONTINUED)

- Accurate plant spacing will be an equal opportunity environment for every plant.
- Suggested populations are for final plant stands.
- To achieve ideal plant populations it is necessary to either over-plant and hand thin or to plant according to recommendations and hand plant later to fill skips.
- Seed corn maggots, wire worms, mice and birds, floods or lack of rain are all common problems that effect accurate stand establishment.

PLANT SPACING CHART

	Row Width	Distance Between Plants	Plants Per Acre
Category 1	12'	6'	605
Category 2	7 ½ to 9'	4'	1,210 to 1,450
Category 3	6 to 7 ½'	4'	1,450 to 1,815
Category 4	5 to 6'	2'	3,600 to 4,350



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Natural™ VEGETABLE ROOT INOCULANT
Natural™ for Vegetables contains proprietary and patent pending biologicals that colonize the root system of plants. Crop stress such as disease and dry weather can be alleviated, and often systemically, so that root colonization by this treatment can affect the physiology of the whole plant resulting in higher yields. See page 119 for application rates and pricing.

GROWER PREFERRED ALL-STARS ★ PUMPKINS

Growers had great success with these varieties again in 2019. If you are just getting started with pumpkins or looking for a proven variety, take a look at these All-Stars.

LARGE

A long awaited variety in the powdery mildew resistant class with a nice black handle atop a really dark orange, deep ribbed fruit is **Bayhorse Gold**. An 18-22# fruit average make this one a sure winner for the wholesale market.

With its early 95 day maturity, growers can plant **Early Giant** later and still get orange pumpkins for fall. This makes it a preferred choice when challenging spring weather delays planting.

Under ideal growing conditions **Gold Medal** will produce fruit in the 30# size category. This dark orange, large handled variety has a full vine and 90 day maturity.

Growers are still telling us that **Solid Gold** is one of the best varieties that they have ever grown. It is the most uniform 20-25# variety on the market. Remember to give it room, 25 square feet per plant at a minimum. It also has a 105 day maturity so plant accordingly. Its dark orange color and large handle make Solid Gold a winner.

MID SIZE

Growers tell us **Gold Standard** is the highest yielding 13-15# pumpkin in the market. Its dark orange fruit and nice handles make it a winner.

SMALL / PIE

Prankster is a 3-5# PMR pie pumpkin that is dark orange, deep ribbed, and has a very nice sized black handle making this one of the prettiest pie pumpkins on the market.

MINIATURE

A mini pumpkin with powdery mildew tolerance, **Gold Speck** delivers very uniform darker orange fruit, has a larger stem and is higher yielding than similar miniature varieties. Gold Speck is 20% smaller than Jack-B-Quik.

SPECIALTY

With the red veins on a white background, **One Too Many** is the only thing like it on the market. That is what makes it sell.

WHITE

At 20-30# average, **Crystal Star** is one of the largest white pumpkins on the market. Its round shape and classic white color make this fly off the shelf. It has a large vine, so give it room to grow.



Barry Rupp
Vegetable Consultant

PUMPKINS		GIANT						
▲		Days	Weight pounds	Skin	Vine	Spacing Category	Features	
38501	Dill's Atlantic Giant ^{PVP}	120	100 - 600	Orange	Very Large	1	<i>Produces giant show pumpkins.</i>	
38092	Monster Smash ^{F1}	120	50 - 150	Bright Orange	Very Large	1	<i>Complete with slightly flattened/round fruit with moderately defined ribbing, this Rupp release is targeted for those growers who have a passion to enhance their already existing Rupp "Gold Series" pumpkin line. Without question, this invention is sure to be a "smashing" success!</i>	
38007	Prizewinner ^{F1}	120	50 - 200	Orange	Very Large	1	<i>An excellent display pumpkin with superior shape and color to Atlantic Giant.</i>	
38074	World of Color ^{Blend}	120	50 - 125	Multi Colored Mix	Very Large	1	<i>A Rupp product that is a blend of very large pumpkins with coats of many colors. The base of the blend will be a dark red-orange pumpkin that does not fade in the sun. Other colors are white, pink & blue, hubbard blue, plus peach and other nuances discovered in our breeding nursery. All of the fruit are pumpkin shaped and will definitely create a new concept in fall displays.</i>	

PUMPKINS GIANT		M=1,000 seeds				
Priced per package		1 oz.	4 oz.			
Priced per pound in these package sizes		1#	5#	Seeds /lb.		
38501	Dill's Atlantic Giant	13.60	35.70	107.25	104.25	1,400

PUMPKINS GIANT		M=1,000 seeds					
Priced per package		100 Seeds	250 Seeds				
Priced per 1,000 seeds in these package sizes		1M	3M	25M	Seeds /lb.		
38092	Monster Smash	57.50	106.40	283.65	280.40	278.15	2,900
38007	Prizewinner	85.45	158.15	421.70	418.45	416.20	1,300
38074	World of Color ^{Blend}	60.50	112.00	298.55	295.30	293.05	1,200

* Multiple packages may be used to fill orders for these quantities.



20 KARAT GOLD



BAYHORSE GOLD ★



BELLATRIX



CARBONADO GOLD 🚀



EAGLE CITY GOLD



EARLY GIANT ★



GOLD MEDAL ★



GOLD MEDALLION



GOLD RUSH



ORANGE RAVE



PHAT JACK



SOLID GOLD ★

PUMPKINS		LARGE							Pricing on pages 83 & 83
Days	Weight pounds	Skin	Powdery Mildew	Vine	Spacing Category	Bin Count	Features		
38068	20 Karat Gold	100	18 - 22	Dark Orange	IR	Semi Bush	2	40	<i>A Rupp pmt, semi-bush hybrid with dark orange rind color and good handles. A potential option for the shipper market. U.S. Patent #5,811,642</i>
★ 38061	Bayhorse Gold	100	15 - 20	Very Dark Orange	IR	Vine	3	40	<i>Uniform, slightly elevated hybrid with strikingly gorgeous, very dark orange fruit and elongated dark handle. Can be used for roadside sales or wholesale shipping in 40 count bins. Gaining popularity with growers!</i>
38060	Bellatrix	95	25+	Orange	IR	Large Vine	1 or 2	35	<i>Large, round, attractive orange pumpkin with a strong, dark green handle.</i>
🚀 38069	Carbonado Gold	100	15 - 18	Very Dark Orange	IR	Vine	3	40	<i>Dynamic new Rupp pumpkin variety with extremely uniform shape and strong handle. Similar in weight to Bayhorse Gold, with a more rounded shape. Perfect for 40 count shipping bins or roadside retail market.</i>
38062	Eagle City Gold	100	18 - 24	Medium Orange	IR	Vine	3	35 - 40	<i>The shallow ribs on the round fruit make it an ideal choice for carving. Has intermediate resistance to powdery mildew.</i>
★ 38009	Early Giant	95	25 - 30	Dark Orange	IR	Large Vine	2	30 - 35	<i>Upright fruit on a productive plant with excellent orange color. Intermediate resistance to powdery mildew.</i>
★ 38050	Gold Medal	95	25+	Deep Orange		Large	1 or 2	30	<i>A Rupp hybrid that is at the top of the class in appearance for the retail marketer. A large pumpkin with dark color and a great, long handle. U.S. Patent #5,811,642</i>
38071	Gold Medallion	110	30+	Orange		Large	1 or 2	30	<i>A sister hybrid to Gold Medal that is 2 lbs. larger and has a larger vine. U.S. Patent #5,811,642</i>
38523	Gold Rush	120	20 - 35	Deep Orange		Large	1 or 2	30	<i>A large Rupp pumpkin with handles 4" long and 3" in diameter, thick flesh and heavy. U.S. Patent #5,811,642</i>
38508	Howden	105	25	Dark Orange		Vine	2	35	<i>Popular for home garden.</i>



WOLF



SAVE WITH CASH DISCOUNTS

Cash discounts are available throughout the season and are a great way to add money to your bottom line. See page 6 for all of the details.

December.....	6%
January.....	5%
February.....	4%
March.....	3%
April.....	2%

PUMPKINS		LARGE							Pricing on pages 83 & 83
▲		Days	Weight pounds	Skin	Powdery Mildew	Vine	Spacing Category	Bin Count	Features
38500	Jumpin Jack™	120	20 - 40	Orange		Large Very Vigorous	1 or 2	30	<i>A Rupp exclusive. Very large, well handled, taller than wide variety.</i>
38001	Orange Rave F1	100	15 - 25	Dark Orange	IR	Semi Vine	2	35 - 40	<i>A hybrid with rounded to slightly upright fruit and moderate ribbing. Has preferred dark orange color and intermediate resistance to powdery mildew.</i>
38072	Phat Jack	125	50 +	Orange		Medium	1 or 2	25	<i>A very large Jack O' Lantern pumpkin from Siegers. Tall with a thick handle.</i>
★ 38085	Solid Gold F1	100	25	Deep Orange		Medium	2	35	<i>A Rupp hybrid that has performed very well on the farm. Has excellent color, handles and yields. U.S. Patent #5,811,642</i>
38550	Wolf PVP	120	15 - 25	Deep Orange		Large	1	40	<i>Round to oblate shaped fruit with moderate ribs and very thick, long handles. The flesh thickness is excellent which helps to prevent against flat-sided fruit and makes them heavy for their size.</i>

PUMPKINS LARGE		M=1,000 seeds				
Priced per package	250 Seeds	Priced per 1,000 seeds in these package sizes				
		1M	3M	25M	100M	
38068	20 Karat Gold	20.70	55.20	51.95	49.45	48.15
38068	20 Karat Gold F1400	22.90	61.05	57.80	55.30	54.00
38061	Bayhorse Gold F1400	35.15	93.70	90.45	87.95	86.65
38060	Bellatrix F1400	30.10	80.20	76.95	74.45	73.15
38069	Carbonado Gold F1400	36.15	96.30	93.05	90.55	89.25
38062	Eagle City Gold F1400	34.75	92.65	89.40	86.90	85.60
38009	Early Giant F1400	24.65	65.65	62.40	59.90	58.60
38050	Gold Medal	19.75	52.55	49.30	46.80	45.50
38050	Gold Medal F1400	21.90	58.35	55.10	52.60	51.30
38050U	Gold Medal Untreated	19.75	52.55	49.30	46.80	45.50
38071	Gold Medallion	18.55	49.45	46.20	43.70	42.40
38071	Gold Medallion F1400	20.75	55.25	52.00	49.50	48.20
38523	Gold Rush	11.95	31.85	28.60	26.10	24.80
38523	Gold Rush F1400	14.15	37.70	34.45	31.95	30.65
38001	Orange Rave F1400	31.95	85.15	81.90	79.40	78.10
38085	Solid Gold	25.40	67.65	64.40	61.90	60.60
38085	Solid Gold F1400	27.60	73.50	70.25	67.75	66.45

PUMPKINS LARGE		M=1,000 seeds				
Priced per package	1 oz.	4 oz.	Priced per pound in these package sizes			
			1#	5#	25#	
38508	Howden	3.25	9.60	29.45	26.45	24.45
38500	Jumpin' Jack™	7.45	21.95	67.45	64.45	62.45
38072	Phat Jack F1400	13.85	40.95	125.90	122.90	120.90
38550	Wolf F1400	16.60	49.15	151.15	148.15	146.15



AUTUMN GOLD



BUS STOP



GOLD STANDARD ★



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SKIDOO GOLD

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PUMPKINS		MID SIZE								
		Days	Diameter Height	Weight pounds	Skin	Powdery Mildew	Vine	Spacing Category	Bin Count	Features
38005	Autumn Gold ^{F1}	90	9 x 12"	8 - 12	Orange		Restricted Vine	3	55	<i>Precocious variety helps fruit develop early color which then can be harvested before other hybrids.</i>
38010	Bus Stop ^{F1}	90	10 x 11"	12 - 15	Orange		Medium	3	45	<i>A hybrid from Rupp that is targeted for the school market. Is suitable for either carving or painting.</i>
★ 38045	Gold Standard ^{F1}	90	13 x 13"	16	Deep Orange		Restricted Vine	3	45	<i>A Rupp pumpkin with good handles, high yields and deep orange color. Will blend right in with Howden to bring the average size down.</i>
38034	Secretariat ^{F1}	105	12 x 9"	15	Dark Orange	IR	Restricted Vine	3	45	<i>Prolific plants produce beautiful, slightly-flattened fruit with thick handles. Works well for binned markets or road-side growers.</i>
38076	Skidoo Gold ^{F1}	90	10 x 11"	12 - 15	Deep Orange	IR	Restricted Vine	3	45	<i>Blocky, heavily ribbed, mid-sized hybrid with powdery mildew tolerance. Improved uniformity and color over comparable varieties in the same weight class.</i>

PUMPKINS MID SIZE		M=1,000 seeds					
	Priced per package	250 Seeds					Seeds /lb.
		1M	3M	25M	100M		
38010	Bus Stop ^{F1400}	14.35	38.15	34.90	32.40	31.10	2,900
38045	Gold Standard	12.80	34.10	30.85	28.35	27.05	3,400
38045	Gold Standard ^{F1400}	15.00	39.95	36.70	34.20	32.90	3,400
38045U	Gold Standard ^{Untreated}	12.80	34.10	30.85	28.35	27.05	3,400
38034	Secretariat ^{F1400}	31.15	82.95	79.70	77.20	75.90	3,500
38076	Skidoo Gold ^{F1400}	31.35	83.50	80.25	77.75	76.45	2,700
	Priced per package	1 oz.		4 oz.		Seeds /lb.	
	Priced per pound in these package sizes	1#	5#	25#			
38005	Autumn Gold	9.35	27.70	85.20	82.20	80.20	6,800

PUMPKINS SMALL / PIE		M=1,000 seeds					
	Priced per package	250 seed					Seeds /lb.
		1M	3M	25M	100M		
38075	Bisbee Gold ^{F1400}	33.10	88.20	84.95	82.45	81.15	2,700
38020	Darling ^{F1400}	26.45	70.45	67.20	64.70	63.40	4,000
38046	Hybrid Pam ^{F1400}	17.75	47.30	44.05	41.55	40.25	2,500
38003	Jack Sprat ^{F1400}	31.30	83.45	80.20	77.70	76.40	5,800
38038	Pik-A-Pie	12.20	32.50	29.25	26.75	25.45	3,500
38038	Pik-A-Pie ^{F1400}	14.40	38.30	35.05	32.55	31.25	3,500
38038U	Pik-A-Pie ^{Untreated}	12.20	32.50	29.25	26.75	25.45	3,500
38067	Frankster ^{F1400}	21.30	56.70	53.45	50.95	49.65	3,400
38047	Touch of Autumn	10.75	28.65	25.40	22.90	21.60	5,400
38047	Touch of Autumn ^{F1400}	12.95	34.50	31.25	28.75	27.45	5,400
38047U	Touch of Autumn ^{Untreated}	10.75	28.65	25.40	22.90	21.60	5,400
	Priced per package	1 oz.		4 oz.		Seeds /lb.	
	Priced per pound in these package sizes	1#	5#	25#			
38507	Small Sugar ^{Asgrow Strain}	4.80	14.10	43.35	40.35	38.35	4,000



BISBEE GOLD 🚩



DARLING



JACK SPRAT



PIK-A-PIE



PRANKSTER ★



TOUCH OF AUTUMN

PUMPKINS		SMALL / PIE							
▲		Days	Diameter Height	Weight pounds	Skin	Powdery Mildew	Vine	Spacing Category	Features
🚩	38075 Bisbee Gold F1 🚩🌱	90	6 1/2 x 6 1/2"	6 - 7	Very Dark Orange	HR	Semi Bush	3	Gorgeous dark orange fruit and jet black handles. Has tremendously refined ribbing and high resistance to PM. Top of the line!
	38020 Darling F1 🌱	90	8 x 12"	6 - 8	Dark Orange	IR	Semi Bush	3	Unique tall pie pumpkin with intermediate resistance to powdery mildew.
	38046 Hybrid Pam F1 🌱	90	6 x 6"	5 - 7	Deep Orange		Semi Bush	3	A restricted vine, Spookie type hybrid.
	38003 Jack Sprat F1 🌱	100	5" x 6"	2 - 3	Dark Orange	IR	Semi Bush	3	Fruit have a nice dark orange exterior and dark green embedded handles. Very uniform in size and shape. High fruit numbers per plant with an excellent yield potential.
	38038 Pik-A-Pie F1 🚩🌱	85	6 x 5"	5 - 6	Dark Orange		Semi Bush	3	Produces uniform fruit with a large, dark green handle. Yields an abundance of excellent quality pumpkins.
★	38067 Prankster F1 🚩🌱	85	6 x 4"	3	Dark Orange	IR	Semi Bush	3	An excellent stemmed powdery mildew tolerant pumpkin. Good size for boxing, painting and the school market.
	38507 Small Sugar Asgrow Strain	100	6 x 7"	5 - 6	Orange		Medium	3	A selection with a distinctly superior handle when compared to other Small Sugar strains.
	38047 Touch of Autumn F1 🚩🌱	95	6 x 5"	2 1/4	Medium Deep Orange	IR	Semi Bush	3	A hybrid, with excellent handles and is just the right size for boxing. In most university trials is the highest yielding in fruit numbers and pounds per acre.

PUMPKIN PLANTING/HARVESTING TIMING CHART

Just like sweetcorn, when a grower is planting pumpkins continually for the whole season, the plan is of utmost importance. The planting date plus the maturity of the hybrid should equal the potential harvest date. Realizing that increasing or decreasing the heat and sunlight of each year can shorten or elongate this time span. Use the following chart to align your pumpkin variety maturity with your desired harvest date to schedule planting.

Variety Maturity	Planting Date: May 1 Harvest Range	Planting Date: May 15 Harvest Range	Planting Date: June 1 Harvest Range	Planting Date: June 15 Harvest Range	Planting Date: July 1 Harvest Range
80	July 10 - July 30	July 24 - Aug. 13	Aug. 10 - Aug. 30	Aug. 24 - Sept. 13	Sept. 9 - Sept. 29
85	July 15 - Aug. 4	July 29 - Aug. 18	Aug. 15 - Sept. 4	Aug. 29 - Sept. 18	Sept. 14 - Oct. 4
90	July 20 - Aug. 9	Aug. 3 - Aug. 23	Aug. 20 - Sept. 9	Sept. 3 - Sept. 23	Sept. 19 - Oct. 9
95	July 25 - Aug. 14	Aug. 8 - Aug. 28	Aug. 25 - Sept. 14	Sept. 8 - Sept. 28	Sept. 24 - Oct. 14
100	July 30 - Aug. 19	Aug. 13 - Sept. 2	Aug. 30 - Sept. 19	Sept. 13 - Oct. 3	Sept. 29 - Oct. 19
105	Aug. 4 - Aug. 24	Aug. 18 - Sept. 7	Sept. 4 - Sept. 24	Sept. 18 - Oct. 8	Oct. 4 - Oct. 24
110	Aug. 9 - Aug. 29	Aug. 23 - Sept. 12	Sept. 9 - Sept. 29	Sept. 23 - Oct. 13	Oct. 9 - Oct. 29
115	Aug. 14 - Sept. 3	Aug. 28 - Sept. 17	Sept. 14 - Oct. 4	Sept. 28 - Oct. 18	Oct. 14 - Nov. 3
120	Aug. 19 - Sept. 8	Sept. 2 - Sept. 22	Sept. 19 - Oct. 9	Oct. 3 - Oct. 23	Oct. 19 - Nov. 8

Pumpkin quality will be the best when harvested nearest to the variety's actual maturity. First, select the maturity of the variety you are using, then pick the date you would like your pumpkins to look the freshest (nice green handle). The required planting date will be at the top of the column.

For example; if you are planting Gold Medal (95 day) and you want them to look their freshest on September 15th, you will want to plant on June 15. However, if you are planting Gold Rush (120 day) and you also want them to look their freshest on September 15th, you will want to plant on May 15.

SHIPPING
NOW ONLY
\$10⁰⁰

Orders over \$250
are shipped free!



BATWING MIX



GOLD DUST



GOLD SPECK ★



JACK-B-QUIK



ORANGITA

PUMPKINS		MINIATURE							
▲		Days	Diameter Height	Weight pounds	Skin	Powdery Mildew	Vine	Spacing Category	Features
38548	Batwing Mix	90	3"	¼	Orange/ Green		Semi Bush	4	A unique orange and dark green colored pumpkin when harvested early to full orange color at maturity.
38066	Gold Dust ^{F1}	95	3 ½ x 2"	⅓	Orange	HR	Semi Bush	4	A Rupp developed semi bush hybrid with darker fruit than Jack-B-Quik plus powdery mildew tolerance. Most fruit set close to the crown early and escape virus flecking. The strain that growers prefer.
Waiver Needed: Our current seed lot may produce up to 15% fruit that vary in shape, color, and size. We ask that you sign the "Gold Dust Agreement" on page 129. Pricing has been adjusted for this current seed lot.									
★	38077 Gold Speck ^{F1}	95	3 x 2"	¼	Orange	HR	Bush	4	A Rupp sister bush hybrid to Gold Dust, with similar vine and fruit characteristics, but smaller than Jack-B-Quik and Munchkin. Most fruit set close to the crown early and escape virus flecking. Our highest yielding Jack-B-Little type. The strain that growers prefer.
38525	Jack-B-Quik	95	3 x 2"	¼	Orange		Medium	4	A more ribbed mini with taller and darker orange fruit.
38042	Orangita	80	5 x 3	1 - 1 ½	Orange	HR	Semi Bush	4	Beautiful mini pumpkin featuring a disk shape with deep ribbing. Makes for an excellent display.
38043	Spark	90	3.5 x 2"	½	Deep Orange / Yellow Stripes	HR	Vine	4	Very uniform, striped ornamental variety with a dark green handle that is strongly attached to the fruit. Excellent for Fall decorations when used together with Caperita.
38538	Wee-B-Little ^{PVP}	95	3 x 3"	½	Orange		Bush	3	An AAS winner from Syngenta that can be carved plus excellent plant health on a tight bush plant. A true mini pumpkin.
Growing Tip: Wee-B-Little is known for its poor yields! High levels of nitrogen causes excessive plant growth and low fruit set. If you force it into the survival mode (more like a weed) with low nitrogen, plant size will be reduced and fruit numbers will multiply and give much better yields. We have proven to ourselves that low input production improves yields.									
38078	WeeeeeOne ^{F1}	95	3 x 3"	½	Orange	IR	Large Bush	3	A unique miniature pumpkin with shallow ribs. Vigorous bush with intermediate resistance to powdery mildew and very high yields.
Waiver Needed: Our current seed lot is a blend that will produce 2 sizes, 60% typical WeeeeeOne size fruit and 40% smaller fruit. Both sizes are uniform and would be marketable. We ask that you sign the "WeeeeeOne Agreement" on page 130. Pricing has been adjusted for this current seed lot.									

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SPARK



WEE-B-LITTLE



WEEEEONE



SAVE WITH CASH DISCOUNTS

Cash discounts are available throughout the season and are a great way to add money to your bottom line. See page 6 for all of the details.

December	6%
January	5%
February	4%
March	3%
April	2%

PUMPKINS MINIATURE		M=1,000 seeds				
Priced per package	250 seed	Priced per 1,000 seeds in these package sizes				Seeds /lb.
		1M	3M	25M	100M	
38066 Gold Dust	14.35	38.20	34.95	32.45	31.15	6,600
38066 Gold Dust ^{FI400}	16.55	44.05	40.80	38.30	37.00	6,600
38066U Gold Dust ^{Untreated}	14.35	38.20	34.95	32.45	31.15	6,600
38077 Gold Speck	19.90	53.00	49.75	47.25	45.95	7,800
38077 Gold Speck ^{FI400}	22.10	58.85	55.60	53.10	51.80	7,800
38077U Gold Speck ^{Untreated}	19.90	53.00	49.75	47.25	45.95	7,800
38042 Orangita ^{FI400}	25.35	67.50	64.25	61.75	60.45	6,500
38043 Spark	26.25	69.95	66.70	64.20	62.90	7,500

PUMPKINS MINIATURE		M=1,000 seeds				
Priced per package	250 seed	Priced per 1,000 seeds in these package sizes				Seeds /lb.
		1M	3M	25M	100M	
38538 Wee-B-Little	9.95	26.45	23.20	20.70	19.40	7,500
38538 Wee-B-Little ^{FI400}	12.10	32.25	29.00	26.50	25.20	7,500
38538U Wee-B-Little ^{Untreated}	9.95	26.45	23.20	20.70	19.40	7,500
38078 WeeeeeOne ^{FI400}	10.95	29.10	25.85	23.35	22.05	
38078U WeeeeeOne ^{Untreated}	8.75	23.30	20.05	17.55	16.25	

Priced per package	1 oz.		4 oz.		Seeds /lb.
	1#	5#	25#		
38548 Batwing Mix	13.45	39.80	122.35	119.35	5,900
38525 Jack-B-Quik	9.00	26.60	81.80	78.80	7,100

BARRY'S PUMPKIN GROWING TIPS FOR SUCCESS

My name is Barry Rupp and I have been serving growers as a vegetable seed consultant with Rupp Seeds for over 30 years. Our company started breeding pumpkins about 25 years ago and I've been passionate about them ever since. Following are my "Tips for Success for the Novice Pumpkin Grower" or maybe "Reminders for Success for the Experienced Pumpkin Grower". Regardless of your experience in raising pumpkins, here are nine helpful suggestions, listed in no particular order:

CROP ROTATION

I strongly recommend that growers NOT plant pumpkins in the same field in consecutive years and would suggest that waiting a minimum of three years between pumpkin crops would be best. If you have adequate acreage, I would even prefer that you wait 5 to 7 years before raising another pumpkin crop in that same field. This helps to reduce and possibly even prevent soil diseases and pest infestations. When possible, raising pumpkins after wheat is a great option. Rotating pumpkins in after corn and soybeans can increase the likelihood of higher rootworm populations and phytophthora, which will be detrimental to the crop.

PLANT SPACING

Correct plant spacing is very important and will vary by product. Planting a full vine variety too close can increase disease pressure. Diseases like powdery mildew or fruit rot can become more prevalent when the vine foliage does not have adequate space for air movement to aid in removing moisture in the plant canopy. Planting too closely will also affect fruit size and yield by holding too much heat in the field and restricting the ability for pollinators to do their job. It also impedes insecticide and fungicide effectiveness by restricting spray penetration.

PEST CONTROL

The biggest problem I hear about concerning insect and disease control is when growers are using the same product in repeated applications. Rotate your insecticide and fungicides based on their mode of action and NOT just brand name or active ingredient. Remember scouting is one of your best tools. For chemical recommendations, consult the Midwest Vegetable Production Guide https://ag.purdue.edu/btny/midwest-vegetable-guide/Documents/2019/ID-56_2019.pdf.

POLLINATION

Pollinators can have the significant effect on pumpkin yield. I have heard it can take 14 - 17 visits by a pollinator (bees, etc.) in order for a flower to be fully pollinated. Scout your fields in the morning and if you don't see or hear bees, I recommend bringing in 1 hive of bees per acre.

VARIETY CHOICE

Make sure you know your target market before selecting which hybrids you want to grow. Most retail markets will accept a wide range of sizes, shapes and colors, where wholesale markets tend to have more specific requirements around bin count, size, shape, color and handle.

FIELD LOCATION

Vine crops typically perform better on well-drained sandy soils. The heavier the soils, the greater the importance of drainage. When a pumpkin is ripe, any rain that gets taken up by the plant is deposited into the seed cavity, which may lead to and even speed up the process of fruit rot.

BIOLOGICS

Beneficial bacteria in the soil, or added at planting time, will colonize on the roots and improve root and plant health which will help the plant handle stress (i.e. - drought or excessive water) later in the season.

PLANTING TIMING

This is a topic we discuss often as we continue to develop new varieties. If you are currently growing a late maturing variety and choose to also plant an early variety, DO NOT plant them on the same day. The early variety usually ripens way too early for your market and will likely rot before you harvest. We have a very handy "Pumpkin Planting/Harvesting Timing Chart" on page 85 to assist you with your planting dates.

FERTILITY

Soil testing can't be emphasized enough. Know what is already in your soil, and what you need to add. For invaluable information of this, see the Midwest Vegetable Production Guide link listed under Pest Control.





BLACK KAT **NEW**



BLUE DOLL



GOOSE BUMPS II
KNUCKLE HEAD



HSC151



INDIAN DOLL **NEW**



MELLOW YELLOW



NAKED BEAR



NEW ENGLAND
CHEDDAR

The Pink Pumpkin Patch Foundation was created in 2012 to aid in the fight against breast cancer. America's pumpkin growers have committed to giving a percentage of proceeds from every pink pumpkin sold to organizations involved in breast cancer research. Learn more about the Pink Pumpkin Patch 501(c)(3) charitable foundation. Visit www.PinkPumpkinPatch.org for details.



Please send pledge form and funds to:

Pink Pumpkin Patch Foundation
PO Box 670
Rocky Ford, CO 81067

For promotional pledge form,
please visit pinkpumpkinpatch.org

For promotional materials,
please visit pinkpumpkinpatch.org/retail-support



PUMPKINS		SPECIALTY						
		Days	Diameter Height	Weight pounds	Skin	Vine	Spacing Category	Features
NEW	38089 Black Kat ^{F1}	77		½ - 1	Black	Semi Bush	4	Very dark green pumpkin having a classic shape with deep ridges. Will start to turn orange after approximately 2 months of storage. Intermediate tolerance to PM. Plant no earlier than June 22.
	38012 Blue Doll ^{F1}	100	12 x 10"	20 - 24	Blue	Very Large Vine	2	Features an exotic blue color and an almost square appearance with deep ribbing. Exhibits deep orange, sweet flesh that can be used for pies, soup, and gourmet culinary delights. Great for stacking displays.
	38093 Goose Bumps II ^{F1}	95	8 X 8"	8 - 12	Orange	Medium	3	Improved Goose Bumps with higher percentage of fruit covered with warts.
	38048 HSC151	110	8 ½ x 11"	9 - 14	Medium Orange / Green Stripes	Medium	3	Totally hullless, the roasted seeds are delicious with a nutty texture. Compared to other hullless varieties, maturity is earlier and seed yield is exceptional.
NEW	38081 Indian Doll ^{F1}	100		20 - 24	Deep Orange	Vine	2	Indian Doll features a deep-orange color and an almost square appearance. Sweet flesh is great for pies, soup and gourmet culinary delights. Great for fall decorations.
	42939 Jarrahdale	95	10"	7 - 8	Blue	Medium	2	The favorite Australian winter squash. Excellent quality flesh, beautiful looking fruit. Good to use for both food or ornamental use.
	38088 Knuckle Head ^{F1}	105	12 x 10"	12 - 16	Orange	Medium	3	Largest variety in the Super Freak series.
	38044 Mellow Yellow	100	10 x 12	12 - 15	Yellow	Vine	2	Slightly elevated profile. Medium ribbing. Intermediate tolerance to PM.
	38030 Naked Bear	105	5 x 6"	2 - 4	Light Orange	Medium	3	Large handled, naked seeded variety. High yielding product for either boxed pie pumpkin or edible seed pack markets.
	42969 New England Cheddar ^{F1}	112	8 ½ x 12"	15	Tan	Vine	2	A hybrid that is excellent for industrial, or home processing (canning or pies) or other uses. It has a uniform rind color and deep orange flesh. It has superior dry matter and sugar content when compared with Long Island Cheese or Dickinson Field.
★	42961 One Too Many	110	14"	20	White Back- ground with Red Veins	Large Vine	2	A Rupp product with outstanding potential for decorative use, developed through cross species breeding work. Fruit are 75% round with about 25% oblong fruit.

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ONE TOO MANY ★



PORCELAIN DOLL



RED WARTY THING



SMALL WORLD OF COLOR



THUMPKIN

Natural

See page 119 for rates and pricing.

PUMPKINS		SPECIALTY						
		Days	Diameter Height	Weight pounds	Skin	Vine	Spacing Category	Features
38029	Porcelain Doll ^{F1}	110	12 x 10"	20 - 24	Pink	Very Large Vine	3	<i>This eye-catching hybrid pink pumpkin with deep ribbing and almost square appearance, stacks well and is sure to be a winner for your market stand! Porcelain Doll has deep-orange sweet flesh that can be used for pies, soup and other gourmet delights. When picking, wait for the stem to get fully corky for maximum pink potential. All growers are encouraged to join the fight against breast cancer and sign the pledge. You can download the pledge form on the The Pink Pumpkin Patch Foundation website at www.pinkpumpkinpatch.org.</i>
42953	Red Warty Thing ^{Essex}	110	14"	20	Bright Orange / Warty	Large Vine	2	<i>A variety sourced from the U.S. Seed Bank with an appearance that is well suited as an unusual addition for the decorative market. Good eating, Hubbard type flesh, very hard, thick rind.</i>
38533	Rouge Vif d'Etampes ^{Cinderella}	105	15 x 6"	20	Reddish Orange	Vine	2	<i>A unique pumpkin from France. A flattened, deeply ridged fruit. Surprising beauty, great yield and flavor. Cinderella type used for stacking displays.</i>
38084	Small World of Color	110	12 x 11"	25 - 30	Multi Color	Vine	1	<i>A Rupp mix with round pumpkin shaped fruit in the maxima class that can be used in a new way of decorating. The blend contains Crystal Star that will keep its white color (not turn blue or yellow), plus a pink and also a pink & blue variety.</i>
38549	Thumpkin	120	14 x 8"	15 - 25	Dark Orange	Vine	1	<i>Hard stemmed pumpkin with unique flattened fruit and a gigantic handle. Plant at 72 square feet per plant. Crowding results in fewer but larger pumpkins. From the same supplier as Wolf.</i>

PUMPKINS SPECIALTY		M=1,000 seeds					
Priced per package		100 Seed	250 Seed				
Priced per 1,000 seeds in these package sizes		1M	3M	25M	55M		
38089	Black Kat ^{F1400}	16.95	31.30	83.35	80.10	77.60	76.30
38012	Blue Doll ^{F1400}	17.95	33.20	88.50	85.25	82.75	81.45
38093	Goose Bumps II ^{F1400}	23.15	42.85	114.15	110.90	108.40	107.10
38048	HSC151 ^{F1400}	13.15	24.30	64.80	61.55	59.05	57.75
38081	Indian Doll ^{F1400}	17.95	33.20	88.45	85.20	82.70	81.40
38088	Knuckle Head ^{F1400}	23.15	42.85	114.15	110.90	108.40	107.10
38044	Mellow Yellow ^{F1400}	18.70	34.55	92.10	88.85	86.35	85.05
38030	Naked Bear	14.85	27.50	73.30	70.05	67.55	66.25
New England Cheddar							
42969	Cheddar	7.25	13.35	35.55	32.30	29.80	28.50
New England Cheddar ^{Untreated}							
42969U	Cheddar	7.25	13.35	35.55	32.30	29.80	28.50

PUMPKINS SPECIALTY		M=1,000 seeds					
Priced per package		100 Seed	250 Seed				
Priced per 1,000 seeds in these package sizes		1M	3M	25M	55M		
42961	One Too Many	32.05	59.35	158.25	155.00	152.50	151.20
42961U	One Too Many ^{Untreated}	32.05	59.35	158.25	155.00	152.50	151.20
42961	One Too Many ^{F1400}	33.25	61.55	164.10	160.85	158.35	157.05
38029	Porcelain Doll ^{F1400}	24.75	45.80	122.10	118.85	116.35	115.05
38084	Small World of Color	44.90	83.10	221.55	218.30	215.80	214.50
Priced per package		1 oz.	4 oz.				
Priced per pound		1#	5#	25#	Seeds /lb.		
42939	Jarrahdale	4.80	14.10	43.35	40.35	38.35	2,200
42953	Red Warty Thing	9.95	29.35	90.20	87.20	85.20	2,400
42953U	Red Warty Thing ^{Untreated}	9.95	29.35	90.20	87.20	85.20	2,400
38533	Rouge Vif d'Etampes	8.00	23.65	72.75	69.75	67.75	1,800
38549	Thumpkin ^{F1400}	17.95	53.05	163.15	160.15	158.15	2,100



CASPERITA



SNOWBALL **NEW**



BLANCO



COTTON CANDY



FLAT WHITE BOER FORD



FLAT STACKER

PUMPKINS		WHITE							
		Days	Diameter Height	Weight pounds	Skin	Powdery Mildew	Vine	Spacing Category	Features
38532	Baby Boo ^{PVP}	100	3 x 2"	¼	White		Vine	4	A white Jack-B-Quik type variety. Should be planted later than Jack-B-Quik types because it will turn a pale yellow at full maturity.
38032	Casperita ^{F1}	77	3 x 2"	½ - 1	White	IR	Semi Bush	4	Stunning personal sized hybrid with good yield. Classic shape that can be used for both ornamental and edible purposes. Ideal size for restaurant use.
NEW 38004	Snowball ^{F1}	90	6 x 6"	1-2	White	IR	Vine	4	Very high yielding variety with attractive smooth round fruit. Bright white coloration with a dark green stem. Has the ability to hold white color under stress.
38033	Blanco	100	8 x 6"	4 - 6	White		Medium	4	Flattened shape, medium rib and long handle. Has shown moderate resistance to color change due to sun or light frost. Great alternative for growers who require a consistent high quality white pumpkin. The stay white gene extends the harvest window.
38065	Cotton Candy ^{F1}	110	9 x 8"	5 - 12	White		Vine	3	A Rupp white pumpkin with good handles, a blend of strains that range between 5 and 12 lbs. Harvest and store in the dark to maintain best white color. Excellent for painting. Flesh color is white. Despite its name, this is not good for eating.
38016	Casper	90	8 x 10"	10 - 20	White		Medium	3	A smooth, white-skinned pumpkin for painting. Bright white background.
38510	Flat White Boer Ford	115	10 x 4"	15 - 17	White		Large	2	A flat pumpkin with a creamy white rind and thick orange flesh. The vines are vigorous, providing good cover for the fruit. It is both superbly tasty and great for fall decoration. Stacks well.
38041	Flat Stacker	90 - 95		15 - 20	White		Semi Bush	4	Extremely oblate shape with deep ribbing. Great for stacking. Good disease resistance.
38086	Crystal Star	100	12 x 11"	25 - 35	White		Medium	2	A Rupp variety that will maintain its true white color (not turn blue or yellow at maturity) and be a pumpkin shape.
38547	Full Moon ^{PVP}	115		25 - 75	White		Large	2	A large white display pumpkin from Hollar. Harvest when white and store in the shade to maintain white color.

FarMore® FI400 Cucurbits

The early-season insect protection offered by FarMore Technology can prevent or eliminate damage caused by cucumber beetles. Additionally, the insecticide component has shown a remarkable ability to improve plant vigor and growth under certain environmental conditions. This patented vigor effect leads to more advanced crop development and superior performance that is especially important when pumpkin crops are under stress. <http://www.syngenta-us.com/seed-treatment/far-more-fi400-cucurbits>

FarMore Technology provides systemic and post-emergence disease protection against general damping-off and seedling blight, Fusarium spp., Pythium spp., Rhizoctonia spp., Alternaria spp. and seed-borne Sclerotinia spp. in selected vegetables.

FarMore offers targeted protection from a variety of insects without harming beneficial insects and pollinators to help get crops off to a healthy start and maximize yield potential. Insects include; aphids, cucumber beetles, flea beetles, leafminers, seedcorn maggots, wireworms and whiteflies.



FarMore® treated items are highlighted in green in the price tables.

Look for this symbol in the product description tables marking FarMore treated items.



CRYSTAL STAR ★



CELESTA



CHAMPION



CRUNCHY KING



THOR

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\$10⁰⁰
Orders over \$250
are shipped free!

RADISH		Days	Shape	Features
39104	Celesta ^{F1}	25	Globe	Excellent quality and reliability. Uniform round bulbs, bright red bulb color, very good internal quality. Strong against Peronospora on bulbs and foliage.
39003	Champion	21	Globe	Bright red, globe-shaped, very firm. Slow to pith.
39105	Crunchy King ^{F1} 🌱	24	Globe	Holds round shape and does well all season. Strongest in Fall and Spring slots. Bright white interior with attractive dark red skin. Has very high recovery and is slow to pith.
39001	Easter Egg II	28	Globe	Multi-line mix for the home garden. Red, pink, purple, violet and white radishes; good flavor.
39007	French Breakfast	24	Oblong	Skin is rose scarlet with a white tip. Flesh is white, tender and coarser than most varieties.
39102	Pearl ^{F1}	25	Globe	<i>Crop failure for 2020.</i> White round radish with a small green neck for open field production. Very vigorous growth and good resistance to cracking. Nice mix with reds.

RADISH		WINTER / ORIENTAL		
Days	Features			
39701	April Cross ^{F1} Daikon Japanese Type	60	Extra slow bolting. Plant in early spring. Up to 15" long and 2 lbs.	

SPINACH		Hybrid		
Days	Features			
41001	Olympia 🌱	45	A fast growing and long standing smooth leaf hybrid for early spring or late summer sowing. Tolerant to downy mildew.	
41007	Thor 🌱	35	New baby leaf variety with beautiful, dark green, glossy, semi-savoy leaves. Combined white rust and downy mildew disease package. Well suited for late fall and early spring plantings.	

PUMPKINS WHITE	M=1,000 seeds					
	100 seed	250 seed	1M	3M	25M	100M
38033 Blanco ^{F1400}	29.95	79.75	76.50	74.00	72.70	
38032 Casperita ^{F1400}	27.70	73.80	70.55	68.05	66.75	
38065 Cotton Candy	14.75	39.30	36.05	33.55	32.25	
38065 Cotton Candy ^{F1400}	16.95	45.15	41.90	39.40	38.10	
38065U Cotton Candy ^{Untreated}	14.75	39.30	36.05	33.55	32.25	
38086 Crystal Star ^{F1400}	39.65	73.35	195.60	192.35	189.85	188.55
38086U Crystal Star ^{Untreated}	38.45	71.20	189.75	186.50	184.00	182.70
Flat White Boer Ford ^{F1400}	18.70	49.85	46.60	44.10	42.80	
38041 Flat Stacker ^{F1400}	16.95	31.30	83.35	80.10	77.60	76.30
38547 Full Moon	32.15	59.45	158.45	155.20	152.70	151.40
38004 Snowball ^{F1400}	31.80	84.75	81.50	79.00	77.70	
Priced per package		1 oz.	4 oz.			
Priced per pound in these package sizes				1#	5#	25#
38532 Baby Boo	14.65	43.30	133.10	130.10	128.10	
38016 Casper	6.10	18.05	55.40	52.40	50.40	

RADISH	M=1,000 seeds				
	4 oz.	1#	5#	25#	
39003U Champion ^{Untreated}	4.10	9.65	9.40	9.15	
39001 Easter Egg II	8.40	19.90	19.65	19.40	
39007U French Breakfast ^{Untreated}	4.00	9.45	9.20	8.95	
Priced per 1,000 seeds in these package sizes		10M	50M	250M	1000M
39104 Celesta	1.20	1.10	1.05	1.00	
39105 Crunchy King ^{F300}	1.43	1.33	1.28	1.23	
39102 Pearl	Crop Failure for 2020				

SPINACH Hybrid	M=1,000 seeds			
	5M	25M	250M	1,000M
41001 Olympia ^{F300}	0.56	0.48	0.43	0.40
41007 Thor ^{F300}	0.54	0.46	0.41	0.38

RADISH WINTER/ORIENTAL	M=1,000 seeds		
	1M	5M	25M
39701 April Cross	11.15	9.75	8.85



BLONDE BEAUTY

SQUASH SUMMER

PLANTING

Direct seed into field. Plant $\frac{1}{2}$ " - $\frac{3}{4}$ " deep. Row spacing should range from 36" - 60" apart. In row spacing ranges from 18" - 24".

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

MANAGEMENT

Scout fields every 7 days. Inspect for weeds, insect, and disease infestation.

HARVEST

Harvest every other day. Fruit should be 7 - 8" in length and 1 - $2\frac{1}{2}$ " in diameter. Another way to determine harvestability is to harvest when blossom has wilted.

STORAGE

Store at 40 - 50°F and at 95% humidity.

DISEASE CODES

CMV - Cucumber Mosaic Virus
DM - Downy Mildew
PM - Powdery Mildew
PRV - Papaya Ringspot Virus
WMV - Watermelon Mosaic Virus
ZYMV - Zucchini Yellows Mosaic Virus

HERBICIDE CAUTION

Some pre-emergence herbicides can and will cause distortions in squash and pumpkins, especially the species with the corky stems. It also has been noticed in hardstem varieties. These distortions may show up in both color or shape.



BASIMA



DUNJA ★



GREEN MACHINE



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LIBERTY



PAYCHECK



SPINELESS BEAUTY ★



SPINELESS
PERFECTION ★



SPINELESS
SUPREME



STARSHIP

SQUASH **SUMMER GREEN Hybrid** Pricing on page 94

		Days	Harvest Length	Color	Type	Fruit Shape	Disease	Features
42092	Basima	40	4"	Pale Green	Lebanese	Tapered	WMV, ZYMV	Strong plant habit with semi-erect stem and open habit. Very productive. Perfect for stuffing.
★ 42096	Dunja	45	7 - 8"	Dark Green	Zucchini	Cylindrical	PM, WMV, ZYMV	A high yielding variety with a compact and open plant for ease of picking. Glossy fruit also exudes fine flecking for a quite handsome exterior.
42009	Green Machine	45	7 - 8"	Medium Dark Green	Zucchini	Cylindrical	CMV, PM, WMV, ZYMV	Widely adaptable, high yielding variety. Has a strong semi-open plant with an excellent disease package.
42017	Kopana	45	7 - 8"	Dark Green	Zucchini	Cylindrical	PM, PRSV, WMV, ZYMV	Selected for high tunnel production in the spring. Vigorous, open plant with shiny and slightly flecked fruit. Works best in the presence of some pollination. Uniform high quality fruit for early market. High yielding. Can get nine feet tall.
42052	Liberty	45	8"	Dark Green	Zucchini	Cylindrical	PRSV, WMV, ZYMV	Strong, open and spineless plant promoting ease of picking and less damage at harvest. Attractive glossy fruit maintain a cylindrical shape and twist off easily at maturity.
42088	Paycheck	42	7 - 8"	Medium Green	Zucchini	Cylindrical	CMV, PM, WMV, ZYMV	In eastern trials, it has shown good adaptability and excellent fruit quality. Works well in cooler conditions.
★ 42027	Spineless Beauty	50	7 ½ - 8 ½"	Medium Green	Zucchini	Cylindrical		Popular with growers due to lack of petiole spines, open plant habit, large yields, classy cylindrical fruit, and continuous setting ability.
★ 42094	Spineless Perfection	44	7 - 8"	Medium Green	Zucchini	Cylindrical	PM, WMV, ZYMV	A spineless variety that integrates more refined flecking onto a rich looking glossy fruit. Contains the "easy pick" characteristic meaning the fruit are easily twisted from the plant leaving the peduncle and fruit still intact.
42051	Spineless Supreme	45	7 - 8"	Medium Green	Zucchini	Cylindrical	CMV, PM, WMV, ZYMV	Newest of the spineless series from Syngenta. Offers improved virus and disease protection over its predecessors.
42135	Starship	45	2 x 3 - 4"	Medium Dark Green	Scallop	Dish		A quality scallop squash that consistently maintains its shape and glossy dark green color through multiple harvests without rounding. A vigorous bush plant.



BLONDE BEAUTY



GOLDEN GLORY ★



GRANDPRIZE



ONE BALL

Naturall™
 Enhance root growth and increase seedling vigor for healthier plants and higher yields with Naturall™ for Vegetables.
 See page 119 for rates and pricing.

SQUASH		SUMMER YELLOW Hybrid						
		Days	Harvest Length	Color	Type	Fruit Shape	Disease	Features
42018	Blonde Beauty	40	5 - 7"	Glossy Yellow	Straightneck	Tapered		Spineless petioles provide less painful picking on this hybrid from the Slickpick series. Standard commercial shape with an open plant makes a desirable package all around!
★ 42133	Golden Glory	50	7 - 8"	Golden Yellow	Gold Zucchini	Cylindrical	PM, WMV, ZYMV	Produces high quality uniform fruit on an open, upright and vigorous plant.
42049	Grandprize	42	6 - 7"	Yellow	Straightneck	Cylindrical	PM, WMV, ZYMV	Offers improved fruit coloring, great plant vigor, and solid yield potential. Solid outer texture to withstand harvest. Increased virus resistance over Grandprize.
42080	One Ball	38	3 x 3"	Gold	Zucchini	Round		Fruit set at every node and grow very rapidly after flowering. Has occasional green fruit.
42010	Sunburst	50	2 1/2 x 3"	Bright Yellow	Scallop	Dish		AAS winner. Attractive, colorful fruit. Best when young.

SQUASH SUMMER GREEN Hybrid		M=1,000 seeds					
Priced per package		100 Seeds	250 Seeds				
Priced per 1,000 seeds in these package sizes		1M	3M	25M	55M		
42092	Basima	9.25	15.40	43.90	38.15	36.40	35.40
42096	Dunja ^{FI400}	14.40	24.00	68.55	59.60	57.85	56.85
42009	Green Machine ^{FI400}	14.40	23.95	68.30	59.35	57.60	56.60
42017	Kopana	26.75	44.55	127.25	110.65		
42052	Liberty ^{FI400}	12.55	20.85	59.55	51.75	50.00	49.00
42088	Paycheck ^{FI400}	17.45	29.05	83.00	72.15	70.40	69.40
42027	Spineless Beauty ^{FI400}	11.60	19.30	55.10	47.90	46.15	45.15
42094	Spineless Perfection ^{FI400}	16.50	27.50	78.50	68.25	66.50	65.50
42051	Spineless Supreme ^{FI400}	16.95	28.20	80.45	69.95	68.20	67.20
42135	Starship	6.50	10.80	30.80	26.75	25.00	24.00

SQUASH SUMMER YELLOW Hybrid		M=1,000 seeds					
Priced per package		100 Seeds	250 Seeds				
Priced per 1,000 seeds in these package sizes		1M	5M	25M	55M	80M	
Blonde Beauty							
42018	Blonde Beauty ^{FI400}	10.65	17.70	50.50	43.90	42.15	41.15
42133	Golden Glory ^{FI400}	13.85	23.05	65.80	57.20	55.45	54.45
42049	Grandprize ^{FI400}	13.35	22.25	63.45	55.15	53.40	52.40
42080	One Ball	10.70	17.80	50.85	44.20	42.45	41.45
42010	Sunburst ^{FI400}	11.50	19.15	54.65	47.50	45.75	44.75

GROWER PREFERRED ALL-STARS ★ SUMMER SQUASH

GREEN

Dunja has the highest market share, by percentage of customers, of any green zucchini that we offer. Ideal for those customers who want a darker skinned, glossy looking fruit. Dunja also shows a comprehensive disease package for extended harvest. Jump on the Dunja bandwagon!

For those that love oldies but goodies, **Spineless Beauty** is for you. The glossy medium-green fruit is still one of the prettiest looking zucchini hybrids on the market today.

Spineless Perfection is quickly gaining traction with commercial growers for numerous reasons. It demonstrates a similar style of classy fruit exterior as its forerunner, Spineless Beauty. It is simple to harvest due to an open plant habit and “easy pick” trait. Spineless Perfection also has an enhanced disease platform when compared to Spineless Beauty.

YELLOW

When choosing a yellow zucchini hybrid, **Golden Glory** should be your go to variety...hands down. Wide-ranging package includes: small petiole spines, open plant, easy twist picking capabilities, and beautiful contrast between dark green handle and splendid dark yellow fruit. Grow Golden Glory in 2020.



Pete Dinius
Product Development

SQUASH		SUMMER OP					
		Days	Harvest Length	Color	Type	Fruit Shape	Features
42112	Dark Green Zucchini	62	6 - 7"	Medium Dark Green	Zucchini	Cylindrical	Popular, medium dark green variety.
42107	Golden Zucchini	55	6 - 7"	Golden	Golden Zucchini	Cylindrical	Has crisp flesh on golden skinned fruit. A good choice for the home gardener.

SQUASH SUMMER OP

	Priced per package	4 oz.		
	Priced per pound	in these package sizes		
		1#	5#	
42112U	Dark Green Zucchini Untreated	6.45	17.05	16.80
42107U	Golden Zucchini Untreated	9.20	24.25	24.00

NATURALL™ APPLICATION RATES

CROPS	RATE
Cucurbit Vegetables: Pumpkins and Squash	1.0 oz. per 80,000 seeds
Cucurbit Vegetables: Cucumbers and Melons	0.5 oz. per 80,000 seeds
Broccoli, Cabbage and Cauliflower	0.5 oz. per 50,000 seeds
Peppers and Tomatoes: Garlic, Leeks, Onions, Shallots	0.5 oz. per 100,000 seeds
Root Crops: Beets, Sugar Beets, Red Beets, Carrots, Celeriac, Chicory, Horseradish, Parsnip, Radish, Rutabaga, Salsify, Turnips	0.5 oz. per 100,000 seeds

For pricing on Naturall inoculant, see page 119.

For additional information visit the following website.

<http://www.abm1st.com/crops-products/vegetables/naturall/>

Biological Enhancement for Vegetables

Naturall™ for Vegetables

ROOT INOCULANT PB

- Enhanced root growth
- Healthier plants
- Increased seedling vigor
- Easy to apply
- Higher yields
- Improved nutrient and water efficiency



ABM™
Patent Pending
Made in U.S.A.

Net Wt. 1 oz.



HONEYNUT **NEW**

SQUASH WINTER

PLANTING

Plant seeds ½" - ¾" deep. Plant spacing varies depending on vine type. Bush type plants should be planted closer and vine types should be planted farther apart. Squash need to have approximately 25 - 30 sq. ft. See the Winter Squash Planting / Harvest Timing chart on page 98 for additional information.

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

MANAGEMENT

Scout every 7 days for insect, weed, and disease pressure. Fruit will tend to decrease in size the farther south a crop is planted and increase in size the farther north it is planted. Size is relative to day length.

HARVEST

Cut off the vine to keep peduncle. Wash in 5% chlorine solution and pat dry. Let cure for 10 days. Keep fruit dry to prevent spoilage. Allow air to circulate around fruit.

STORAGE

Store at 45 - 55°F and humidity level of 50 - 60%. Keep fruit dry and allow air to circulate around fruit.

PLANT SPACING

Each variety or type of squash has an optimum plant spacing for its best performance. If plants are too close, stress and competition can decrease fruit size and possibly even reduce the number of female flowers. Under extreme stress, tight spacing may eliminate the crop entirely.

- Accurate plant spacing will be an equal opportunity environment for every plant.
- Suggested populations are for final plant stands.
- To achieve ideal plant populations it is necessary to either over-plant and hand thin or to plant according to recommendations and hand plant later to fill skips.
- Seed corn maggots, wire worms, mice and birds, floods or lack of rain are all common problems that effect accurate stand establishment.

PLANT SPACING CHART

	Row Width	Distance Between Plants	Plants Per Acre
Compact Bush	5'	2'	4,356
Bush	5'	3'	2,904
Semi Bush	5'	4'	2,178
Restricted Vine	5'	4'	2,178
Vine	5'	5'	1,742



AUTUMN DELIGHT ★



CELEBRATION ★



CREAM OF THE CROP



HARLEQUIN



HEART OF GOLD



MASHED POTATO

SQUASH		WINTER ACORN						
		Days	Fruit Size	Weight pounds	Color	Habit	Features	
★	42311 Autumn Delight F1 pmt	80	6 x 5"	1 ½	Dark Green	Semi Bush	A popular, powdery mildew tolerant acorn hybrid. Fruit are large with excellent quality.	
★	42955 Celebration F1 pmt	80	4 x 5"	1 ½	Light Yellow / Orange Sutures	Compact Bush	A powdery mildew tolerant, gold striped acorn hybrid with exceptional eating quality. Is also decorative. A Rupp exclusive in cooperation with Cornell University.	
	42304 Cream of the Crop F1	85	6 x 5"	1 ½ - 2	Cream	Compact Bush	AAS winner. Unique creamy white fruit. Uniform size.	
	42952 Harlequin F1 pmt	80	4 - 5"	1 ½ - 2	Light Green / Dark Green Sutures	Compact Bush	A powdery mildew tolerant, green striped acorn hybrid from Rupp. Has exceptional eating and decorative qualities. A sure winner.	
	42930 Heart of Gold F1	80	4 - 5"	3	Cream / Green Stripes	Semi Bush	A winter squash striped like Sweet Dumpling, heart shaped, with fine sweet flesh. Yields have been 35% higher than Sweet Dumpling.	
	42302 Mashed Potato	100	4 - 5"	1 - 1 ½	White	Compact Vine	White acorn with fantastic color holding ability. Flesh is nearly white and resembles mashed potatoes when baked and fluffed. 3 to 4 fruit per plant.	
	42301 Table Ace F1	80	6 x 5"	1 ½	Dark Green	Semi Bush	A popular, dark black-green, acorn squash with rounded ribs and blunted blossom ends. It has solid, tasty flesh with almost no fibers or stringiness.	
	42310 Table Star F1 pmt	80	6 x 5"	2	Jet Black with a golden star around the stem attachment.	Bush	A top selling acorn squash due to its eating quality and powdery mildew tolerance. It is competitive with the best in the market, plus has 50% higher sugars than other acorns.	
	42309 Table Treat F1	70	5 ½ x 5"	1 ½ - 1 ¾	Jet Black	Bush	A powdery mildew tolerant acorn hybrid from Rupp that is slightly smaller than Table Star, plus has 50% higher sugars than the comparable acorns. Very good eating quality.	
	42307 Taybelle PM F1	80	6 x 5"	2	Jet Black	Bush	A direct conversion from Taybelle to include intermediate resistance to powdery mildew. Sweet flavor and good storage quality.	

SQUASH WINTER ACORN		M=1,000 seeds					
Priced per package		1 oz.	4 oz.				Seeds /lb.
Priced per pound in these package sizes		1#	5#	20#			Seeds /lb.
42309	Table Treat	10.25	32.25	88.35	87.35	85.85	4,600
Priced per package		250 Seeds					Seeds /lb.
Priced per 1,000 seeds in these package sizes		1M	3M	25M	55M		Seeds /lb.
42311	Autumn Delight	16.00	42.65	39.65	37.65	36.65	4,300
42311	Autumn Delight F1400	17.10	45.60	42.60	40.60	39.60	4,300
42311U	Autumn Delight Untreated	16.00	42.65	39.65	37.65	36.65	4,300
42955	Celebration	11.25	29.95	26.95	24.95	23.95	4,800
42955	Celebration F1400	12.35	32.90	29.90	27.90	26.90	4,800
42304	Cream of the Crop	12.70	33.75	30.75	28.75	27.75	4,000
42304	Cream of the Crop F1400	13.80	36.70	33.70	31.70	30.70	4,000

SQUASH WINTER ACORN		M=1,000 seeds					
Priced per package		250 Seeds					Seeds /lb.
Priced per 1,000 seeds in these package sizes		1M	3M	25M	55M		Seeds /lb.
42952	Harlequin	11.00	29.25	26.25	24.25	23.25	4,400
42930	Heart of Gold	12.75	34.00	31.00	29.00	28.00	4,900
42930	Heart of Gold F1400	13.90	36.95	33.95	31.95	30.95	4,900
42302	Mashed Potato	13.20	35.10	32.10	30.10	29.10	5,900
42301	Table Ace	13.30	35.35	32.35	30.35	29.35	4,400
42301	Table Ace F1400	14.40	38.30	35.30	33.30	32.30	4,400
42301U	Table Ace Untreated	13.30	35.35	32.35	30.35	29.35	4,400
42310	Table Star	10.65	28.40	25.40	23.40	22.40	3,900
42310	Table Star F1400	11.80	31.35	28.35	26.35	25.35	3,900
42307	Taybelle PM F1400	14.70	39.15	36.15	34.15	33.15	4,300

GROWER PREFERRED ALL-STARS ★ WINTER SQUASH

These winter squash All-Stars continue to bring growers consistent, predictable performance.

ACORN

With great dark color, good storage abilities and zero to very little ground spot, **Autumn Delight** is a sure winner for both fresh market and shipper growers.

Celebration is a must have for your autumn displays. Color, color, color!

BUTTERCUP

For that classic look, **Autumn Cup** is your choice. It is a great compliment to Thunder for seasonal markets.

For your storage market, choose **Sweet Mama** for long term keepers.

What can we say about **Thunder** but yield, yield, yield! Sure to put plusses in your income column.

BUTTERNUT

Betternut 900 has quickly become the standard in the boxing trade. It also carries other qualities such as taste, sweetness, vitamins, and minerals for today's nutritional needs.

Ultra will give you a large yield with huge fruit that work whether you're a processor or fresh market grower.

George Wonnacott
Vegetable Consultant



DELICATA

Sweet Lightning is a great choice when you want great looking fall decoration. When it's cooked it provides the consumer with one of the sweetest eating squash on the market today. A great "dual-purpose" variety.

HUBBARD

When you want to attract customers to your market, **Blue Hubbard New England** is the one. It exudes great looks, an attractive interior and distinctive hubbard flavor.

SPAGHETTI

If it's spaghetti squash you're looking for, then **Primavera** is the variety to pick. Uniformity, yield, and great color make this a grower favorite.

OTHER

Galeuse d'Eysines is also known as "The Peanut Squash". Customers can't believe its unusual looks, but they enjoy its delicious squash flavor when fried up in a pan with butter.

Marina de Chioggia is a unique green warted squash that adds variety to your fall display, but also eats very well. It was bred for use in gnocchi and ravioli.

Turk's Turban adds great fall colors to any decorated area. Customers will ask for this one by name, so be sure to have plenty on hand.

WINTER SQUASH PLANTING/HARVESTING TIMING CHART

When a grower is planting sweet corn continually for the whole season, the plan is of utmost importance. The planting date plus the maturity of the hybrid should equal the potential harvest date. Realizing that increasing or decreasing the heat and sunlight of each year can shorten or elongate this time span. Squash are no different.

Use the following chart to align your squash variety maturity with your desired harvest date to schedule planting.

Variety Maturity	Planting Date: May 1 Harvest Range	Planting Date: May 15 Harvest Range	Planting Date: June 1 Harvest Range	Planting Date: June 15 Harvest Range	Planting Date: July 1 Harvest Range
70	July 1 - July 20	July 14 - Aug. 3	Aug. 1 - Aug. 20	Aug. 14 - Sept. 3	Aug. 31 - Sept. 19
75	July 5 - July 25	July 19 - Aug. 8	Aug. 5 - Aug. 25	Aug. 19 - Sept. 8	Sept. 4 - Sept. 24
80	July 10 - July 30	July 24 - Aug. 13	Aug. 10 - Aug. 30	Aug. 24 - Sept. 13	Sept. 9 - Sept. 29
85	July 15 - Aug. 4	July 29 - Aug. 18	Aug. 15 - Sept. 4	Aug. 29 - Sept. 18	Sept. 14 - Oct. 4
90	July 20 - Aug. 9	Aug. 3 - Aug. 23	Aug. 20 - Sept. 9	Sept. 3 - Sept. 23	Sept. 19 - Oct. 9
95	July 25 - Aug. 14	Aug. 8 - Aug. 28	Aug. 25 - Sept. 14	Sept. 8 - Sept. 28	Sept. 24 - Oct. 14
100	July 30 - Aug. 19	Aug. 13 - Sept. 2	Aug. 30 - Sept. 19	Sept. 13 - Oct. 3	Sept. 29 - Oct. 19
105	Aug. 4 - Aug. 24	Aug. 18 - Sept. 7	Sept. 4 - Sept. 24	Sept. 18 - Oct. 8	Oct. 4 - Oct. 24
110	Aug. 9 - Aug. 29	Aug. 23 - Sept. 12	Sept. 9 - Sept. 29	Sept. 23 - Oct. 13	Oct. 9 - Oct. 29
115	Aug. 14 - Sept. 3	Aug. 28 - Sept. 17	Sept. 14 - Oct. 4	Sept. 28 - Oct. 18	Oct. 14 - Nov. 3
120	Aug. 19 - Sept. 8	Sept. 2 - Sept. 22	Sept. 19 - Oct. 9	Oct. 3 - Oct. 23	Oct. 19 - Nov. 8

Squash quality will be the best when harvested nearest to the variety's actual maturity.

First, select the maturity of the variety you are using, then pick the date you would like your squash to look the freshest. The required planting date will be at the top of the column.



TABLE ACE



TABLE STAR



TABLE TREAT



SAVE WITH CASH DISCOUNTS

Cash discounts are available throughout the season and are a great way to add money to your bottom line. See page 6 for all of the details.

December	6%
January	5%
February	4%
March	3%
April	2%



AUTUMN CUP ★



SPACE STATION



SUNSHINE



SUN SPOT



SWEET MAMA ★



THUNDER ★

SQUASH		WINTER BUTTERCUP / KABOCHA					
▲		Days	Fruit Size	Weight pounds	Color	Habit	Features
★	42935 Autumn Cup ^{F1}	95	6"	4 1/2	Dark Green	Semi Bush	The first hybrid, semi bush buttercup squash. Dark green, very high quality flesh and high yields. Has a reduced button when compared to Burgess and is slightly more oval.
	42904 Buttercup Burgess	110	8-9 x 5"	3	Dark Green	Vine	Flesh is dry and sweet, good for storage, fresh market or garden.
	42962 Space Station ^{F1}	90	7 x 4"	3 1/2	Black Green	Semi Bush	A semi bush kabocha hybrid with excellent flesh color and quality. Flesh is very sweet and dry. An upgrade to the long used Sweet Mama.
	42902 Sunshine ^{F1}	95	7 x 5"	3-5	Bright Orange	Vine	Tender flesh is smooth, sweet, and bright orange for baking, mashing, and pies. Appearance and eating quality are superior to other varieties of this type. Average 3-4 fruit per plant.
	42966 Sun Spot ^{F1}	75	6 x 4"	1 1/2	Dark Red	Vine	A dark red buttercup hybrid with excellent dry flesh and fruit size that is desirable for today's small household. Early, dark orange, tasty flesh.
★	42905 Sweet Mama ^{F1}	85	8-9 x 5"	4	Dark Green	Semi Bush	AAS winner. A kabocha with sweet flavor that stores well.
★	42968 Thunder ^{F1}	85	7 x 4"	3 1/2	Black Green	Vine	A buttercup (kabocha) hybrid that is an excellent yielder with dry sweet flesh.

SQUASH WINTER BUTTERCUP / KABOCHA		M=1,000 seeds				
	Priced per package	1 oz.		4 oz.		
		1#	5#	20#		
42904	Buttercup Burgess	4.50	13.25	36.05	35.05	33.55
42902	Sunshine	19.75	64.00	176.05	175.05	173.55
42905	Sweet Mama ^{F1400}	23.50	75.75	208.90	207.90	206.40

SQUASH WINTER BUTTERCUP / KABOCHA		M=1,000 seeds				
	Priced per package	250 Seeds				
		Priced per 1,000 seeds in these package sizes				
		1M	3M	25M	55M	
42935	Autumn Cup	23.10	61.50	58.50	56.50	55.50
42935	Autumn Cup ^{F1400}	24.20	64.45	61.45	59.45	58.45
42962	Space Station	32.15	85.70	82.70	80.70	79.70
42962	Space Station ^{F1400}	33.25	88.65	85.65	83.65	82.65
42962U	Space Station ^{Untreated}	32.15	85.70	82.70	80.70	79.70
42966	Sun Spot	22.55	60.10	57.10	55.10	54.10
42966	Sun Spot ^{F1400}	23.65	63.05	60.05	58.05	57.05
42968	Thunder	24.85	66.20	63.20	61.20	60.20
42968	Thunder ^{F1400}	25.95	69.15	66.15	64.15	63.15



BETTERNUT 23



BETTERNUT 401



BETTERNUT 900 ★



BETTERNUT 1744



BUTTERBABY



HONEYNUT **NEW**

SQUASH		WINTER BUTTERNUT					
		Days	Fruit Size	Weight pounds	Color	Habit	Features
42613	Avalon ^{F1}	88	11"	4 - 5	Buff	Vine	<i>This Hollar Seeds butternut is a good packing and high yielding variety.</i> <i>Powdery mildew tolerant. Very uniform variety with proportional neck to bulb ratio. Exceptional flesh and skin color. High percentage of dry matter and sugar content.</i>
42606	Betternut 23 ^{F1}	105	12 - 15"	6 - 8	Buff	Vine	<i>A hybrid with good flesh color and uniformity on a semi bush plant. Powdery mildew tolerant.</i>
42614	Betternut 401 ^{F1}	80	8 - 9"	2 ¾	Light Tan	Semi Bush	<i>A hybrid with good flesh color and uniformity on a semi bush plant. Powdery mildew tolerant.</i>
★ 42622	Betternut 900 ^{F1}	80	8 - 9"	3	Light Tan	Semi Bush	<i>Overall best variety in the Betternut series for boxing. Powdery mildew tolerant.</i> <i>Slightly larger than Betternut 900 for farm markets and roadside stands. Provides powdery mildew tolerance.</i>
42976	Betternut 1744 ^{F1}	80	8 - 9"	3 ¼	Light Tan	Semi Bush	<i>High eating quality variety that is perfect size for CSA box growers and personal-sized market. Very nice color and shape while maturing earlier than Honeynut. Longer storage ability than Honeynut.</i>
42607	Butterbaby	80	5 - 6"	½ - 1	Buff	Semi Bush	
NEW 42702	Honeynut	85	4 - 5"	½ - 1	Dark Tan	Restricted Vine	<i>Produces single-serving squash with very sweet and delicious flavor. Very high yielding.</i>
38518	Neck Pumpkin	120	18 - 24"	10	Light Brown	Vine	<i>Flesh similar to butternut. Can be used for market or processing.</i>
★ 42615	Ultra ^{F1}	90	15"	10	Light Tan	Vine	<i>A high yielding large butternut for both processors and market gardeners.</i>

SQUASH WINTER BUTTERNUT		M=1,000 seeds							
Priced per package		1 oz.	4 oz.						
Priced per pound in these package sizes					1#	5#	20#	Seeds /lb.	
38518	Neck Pumpkin	3.75	11.25	30.80	29.80	28.30	4,000		
Priced per package		250 Seeds							
Priced per 1,000 seeds in these package sizes					1M	3M	25M	100M	Seeds /lb.
42613	Avalon ^{F1400}	15.00	39.95	36.95	34.95	33.95	5,000		
42606	Betternut 23	13.75	36.55	33.55	31.55	30.55	5,000		
42606	Betternut 23 ^{F1400}	14.80	39.45	36.45	34.45	33.45	5,000		
42614	Betternut 401	13.50	35.90	32.90	30.90	29.90	6,000		
42614	Betternut 401 ^{F1400}	14.60	38.85	35.85	33.85	32.85	6,000		

SQUASH WINTER BUTTERNUT		M=1,000 seeds							
Priced per package		250 Seeds							
Priced per 1,000 seeds in these package sizes					1M	3M	25M	100M	Seeds /lb.
42622	Betternut 900	14.05	37.35	34.35	32.35	31.35	4,600		
42622	Betternut 900 ^{F1400}	15.15	40.30	37.30	35.30	34.30	4,600		
42622U	Betternut 900 ^{Untreated}	14.05	37.35	34.35	32.35	31.35	4,600		
42976	Betternut 1744	13.05	34.75	31.75	29.75	28.75	5,000		
42976	Betternut 1744 ^{F1400}	14.15	37.70	34.70	32.70	31.70	5,000		
42607	Butterbaby ^{F1400}	13.30	35.40	32.40	30.40	29.40	5,800		
42702	Honeynut	11.15	29.65	26.65	24.65	23.65			
42615	Ultra ^{F1400}	17.85	47.55	44.55	42.55	41.55	4,500		

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ULTRA ★



FESTIVAL



JESTER **NEW**



SWEET LIGHTNING ★

**SHIPPING
NOW ONLY
\$10⁰⁰**

Orders over \$250
are shipped free!

SQUASH		WINTER DELICATA / SWEET DUMPLING					
Days	Fruit Size	Weight pounds	Color	Habit	Features		
42957	Bush Delicata	105	5 - 6"	2	White / Green Stripes	Bush	An AAS winner bred by Cornell and marketed by Rupp. A typical delicata fruit on a bush plant with strong tolerance to powdery mildew.
42945	Festival ^{F1}	100	4 - 5"	1 ½ - 2	Yellow Green Orange	Vine	A Carnival type squash with fewer oversized fruit, similar color and flesh quality. Fruit shape is between an acorn and Sweet Dumpling. Highly ornamental with great eating quality.
NEW 42933	Jester ^{F1}	95	5 - 7"	1 ½	Ivory / green inter-rib stripes	Short Vines	Superb flavor with eye-catching fruit. Oval and tapered at both ends, with small to average ribs. Among the best in eating quality. About 60 days storage time.
42911	Sweet Dumpling	100	4"	1	Cream Striped	Vine	Colorful, acorn shape, sweet flesh. Stores 3 - 4 months.
★ 42501	Sweet Lightning ^{F1 pmt}	100	3 x 5"	1 - 1 ¼	Pale Yellow / Orange Stripes	Semi Bush	A Rupp product with both outstanding decorative and eating qualities. Is one of the best flavored when used as a squash. Has powdery mildew tolerance on a semi-bush vine.

SQUASH WINTER DELICATA / SWEET DUMPLING					
	Priced per package		Priced per pound in these package sizes		
	1 oz.	4 oz.	1#	5#	25#
42945 Festival	12.00	37.75	103.90	102.90	101.40
42933 Jester	12.00	38.25	105.40	104.40	102.90
42911 Sweet Dumpling ^{F400}	12.50	39.75	109.60	108.60	107.10
	Priced per package		Priced per 1,000 seeds in these package sizes		
	250 Seeds	M=1,000 seeds	1M	3M	25M
42957 Bush Delicata	11.00	29.25	26.25	24.25	23.25
42957 Bush Delicata ^{F400}	12.10	32.15	29.15	27.15	26.15
42501 Sweet Lightning	19.05	50.70	47.70	45.70	44.70
42501 Sweet Lightning ^{F400}	20.15	53.65	50.65	48.65	47.65

SQUASH		WINTER HUBBARD					
		Days	Fruit Size	Weight pounds	Color	Habit	Features
42906	Blue Hubbard	110	7 x 12"	12 - 14	Blue Gray	Vine	A popular hubbard type with thick, orange, fine textured, sweet flavored flesh. Claimed by some to be the best of all hubbards.
★ 42918	Blue Hubbard New England	120	20 - 30"	30 - 45	Blue Gray	Vine	Largest of the hubbards. Flesh is orange with fine texture and flavor. Rupp produced.
42944	Blue Magic ^{F1}	100	5 x 6"	5 - 7	Blue Gray	Vine	Miniature Blue Hubbard hybrid for those that love the hubbard flavor but are overwhelmed with the normal Blue Hubbard size. Has a true hubbard shape.
42908	Chicago Warted	115	10 x 13"	12 - 14	Green Black	Vine	Large warts, flesh is rich, fine grained and dry. Use for market or garden.
42907	Golden Delicious	100	7 x 14"	10	Red Orange	Vine	Rind is hard and smooth. Flesh is dry, fine grained, and good quality. Used primarily as a processing squash.
42926	Golden Hubbard	110	11 x 9"	10	Orange	Vine	Slightly smaller than most hubbards, slightly warted, orange color with tan stripes toward blossom end.
42909	Green True	105	9 x 12"	12 - 14	Dark Green	Vine	Good shipper and keeper.
42977	Heavenly Hubbard ^{F1}	100	12 x 15"	15 - 20	Blue Gray	Vine	A Hubbard hybrid with thick, fine textured flesh and sweet flavor.
42919	Uchiki Kuri	90	7 x 7"	2 ½	Orange Red	Vine	Improved smooth Hubbard selection with almost no ribbing on the fruit. Flesh is very sweet and nutty in flavor.

SQUASH WINTER HUBBARD		M=1,000 seeds				
		1 oz.	4 oz.	1#	5#	25#
Priced per package						
Priced per pound in these package sizes						
42906	Blue Hubbard	4.00	12.25	33.75	32.75	31.25
42918	Blue Hubbard New England	7.00	21.75	59.75	58.75	57.25
42944	Blue Magic	10.25	32.50	89.45	88.45	86.95
42908	Chicago Warted	3.75	12.00	32.65	31.65	30.15
42907	Golden Delicious	3.75	11.25	30.40	29.40	27.90
42926	Golden Hubbard	4.00	12.25	33.25	32.25	30.75
42909	Green True	4.50	13.75	37.55	36.55	35.05
42919	Uchiki Kuri	12.25	38.50	106.20	105.20	103.70
		250 Seeds				
		1M	3M	25M	55M	
Priced per package						
Priced per 1,000 seeds in these package sizes						
42977	Heavenly Hubbard	39.45	105.20	102.20	100.20	99.20

SQUASH WINTER SPAGHETTI		M=1,000 seeds				
		1 oz.	4 oz.	1#	5#	25#
Priced per package						
Priced per pound in these package sizes						
42903	Spaghetti	6.00	18.75	51.10	50.10	48.60
42981	Vegetable Spaghetti ^{Sakata F1400}	8.75	28.00	77.05	76.05	74.55
		250 Seeds				
		1M	3M	25M	Seeds /lb.	
Priced per package						
Priced per 1,000 seeds in these package sizes						
42950	Pinnacle ^{F1400}	27.00	71.90	56.60	56.10	2,600
42946	Primavera ^{F1400}	25.05	66.70	52.50	52.00	3,500

SQUASH WINTER OTHER						
		1 oz.	4 oz.	1#	5#	25#
Priced per package						
Priced per pound in these package sizes						
42901	Banana Pink Jumbo	5.50	17.25	47.15	46.15	44.65
42971	Galeuse d'Eysines ^{Peanut}	8.70	27.75	76.50	75.50	74.00
42971U	Galeuse d'Eysines ^{Peanut Untreated}	8.70	27.75	76.50	75.50	74.00
42948	Georgia Candy Roaster	7.00	22.25	61.30	60.30	58.80
42970	Marina de Chioggia	8.40	26.50	72.95	71.95	70.45
42970U	Marina de Chioggia ^{Untreated}	8.40	26.50	72.95	71.95	70.45
26024	Tiny Turk	6.50	20.50	56.25	55.25	53.75
42938	Tricolor Cushaw	6.75	21.00	57.65	56.65	55.15
26007	Turk's Turban	5.75	18.25	49.90	48.90	47.40

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HEAVENLY HUBBARD



PINNACLE **NEW**



PRIMAVERA ★



GALEUSE D'EYSINES ★ TINY TURK



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SQUASH

WINTER SPAGHETTI

	Days	Fruit Size	Weight pounds	Color	Habit	Features
NEW 42950 Pinnacle ^{F1}	85	7 x 5"	3	Bright Yellow	Semi-Bush	<i>Spaghetti squash with a semi-bush plant habit, that allows higher plant densities and higher yields per acre. Fruit ripen to an appealing bright yellow color. The spaghetti strands are fine and have the nutty flavor of a true Spaghetti Squash.</i>
★ 42946 Primavera ^{F1}	90 - 95	5 ½ x 10"	2 ½ - 3	Canary Yellow	Restricted Vine	<i>A high yielding Sakata hybrid with good uniformity and attractive color.</i>
42903 Spaghetti	105	8 - 10"	2 ½ - 3	Light Yellow	Vine	<i>A uniform, purified strain by Hollar. Is slightly smaller and will be an excellent fit for the commercial grower. Good keeper, low-calorie spaghetti squash. Market or garden.</i>
42981 Vegetable Spaghetti ^{Sakata}	100	5 ½ x 10"	2 ½	Creamy Yellow	Vine	<i>Sakata's popular OP spaghetti squash introduced years ago. Long, oval shaped with noodle-like strands inside when cooked.</i>

SQUASH

WINTER OTHER

Pricing on page 102

	Days	Fruit Size	Weight pounds	Color	Habit	Features
42901 Banana Pink Jumbo	105	20"	15	Pink / Orange	Vine	<i>Thick, fine grained, light orange flesh. Delicious flavor.</i>
★ 42971 Galeuse d'Eysines ^{Peanut}	100	6 ½ x 11"	18	Pink	Vine	<i>A warty squash from France with ornamental value plus delicious when fried in butter.</i>
42948 Georgia Candy Roaster	110	2 ½ - 3'	up to 60	Pink / Orange	Vine	<i>A long, narrow fruited heirloom that is known for its outstanding baking quality. One of the sweetest and tastiest. Enough for the entire village.</i>
★ 42970 Marina de Chioggia	100	7 x 11"	11	Green warty	Vine	<i>A unique green warty squash from Italy with ornamental value. Bred to be used in gnocchi and ravioli.</i>
26024 Tiny Turk	100	4 x 5"	1 ½ - 3	Orange, Green and White	Vine	<i>A smaller selection of Turk's Turban. Used primarily as decoration.</i>
42938 Tricolor Cushaw	110	Large Curved Neck	5 - 10	Gold / Dark Gold Stripes	Vine	<i>Beautiful bright orange squash. Same flesh qualities as other cushaw types. A resurrected old variety.</i>
★ 26007 Turk's Turban	100	7 x 8"	3 - 4	Orange, Green and White	Vine	<i>An ornamental and edible squash/gourd. Attractive for displays. Keeps well.</i>



FULL SUN IMPROVED **NEW**



PROCUT PLUM **NEW**



PROCUT RED **NEW**



PROCUT WHITE LITE **NEW**



PROCUT WHITE NITE **NEW**



PROCUT HORIZON **NEW**



PROCUT ORANGE EXCEL **NEW**



SUNRICH GOLD



SUNRICH LEMON



SUNRICH LIME **NEW**



SUNRICH ORANGE



SUNRICH LIMONCELLO SUMMER

SUNFLOWER

	Days	Features
47005 Giant Striped	80	Excellent confectionery type variety. Striped, plump seeds are well filled and have thin hulls. 6 - 12' tall. Plant at 3-4 pounds per acre.
47016 Lemon Queen	70	6 - 7' tall with 5" blooms, pale lemon-yellow with dark centers. Free flowering and multiple branched with strong stems are ideal for cut flowers or borders.
47014 Sunspot Dwarf	55	1 - 2' tall with a full size yellow flower of 10". Does well in the garden or in 8 - 10" pots. Large seed.
47015 Velvet Queen	70	5' tall with 5" velvety blooms that are burgundy, chestnut and bronze with a dark center. Well branched, multiple flowered, free flowering plants with strong stems which are ideal for cut flowers or borders.
Cut Flowers		
NEW 47007 Full Sun Improved	60-100	A single stem with dark yellow petals and dark disc, 68 - 84 inches tall. Seed spacing will affect plant height and head size. For shorter stems (6') and smaller heads (5") - plant 4" apart. For taller stems (7-8') and larger heads (7") - plant 4" apart.
ProCut Series Sunflowers are early maturing, pollenless hybrids. Plants are strong single stems that are 60 - 72" high with 4 - 6" blooms. All of the ProCut varieties are day length neutral.		
NEW 47033 ProCut Plum	50-60	Is it pink? Rose? Mauve? Unique plum colored petals.
NEW 47034 ProCut Red	50-60	The latest breakthrough in sunflowers! Deep burgundy colored petals.
NEW 47031 ProCut White Lite	50-60	Lush white petals border a light colored center disc. An excellent choice paired with other flowers in bouquets.
NEW 47032 ProCut White Nite	50-60	White petals with a dark center. With unlimited possibilities. Can even be dyed red and blue for a July 4th vase.
NEW 47036 ProCut Horizon	45-55	A brand new ProCut variety, with rich overlapping orange petals surrounding a traditional dark disc, with perfect upward facing blooms.
NEW 47035 ProCut Orange Excel	45-55	The next generation of ProCut series. Deep orange color with upright flowers.
47001 Sunrich Gold	55-70	Sunrich Series Cut Sunflowers. An early, male sterile, pollenless sunflower used exclusively for the cut flower market. A 48" - 60" plant when cut will have a height of 2 - 2 1/2 feet, with a 5 - 6" flower. Works best if direct sown with a 5" spacing. Need to keep a dense planting. Over fertilizing will cause the flower to grow too big for floral purposes.
47002 Sunrich Lemon	55-70	
NEW 47006 Sunrich Lime	55-70	
47003 Sunrich Orange	55-70	
47004 Sunrich Limoncello Summer	50-65	An early variety in the Sunrich series. Flowers 5 to 10 days earlier than the Gold, Lemon and Orange. A unique bi-color flower, vibrant yellow changing to a light, creamy yellow tip.

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CELEBRATION



SUPER VERDE



SAVE WITH CASH DISCOUNTS

Cash discounts are available throughout the season and are a great way to add money to your bottom line. See page 6 for all of the details.

December	6%
January	5%
February	4%
March	3%
April	2%

SWISS CHARD		Days	Features
43006	Celebration	60	A multi-colored chard. It exhibits highly uniform plants with dark green, glossy leaves. It has vibrant multi-colored petioles and venations with high percentage of pink, yellow and orange chards. Great for producing full-sized specialty chard or baby leaf.
43004	Five Color <small>Australian Heirloom</small>	60	Offers growers a rainbow of stem colors: yellow, gold, orange, pink, violet, green, white, red or striped, plus green, dark green or bronze leaf colors. Has improved tenderness and a mild chard flavor. Can be used fresh as a miniature leaf in salads or cooked when more mature.
43002	Rhubarb	60	Unique crimson stalks look like rhubarb. Dark green, heavily crumpled leaves have delicious flavor.

TOMATILLO		Days	Features
44530	Super Verde	80	A green hybrid tomatillo that has mid maturity, plus a nice plant with strong vigor and cover. Fruit set is very good and offers improved uniformity, yield potential and longer cycle production. Fruit are firm, have healthy husks, attractive green color and above average shelf life.

SUNFLOWER		1 oz.	4 oz.	1#	5#	50#
<i>Priced per package</i>						
<i>Priced per pound in these package sizes</i>						
47005U	Giant Striped <small>Untreated</small>		5.35	9.70	9.20	8.95
47016U	Lemon Queen <small>Untreated</small>	4.45	14.55	40.90	39.90	
47014U	Sunspot Dwarf <small>Untreated</small>	4.45	14.55	40.90	39.90	
47015U	Velvet Queen <small>Untreated</small>	4.45	14.55	40.90	39.90	
<i>Priced per package</i>				500 Seeds	1M	5M
<i>Cut Flowers</i>						
47007U	Full Sun Improved <small>Untreated</small>			24.25	38.25	34.65
47036U	ProCut Horizon <small>Untreated</small>			17.50	27.75	25.20
47035U	ProCut Orange Excel <small>Untreated</small>			17.50	27.75	25.20
47033U	ProCut Plum <small>Untreated</small>			20.25	32.00	28.90
47034U	ProCut Red <small>Untreated</small>			20.25	32.00	28.90
47031U	ProCut White Lite <small>Untreated</small>			25.75	40.50	36.75
47032U	ProCut White Nite <small>Untreated</small>			25.75	40.50	36.75
47001U	Sunrich Gold <small>Untreated</small>			24.00	37.75	34.15
47002U	Sunrich Lemon <small>Untreated</small>			24.00	37.75	34.15
47006U	Sunrich Lime <small>Untreated</small>			24.00	37.75	34.15
47004U	Sunrich Limoncello Summer <small>Untreated</small>			24.00	37.75	34.15
47003U	Sunrich Orange <small>Untreated</small>			24.00	37.75	34.15

SWISS CHARD		M=1,000 seeds			
<i>Priced per package</i>		4 oz.			
<i>Priced per pound in these package sizes</i>		1#	5#	25#	
43004U	Five Color <small>Untreated</small>	11.45	29.90	29.65	29.15
43002U	Rhubarb <small>Untreated</small>	6.55	17.05	16.80	16.30
<i>Priced per 1,000 seeds in these package sizes</i>		10M	25M	250M	1000M
43006	Celebration	3.50	3.25	3.10	3.00

TOMATILLO		M=1,000 seeds					
<i>Priced per package</i>		100 Seeds	500 Seeds				
<i>Priced per 1,000 seeds in these package sizes</i>		1M	5M	25M	100M		
44530	Super Verde	4.30	14.25	22.80	19.80	18.00	17.10



LAGUNA RED **NEW**

TOMATOES

PLANTING

Sow in greenhouse 4 - 6 weeks before desired planting date. Allow plants to adjust to field conditions for 48 hours before transplanting. Plant transplants up to 6 inches deep.

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

MANAGEMENT

Staking and pruning plants are an important management practice. Staking and pruning allows the plant to concentrate on fruit development and also ensures less damage when harvesting fruit. Staking also keeps fruit from setting on the ground. Grow plants on raised beds with drip irrigation. Scout weekly to ensure crop quality. Consult Midwest Vegetable Production Guide on identification and treatment.

https://ag.purdue.edu/btny/midwest-vegetable-guide/Documents/2019/ID-56_2019.pdf

HARVEST

Harvest tomatoes when 60 - 90% red for fresh markets. Consult your buyers on what stage they would like their tomatoes harvested. How-

ever, please note that the more red the tomato the shorter the shelf life.

STORAGE

Store at 50 - 60°F and 85 - 95% humidity to ensure the longest shelf life.

DISEASE CODES

ASC - Alternaria Stem Canker
BLS - Bacterial Leaf Spot
BS - Bacterial Spec
BW - Bacterial Wilt
EB - Early Blight
FCR - Fusarium Crown Rot
Ff - Leaf Mold
FR - Fusarium Race #
GLS - Gray Leaf Spot
N - Nematodes
PM - Powdery Mildew
PVY - Potato Virus Y
TMV - Tobacco Mosaic Virus
ToMV - Tomato Mosaic Virus
TYLC - Tomato Yellow Leaf Curl
SW - Spotted Wilt
SBW - Southern Bacterial Wilt
VW - Verticillium Wilt

USE

BP - Bedding Plant
HG - Home Garden
FM - Fresh Market
S - Shipping
P - Processing

TERMS

GS - Green Shoulders
LGS - Light Green Shoulders when ripe
UG - Uniform Green Gene ripe fruit are a uniform color
DT - Determinate restricted vine or bush
INDT - Indeterminate vining type used primarily in home gardens



BRAVEHEART



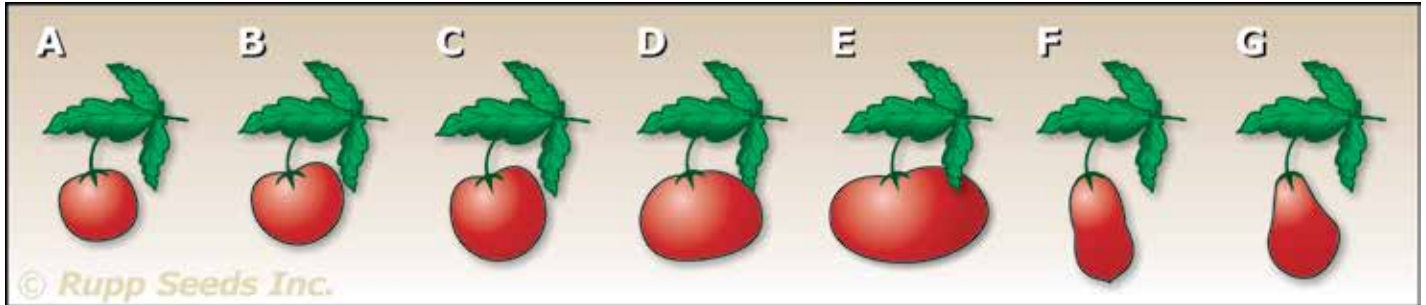
CELEBRITY★



SAVE WITH CASH DISCOUNTS

Cash discounts are available throughout the season and are a great way to add money to your bottom line. See page 6 for all of the details.

December	6%
January	5%
February	4%
March	3%
April	2%



TOMATO		HOME GARDEN / BEDDING Hybrid							
		Days	Use	Weight ounces	Shoulders	Shape	Habit	Disease	Features
44002	Better Boy	75	HG	8	GS	C	INDT	ASC, FR ¹ , GLS, N, VW	<i>Widely adapted.</i>
44076	Big Beef	73	HG	10-12	GS	D	INDT	ASC, FR ^{1,2} , N, TMV, VW	<i>AAS winner with an excellent name that will assure its place in the home garden. High yield, attractive.</i>
44003	Big Boy <small>Burpee's</small>	78	HG	12	GS	C	INDT		<i>Large, popular home garden.</i>
44043	Braveheart	65	FM, HG	0.8		Cherry	INDT	Ff, FR, TMV ^{0,1}	<i>Versatile variety suited for low and medium-tech production as well as roadside markets. More compact growth habit, very prolific, and has good shelf life with excellent flavor. Shiny appearance.</i>
★ 44006	Celebrity	72	FM, HG	8	GS	D	DT	ASC, FR ^{1,2} , GLS, N, TMV, VW	<i>AAS winner. Excellent flavor.</i>
44035	Early Girl	52	HG	4-6	GS	B	INDT	VW	<i>Popular, early home garden variety.</i>

TOMATO HOME GARDEN/BEDDING Hybrid						
	Priced per package		Priced per 1,000 seeds in these package sizes			
	100 Seeds	500 Seeds	1M	5M	25M	100M
44002 Better Boy	5.65	21.70	34.70	30.15	27.40	26.05
44076 Big Beef	7.25	27.75	44.40	38.60	35.05	33.35
44003 Big Boy <small>Burpee's</small>	5.40	20.75	33.20	28.85	26.20	24.95
44043 Braveheart	6.90	26.45	42.30	36.75	33.40	31.80
44006 Celebrity	7.05	26.95	43.05	37.40	34.00	32.35
44035 Early Girl	5.05	19.25	30.80	26.75	24.30	23.10



BHN-964 ★



CAROLINA GOLD ★



DIXIE RED 🚀



FLORIDA 47 R ★



FLORIDA 7514



GRAND MARSHALL

GROWER PREFERRED ALL-STARS ★ TOMATOES

LARGE ROUNDS

BHN-964 is a great tomato for the grower who wants the perfect combination of excellent flavor and high yield potential.

Carolina Gold is the choice for tomato growers looking for a large yellow hybrid. Carolina Gold produces large fruit with a small stem scar and a very nice yellow/gold color.

Growers looking for good vine ripe flavor and quality fruit still turn to longtime favorite, **Celebrity**.

One of the best yielding tomatoes we offer is **Florida 47 R**. It is perfect for mature green use and has consistent large size all season long.

Mountain Spring has been a favorite of tomato growers for a long time. Fruit size is consistently large and the maturity is mid-season. Mountain Spring can be used in both open field and high tunnel applications.

Roadster is the variety for the grower needing a high quality round tomato. It has great flavor, fantastic crimson interior, and 2nd early maturity.

Skyway 687 has quickly become a grower preferred variety for its excellent interior color, firmness and eating quality. It has a strong plant that provides consistent sized fruit up the plant.

ROMA

Mariana is a great choice for your Roma tomato needs. Mariana produces a large number of medium sized fruit on a medium sized plant. Mariana has been a favorite with growers for years.

CHERRY/GRAPE

One of the best tasting tomatoes we sell is **Montesino**. This grape can be grown in the open field or in your greenhouse. You won't be disappointed with Montesino's fantastic quality!



Dave Silveus
Vegetable Consultant

TOMATO		FRESH MARKET Hybrid							
▲		Days	Use	Weight ounces	Shoulders	Shape	Habit	Disease	Features
★	44214 BHN-964	76	FM, S	10	UG	C	DT	FR, TMV, VW	A variety with early blight tolerance. Possesses beautiful shoulders and excellent interior flesh quality. Sets well in the heat.
★	44126 Carolina Gold 🌿	75	HG, FM	10 - 12	GS	C	DT	FR ^{1,2} , VW	A yellow hybrid from Syngenta and North Carolina State University with very small blossom scar, tolerance to cracking and weather check.
🚀	44028 Dixie Red 💧	85	FM, S	11	UG	C	DT	ASC, FR ^{1,3} , GLS, N, SW, VW	A Seminis product, produces a continuous set of larger fruit up the plant. This strong yielder has intermediate resistant to Root-knot nematodes. Its hot set capabilities make it ideal for southern growers during the main season. It can be used as a vine ripe or gas green variety.
★	44120 Florida 47 R	75	S	10	UG	C	DT	ASC, FR ^{1,2} , GLS, VW	A Seminis hybrid with exceptional firmness and fruit quality.
	44159 Florida 7514	75	FM, S	10	UG	C	DT	BS, BW, FR ^{1,2} , GLS, VW	A University of Florida hybrid with excellent disease resistance, fruit qualities, yield, plus good crack resistance and great flavor.
	44045 Grand Marshall	70	FM, S	9 - 10	UG	C	DT	ASC, FR ^{1,2} , GLS, TYLC, VW	Vigorous hot set variety with extra-large and large, firm fruit. Pruning is beneficial at a low to medium level. Strong plant and good field performance under bacterial pressure.
	44046 Katana	75	FM	9 - 10	UG	C	Semi DT		Beefsteak type hybrid that produces uniform, large and firm fruit. Tight blossom end and smooth shoulders. Continuous setting ability which translates to high yields.

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KATANA



LAGUNA RED NEW



MOUNTAIN SPRING ★



ROADSTER ★



SKYWAY 687 ★



SUMMERPICK

TOMATO		FRESH MARKET Hybrid									
		Days	Use	Weight ounces	Shoulders	Shape	Habit	Disease	Features		
NEW	44061 Laguna Red	70	FM, S	8 - 12	UG	C	DT	ASC, FR ^{1,2} FCR, ToMV ^{0,1} VW ¹	A high quality determinate variety well suited for cool season production. Fruit are an attractive red, firm and smooth-shouldered with good flavor. Suited for both mature green and vine ripe markets. Medium tall plants that benefit from light pruning, and a mid-concentrated set.		
★	44067 Mountain Spring	70	FM, S	10	UG	C	DT	FR ^{1,2} , VW	A superior market hybrid.		
★	44048 Roadster	70	FM, S	8 - 12	UG	C	DT	ASC, FR ^{1,2,3} , TSWV, VW	High quality variety with large sized fruit. Fruit are attractive red, very firm and smooth-shouldered. Medium tall plants and benefit from light pruning.		
	44201 Rocky Top	70	FM, S	9 - 10	UG	C	DT	GLS, VW	A Syngenta hybrid with fruit that are very firm, with dark red interior. Proven to perform well in the field and excellent in the high tunnels.		
★	44022 Skyway 687	75	FM	11	UG	C	DT	FR ^{1,3} , N, SW, TYLC	With excellent interior color, firmness and good eating quality, it has a strong plant that provides consistent sized fruit up the plant. Fruit size is extra-large to jumbo.		
	44029 SummerPick	72	FM	11	UG	D	DT	FR ^{1,3} , GLS, SW, VW	A classic vine ripe variety well-suited for warm transplanting slots. Flavorful with attractive, smooth, uniform appearance. Wide adaptability and consistent performance.		
	44094 Sunstart	60	FM	8 - 10	UG	B	DT	ASC, FR ^{1,2} , GLS, VW	A very early hybrid from Seminis that is in a maturity class of its own. An outstanding choice for roadside marketers. Concentrated set for 2 early pickings.		
	44018 Tribeca	70	FM, S	9 - 10	UG	C	DT	FR ^{1,2} , GLS, SW, VW	An exciting heat set variety that has performed well in internal trials over multiple years. Fantastic eating quality for local markets as well as excellent color and fruit firmness. High yields of larger fruit.		

TOMATO FRESH MARKET Hybrid		M=1,000 seeds					
Priced per package	100 Seeds	500 Seeds	Priced per 1,000 seeds in these package sizes				
			1M	5M	25M	100M	
44214P BHN-964 Pelleted	14.15	54.30	90.50	82.25	78.30	74.55	
44126P Carolina Gold Pelleted	9.60	36.85	61.40	55.80	53.10	50.55	
44028P Dixie Red F300 Pelleted	16.50	63.35	105.55	95.95	91.35	87.00	
44120P Florida 47 R Pelleted	14.60	56.00	93.30	84.80	80.75	76.90	
44159 Florida 7514	8.00	30.60	51.00	46.35	44.10	42.00	
44045 Grand Marshall	15.75	60.40	100.65	91.50	87.10	82.95	
44046 Katana	19.05	73.25	122.05	110.95	105.65	100.60	
44061P Laguna Red Pelleted	15.85	60.85	101.40	92.15	87.75	83.55	
44067 Mt. Spring	7.60	29.15	48.55	44.10	42.00	40.00	
44067P Mt. Spring Pelleted	7.70	29.50	49.15	44.65	42.50	40.45	

TOMATO FRESH MARKET Hybrid		M=1,000 seeds					
Priced per package	100 Seeds	500 Seeds	Priced per 1,000 seeds in these package sizes				
			1M	5M	25M	100M	
44048P Roadster Pelleted	15.85	60.85	101.40	92.15	87.75	83.55	
44201P Rocky Top Pelleted	10.95	41.95	69.85	63.50	60.45	57.55	
44022P Skyway 687 Pelleted	14.70	56.35	93.90	85.35	81.25	77.35	
44029P SummerPick Pelleted	12.00	46.10	76.80	69.80	66.45	63.25	
44094 Sunstart	12.10	46.50	77.50	70.45	67.05	63.85	
44018 Tribeca	10.00	38.45	64.05	58.20	55.40	52.75	

* Multiple packages may be used to fill orders for these quantities.



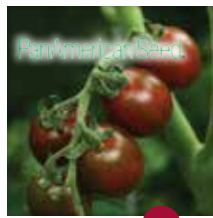
SUNSTART



TRIBECA



BHN-268



CHOCOLATE SPRINKLES



MONTESINO



RUBY CRUSH

TOMATO		CHERRY Hybrid					
▲		Days	Weight ounces	Shape	Habit	Disease	Features
44140	BHN-268	68	0.9	Globe	DT	FR ² , VW	Longer shelf life, increased firmness, and a fraction smaller than other hybrids. Ships extremely well. Fewer picks of higher color fruit. Yields are unbelievable.
NEW	44059 Chocolate Sprinkles 🌱	55	.4 - .5	Globe	INDT	FR ¹ , N	Heirloom flavor and appearance with a modern disease package and firm texture. Performs well in high tunnel and open field. Unique dark red fruit with a green striped exterior and purple flesh color.
★	44223 Montesino 🌱	65	.4 - .5	Grape	INDT	FR, TMV	Outstanding eating quality grape tomato. For production in heated greenhouses.
	44165 Red Grape	68	.3 - .5	Grape	INDT		A superior flavored grape tomato from D. Palmer Seed with firm, excellent shaped red fruit.
	44047 Ruby Crush	65	.4 - .5	Grape	DT	FCR, FR ^{1,2} , ToMV ^{0,2} , GLS	Deep red fruit that are very smooth, uniform and firm with a good flavor profile. Limited to no pruning necessary. High yield potential.
	44156 Sweet Canary 🌱	62	0.5	Grape	SEMI-DT		Semi-determinate yellow grape with deep yellow color and firm texture. Can be used in open field or protected culture. Fantastic flavor.
	44199 Sweet Hearts	60	.4 - .5	Grape	INDT	Cf, FR ¹ , ToMV	Hybrid from Sakata with excellent crack resistance, shelf life, high Brix and yields. Sets under cooler conditions than most grapes.
	44049 Tidy Treats	50-55		Cherry	DT	FR, VW	Tons of fruit on a compact plant. Good in small-space gardens and containers.
	44225 Toronjina 🌱	65	.6 - .8	Globe	INDT	Ff, FR, TMV	An orange cherry with higher eating quality than red cherry varieties. High yields.

TOMATO		GREENHOUSE 🌱				
▲	Use	Weight ounces	Shape	Disease	Features	
44026	Caiman Greenhouse	8 - 9	Round Beef	Ff ¹⁻⁵ , FR ⁰⁻¹ , SWVa, ToMV, Vd	A large round beef tomato with a medium-vigorous plant and an open plant habit. Good fruit set under hot conditions; very productive. Average fruit weight exceeds 8.8 oz.	
44198	Arnold Rootstock Cold Greenhouse & Tunnels				Germinates extremely well. Arnold has a more generative effect on the plant and is therefore suitable for vigorous varieties, late plantings in the spring or in vegetative conditions; such as with growers that produce without heat to save energy. Slightly more open plant than Maxifort.	

TOMATO CHERRY Hybrid		M=1,000 seeds			
		100 Seeds	500 Seeds	1M	5M
	Priced per package				
	Priced per 1,000 seeds in these package sizes				
44140P	BHN-268 Pellet	42.00	139.40	232.30	221.65
44059	Chocolate Sprinkles	24.45	81.15	135.25	123.50
44223	Montesino	27.10	89.95	149.85	142.95
44165	Red Grape	28.40	94.20	157.00	143.35
44047	Ruby Crush	32.75	108.70	181.15	165.40
44156	Sweet Canary	25.75	85.50	142.50	130.10
44199	Sweet Hearts	45.95	152.55	254.20	242.55
44049	Tidy Treats	12.80	42.45	70.75	64.60
44225	Toronjina	27.10	89.95	149.85	142.95

* Multiple packages may be used to fill orders for these quantities.

TOMATO GREENHOUSE		M=1,000 seeds		
		100 Seeds	500 Seeds	1M
	Priced per package			
	Priced per 1,000 seeds in these package sizes			
44026	Caiman	30.60	117.60	195.95
44198	Arnold Rootstock	41.15	158.25	263.70

* Multiple packages may be used to fill orders for these quantities.

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SWEET CANARY



SWEET HEARTS



TIDY TREATS



SAVE WITH CASH DISCOUNTS

Cash discounts are available throughout the season and are a great way to add money to your bottom line. See page 6 for all of the details.

December	6%
January	5%
February	4%
March	3%
April	2%



TORONJINA



CAIMAN



DAYTONA



MARIANA ★



MONTICELLO



SAN MARZANO

TOMATO PROCESSING / SALADETTE Hybrid

	Days	Use	Weight ounces	Shape	Habit	Disease	Features
NEW 44062 BHN-1045	75	FM, S	4	F	DT	FR ^{1,2,3} N, SW, TYLC, VW	The newest BHN Roma release. BHN1045 has uniform large fruit and a deep blocky shape. A strong determinate plant with an excellent disease package. An all-around improved BHN410.
44041 Daytona	74	FM, S	4 - 5	F	DT	ASC, FR ^{1,2} , TYLC, VW ¹	Widely adapted variety with excellent yield potential and quality. Productive plants produce smooth, extra large fruit, with good color, firmness and shelf life. Similar to Mariana with the addition of intermediate resistance to Tomato Yellow Leaf Curl Virus.
★ 44176 Mariana	74	FM	4 - 5	F	DT	ASC, FR ^{1,2} , N, VW	A blocky, Roma type with thick walls and very good external and internal fruit color. Excellent firmness and shelf life.
44224 Monticello	74	FM	4 - 5	F	DT	ASC, FR ^{1,2} , N, VW	High disease package. Suitable for the northern and central growing regions of the Eastern U.S.
44091 San Marzano	61	FM	3.8	F	INDT		A step above your typical Roma with high yields. Classic Italian flavor with an extra kick! Great in sauces and baked dishes.

TURNIPS / RUTABAGA

	Days	Features
45903 Laurentian Rutabaga	90	A dependable, yellow-fleshed rutabaga for storage and shipping. Selected for its sweet flavor and small necks.
45501 Purple Top White Globe	57	Smooth, globe-shaped, purple topped with, white globe beneath 5 - 6" fruit with white, fine grained flesh.
45001 Tokyo Cross F ¹	35	A very early, perfect globe shaped root. Can be harvested from 2 - 6" without risk of getting pithy.

TOMATO PROCESSING/SALADETTE Hybrid

	Priced per package		Priced per 1,000 seeds in these package sizes			
	100 Seeds	500 Seeds	1M	5M	25M	100M
44062P BHN-1045 Pelleted	15.15	58.10	96.80	88.00	83.80	79.80
44041P Daytona F300 Pelleted	11.75	45.10	75.10	68.25	65.00	61.90
Mariana F300 Primed						
44176P Pelleted	11.15	42.80	71.30	64.80	61.70	58.75
44224P Monticello Pelleted	12.10	46.35	77.20	70.15	66.80	63.60
44091 San Marzano	13.50	51.75	86.25	78.40	74.65	71.05

* Multiple packages may be used to fill orders for these quantities.

TURNIPS / RUTABAGA

	Priced per package		Priced per pound in these package sizes		
	1 oz.	4 oz.	1#	5#	50#
45903 Laurentian Rutabaga	3.50	12.10	33.80	32.80	
45501U Purple Top White Globe Untreated		6.20	15.20	14.70	14.20
45001 Tokyo Cross	19.70	68.40	191.20	190.20	



ESTRELLA ★

WATERMELON

PLANTING

Start in the greenhouse and allow 28 - 35 days to get plants ready to transplant. Excessive water during germination must be avoided. Water transplant growing medium well and allow excess moisture to drain and moisture to stabilize for 24 - 48 hours. Bring medium temperature to 80 - 95°F before seeding. Seedcoat adherence to cotyledons may be virtually eliminated by orienting the seed in transplant trays with the pointed end up at a 45° to 90° angle. Plant transplants 6 - 12 feet apart with 36" between plants.

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

MANAGEMENT

Scout fields every 7 days to monitor weed, insect, and disease pressure. Place pollinating insects near the field to ensure proper pollination. Water only if necessary. Do not over-water.

HARVEST

Ripeness is indicated by a cream to slight yellowing of the white background color of the part of the melon that rests on the ground. Drying of the stem tendril nearest the attachment point of the watermelon and green color tone of the rind are also indicators of ripeness but these vary with cultivar. Melons should be cut from the vine rather than pulled, twisted, or broken off.

STORAGE

Store at 50 - 60°F and at a humidity level of 90 - 95%. This will ensure a long shelf life.

DISEASE CODES

A - Anthracnose
F - Fusarium
GSB - Gummy Stem Blight



ESTRELLA ★



SANGRIA



JADE STAR



YELLOW DOLL



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NOW ONLY
\$10⁰⁰**



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are shipped free!

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WATERMELON		LARGE Hybrid							
▲		Days	Shape	Weight pounds	Rind Type	Flesh Color	Seed Size	Disease	Features
★	46041 Estrella 	80	Long Blocky	20 - 24	Allsweet	Bright Red	Small	A, F	<i>Excellent flavor and texture. Plants are typically vigorous with large leaves. Uniform fruit.</i>
	46030 Sangria 	85	Elongated	18 - 22	Allsweet	Bright Red	Large	A, F	<i>Good field performance with excellent taste.</i>

WATERMELON		ICEBOX							
▲		Days	Shape	Weight pounds	Rind Type	Flesh Color	Seed Size	Disease	Features
	46051 Jade Star <small>Pata Negra</small> 	80	Round Oval	15	Dark Green / Faint Stripes	Intense Red	Small	F ¹	<i>An improved Sugar Baby type hybrid with brighter, sweeter flesh and a better vine. For fresh market.</i>
	46005 Yellow Doll 	68	Oval	5 - 7	Medium Green / Dark Stripes	Yellow	Small		<i>Unusual, very sweet home garden hybrid. Crisp flesh.</i>

WATERMELON LARGE Hybrid		M=1,000 seeds			
Priced per package		250 Seeds			
Priced per 1,000 seeds in these package sizes		1M	5M	10M*	
46041	Estrella	34.40	88.75	83.75	78.75
46030	Sangria	36.45	94.00	89.00	84.00

*NOTICE WATERMELON GROWERS: Customers are required to sign a "Waiver of Liability" form, prior to the shipping of any watermelon seed.

* Multiple packages may be used to fill orders for these quantities.

WATERMELON ICEBOX		M=1,000 seeds			
Priced per package		250 Seeds			
Priced per 1,000 seeds in these package sizes		1M	5M	10M*	
46051	Jade Star	36.25	92.85	91.85	90.85
46005	Yellow Doll ^{F300}	38.25	98.00	97.00	96.00

* Multiple packages may be used to fill orders for these quantities.

DOCUMENTS REQUIRED

Various products in our catalog require signed documents before seed can be shipped.

Look for this document icon with a page number. This will guide you to the page with the appropriate document for the product you are purchasing.

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SIRIUS **NEW**

WATERMELON SEEDLESS

PLANTING

Start in the greenhouse. Allow 28 - 35 days to get plants ready to transplant. Excessive water during germination must be avoided. Water transplant growing medium well and allow excess moisture to drain and moisture to stabilize for 24 - 48 hours. Bring medium temperature to 80 - 95°F before seeding. Seedcoat adherence to cotyledons may be virtually eliminated by orienting the seed in transplant trays with the pointed end up at a 45° to 90° angle. Plant transplants 6 - 12 feet apart with 36" between plants.

As a general rule, direct field seeding of the pollinizer variety should be done on the same day the triploid seed is planted in the greenhouse. Small-fruited, icebox varieties usually flower earlier than standard watermelon varieties. If icebox varieties are to be used as the pollinizer, then direct seeding should be delayed a week to ten days. The diploid icebox pollinizer variety will frequently set fruit and stop producing male blossoms while the triploid variety is still producing female blossoms. Growers may make a second planting of a pollinizer 2 - 3 weeks after the initial planting to provide pollen for the late-developing female

blossoms on the triploid variety. No consistent differences among any standard and icebox types in effectiveness of pollination have been noted. Icebox varieties used as pollinizers result in high early yields; standard varieties used as pollinizers result in high total yields.

See "Germination Chart" on page 121 for additional information on germination rate and days to germination at various soil temperatures.

MANAGEMENT

For successful seedless watermelon production, an adequate bee population is especially important to transfer the pollen from the pollinizer variety to the seedless variety (seedless watermelons do not produce pollen). The pollinizer variety is normally planted in alternate, or every third row to ensure adequate pollen movement by the bees. At least eight visits to an individual flower of the seedless variety are necessary for adequate hormonal stimulation for normal fruit development. Scout fields very 7 days to monitor weed, insect, and disease pressure.

HARVEST

Ripeness is indicated by a cream to slight yellowing of the white background color of the part of the melon that rests on the ground. Drying of the stem tendril nearest the attachment point of the watermelon and green color tone of the rind are also indicators of ripeness but these vary with cultivar. Melons should be cut from the vine rather than pulled, twisted, or broken off.

STORAGE

Store at 50 - 60°F and at a humidity level of 90 - 95%. This will ensure a long shelf life.



BOLD RULER



FASCINATION ★



JOY RIDE



MELODY



ORANGE CRISP



SWEET DAWN ★

WATERMELON		TRIPLOID Hybrid					Pricing on pages 117
Days	Shape	Weight pounds	Rind Type	Flesh Color	Features		
46001	Bold Ruler	83	Round / Oval	16 - 18	Crimson Sweet	Bright Red	<i>A high quality seedless with early set in cool conditions. Very high yield and excellent fruit uniformity. Must be planted with an early pollinator like Ace Plus.</i>
★ 46140	Fascination	85	Blocky	17 - 21	Crimson Sweet	Dark Red	<i>A variety with very firm, high quality flesh with small pips. Exhibits improved disease tolerances to Fusarium and Anthracnose.</i>
46026	Joy Ride	86	Oblong	19 - 20	Mottle Stripe	Dark Red	<i>Highly adaptable and suitable hybrid for growing across all regions of the country. Produces a large percentage of 36-count watermelons. Offers a thick rind and firm fruit with uniform setting. Has a vigorous plant type with good canopy coverage. Has shown a high, industry leading average degrees Brix of 11.5 in trials, surpassing all comparable varieties.</i>
46134	Melody	80	Globe	14 - 16	Allsweet	Dark Red	<i>Offers growers the advantage of an early maturing hybrid, with a heavy, concentrated and uniform fruit set.</i>
46007	Orange Crisp	92	Round / Oval	14 - 18	Jubilee	Orange	<i>The melons hold up for a very long time in and out of the field. Very crisp and firm flesh. Yellow-orange flesh turns more orange as it matures and the taste improves with time. Don't pick too early!</i>
★ 46102	Sweet Dawn	76	Blocky	16 - 20	Crimson Sweet	Dark Red	<i>Early variety that produces consistently high yields, offering growers significant first to market advantages. Firm and sweet flesh are ideal for retail markets.</i>
★ 46008	Sweet Gem	83	Oval	12	Dark Green	Bright Red	<i>High-yielding seedless variety that produces uniform, large, oval fruit with a rich, classy rind. Its distinctive look and superior flavor make it ideal for the fresh market and a standout in the produce aisle.</i>
46039	Tailgate	84	Oval	17 - 20	Dark Mottle Stripe	Deep Red	<i>Excellent internal characteristics with small pips. Low frequency of hard seed and hollow heart. High Brix and great flesh firmness.</i>

Additional Triploid Watermelons can be found on the next page --->.

GROWER PREFERRED ALL-STARS ★ WATERMELON

LARGE SEEDED

Estrella, is early (80 days) with excellent flavor and texture, nice consistently blocky fruit that has a great look at the market.

TRIPLOID

Fascination is the #1 planted variety in the Eastern US for good reasons: high quality interior and a rich non-fading rind color combined with yield and tolerance to Fusarium and Anthracnose. It provides the flavor that your customers demand. Fascination should be part of any size operation.

Sweet Dawn, Great eating quality in an early season seedless. More consistent size and shape as compared to Melody. Will get you to the marketplace a week earlier than Fascination. This is the melon that I go out and pick when we need one for our own table.

Sweet Gem is a great eating seedless with a "Black Diamond" look and superior flavor that will set your crop apart in the marketplace.



Brad Paulson
Vegetable Consultant



SWEET GEM ★



TAILGATE



UNBRIDLED



YELLOW BUTTERCUP



SIRIUS **NEW**



EXTAZY

WATERMELON

TRIPLOID Hybrid

Pricing on pages 117

		Days	Shape	Weight pounds	Rind Type	Flesh Color	Features
46018	Unbridled	85	Oval	18 - 22	Medium Green Background / Dark Green Stripes	Deep Red	Next generation breeding from Sakata includes this high yield potential, strong vined variety. Beautiful rind pattern and crisp, dark red flesh round out a solid product.
46021	Yellow Buttercup	90	Round/Oval	14 - 16	Dark Green Background / Green Stripes	Bright Yellow	One of the top yellow-fleshed varieties in today's marketplace. Crisp texture and great eating quality.
Personal Size							
46150	Extazy	80	Round	5 - 7	Dark Crimson	Dark Red	Very sweet and crunchy. Excellent shelf life. Good for small families or empty nesters.
NEW 46045	Sirius	74	Globe	5.5-6.5	Crimson Sweet	Red	High-quality, Crimson Sweet striped personal size seedless. Medium thick rind and intermediate resistance to Fusarium wilt race 1. Globe shaped fruit with red flesh and small-medium pip size. Early maturity.
Pollenizers							
46103	Ace Plus		Round / Oval		Light Green Background / Medium Green Stripes		Offers a very early flowering date that makes pollen available for the first female flowers produced by the triploid hybrid. Continues an elongated pollination cycle.
46109	Wild Card Plus		Round / Oval		Light Green Background / Medium Green Stripes		Early and extended flowering period that ensures early pollenation availability when triploid hybrid begins flowering. Long, thin internodes radially extend pollen to wherever a female flower is located.



DOCUMENTS REQUIRED

Various products in our catalog require signed documents before seed can be shipped.

Look for the colored document icon with a page number next to each variety name. The page number indicates the correct watermelon waiver that needs to be signed yearly before your seed can ship.

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ACE PLUS



WILD CARD PLUS



SAVE WITH CASH DISCOUNTS

Cash discounts are available throughout the season and are a great way to add money to your bottom line. See page 6 for all of the details.

December.....	6%
January.....	5%
February.....	4%
March.....	3%
April.....	2%

WATERMELON TRIPLOID Hybrid

M=1,000 seeds

	Priced per package		Priced per 1,000 seeds in these package sizes		
	100 Seeds	500 Seeds	1M	5M	10M*
46001 Bold Ruler	33.65	134.50	229.85	222.35	217.35
46140 Fascination	47.30	189.15	323.30	315.80	310.80
46026 Joy Ride	40.85	163.40	279.30	271.80	266.80
46134 Melody	45.60	182.40	311.75	304.25	299.25
46007 Orange Crisp	41.35	165.40	282.65	275.15	270.15
46102 Sweet Dawn	47.60	190.40	325.40	317.90	312.90
46008 Sweet Gem	57.90	231.55	395.75	388.25	383.25
46039 Tailgate	41.35	165.30	282.50	275.00	270.00
46018 Unbridled ^{F300}	38.65	154.50	264.10	256.60	251.60
46021 Yellow Buttercup ^{F300}	55.40	221.50	378.55	371.05	366.05
Personal Size					
46150 Extazy	39.50	157.85	269.75	262.25	257.25
46045 Sirius	36.40	145.55	248.75	241.25	236.25
Pollenizers					
46103 Ace Plus ^{F300}	28.65	114.60	195.85	188.35	183.35
46109 Wild Card Plus ^{F300}	33.45	133.65	228.40	220.90	215.90

* Multiple packages may be used to fill orders for these quantities.





RUPP JACKET



RUPP SOFT SHELL



RUPP HOODIE



RUPP CAMO CAP



RUPP KHAKI & BLACK CAP



RUPP RED & GRAY CAP

RUPP CLOTHING

		Regular Sizes	Tall Sizes	Features
PJKT.CAS.W1	Rupp Jacket 11.5 oz	XS - 6XL	LT - 6XLT	<i>This jacket features a shell constructed of wind-proof/water resistant Polyurethane coated heavyweight Toughlan™ nylon, and is fully lined with super heavyweight 11.5 oz. anti-pilling panda fleece. Also features a generous full cut, two front pockets and one inner right chest pocket, all with zippers. Double-stitched seams for added strength. Raglan sleeves with stretch cuff and waistband. The jacket shell is khaki with a black lining. The Rupp logo is embroidered in maroon on the left chest. Men's sizes only.</i>
PJKT.CAS.SF3	Rupp Soft Shell Jacket	S - 4XL		<i>This soft shell jacket is ready to take on rain or wind with a sleek colorblock shell and a warm microfleece interior. Rupp logo on the left chest. Available in men's sizes only.</i>
PJKT.SWT.HD	Rupp Hoodie Sweatshirt	S - 3XL		<i>Charcoal gray pull-over hoodie sweatshirt with the a large Rupp logo on the front.</i>
PHAT.SOLID.G3	Rupp Camouflage Solid Cap	One size fits all		<i>This ballcap features a sloped front and a pre-formed visor. The cap is black with Realtree Hardwoods® camouflage and barbed wire accent. Rupp Seeds logo embroidered in gray.</i>
PHAT.MESH.G5	Rupp Khaki & Black Mesh Cap	One size fits all		<i>This mesh back, unstructured cap features a Rupp logo patch on the front and has our "See What Good Yields*" tagline on the back.</i>
PHAT.SOLID.G7	Rupp Red & Gray Solid Cap	One size fits all		<i>This ballcap features a sloped front and a pre-formed visor. The cap is red and gray with Rupp Seeds logo embroidered in white on the front and our "See What Good Yields*" tagline on the back.</i>

Please allow 3-4 weeks for delivery on clothing.

RUPP CLOTHING

RECOMMENDED SIZE CHART

	XS	S	M	L	XL	2XL	3XL	4XL	5XL	6XL
Men's Jacket Size	30-32	34-36	38-40	42-44	46-48	50-52	54-56	58-60	62-64	66-68
Ladies Jacket Size	2-4	6-8	10-12	14-16	18-20	22-24	26-28	30-32		
Size Code**	X	S	M	L	1	2	3	4	5	6

** Use item number plus size code. Add a 'T' to the end for tall sizes.

CLOTHING

	Size	XS	S	M	L	XL	2XL	3XL	4XL	5XL	6XL
	Size codes	X	S	M	L	1	2	3	4	5	6
PJKT.CAS.W1	Rupp Jacket ^{11.5 oz}	73.25	73.25	73.25	73.25	73.25	77.50	80.50	83.50	86.50	89.50
PJKT.CAS.SF3	Rupp Soft Shell Jacket		71.15	71.15	71.15	71.15	75.40	78.40			
PJKT.SWT.HD	Rupp Hoodie Sweatshirt		31.50	31.50	31.50	31.50	35.75	38.75			
PHAT.SOLID.G7	Rupp Red & Gray Cap	13.15									
PHAT.SOLID.G3	Rupp Camouflage Cap	13.15									
PHAT.MESH.G5	Rupp Khaki & Black Mesh cap	13.15									
	Tall size codes				LT	1T	2T	3T	4T	5T	6T
CAS.W1	Rupp Jacket ^{11.5 oz}				77.50	80.50	83.50	86.50	89.50	92.50	95.50

Prices include shipping. Allow 3-4 weeks for delivery.

Cash discounts are not available on clothing.

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1 OZ. PACKET



4 OZ. PACKET



BIN MARKERS

POINT OF SALE

Seed Packets	Priced per box of 500 packets	Box
VPOS.PACKET.1Z 1 oz seed packets - 3 1/4" x 4 3/4"		30.45
VPOS.PACKET.4Z 4 oz seed packets - 4 5/8" x 6 7/8"		44.10
Bin Markers		
VPOS.BINMARK 4 3/4" x 6 3/4" Bin Marker - Pack of 25		2.65

PLANTER PLATES

	Priced per plate	1 plate
B John Deere Plates		36.75
C IH Plates		36.75
F Filler Ring		36.75

Give us a call about your planter plate needs. We have a good stock including blank plates available for you to make your own cells for those hard to fit seeds.

Biological Enhancement for Vegetables

Naturall™

for Vegetables

ROOT INOCULANT

Naturall™ for Vegetables contains proprietary and patent pending biologicals that colonize the root system of plants. Crop stress such as disease and dry weather can be alleviated, and often systemically, so that root colonization by this treatment can affect the physiology of the whole plant resulting in higher yields.



- Enhanced root growth
- Healthier plants
- Increased seedling vigor
- Easy to apply
- Higher yields
- Improved nutrient and water efficiency



ABM | abm1st.com

NATURALL™ PB APPLICATION RATES

CROPS	RATE
Cucurbit Vegetables: Pumpkins and Squash	1.0 oz. per 80,000 seeds
Cucurbit Vegetables: Cucumbers and Melons	0.5 oz. per 80,000 seeds
Broccoli, Cabbage and Cauliflower	0.5 oz. per 50,000 seeds
Peppers and Tomatoes: Garlic, Leeks, Onions, Shallots	0.5 oz. per 100,000 seeds
Root Crops: Beets, Sugar Beets, Red Beets, Carrots, Celeriac, Chicory, Horseradish, Parsnip, Radish, Rutabaga, Salsify, Turnips	0.5 oz. per 100,000 seeds

CONTENTS SETTLE SHAKE CONTAINER WELL BEFORE MEASURING



CORN

Application rate: SabrEx for corn can be used for field corn, popcorn, sweet corn and sunflowers at a rate of 0.5 oz. per 50 lb. of seed.

Directions for use: Apply as a dry seed treatment prior to planting. Mix until uniform coverage is obtained.

Compatibility: SabrEx is compatible with many common fungicides and insecticides. For current compatibilities, contact your ABM representative or call 877-617-2461.

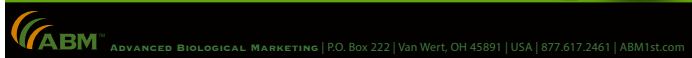
Product specifications: Contains proprietary and crop-specific combination of patent-pending strains of Trichoderma microorganism spores formulated with an 80/20 talc/graphite carrier.

Minimum specifications: 7x10⁷ cfu/gm.

CONTAINS LIVING ORGANISMS. STORE IN A COOL DRY PLACE OUT OF SUNLIGHT.

Made in the USA

Net Contents: 1 oz.



INOCULANT

	Priced per pouch	Each
TRT.NATRALPB.1Z Naturall PB for Vegetables 1 oz pouch		29.95
TRT.GRAPHEx Graph-Ex SA Pea and Bean Inoculant 4 oz pouch		12.60
TRT.SABREX SabrEx PB for Sweet Corn 1 oz pouch		31.50

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GERMINATION CHART PERCENTAGE OF NORMAL VEGETABLE SEEDLINGS

PRODUCED AT DIFFERENT TEMPERATURES* **

Seeds will germinate at a wide range of temperatures. However, there is an optimal temperature that will maximize production time. This chart shows the percentage of seedlings produced at various temperatures and the number of days until seedling emergence at each temperature: shown in ().

The numbers in red = the optimal daytime soil temperature for maximum production in the shortest time.

Crops	32°F	41°F	50°F	59°F	68°F	77°F	86°F	95°F	104°F
Asparagus	0	0	61% (53 d)	80% (24 d)	88% (15 d)	95% (10 d)	79% (12 d)	37% (19 d)	0
Beans, lima	0	0	1	52% (31 d)	82% (18 d)	90% (7 d)	88% (7 d)	2	0
Beans, snap	0	0	1	97% (16 d)	90% (11 d)	97% (8 d)	47% (6 d)	39% (6 d)	0
Beets	0	53% (42 d)	72% (17 d)	88% (10 d)	90% (6 d)	97% (5 d)	89% (5 d)	35% (5 d)	0
Cabbage	0	27	78% (15 d)	93% (9 d)	97% (6 d)	99% (5 d)	70% (4 d)	0	0
Carrots	0	48% (51 d)	93% (17 d)	95% (10 d)	96% (7 d)	96% (6 d)	95% (6 d)	74% (9 d)	0
Cauliflower	0	0	58% (20 d)	60% (10 d)	62% (6 d)	63% (5 d)	45% (5 d)	0	0
Celery	0	72% (41 d)	70% (16 d)	40% (12 d)	97% (7 d)	65%	0	0	0
Cucumber	0	0	0	95% (13 d)	99% (6 d)	99% (4 d)	99% (3 d)	99% (3 d)	49
Eggplant	0	0	0	0	21% (13 d)	53% (8 d)	60% (5 d)	0	0
Lettuce	98% (49 d)	98% (15 d)	98% (7 d)	99% (4 d)	99% (3 d)	99% (2 d)	12% (3 d)	0	0
Muskmelon	0	0	0	0	38% (8 d)	94% (4 d)	90% (3 d)	0	0
Okra	0	0	0	74% (27 d)	89% (17 d)	92% (13 d)	88% (7 d)	85% (6 d)	35% (7 d)
Onions	90% (136 d)	98% (31 d)	98% (13 d)	98% (7 d)	99% (5 d)	97% (4 d)	91% (4 d)	73% (13 d)	2
Parsley	0	0	63% (29 d)	0% (17 d)	69% (14 d)	64% (13 d)	50% (12 d)	0	0
Parsnips	82% (172 d)	87% (57 d)	79% (27 d)	85% (19 d)	89% (14 d)	77% (15 d)	51% (32 d)	1	0
Peas	0	89% (36 d)	94% (14 d)	93% (9 d)	93% (8 d)	94% (6 d)	86% (6 d)	0	0
Peppers	0	0	1	70% (25 d)	96% (13 d)	98% (8 d)	95% (8 d)	70% (9 d)	0
Radish	0	42% (29 d)	76% (11 d)	97% (6 d)	95% (4 d)	97% (4 d)	95% (3 d)	0	0
Spinach	83% (63 d)	96% (23 d)	91% (12 d)	82% (7 d)	52% (6 d)	28% (5 d)	32% (6 d)	0	0
Sweet Corn	0	0	47% (22 d)	97% (12 d)	97% (7 d)	98% (4 d)	91% (4 d)	88% (3 d)	10
Tomatoes	0	0	82% (43 d)	98% (14 d)	98% (8 d)	97% (6 d)	83% (6 d)	46% (9 d)	0
Turnips	1	14	79% (5 d)	98% (3 d)	99% (2 d)	100% (1 d)	99% (1 d)	99% (1 d)	88% (3 d)
Watermelon	0	0	0	17	94% (12 d)	90% (5 d)	92% (4 d)	96% (3 d)	0

*The above data was taken from a report published in the mid-1980's. Author, affiliation, and publisher are not known.

**The above table was derived from experimental data. Certain logical inconsistencies exist due to crop failure or to bad batches of seed. They do not interfere with the overall interpretation.

PLANTING GUIDE

Seeds per Pound	Seeding Rate			Seed or Plant Spacing			Recommended Soil Temperature	Days to Germination	
	per Acre by Weight	per Acre in 1000s	Seeds per 1000 foot of Row	In Row	Between Rows	Depth			
Asparagus	12,800 - 16,500	7.5 - 11 oz	6.1 - 11.4 M	667 - 1,000	12 - 18"	48 - 60"	.8"	60 - 85°F	10 - 20
Beans Bush Green	1,500 - 1,600	60.5 - 68 lbs	90.8 - 108.9 M	6,000	2"	30 - 36"	.5 - 1"	65 - 85°F	8 - 12
Beet	25,600 - 30,000	5.3 - 6.1 lbs	136.1 - 181.5 M	6,000	2"	18 - 24"	.5 - 1"	60 - 85°F	6 - 10
Broccoli	80,000 - 128,000	2.9 - 3 oz	15.2 - 22.7 M	1,000	12"	24 - 36"	.3 - .5"	60 - 75°F	6 - 10
Brussels Sprouts	80,000 - 128,000	1 - 1.4 oz	7.6 M	500	24"	36"	.5 - 1"	60 - 75°F	6 - 10
Cabbage	107,000 - 128,000	1.9 - 2.2 oz	15.2 M	1,000	12"	36"	.3 - .5"	50 - 60°F	6 - 10
Cantaloupe	15,000 - 20,000	4 - 4.8 oz	3.8 - 6.1 M	500 - 667	18 - 24"	60 - 72"	.5 - 1"	75 - 85°F	7 - 12
Carrots	320,000 - 410,000	2 - 2.1 lbs	653.2 - 871 M	24,000	.5"	15 - 20"	.5"	50 - 85°F	8 - 12
Cauliflower	116,000 - 128,000	1.1 - 1.3 oz	7.6 - 10.1 M	500 - 667	18 - 24"	36"	.3"	50 - 77°F	6 - 10
Celery	960,000 - 1,417,500	0.5 - 0.8 oz	45.4 M	2,000	6"	24"	.1"	65 - 70°F	21 - 25
Collards	90,700 - 144,000	1.3 - 1.8 oz	10.1 - 12.1 M	667 - 800	15 - 18"	36"	.3 - .5"	60 - 75°F	6 - 10
Cucumber	16,000 - 18,000	0.6 - 1 lbs	10.1 - 18.2 M	667 - 1,000	12 - 18"	30 - 36"	.5 - 1"	60 - 95°F	7 - 10
Eggplant	96,000 - 110,000	1 - 1 oz	5.5 - 6.9 M	600 - 750	16 - 20"	60"	.2 - .5"	85 - 90°F	10 - 14
Endive	240,000 - 260,000	1.4 - 2.2 oz	22.7 - 36.3 M	1,000 - 1,200	10 - 12"	18 - 24"	.5"	50 - 75°F	10 - 14
Kale	124,000 - 136,000	1.9 - 2.9 oz	15.2 - 24.2 M	667 - 800	15 - 18"	18 - 24"	.25 - .5"	60 - 75°F	6 - 10
Kohlrabi	123,000 - 144,000	1.9 - 2.7 oz	15.2 - 24.2 M	667 - 800	15 - 18"	18 - 24"	.25 - .5"	60 - 75°F	6 - 10
Leeks	144,000 - 151,000	1.1 - 1.4 lbs	163.3 - 204.2 M	6,000	2"	16 - 20"	.5"	65 - 95°F	10 - 14
Lettuce	364,000 - 432,000	3 - 3.4 oz	68.1 - 90.8 M	3,000	4"	18 - 24"	.3 - .5"	50 - 75°F	2 - 7
Mustard	204,000 - 272,000	4 - 5.3 oz	68.1 M	1,500	8"	12"	.3"	60 - 75°F	5 - 8
Okra	7,800 - 8,000	1.1 - 1.3 lbs	8.7 - 10.1 M	667	18"	36 - 42"	1"	65 - 95°F	7 - 18
Onion	106,000 - 144,000	1.4 - 1.5 lbs	163.3 - 204.2 M	6,000	2"	16 - 20"	.5"	32 - 85°F	10 - 14
Parsley	266,000 - 288,000	8.2 - 13.4 oz	136.1 - 242 M	3,000 - 4,000	3 - 4"	9 - 12"	.3"	50 - 86°F	21 - 25
Parsnips	87,000 - 120,000	1.4 - 1.5 lbs	121 - 181.5 M	4,000	3"	12 - 18"	.3 - .5"	32 - 75°F	18 - 25
Peas	2,200 - 2,400	41.2 - 90.7 lbs	90.8 - 217.8 M	6,000 - 12,000	1 - 2"	30 - 36"	1.5 - 2"	40 - 86°F	6 - 10
Pepper <small>Twin row on plastic</small>	64,000 - 76,000	2.2 - 2.6 oz	9.1 - 12.1 M	500 - 667	18 - 24"	12"	.3 - .5"	65 - 86°F	10 - 14
Pumpkin	3,000 - 3,200	0.6 - 1.2 lbs	1.9 - 3.8 M	333 - 500	24 - 36"	72 - 96"	.5 - 1"	70 - 80°F	7 - 10
Radish	45,000 - 48,000	12.1 - 15.1 lbs	544.4 - 725.8 M	12,000	1"	9 - 12"	.5 - .8"	60 - 85°F	5 - 8
Spinach	39,000 - 48,000	3.7 - 11.3 lbs	145.2 - 544.4 M	4,000 - 12,000	1 - 3"	12 - 15"	.5"	32 - 60°F	7 - 10
Squash Summer	2,500 - 6,000	1.7 - 1.8 lbs	4.6 - 10.1 M	500 - 667	18 - 24"	36 - 60"	.5 - .75"	70 - 80°F	7 - 10
Squash Winter	3,000 - 4,000	1 - 1.3 lbs	2.9 - 5.1 M	500 - 667	18 - 24"	72 - 96"	.5 - .75"	70 - 80°F	7 - 10
Sweet Corn	2,700 - 6,000	4.5 - 6.7 lbs	18.2 - 27.3 M	1,000 - 1,500	8 - 12"	30"	.75 - 1.5"	60 - 75°F	7 - 10
Tomato	140,000 - 165,000	0.8 - 0.8 oz	7.6 M	667	18"	48"	.25 - .5"	60 - 75°F	7 - 10
Turnip	173,000 - 192,000	1.4 - 1.6 lbs	272.2 M	6,000	2"	12"	.3"	60 - 75°F	6 - 10
Watermelon Large	4,000 - 8,000	5.1 - 5.1 oz	1.3 - 2.6 M	333	36"	72 - 144"	.5 - 1"	80 - 95°F	8 - 12
Watermelon Small	8,000 - 10,000	2.6 - 4 oz	1.3 - 2.6 M	333	36"	72 - 144"	.5 - 1"	80 - 95°F	8 - 12

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United States Department of Agriculture

This is to verify that

Rupp Seeds

Pettisville, Ohio

has successfully met USDA's acceptance criteria of the voluntary

USDA Good Agricultural Practices & Good Handling Practices Audit

Wholesale Distribution Center/Terminal Warehouses

Various Seeds

A handwritten signature in black ink, appearing to read "K. G. Peterson".

Chief, Audit Services Branch

Audit ID: 25993

10/30/2018

Audits are valid for one year from date on certificate. To verify continued adherence to the program, please visit www.ams.usda.gov/gapghp



Rupp Seeds Inc.
17919 County Road B
Wauseon, Ohio 43567

419-337-1841
fax 419-337-5491
www.ruppseeds.com

Letter of Guarantee

To whom it may concern,

Rupp Seeds Incorporated was founded in 1946 and is a family owned business now in its third generation of family management.

Rupp Seeds is an active member of the American Seed Trade Association (ASTA) (www.amseed.org), Independent Professional Seed Association (IPSA) (ipseed.org) and Ohio Seed Improvement Association (OSIA) (www.ohseed.org).

Involvement in these organizations insures that we stay abreast of best practices in managing seed and variety quality throughout production and processing in a manner that meets and exceeds industry standards.

Rupp Seeds is an authorized seed dealer for many of the leading vegetable seed breeders and producers. Rupp Seeds and its seed suppliers employ Good Agricultural Practices in the production of commercial seed lots and every effort is made to minimize microbial contamination during production and processing. Seeds sold to Buyer are of adequate quality for use in raising a crop.

Rupp Seeds has contracted with a third party to manage pest control in its seed storage and processing facilities.

This is a continuing guarantee, subject to revocation only on written notice to Buyer.

A handwritten signature in blue ink, appearing to read 'Philip Rupp', is written over a horizontal line.

Philip Rupp, President

October 7, 2019



Rupp Seeds Inc.
17919 County Road B
Wauseon, Ohio 43567

Watermelon Waiver

800.700.1199

FAX 419.337.5491

waivers@ruppseeds.com

NOTICE, WAIVER and COMPLETE RELEASE AGREEMENT

Watermelon Fruit Blotch (WFB) is a serious disease that has become a significant risk factor in many areas where watermelons are grown. The pathogen causing WFB can be introduced into a field by infested seed, infected transplants, volunteer watermelon, mechanical means, or natural spread from alternate hosts. While it is impossible to conduct testing procedures that will give 100% reliable results with regard to the identification of any seed born WFB infection, Rupp Seeds suppliers are testing all of their seed lots. Depending on the supplier, 10,000 to 50,000 seeds from each seed lot have been tested pursuant to current industry standards, and no symptoms of WFB were found to be present within the known limits of detection. Rupp hereby represents that its suppliers have tested representative samples of all seed lots to be covered by this agreement, and has not detected the presence of WFB bacteria in any such representative samples. Notwithstanding the above, Rupp Seeds cannot guarantee that such tests are totally conclusive and nor that the seeds are free of WFB and, further, cannot guarantee that WFB bacteria may not be introduced to such seeds and/or watermelon plants from outside sources at a later time.

GROWERS RELEASE OF ALL LIABILITY FOR WATERMELON FRUIT BLOTCH.

Acknowledging the above, Grower still wishes to purchase watermelon seeds, and Grower is willing to assume all risks of loss associated with WFB. Accordingly, Grower hereby fully and conditionally releases Rupp and its suppliers from any and all liability with respect to the presence of WFB bacteria on or within such seeds or the vulnerability of such seeds, to the WFB bacteria. Grower acknowledges and agrees that Rupp and its suppliers shall have no responsibility or liability for any losses or damages relating in any way to WFB, under any legal theory including but not limited to negligence or strict products liability. Rupp Seeds acknowledges that all other aspects of its express warranty, as contained on the label, do apply, and that any waiver or limitation on the Rupp express warranty resulting from the terms and conditions of this Agreement, only apply to the presence on or within, or vulnerability of, such seeds, to WFB bacteria. Grower further agrees that Rupp and its suppliers have no liability or responsibility for its watermelon seeds or plants grown there from, if they are contaminated with WFB bacteria after the seeds are delivered to grower. Grower acknowledges that contamination may occur in a transplant house, in the field, or under circumstances beyond the control of Rupp Seeds.

GROWER'S AGREEMENT NOT TO RESELL SEEDS OR PLANTS.

In consideration for Rupp Seeds, or its suppliers, agreeing to sell watermelon seeds to Grower, Grower hereby agrees that it/he will only use such seeds for plantings on its/his own holdings, and will not, under any circumstances, sell, transfer, distribute or in any way dispose of any such seeds or seedlings grown from the seeds, with or without consideration, to any third party.

GROWER'S INDEMNIFICATION AGREEMENT.

Grower acknowledges that in the event it/he breaches the terms and conditions of paragraph 2, of this agreement, with respect to the distribution of such watermelon seeds to a third party, Rupp Seeds and their suppliers could incur liability to such third parties. Therefore, grower hereby unconditionally agrees to defend and indemnify Rupp Seeds or any of their suppliers, from any and all loss, liability, or damage which Rupp Seeds or any of their suppliers, may incur, including, but not limited to reasonable attorney's fees, relating to any claim by a third party who received any portion of the watermelon seeds which are covered by this agreement as sold by Rupp Seeds to grower.

GROWER UNDERSTANDS THIS AGREEMENT.

Grower represents and warrants that it/he has consulted with or had an opportunity to consult with an attorney, and that Grower fully understands the meaning and legal effect of this agreement.

ALL OTHER TERMS OF THE LABEL APPLY.

Except as expressly provided within this agreement, all remaining terms, disclaimers, limitations, and conditions of purchase as disclosed and set forth on the Rupp label and on the Rupp Notice to Purchase Regarding Liability shall apply to the Grower's purchases of watermelon seed.

CHOICE OF LAW AND CHOICE OF FORUM.

The parties agree that this agreement is entered into the County of the Rupp's supplier and shall be construed in accordance with the laws of that state. It is further agreed that any litigation by and between Grower and Rupp Seeds, or under a Rupp supplier, relating to the sale of all such watermelon seeds hereunder, shall take place in the county of the Rupp supplier.

ATTORNEY'S FEES.

In the event that Rupp or its supplier enforces any terms of this agreement in any litigation with Grower, Rupp or its supplier shall be entitled to recover reasonable attorney's fees from Grower.

Rupp Seeds Inc.

Signature _____

Date _____

I have read and understand this release agreement and I agree to be bound by all of its terms. Please fill out completely and sign below.

Customer Name _____

Address 1 _____

Address 2 _____

City _____

State _____ Zip _____

Phone # _____

Fax # _____

Printed Name _____

Title _____

Signature _____

Date _____

Variety	Lot	Quantity



SEE WHAT GOOD YIELDS[®]

Release Agreement – Gold Dust

For seed below Rupp quality standards

We are informing you that Gold Dust pumpkin, lot number PCH1518 (herein Seed) is below Rupp Seeds (herein Rupp) quality standards, in that it contains offtypes and may produce up to 15% fruit that vary in shape, color and size. Rupp is offering the Seed at a 15% discount.

By signing this agreement, the Customer understands the Seed is below standard, agrees to purchase the Seed and understands the Seed is not returnable. The Customer further agrees to release Rupp of any and all claims or liability arising from the use of the Seed, and to indemnify and hold harmless Rupp from any claims by third parties arising out of the planting of the Seed.

CUSTOMER

Signature: _____

Printed: _____

Date: _____

Farm/Business Name: _____

Address: _____

Phone: _____



SEE WHAT GOOD YIELDS[®]

Release Agreement – WeeeeeOne

For seed below Rupp quality standards

We are informing you that WeeeeeOne pumpkin, lot number PCH146 (herein Seed) is below Rupp Seeds (herein Rupp) quality standards, in that it contains offtypes and may produce up to 40% fruit that are smaller in size from the variety standard. Both the standard and smaller size fruit are uniform and still likely marketable. Even so, Rupp is offering the Seed at a 40% discount.

By signing this agreement, the Customer understands the Seed is below standard, agrees to purchase the Seed and understands the Seed is not returnable. The Customer further agrees to release Rupp of any and all claims or liability arising from the use of the Seed, and to indemnify and hold harmless Rupp from any claims by third parties arising out of the planting of the Seed.

CUSTOMER

Signature: _____

Printed: _____

Date: _____

Farm/Business
Name: _____

Address: _____

Phone: _____

DP Seeds LLC.

GROWERS RISK AGREEMENT IN THE USE OF WATERMELON SEED SOLD AND / OR SAMPLED BY DP SEED LLC.

DUE TO AN ADVERSE LEGAL CLIMATE IN THE STATES OF NORTH CAROLINA AND SOUTH CAROLINA, WE DO NOT RECOMMEND OUR WATERMELON SEED BE SOLD IN THESE STATES.

Watermelon seed sold or sampled by DP SEED LLC. has been tested for the presence of seed borne Bacterial Fruit Blotch (*Acidovorax Avenae*, sub spec. *Citrulli*) and Gummy Stem Blight (*Didymella Bryoniae*). No symptoms of either disease were found in 50,000 seeds tested through pathology testing and grow out. An accredited seed pathology laboratory using the most current and accepted methods available has done all testing. DP SEED LLC. does not warrant that its seed lots are completely free from the Watermelon Bacterial Fruit Blotch or Gummy Stem Blight. All warranties, express or implied, including warranty of merchantability and fitness for a particular purpose, are disclaimed. In no event, shall DP SEED LLC. be liable for any incidental or consequential damages, including without limitation, lost profits.

The Buyers sole and exclusive remedy for any claim or loss resulting from the use of any seed from any lot sold by DP SEED LLC., its dealers, agents and representatives, is limited to repayment of the purchase price. BY ACCEPTING WATERMELON SEED SOLD OR SAMPLED BY DP SEED LLC., GROWER EXPRESSLY ASSUMES ALL RISK THAT THE WATERMELON SEED MAY CONTAIN DISEASES, INCLUDING, WITHOUT LIMITATION, WATERMELON FRUIT BLOTCH AND/OR GUMMY STEM BLIGHT.

1. Watermelon Fruit Blotch (WTB) and Gummy Stem Blight (GSB) have been discovered in some commercial watermelon crops in the U.O. in which severe damage was caused by this bacteria and/or fungi. It is suspect that these diseases can be spread through water, seed, implements, transplants or other cultural practices. Control methods are currently being studied and developed. These devastating diseases are an industry wide problem and a group of plant pathologists are currently working with seed companies, transplant firms and commercial growers to find solutions to this important problem. At the present time, there is no reliable or infallible test available to fully identify infected seed lots. DP SEED LLC. warrants its watermelon seed only to the extent that the seed in the container conforms to the label thereon.

2. It is expressly understood that this document is to be interpreted and governed according to the laws of the State of Arizona. The undersigned expressly agrees that, in the event of any litigation between the parties to this document arising out of, related to, in connection with, or in violation of any of the terms of this document, venue shall be strictly and only in the County of Yuma, State of Arizona.

3. The grower or duly authorized party representing the grower warrants that he/she is duly authorized to bind the entity on whose behalf he/she is signing to the terms of this agreement and that he/she is purchasing the seed for his/her (Growers) own use and that the seed will only be used for plantings on his/her own holdings. The grower expressly warrants that he/she will not transfer seed and/or seedlings grown from this seed, in any manner, way or form to another party.

4. EXPRESS AGREEMENT TO INDEMNIFY DP SEED LLC. The undersigned agrees to indemnify, defend and hold DP SEED LLC., its officers and its representatives harmless from and against any claim that may ever be brought that relates in any way to the seed purchased or received as samples by the undersigned. This indemnity agreement includes, with limitation, any claim arising from allegedly diseased plants or fruit grown from watermelon seed.

5. Together with the invoice or sample order form reflecting the undersigned's receipt of seed, this document contains the entire agreement between the undersigned and DP SEED LLC. It is expressly understood and agreed that this document may not be amended or otherwise altered except by writing executed by an authorized representative of DP SEED LLC. This document and the invoice or sample order form reflecting the undersigned's receipt of seed supersede all prior agreements, understandings and representations concerning the subject matter hereof.

6. The undersigned stipulates that the terms of this document are clear, understandable and unquestionable and pertain totally to the matter of this document. That he/she fully understands the implication of this document and agrees to all terms and conditions of this agreement without recourse. The undersigned agrees that this document is a matter of law and agrees that no parol or oral evidence shall be admissible to interpret the terms of this document.

7. In the event of any dispute between the undersigned and DP SEED LLC. arising out of, relating to or in connection with the terms of this document, the prevailing party shall be entitled to recover its attorney's fees, costs (whether taxable as such or not), and necessary disbursements.

8. This document may be pleaded as a full and complete defense to and may be used as the basis for an injunction against any action, suit or other proceedings which may be instituted, prosecuted or attempted in breach of this document.

9. Each term, clause and provision of this document is separate and independent. Should any term, clause or provision of this document be found to be invalid the validity of the remaining terms, clauses and provisions shall not be affected.

10. The undersigned represents and warrants that he/she has carefully read this document, has had a full and complete opportunity to consult with anyone, including legal counsel of his/her choice, regarding this document, knows and understands what is in the document and willingly enters into this agreement freely and voluntarily.

I HAVE CAREFULLY AND FULLY READ AND UNDERSTAND THIS DOCUMENT AND I FREELY AND VOLUNTARILY AGREE TO ITS TERMS, WITHOUT RECOURSE WHATSOEVER.

Please fill out completely and sign below.

Customer Name _____

Address 1 _____

Address 2 _____

City _____

State _____ **Zip** _____

Phone # _____

Fax # _____

Printed Name _____

Title _____

Signature _____

Date _____

Variety	Lot	Quantity

NOTICE, WAIVER, LIMITATION OF LIABILITY AND WARRANTY DISCLAIMER

This Notice, Waiver, Limitation of Liability and Warranty Disclaimer is made by U.S. Seedless, L.L.C. (USS) and/or US Seedless, Inc. (USS) and applies to all transfers of watermelon seed by USS to any person including, but not limited to, its customers, distributors, and dealers. The terms contained herein apply to all transfers of seeds or transplants by USS whether the transfer is made via sale or by free sample or trial.

1. Disease Control Notice: Watermelon crops have been affected by various diseases over the last several years. Watermelon Fruit Blotch or *Acidovorax avenae* subsp. *citrulli* (WFB), and Gummy Stem Blight or *Didymella bryoniae* (GSB) in particular are serious diseases which have become a significant risk in the area of watermelon cultivation. The pathogens causing these diseases and all other watermelon diseases can be introduced into a field by infested seed, infected transplants, infected volunteer watermelon, mechanical means, infected debris, or by natural spread from alternate hosts. **The causes of these diseases are due to factors beyond the control of USS and USS cannot guarantee that the seeds are free of WFB, GSB or any other disease.** It is scientifically impossible to conduct any testing procedure which will give 100% reliable results with regard to the identification of any seedborne WFB, GSB or other infection. Nonetheless, USS is using its best efforts to test all of its seed lots. Consequently, 10,000 seeds from each lot have been tested pursuant to current industry standards, and no symptoms or indicators of WFB, GSB or other diseases were found to be present within the known limits of detection. USS recommends that the buyer examine all seed purchased carefully and conduct any tests it deems necessary to reduce the possibility that any seeds are infected with WFB, GSB or any other seedborne disease. The buyer agrees that any seed or plants purchased from USS will be produced or grown in accordance with the "Guidelines for Control of Bacterial Fruit Blotch in Watermelon" as published by the National Watermelon Association, Inc., August 1996, including any subsequent amendments.

2. Waiver and Limitation of Liability: USS and the undersigned acknowledge that this transfer of watermelon seed is a commercial transaction between merchants with respect to goods of this kind. As a condition of sale of all watermelon seeds sold by USS or transplants grown from USS seeds and with respect to all USS seeds or transplants grown from USS seeds provided as free samples or trials, the undersigned acknowledges that he has been informed of the risks associated with the potential presence of WFB, GSB, or any other diseases and hereby waives any right to assert any claims against USS, whether for breach of contract, tort, negligence, strict liability, or otherwise. The undersigned also releases USS, its distributors, its dealers, agents and suppliers from any and all claims relating to WFB, GSB or any other diseases with respect to all USS watermelon seed or transplants grown from USS seed supplied by USS or its dealers. The undersigned expressly acknowledges that his exclusive and sole remedy against USS for any loss resulting from the use of USS seed or transplants grown from USS seed is limited to return of the purchase price of said seed. In addition, the undersigned understands and acknowledges that seedless watermelons are not necessarily 100% free of all seeds, but may contain some edible soft seeds, or some inedible hard seeds. It is understood that seedless watermelon varieties may be affected by environmental conditions including, but not limited to, soil properties, plant spacing, irrigation, climactic conditions, chemical applications, insects, nematodes, virus, bacteria, fungus, or other conditions which may cause stress and/or otherwise pathologically impact the watermelon plants. This in turn may cause an increase in seeds, and variations in watermelon flesh color, size, weight, sugar content, water content, fiber content, and hollow heart condition. Additionally, if any seed is repackaged, all remedies against USS will be waived, including return of the purchase price, and USS will have no liability whatsoever to any other parties.

3. Disclaimer of Warranties:

a. Disclaimer of Express Warranty: Any affirmation of fact or promise made by USS shall not be deemed to create an express warranty that the goods shall conform to the affirmation or promise; any description of the goods by catalogue or otherwise is for the sole purpose of identifying them and shall not be deemed to create an express warranty.

b. Disclaimer of Implied Warranty: **This seed or transplant transfer is made on the express understanding that there is no implied warranty that the goods shall be merchantable and that there is no implied warranty that the goods shall be fit for any particular purpose. The buyer acknowledges that he is not relying upon the seller's skill or judgment to select or furnish goods suitable for any particular purpose and that there are no warranties which extend beyond the description on the face hereof.**

4. Transplant Grower ("Buyer") Obligations: The Undersigned Buyer agrees to obtain from each customer or entity to which the Buyer sells USS watermelon seeds or transplants, a duly signed and executed Waiver and Release form in duplicate in the form required by USS. Should the customer be a partnership then all partners must sign the Waiver and Release form. Should the customer be a Company then the Waiver and Release form should be signed by the Directors and Secretary. The undersigned agrees to inform in writing each customer or entity to which it sells USS watermelon seeds that they are bound by the terms of the Waiver and Release form for all future sales of USS Watermelon seeds. The buyer agrees that failure to obtain the executed grower Waiver and Release form from each purchaser of USS watermelon seed will result in the Buyer accepting liability for any claim demand or action by the purchaser in respect of the seed and the Buyer agrees to indemnify USS and the Reseller/Distributor against any liability in respect thereof.

5. Limitation of Damages: USS shall not be liable for incidental or consequential damages or crop failure damages as a result of the use of USS seed or transplants grown from USS seed.

6. Indemnity: The undersigned agrees that he will not resell or transfer any USS seeds or transplants grown from USS seeds except in compliance with the obligations set forth in paragraph 4 above. The undersigned agrees to defend, indemnify and hold harmless USS against any and all claims, actions, proceedings, judgments, attorney's fees, court costs, or other potential liabilities against USS of any nature whatsoever relating to any resale or transfer of said seeds and transplants.

7. Choice of Law / Choice of Forum / Jury Waiver: The parties agree that this Agreement is entered into in the County of Bucks, Commonwealth of Pennsylvania and shall be construed in accordance with the laws of the Commonwealth of Pennsylvania. It is further agreed that any litigation between the parties relating to this Agreement or any sale or transfer of USS seeds or transplants grown from USS seed hereunder shall take place in the County of Bucks, Commonwealth of Pennsylvania.

The undersigned specifically agrees to waive its right to a jury and hereby agrees that any such legal action will be tried without a jury.

8. Severability: The invalidity or unenforceability of any particular provision of this Agreement shall not affect the other provisions hereof, and the Agreement shall be construed in all respects as if such invalid or unenforceable provisions were omitted.

I have read the above Notice, Waiver, Limitation of Liability and Warranty Disclaimer, understand it, and agree to be bound by all of its terms. The foregoing terms constitute the entire agreement between the parties regarding the sale or transfer of USS seeds or transplants grown from USS seeds. I also acknowledge that I have had the opportunity to consult with an attorney regarding this notice. I understand this notice is part of my contract and a condition of sale, and that no shipment from USS or a USS dealer will occur until USS and/or the dealer receive this signed notice. I agree to be bound by the foregoing terms for all future transfers of seeds by USS or transfers of transplants grown from USS seeds.

Dated: _____

By: Rupp Seeds, Inc.:
Reseller / Distributor

Dated: _____

By: _____
Buyer / Transplant Grower / Watermelon Grower

(Printed Name/Company)

(Address)

(Telephone)

**NOTICE, AGREEMENT AND TERMS AND CONDITIONS OF SALE OR TRANSFER
OF DIPLOID AND TRIPLOID WATERMELON SEED**

This agreement is by and between the Seller and Buyer listed below.

Sakata Seed America
18095 Serene Drive
Morgan Hill, CA 95037
USA
(hereinafter called Seller)

and

(hereinafter called Buyer)

SAKATA SEED AMERICA, INC. ("Seller") warrants that the seed it distributes has been labeled as required under State and Federal law, and that it conforms to the label description. Seller makes no other warranties, express or implied, oral or written, including any implied warranties of merchantability or fitness for a particular purpose with respect to this sale of seeds. Watermelon seeds are sold **AS IS AND WITH ALL FAULTS**. Buyer assumes all risk as to quality and performance of watermelon seeds, including the risk that such seeds may carry **BACTERIAL FRUIT BLOTCH OF WATERMELON**. Buyer further assumes all risk for any defect or damage that use of the watermelon seeds may cause.

The undersigned, a duly authorized representative of Buyer, hereby waives all claims against Seller based upon **BACTERIAL FRUIT BLOTCH OF WATERMELON**, including claims based on strict liability, negligence, breach of contract or breach of warranty.

BUYER'S SOLE AND EXCLUSIVE REMEDY FOR ANY CLAIM WITH RESPECT TO THE SALE OF SEEDS IS LIMITED IN ALL EVENTS TO A REFUND OF THE PURCHASE PRICE OF THE SEEDS. Buyer shall not be entitled to any incidental or consequential damages, including planting or replanting costs, lost profits, or any other expenses, losses or damages. Notice of any claim must be received by registered mail within thirty (30) days after the defect in the seed becomes apparent.

Buyer warrants and represents that he is a person who deals in watermelon seeds and by occupation has the knowledge and skill specific to the watermelon seeds involved in this transaction. Buyer further warrants and represents that the purchase of seeds in this transaction is made with full knowledge of the risks regarding watermelon seeds, including the risk that such seeds may carry BACTERIAL FRUIT BLOTCH OF WATERMELON. **Buyer hereby assumes all risk regarding such seeds, and expressly waives any damage claim with respect to BACTERIAL FRUIT BLOTCH OF WATERMELON.**

The undersigned jointly and severally agree to defend, indemnify and hold harmless Seller, its employees, agents and dealers from and against any and all claims, demands, suits, actions, liability, damages and expenses, including, but not limited to, attorneys' fees and court costs, which Seller may suffer or to which Seller may be subject, arising in any way from the distribution by any of the undersigned of the subject seed and relating in any way to BACTERIAL FRUIT BLOTCH OF WATERMELON.

(continued)

Initial: _____

NOTICE, AGREEMENT AND TERMS AND CONDITIONS OF SALE OR TRANSFER
OF DIPLOID AND TRIPLOID WATERMELON SEED

ADDITIONAL NOTICE: Triploid hybrid watermelons are sterile hybrids which characteristically produce fruits with few or no true seeds. Because the absence, or relative absence, of hard or true seeds in the flesh of the melon is its chief distinguishing characteristic, the triploid hybrid watermelon is often referred to as a “seedless” watermelon. Despite this popular perception, triploid hybrid watermelons are not true “seedless” watermelons. The first melons to ripen in a field of triploid hybrid watermelons often contain small, undeveloped seeds. In addition, certain genetic, cultural and climatic factors are known to cause the formation of empty seed coats (small, white, undeveloped seeds), also called “pips”, and/or hard seeds in the flesh of the melons. Due to the wide variety of possible causes of hard seed formation, **TRIPLOID HYBRID WATERMELONS ARE NOT GUARANTEED TO PRODUCE SEEDLESS FRUIT.**

Triploid hybrid watermelon production requires a high level of grower sophistication. Triploid hybrid watermelons require a pollen source and bees to serve as pollen vectors. Triploid hybrids also require special care for satisfactory germination. Growers are encouraged to contact University extension personnel for government publications and information concerning recommended cultural practices. Seller can also supply certain of this information on request. We suggest growers develop expertise in growing triploid hybrid watermelons prior to instituting large-scale commercial production.

SPECIAL LIMITATION OF WARRANTY: ALL TRIPLOID HYBRID WATERMELON SEEDS ARE SOLD PURSUANT TO SELLER’S STANDARD TERMS AND CONDITIONS OF SALE. DESCRIPTIONS AND ILLUSTRATIONS OF TRIPLOID HYBRID WATERMELONS APPEARING ON SELLER’S WEBSITE AND PRODUCT LITERATURE REPRESENT TRIPLOID HYBRID WATERMELONS AS GROWN UNDER FAVORABLE GROWING CONDITIONS IN FAVORABLE GROWING AREAS. APPEARANCE AND PERFORMANCE MAY VARY IN OTHER GEOGRAPHICAL LOCATIONS AND UNDER DIFFERENT GROWING CONDITIONS. SELLER EXPRESSLY EXCLUDES ANY WARRANTY OF CONFORMITY TO DESCRIPTION, ILLUSTRATION OR SAMPLE AND EXTENDS NO WARRANTY THAT THE TRIPLOID HYBRID WATERMELON SEED SOLD WILL PRODUCE “SEEDLESS” FRUIT. ALL IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY EXCLUDED.

I’ve read the foregoing terms and conditions of sale or transfer, and agree to be bound by it.

Buyer representative (PRINT)

Buyer representative SIGNATURE

DATE



STEWARDSHIP AGREEMENT

Section A GROWER INFORMATION – Complete This Section - PLEASE PRINT CLEARLY					
Grower Name (Last, First, MI) <hr/> Farming or “Doing Business As” (d/b/a Name): <hr/> Address: _____ City: _____ State: _____ Zip Code: _____ Business Phone: _____ County: _____ E-mail Address: _____ Customer ID #: <i>(Assigned by Syngenta)</i> Technology #: <i>(Assigned by Syngenta)</i> Dealer Name: Rupp Seeds, Inc. Dealer Number: _____ (Office Use Only) Dealer Phone: 419-337-1841 Third Party Syngenta-Licensee: _____ (Office Use Only)					
YOU, THE UNDERSIGNED GROWER, HEREBY ACKNOWLEDGE AND AGREE THAT: (1) YOU HAVE READ, UNDERSTAND, AND AGREE TO THE TERMS AND CONDITIONS OF THIS STEWARDSHIP AGREEMENT; (2) THIS IS A LEGALLY BINDING CONTRACT; (3) YOU ARE FULLY AUTHORIZED TO ENTER INTO THIS STEWARDSHIP AGREEMENT; AND (4) YOU ARE VOLUNTARILY ENTERING INTO THIS STEWARDSHIP AGREEMENT.					
<table border="1"> <tr> <td>Grower Signature</td> <td>Date</td> </tr> <tr> <td colspan="2">(individual at farm level responsible for planting)</td> </tr> </table>		Grower Signature	Date	(individual at farm level responsible for planting)	
Grower Signature	Date				
(individual at farm level responsible for planting)					
<table border="1"> <tr> <td>Grower Name (Please Print Clearly)</td> </tr> <tr> <td> Thank you for choosing one or more of the Licensed Technology. Return this Stewardship Agreement to the address shown below. If You have any questions regarding the Licensed Technology or this Stewardship Agreement please call: 1 (877) GRO-CORN or 1 (877) 476-2676. </td> </tr> <tr> <td> Please return the agreement back to your Dealer at: Fax to: 419-337-5491 Mail to: Rupp Seeds, Inc. 17919 County Road B Wauseon OH 43567 Email: waivers@ruppseeds.com </td> </tr> </table>		Grower Name (Please Print Clearly)	Thank you for choosing one or more of the Licensed Technology. Return this Stewardship Agreement to the address shown below. If You have any questions regarding the Licensed Technology or this Stewardship Agreement please call: 1 (877) GRO-CORN or 1 (877) 476-2676.	Please return the agreement back to your Dealer at: Fax to: 419-337-5491 Mail to: Rupp Seeds, Inc. 17919 County Road B Wauseon OH 43567 Email: waivers@ruppseeds.com	
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Please return the agreement back to your Dealer at: Fax to: 419-337-5491 Mail to: Rupp Seeds, Inc. 17919 County Road B Wauseon OH 43567 Email: waivers@ruppseeds.com					

This Stewardship Agreement (“Stewardship Agreement”) is entered into between you (“Grower”) and Syngenta Seeds, LLC (“Syngenta”). By signing and returning this Stewardship Agreement without modification (other than Section A above), Syngenta grants Grower a limited license to use the proprietary technology Bt11 and/or the Bt11 x MIR162 x GA21 stack (each, a “Licensed Technology”) embedded in Syngenta’s sweet corn seed product or in any seed product distributed by a third party Syngenta-licensee (collectively, “Seed Product”). Any proposed changes to this Stewardship Agreement other than in Section A are hereby rejected by Syngenta and shall have no effect unless approved in writing by Syngenta.

STEWARDSHIP

Grower acknowledges receipt of the applicable Attribute® Grower Guide (“Stewardship Guide”) which is incorporated herein by this reference and may be updated from time to time and found at http://www.syngenta-us.com/seeds/vegetables/sweet_corn/sweet_corn.aspx under the “Insect Protection” tab. Grower agrees to periodically check the website for the current Stewardship Guide and to read and comply with the then current Stewardship Guide. If Grower uses any Licensed Technology after Syngenta’s release of a new version of the Stewardship Guide or Stewardship Agreement then Growers use shall be deemed an acknowledgement of receipt and agreement to comply with the then current: (i) Stewardship Guide, (ii) Stewardship Agreement, and (iii) the terms and conditions on the Seed Product packaging (collectively, the “Agreement”). The collective Agreement constitutes the entire agreement between Grower and Syngenta regarding the purchase and/or use of Licensed Technology and supersedes any other terms and conditions whether express or implied.

GROWER’S LIMITED USE LICENSE(S). Grower agrees that the Licensed Technology is protected under one or more U.S. patents (the “Patents”). Once this Stewardship Agreement is signed by the Grower then the Grower is granted the limited right, under the applicable Patents, to purchase and plant sweet corn Seed Products containing the Licensed Technology in the United States or Canada (the “Territory”) but strictly according to the terms of the entire Agreement. Grower agrees that any Seed Product acquired in the Territory shall only be planted in the Territory. Further, Grower agrees not to plant Seed Product in the Territory which was acquired outside of the Territory.

GROWER RESPONSIBILITIES. Grower shall: (a) use Seed Products solely for planting a single commercial crop of fresh produce, forage or grain for food, feeding or processing; (b) not supply, transfer, resell, license or sublicense any Seed Products to any other person or entity for planting or any other purpose; (c) not to save any crop produced from Seed Products for planting by Grower or any other person or entity; (d) abide by the terms of the entire Agreement, as it may be updated from time to time as described above; (e) report to Dealer listed above, the number of acres and the location (county and state) where the Seed Product is planted within 45 days of planting; (f) communicate all applicable stewardship requirements and obligations to any of its employees and agents with respect to handling of or work involving Seed Products and/or the crop produced from Seed Products, and monitor such employees’ and agents’ compliance with Grower’s responsibilities under the entire Agreement; and (g) not use or allow others to use Seed Products, the crop produced from Seed Products, the Licensed Technology or any plant material containing the Licensed Technology for: (i) crop breeding, (ii) research (including, without limitation, agronomic testing or generation of cooperative data against sweet corn seed not containing the Licensed Technology), (iii) generation of registration data or production of Seed Product (unless Grower has entered into a valid, written production agreement with a licensed seed company expressly authorizing one of more of these actions).

TERM AND TERMINATION. This Stewardship Agreement, once signed by Grower and accepted by Syngenta, will remain in effect until terminated by Grower or Syngenta. This Stewardship Agreement may be terminated by either party at any time for any reason by sending written notice of termination to the other party at the address for such party specified herein. In the case of termination of this Stewardship Agreement by Grower, such notice of termination must include Grower’s full name and address. Further, Syngenta may terminate this Agreement for failure of Grower to fully comply with the Grower Responsibilities described above. If Grower violates any terms of this Stewardship Agreement, in addition to other remedies available to Syngenta and any owner of the Patents listed above, Grower may forfeit any right to obtain a license to the Licensed Technology in the future. If this Stewardship Agreement is terminated then Grower will no longer have a right to purchase or use Seed Products, but, Grower’s obligations (including but not limited to the above Grower Responsibilities) and Syngenta’s rights that arose under the Agreement prior to termination shall remain in effect.

LIMITATIONS OF WARRANTIES AND REMEDIES. Grower agrees that the Limitations of Warranties and Remedies expressly stated on the Seed Product packaging shall be incorporated in this section as if set forth in full.

GENERAL PROVISIONS.

- This Stewardship Agreement and the parties’ relationship shall be governed by the laws of the state of Illinois and the United States (other than the choice of laws rules).
- Grower’s rights may not be transferred to any other person or entity without the prior written consent.
- Attribute® is a trademark of a Syngenta Group Company. LibertyLink® is a registered trademark of Bayer.

REMEDY SWEET CORN – SUPPLEMENTAL AGREEMENT

<p>Section A GROWER INFORMATION – Complete This Section - PLEASE PRINT CLEARLY</p> <p>Grower Name (Last, First, MI) _____</p> <p>Farming or “Doing Business As” (d/b/a/ Name): _____</p> <p>Address: _____</p> <p>City: _____ State: _____ Zip Code: _____</p> <p>Business Phone: _____ County: _____</p> <p>E-mail Address: _____</p> <p>Customer ID #: <u>(Assigned by Syngenta)</u> Technology #: <u>(Assigned by Syngenta)</u></p> <p>Dealer Name: Rupp Seeds, Inc.</p> <p>Dealer Number: _____ (Office Use Only)</p> <p>Dealer Phone: 419-337-1841</p> <p>Third Party Syngenta-Licensee: _____ (Office Use Only)</p>	<p>YOU, THE UNDERSIGNED GROWER, HEREBY ACKNOWLEDGE AND AGREE THAT: (1) YOU HAVE READ, UNDERSTAND, AND AGREE TO THE TERMS AND CONDITIONS OF THIS SUPPLEMENTAL AGREEMENT; (2) THIS IS A LEGALLY BINDING CONTRACT; (3) YOU ARE FULLY AUTHORIZED TO ENTER INTO THIS SUPPLEMENTAL AGREEMENT; AND (4) YOU ARE VOLUNTARILY ENTERING INTO THIS SUPPLEMENTAL AGREEMENT.</p> <hr/> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">Grower Signature</td> <td style="width: 40%;">Date</td> </tr> <tr> <td colspan="2">(individual at farm level responsible for planting)</td> </tr> </table> <hr/> <p>Grower Name (Please Print Clearly)</p> <p>Thank you for choosing one or more of the Licensed Technology. Return this Supplemental Agreement to the address shown below. If you have any questions regarding the Licensed Technology, your Stewardship Agreement or this Supplemental Agreement please call: 1 (877) GRO-CORN or 1 (877) 476-2676.</p> <p>Please return the agreement back to your Dealer at:</p> <p>Fax to : 419-337-5491 Mail to: Rupp Seeds, Inc. 17919 County Road B Wauseon OH 43567 Email: waivers@ruppseeds.com</p>	Grower Signature	Date	(individual at farm level responsible for planting)	
Grower Signature	Date				
(individual at farm level responsible for planting)					

This Supplemental Agreement (“Supplemental Agreement”) is entered into between you (“Grower”) and Syngenta Seeds, LLC (“Syngenta”) and supplements the terms and conditions of your Stewardship Agreement with Syngenta (by its predecessor-in-interest, Syngenta Seeds, Inc.). By signing and returning this Supplemental Agreement without modification (other than Section A above) and pursuant to the terms of this Supplemental Agreement and the Stewardship Agreement, Syngenta grants Grower a limited license to use the proprietary technology Bt11 x MIR162 x GA21 stack (the “Licensed Technology”) embedded in Syngenta’s “Remedy” sweet corn seed product or in any seed product distributed by a third party Syngenta-licensee (collectively, “Seed Product”). Any proposed changes to this Supplemental Agreement other than in Section A are hereby rejected by Syngenta and shall have no effect unless approved in writing by Syngenta.

TERM AND TERMINATION. This Supplemental Agreement, once signed by Grower and accepted by Syngenta, will remain in effect until either terminated by Grower or Syngenta, or will be terminated automatically upon the termination of your Stewardship Agreement. This Supplemental Agreement may be terminated by either party at any time for any reason by sending written notice of termination to the other party at the address for such party specified herein. In the case of termination of this Supplemental Agreement by Grower, such notice of termination must include Grower’s full name and address. If Grower violates any terms of this Supplemental Agreement and/or Grower’s Stewardship Agreement, in addition to other remedies available to Syngenta and any owner of the Patents (as defined in the Stewardship Agreement), Grower may forfeit any right to obtain a license to the Licensed Technology in the future. If this Supplemental Agreement is terminated then Grower will no longer have a right to purchase or use Seed Product, but, Grower’s obligations (including but not limited to the Grower Responsibilities as set forth in the Stewardship Agreement) and Syngenta’s rights that arose under the Stewardship Agreement and this Supplemental Agreement prior to termination shall remain in effect.

ACKNOWLEDGEMENT; LIMITATION OF WARRANTIES AND REMEDIES. Grower acknowledges and understands that Grower has been informed that under certain stress conditions, Remedy sweet corn may exhibit tassels and or glumes (male parts) growing out of the ear (female part) (the “Notice”). By its signature on this Supplemental Agreement, Grower acknowledges and agrees:

- Grower has been duly informed of the Notice;
- Grower accepts the Seed Product “as is”, “where is” and with all faults and to assume all risks associated with use of the Seed Product and any actual or perceived impact on any crop yield or quality, and Grower will indemnify and hold harmless Syngenta and Syngenta authorized Distributors, and their respective directors, officers, employees and affiliates from any claims related, directly or indirectly, to the performance or non-performance of the Seed Product and its impact on any crop yield or quality; and
- Grower waives any and all claims and releases Syngenta and Syngenta authorized Distributors, and their respective directors, officers, employees and affiliates, from any and all liabilities relating, directly or indirectly, to the Notice and the use of the Seed Product.

GENERAL PROVISIONS.

- This Supplemental Agreement and the parties’ relationship shall be governed by the laws of the State of Minnesota and the United States (other than the choice of laws rules).
- Grower’s rights may not be transferred to any other person or entity without the prior written consent of Syngenta.

Syngenta Seeds, LLC Attn: Attribute Stewardship 11055 Wayzata Blvd., Minnetonka, MN 55305
 Email: syngenta.stewardship@syngenta.com
 Fax: 1-800-858-8664





Rupp Seeds Inc.
17919 County Road B
Wauseon, Ohio 43567

PLACE YOUR ORDER - CALL 800-700-1199

We've added 34 new products to this 2020 catalog. Each one offers improvements such as eating quality, yield, disease resistance, and market suitability. Check the inside front cover for a complete list of new products.



DESPERADO pg. 9 **NEW**



EASTERN CROWN pg. 15 **NEW**



SIGNATURE XR pg. 38 **NEW**



TIME BOMB pg. 76 **NEW**