http://ipm.osu.edu/fruit/index.html

THE OHIO STATE UNIVERSITY Newsletter Extension

# Fruit ICM News

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**In This Issue:**



## Calendar

**November 20, 2003 - Food Safety Workshop II - Managing Liability for Fruit and Vegetable Growers**, Marriott North Hotel, Columbus, Ohio.

## Guthion Label Changes

*Source: New York Berry News, Vol 2., No. 9, Tree Fruit & Berry Pathology, NYSAES*

In the continued phase-out of Guthion (azinphos-methyl), the Environmental Protection Agency (EPA) has approved a new label for the product, effective August 21. The new label contains changes in crop uses as follows: Guthion is no longer available for use on alfalfa, beans, birdsfoot trefoil, broccoli, cabbage, cauliflower, celery, citrus, clover, cucumbers, eggplant, filberts, **grapes**, melons, onions, pecans, peppers, **plums** and dried prunes, quince, spinach, **strawberries,** and tomatoes.

Guthion remains until 2005 for **caneberries**, cotton, cranberries, **nectarines, peaches**, potatoes, and southern pine seed orchards. Guthion remains for almonds, **apples** and crabapples, **blueberries**, brussels sprouts, **cherries**, nursery stock, parsley, **pears**, pistachios, and walnuts.

With this action, Guthion Solupak will be the only formulation supported by Bayer CropScience. All crop uses formerly on Guthion 2L exclusively have been transferred over to the Guthion Solupak label. In addition to spray drift language changes, the newly approved label reflects previously agreed upon changes in buffer zones, use in u-pick situations, lower use rates, etc. Review the new label for specifications about particular usage patterns.

# Organic Farming Website Launched

*Source: New York Berry News, Vol 2., No. 9 Tree Fruit & Berry Pathology, NYSAES*

The Organic Farming Research Foundation has announced an exciting new resource on organic agriculture: OrganicAgInfo http://www.organicaginfo.org. OrganicAgInfo is an on-line database of research reports, farmer-to-farmer information, outreach publications, and more. The database can be searched by keywords, region, crop, or livestock type. All information on this web site can be accessed free of charge. Best of all, if you have information on organic agriculture that you think would be useful to others, you can upload it to the site yourself. To add your work to the web site, please click where it says, "We encourage submissions to the site" on the home page. You will need to create a user name and password during your initial visit. Information submitted on-line will be reviewed by their reviewers before being posted. This unique feature will allow the information in the database to grow through participation of the community it serves. Those using the site can also rate and comment on information already posted on the site.

OrganicAgInfo is hosted by North Carolina State University and was funded the Scientific Congress on Organic Agricultural Research (SCOAR) and the Organic Agricultural Consortium (OAC) from the Initiative for Future Agriculture and Food Systems (IFAFS) through the USDA-CSREES.

# Transition to Organic Highbush Blueberry Production

*Source: Bill Sciarappa, Gary Pavlis, Nicholi Vorsa, Cook Campus Center, Rutgers University, New Brunswick, NJ via New York Berry News, Vol 2., No. 9, Tree Fruit & Berry Pathology, NYSAES*

(Focuses heavily on the New Jersey blueberry industry and the accomplishments of faculty located at Rutgers University and the NJ Agricultural Experiment Station. The intent of running this article is to simply underscore the opportunities growers may have if they choose to produce organically grown blueberries).

Four significant developments have occurred that amplify opportunity for growers to successfully grow organic highbush blueberry and to increase or transition acreage. First, there is the recent USDA national organic standardization that defines organic production practices and crop labels that creates clarity and evens competition. Second, we have the continued increase of small fruit and vegetable sales related to nutritional and human health reasons that strongly contribute in creating today's $40,000,000 highbush blueberry market in NJ. Future agribusiness gains are promising through the "organic certification" market segment. This organic designation appeals to today's consumer as an even higher market value and creates a separate market segment above the fresh market mainstream.

Third, new tools are becoming available to organic growers that reduce the risk from pest problems such as the recent organic registration of Spinosad  now known as Entrust in the organic market. Finally, the Rutgers Blueberry Research Working group has made considerable progress in refining standard IPM practices and in helping develop new tools and holistic approaches for organic production systems.

Our "Work in Progress" is establishing alternative approaches to some current agricultural practices in soil building, fertility, cultural approaches and pest management. Perhaps two thirds of what conventional growers do horticulturally is directly applicable to organic production. Some examples include selection for resistant varieties, pruning for canopy ventilation to reduce disease incidence, adding organic amendments in building soil such as peat and humus, mulching for weed control and

water conservation, raised mounds, roguing of infected plants, and the use of natural plant protection products like Bt, Pyrethrum and Spinosad, which are safe to natural enemies.

In contrast to other fruits that have been introduced from other countries, the blueberry is one of the few native American fruits that has relatively good natural resistance to diseases and insects as well as an inherent vigor because it has been domesticated for less than 100 years. Thus, there is this strong historic baseline for succeeding in the return to organic production, although some key risk factors remain to be solved. To achieve this comprehensive vision of an integrated organic production system, specific obstacles are being addressed by a team of collaborating specialists supported by RCE administrators Dr. Nick Vorsa of the Phil Marucci Blueberry and Cranberry Research Center and Jack Rabin of the NJ Agricultural Experiment Station as follows:

**Varietal Selection** Dr. Mark Ehlenfeldt's comparative work for the USDA breeding program suggests using early maturing varieties like Weymouth, Bluetta, and Earlyblue to escape later season blueberry maggot attack. Mark continues research with new and better varieties resistant to pathogens that are essential in initiating any organic enterprise.

**Fertility** Dr. Gary Pavlis has demonstrated the importance of pH in maximizing plant health through the enhanced availability and uptake of nutrients as the ammonium nitrogen form. Gary has also demonstrated the water conservation benefits of trickle irrigation. Dr. Joe Heckman points to a listing of organic based fertilizers to include nitrogen, phosphorus, and potassium sources such as rock phosphate, greensand, bone meal, fish meal, and composted manures to restore depleted soils.

**Mulching** Dr. Barbara Rogers is researching the impacts of organically approved mulches for soil benefits and weed control. Barbara's investigations with Dr. Uta Krogmann include the recycling of composted cranberry fruit and leaves, municipal leaf blends with available manures, wood chips, and plastic.

**IPM Scouting** Our state fruit IPM specialist, Dean Polk, has provided timely pest population data that is GIS positioned within a blueberry field to allow spot spraying as needed based upon economic thresholds. Dean's extensive scouting program utilizes direct pest assessment, pheromone trapping systems, and colored sticky boards for decision making.

**Entomological Research** Dr. Sridhar Polavarapu has emphasized pruning of old cane to reduce scale infestation, clean cultivation to suppress cranberry weevil and plum curculio, and using OMRI approved insecticides as Bacillus thuringiensis (Bt), azadirachtin (neem plant extract), rotenone, pyrethrum, and spinosad. Spinosad should handle the difficult to control caterpillar complex and other economically important insect pests. Sridhar's research on baited toxicant sphere attractant traps for blueberry maggot and pheromone trapping approaches for oriental beetle are quite promising for commercialization.

**Phytopathology Research** Dr. Peter Oudemans has stressed the importance of sanitation in the field to minimize pathogen entry and spread, use of certified free nursery stock, roguing of virus-infected diseased plants, pruning of bacterial or fungal infected stems, and the promotion of rapid drying of leaf and fruit surfaces. OMRI certified fungicides as oxidate are part of his efficacy evaluation program, as have been the natural minerals sulfur, lime and copper, and Bordeaux mixture, kaolin clay, and urea. Mechanical cultivation and new biological controls appear promising for mummyberry suppression in the soil.

**Weed Control** Dr. Brad Majek provides weed species identification and essential information as to the life cycle of these annual, biennial, or perennial grass and broadleaf weeds. Brad's advice helps plan for

a weed control program, which includes trying various mulching practices and treatments.

**Commercial Organic Grower** John Marchese, Emery's Berry Farm. John's progressive approaches to planting, weed control, and fertility from an organic underpinning have been extremely helpful in establishing commercial utility. His comparative use of the Weed Badger rotary hoe, flaming, cover cropping, mulching and alleyway establishment, and other methods are pointing out some ways for economically solving problems specific to large-scale organic production.

**Commercial Conventional Grower** Bobby Galletta, Atlantic Blueberry. Bobby and his family continue to share their legendary experiences and extensive knowledge in blueberry production in efforts to expand the industry and maintain profitability.

**Certification & OMRI Information** Karen Anderson - Erich Bremer NOFA-NJ. The Northeast Organic Farming Association of NJ has been actively involved in certifying acreage for organic production and in explaining to growers the approved practices and materials that are essential to maintaining compliance. Through NOFA, growers can connect with other growers as to successful farming practices and can gather current information on plant protection materials and fertilizers through OMRI: Organic Materials Resource Inventory. Call 609-737-6848.

**Final Comments** Currently, about 7,500 acres of blueberries are grown in New Jersey with less than 2% (approximately 110 acres) produced organically. Considerable undeveloped potential exists in Pennsylvania as well. The author believes that the agribusiness situation is that of an advanced market ahead of agricultural research; demand ahead of supply.

The price of a flat of organic blueberries has ranged from $18 to $28 over the last three years, while conventional production prices have generally ranged between $8 to $14 per flat. Any northeastern growers interested in transitioning to organic blueberries may feel free to contact the author for advice and connection to the team of leading experts referred to in this article. 732-431-7260 or e-mail sciarappa@aesop.rutgers.edu.

### Additional Berry Articles

*Source: New York Berry News, Vol 2., No. 9 Tree Fruit & Berry Pathology, NYSAES*

(In a similar vein to the article above, the following two articles represent opportunities for raspberry growers. The first article is an excerpt from a detailed series of articles on greenhouse raspberry production that can be accessed by visiting the website: http://www.hort.cornell.edu/department/faculty/pritts/greenhouse/Frontpage.htm. The second article focuses on high-tunnel production in Maryland. Several small fruit workers visited the High Tunnel Research and Education facility at the Horticultural Farm in Rock Springs, PA last July to view first hand some of the impressive growth that can be achieved in these tunnels).

## Growing Winter Raspberries in a Greenhouse

*Source: Marvin P. Pritts, Department of Horticulture, Cornell University, Ithaca, NY via New York Berry News, Vol 2., No. 9 Tree Fruit & Berry Pathology, NYSAES*

Navigating snowy, ice-covered roads on the way to market is among the challenges facing a new type of raspberry grower. A few innovative producers are harvesting up to 60 flats (720 half-pints) of fresh raspberries from a 24 X 30 ft. house between February and May, and selling them for $2,000.

Greenhouses have been used for many years to produce tomatoes and cucumbers during winter, but these vegetables require relatively warm temperatures and high levels of light, making their production expensive. Raspberries, however, are uniquely suited for greenhouse production during the off-season. They grow best at a relatively cool temperature (20C, 70F) and do not require supplemental light to produce a crop, especially if production is targeted for May and June. In northern states, many greenhouses are empty during the winter months, but these could be used to grow raspberries with only moderate inputs, providing greenhouse owners with an opportunity to produce an extremely high value crop during a time of the year when they are realizing no return on their capital investment and when no domestic raspberries are available.

The vast majority of winter raspberries currently on the market are flown in from the Southern Hemisphere. Quality is generally poor because raspberries have an extremely short post-harvest life and bruise easily during shipping. As a result, consumers are willing to pay between $3.00 and $6.00 per half-pint for fresh fruit of superior quality, and restaurant chefs seem willing to pay even more.

Local raspberry production is now possible because of two accomplishments in the area of entomology. First, bumble bees have now been domesticated and are available in small hives for pollinating greenhouse crops. Bumble bees perform better than honey bees in greenhouses, especially under the cooler temperatures used for growing raspberries. Second, predatory mites are now available that feed on phytophagous mites, and these can keep populations of damaging mites at low levels.

Compared to field production, greenhouse-produced berries are larger, firmer, and much less prone to fruit rot. Fruit tends to be slightly less sweet and more acid in the greenhouse, but well within the limits of acceptability. Varieties differ in performance and flavor; varieties that do well in the field will not necessarily perform well in the greenhouse.

Several approaches can be taken to extend the raspberry season from the normal June - September season:

- Grow primocane-fruiting raspberries under high tunnels to extend the fruiting season late into the fall (see article below);
- Grow primocane-fruiting raspberries in a greenhouse to produce a supply of fruit over a long period of time on the same plant; and
- Use floricane-fruiting raspberries to produce a large volume of fruit during a short period of time.

Production periods can be staggered to create a long, extended season.

**Summary:** It is now possible to produce raspberries close to market during most months of the year. Raspberries are the most perishable of all fruits, so even though they can now be grown close to market, they must still be handled with the utmost of care. Raspberries must be cooled quickly after harvest, and delivered to the customer as soon as possible.

Most markets for winter raspberries are small, so a producer will need to line up and supply a larger number of smaller markets. Despite these challenges, the opportunities for producers are great. At this point, there exist only a few winter raspberry producers, so the market is wide open. Furthermore, the quality that can be produced is very high. Consumers and restaurant chefs are willing to pay very high prices for high quality berries in winter. Several growers are already producing winter raspberries in northern states.

# Fall Bearing Red Raspberry Production in Maryland Tunnels

*Source: Bryan Butler and David Lankford, University of Maryland, Cooperative Extension, Central Maryland Research and Education Center, Ellicott City, Maryland via New York Berry News, Vol 2., No. 9 Tree Fruit & Berry Pathology, NYSAES*

Along with Kathy Demchak at Penn State, we have been attempting to adapt primocane, fall-bearing red raspberry culture to tunnel culture in the Mid-Atlantic States. We have, until recently, been focusing on stretching the season into November and December. Our experience has been that in Carroll County (North Central MD), unheated houses have protected the fruit until mid-November twice and into mid-December once. We have used the MD/VA/NJ/WI cooperative breeding program super-sized, late fall selection: ND-f1 (avg. 6 gm) to extend the season. We are now experimenting with raspberry potting systems to increase the opportunity to use the tunnels for other crops in the summer, for example day neutral strawberries.

Recently, Harry Jan Swartz gave us a new early fall selection to try, QEG-f1 (see it on www.fiveacesbreeding.com). He said he thought it was early; it was. On the middle eastern shore, in unheated tunnels, potted plants were producing fruit in late May on primocanes. In Carroll County, the "fall crop" started in early July. Fruit has been coming off at 1/2 to 3/4 ton per acre rates since, at both locations (the plantings are small so this is a gross extrapolation). Fruit size outdoors at The Berry Farm in Matawan NJ, where production started the week of July 20, has averaged 3.4 grams/fruit (it's probably higher in the tunnels). Fruit quality at indoor and out has been excellent, especially flavor in the tunnels. QEG-f1 flavor has been the best of all selections tried, including Anne. Anne and Caroline are 2-3 weeks later than QEG-f1, and Anne has good to excellent flavor and size, as does its more productive seedling, OAY-f1 (both golden raspberries).

Other selections are not as promising, but we are just now trying Caroline and Josephine, two other cultivars from the program. Although new fruiting canes are being produced by QEG-f1 to extend the fall crop season, we are trying pruning to extend the production of individual canes once they have stopped. Yes, Tiny Tim, we'll have raspberries for Christmas, and "fall bearers" for the 4th of July!

**The Basic High Tunnel.** A high tunnel is a simple, inexpensive structure similar to a greenhouse that provides a great deal of season extension versatility. High tunnels offer the opportunity for the grower to get a crop in early in the season, to stay in production later in the season, and possibly to produce a crop such as greens through the winter. High tunnels also provide protection from rain and hail and can reduce disease and pest pressure. In Maryland, the seasonal weather patterns vary greatly from one year to the next, and even with these unheated tunnels it is difficult to confirm exactly the best timing and choice of crops. However, with good planning, variety selection, and close management, this low cost system can add another dimension to a vegetable or small fruit operation. In a high tunnel system, the tunnel is large enough for the grower to plant, monitor, and harvest the crop from inside the structure. The standard tunnel is 14 feet wide, 96 feet long, and 7 feet 6 inches tall at the center. Tunnels should be no wider than 30 feet, for good cross ventilation and reduction of snow accumulation on the roof in the winter.

The Quonset frame consists of metal bows made by bending steel pipe or tubing, and potential stresses caused by the weight of snow or heavy wind must be considered. Metal pipes are driven into the ground approximately 2 feet deep and set every 4 feet of the high tunnel length, providing support for the Quonset frame. The bows fit into the ground pipes and are attached by bolts. The ends of the structure can be plastic or wood on a wood stud frame, but should be removable to allow access for tillage equipment and to increase ventilation in the summer.

The structure is typically covered with a single layer of 6-mil polyethylene, with provisions for rolling up the sidewalls. The poly is secured onto a batten board on each side of the high tunnel about 3.5 feet

above the soil line. A vertical sidewall helps to keep rain out of the tunnel and, when rolled up, provides ventilation. A pipe is then attached to the loose bottom end of the plastic along the length of the structure. A "T" handle on the end of the pipe is used to roll the plastic onto the pipe to open the sides. Cross ventilation is assisted by wind and has proven to be very efficient.

The key to successful use of the high tunnel is to spend the time laying out and preparing the site for construction. The better the tunnel is constructed, the easier the roll-up sides will work, and the easier it will be to ventilate. During periods of cold weather, the sides are lowered in the afternoon to hold heat and then raised in the morning to vent before temperatures inside get too high. The floor of the structure is covered with a layer of 6-mil black plastic. This helps to raise the temperature inside the house, control weeds, and prevent evaporation of soil moisture. Excess moisture will raise humidity in the tunnel and may lead to disease problems. Humidity of the air will increase at night as the air cools down. Venting in the morning will allow drying of any condensed water.

High tunnels can actually reduce the incidence of some diseases, particularly if trickle-irrigation tubing is used underneath the black plastic mulch. No water (rain or irrigation) gets onto the foliage to transport spores or otherwise encourage disease development.

**Benefits for Production**. The use of high tunnels for crop production creates a microclimate that provides the opportunity to increase quality. Since the plants are grown in a structure covered with one layer of plastic, the foliage, flowers, and fruit do not get wet. This can reduce the incidence of many diseases. The soil does not become excessively wet since the only water supply to the plants in the tunnel is trickle irrigation. Proper water management will also help to reduce the incidence of certain root rotting diseases. The single layer of plastic only reduces light levels about 10% as compared to growing outside. Therefore, photosynthesis is not reduced except in shaded parts of the plant canopy. Temperatures inside the tunnel are usually warmer than outside temperatures, providing the environment for season extension. The floor in the house will not freeze during most winters. This allows work to be done with soil amendment incorporation or the growing of a cover crop during the coldest part of the winter. Since the floor receives no rainfall, if irrigation is done carefully, the area between the beds becomes too dry for weeds to germinate. The roll-up sides that truly make the structure a high tunnel provide passive ventilation to cool the structure and to dry the foliage, again helping to reduce disease incidence. These sides can be lowered in the evening to hold in heat and can protect cut tender plants from blustery conditions. The structure will also provide a foundation for the use of plastic netting for support, shade cloth, and row covers for increased plant protection on cold nights.

**Potential Problems.** The use of high tunnels does require an increase in both the level and the amount of management required to grow the crop. The sides must be raised and lowered to regulate temperature and humidity. Plants must be irrigated regularly and fertigated as needed. Plants can be grown on raised beds covered with plastic or landscape fabric, with the rows in between bare dirt, or the entire floor can be covered with landscape fabric. Unless supplemental heat is provided, the tunnel may not be able to provide adequate protection to the plants after the November/ December time frame depending on the year.

Disease problems may occur in the protected environment; management of the environment is critical. Ventilation to avoid high temperatures or high humidity is very important. Maryland's unpredictable weather in spring and fall will make management intensive. Powdery mildew is one disease that may be favored by the high tunnel climate and should be monitored for closely. Insects will find the microclimate created for the plants to be favorable to their growth also. Without a doubt, integrated pest management (IPM) scouting must begin when the plants are set out. The use of beneficials may be the most practical way to deal with some insect and mite problems. However, season extenders can actually be used as physical barriers to keep insects off the plants. For example, screening the sides to exclude

insects, and the use of floating row covers that have the edges secured will prevent many insects from reaching the crop.

Pollination for many crops such as raspberries, strawberries, and tomatoes is provided to a large extent by the large amount of air movement from side to side. However, bumble bees or honeybees may be required to maximize production in the early and late part of the season when the sides are rolled up less often. Maryland researchers are currently examining the use of a honeybee hive placed at the end of a tunnel with the opposite end open during the day. The bees flying in and out will stop off on the various flowers on their way in and out each day, which should provide adequate pollination. Further research regarding the use of bees is being planned.

# Fruit Observations & Trap Reports

**Insect Key**
AM: apple maggot
CM: codling moth
ESBM: eye-spotted budmoth
LAW: lesser apple worm
LPTB: lesser peachtree borer
OBLR: obliquebanded leafroller
OFM: oriental fruit moth
PTB: peachtree borer
RBLR: redbanded leafroller
SJS: San Jose scale
STLM: spotted tentiform leafminer
TABM: tufted apple budmoth
VLR: variegated leafroller

**Site: Waterman Lab, Columbus**
Dr. Celeste Welty, OSU Extension Entomologist

**Apple:** 9/10 to 9/17/03
AM: 0.7 (up from 0.0)
CM: 5.7 (same as last week)
ESBM: 0 (same as last week)
LAW: 1 (down from 4)
OBLR: 0 (same as last week)
RBLR: 13 (same as last week)
SJS: 83 (down from 116)
STLM: 1026 (down from 1160)
TABM: 0 (same as last week)
VLR: 1 (up from 0)

**Peach:** 9/10 to 9/17/03
OFM: 0 (same as last week)
LPTB: 0 (same as last week)
PTB: 1 (down from 2)

# Terminal Market Wholesale Fruit Prices September 17, 2003

Source: Chicago http://www.ams.usda.gov/mnreports/HX_FV010.txt
Detroit http://www.ams.usda.gov/mnreports/DU_FV010.txt
Pittsburgh http://www.ams.usda.gov/mnreports/PS_FV010.txt

## Apples

| | | Terminal Market |
|---|---|---|
| Cartons cell-pack | | |
| U.S. ExFcy McIntosh | **NY** 80s 26-27.00 | Chicago |
| U.S. ExFcy McIntosh | **MI** 96s 21.50-24.00 | Detroit |
| U.S. ExFcy McIntosh | **NY** 100s 24.00 | Detroit |
| Comb U.S. ExFcy-U.S. Fcy McIntosh | **NY** 100s 17.75-19, 120s 16.50-17 | Pittsburgh |
| Cartons tray-pack | | |
| U.S. ExFcy Ginger Gold | **MI** 113s 14-14.50 | Detroit |
| | **WV** 72s, 125s, & 138s 14.50 | Pittsburgh |
| U.S. ExFcy Paula Red | **MI** 113s 14-14.50, 138s 14-14.50 | Detroit |
| U.S. One Paula Red | **NY** 100s 17.50 | Pittsburgh |
| 12 3-lb filmbags | | |
| U.S. ExFcy Earligold | **MI** 2 ½" min 13-13.50 | Detroit |
| U.S. ExFcy Gala | **MI** 2 ½" min 12-14.50 | Detroit |
| U.S. ExFcy Ginger Gold | **MI** 2 ½" min 12-13.00 | Detroit |
| U.S. ExFcy Gold Supreme | **MI** 2 ½" min 12.00 | Detroit |
| U.S. ExFcy McIntosh | **MI** 2 ½" min 13.50-15.50 | Detroit |
| U.S. ExFcy Paula Red | **MI** 2 ½" min 12-14.50 | Detroit |
| U.S. ExFcy R. Delicious | **MI** 2 ½" min 14-14.50 | Detroit |
| U.S. Fcy Early McIntosh | **MI** 2 ½" min 12.00 | Detroit |
| U.S. Fcy McIntosh | **MI** 2 ¼" min 12.00 | Detroit |
| U.S. Fcy Paula Red | **MI** 2 ½" min 12.00 | Detroit |
| Comb U.S. ExFcy-U.S. Fcy McIntosh | **NY** 2 ½" min 15.00, 2 ¼" min 12.75-13 | Pittsburgh |
| Bushel cartons loose | | |
| U.S. Fcy Early McIntosh | **MI** 2 ½" up 12.00 | Detroit |
| U.S. Fcy Gala | **MI** 3" up 15.00 | Detroit |
| U.S. Fcy Ginger Gold | **MI** 2 ¾" up 12.00 | Detroit |
| U.S. Fcy Gold Supreme | **MI** 2 ¾" up 12.00, 3" min 14-15 | Detroit |
| U.S. Fcy Greening | **MI** 2 ¾" up 15.00 | Detroit |
| U.S. Paula Red | **MI** 3" min 14.00, 2 ½" up 10-12.00 | Detroit |

## Blueberries

| | | |
|---|---|---|
| 12 1-pt cups | **MI** lge 23.00-28.00 | Chicago |
| | **MI** med-lge 22-24.00, med 20.00-25.00 | Detroit |
| 12 6-oz cups | **MI** med-lge 17-17.50, med 15-15.50 | Detroit |
| | **MI** med 19.00 | Pittsburgh |

## Nectarines

| | | |
|---|---|---|
| ½ bushel loose | | |
| U.S. One various yellow flesh varieties | **MI** 2 ½" up 13.50-15.00 | Detroit |
| Sunglo | **NJ** 2 ½" up 17.50, 2 ¼" up 12.75 | Pittsburgh |

## Peaches

25 lb cartons loose no grade marks, various yellow flesh varieties

| | | |
|---|---|---|
| | **NJ** 2 ¾" up 9.00, 2 ½" up 7.00, 2 ¼" up 5.00 | Chicago |
| | **WV** 2 ½" up 10.00, 2 ¼" up 8.00 | Chicago |

½ bushel cartons

| | | |
|---|---|---|
| U.S. One various yellow flesh varieties | **MI** 2 ¾" up 13-15.00 | Detroit |
| | **MI** 2 ½" up 11.50-12.00 | Detroit |
| U.S. ExOne Flavorcrest Pittsburgh | **NJ** 2 ½" up 12.00 | Pittsburgh |
| U.S. ExOne Redglobe | **WV** 2 ¾" up 9.00, 2 ½" up 8.00 | Pittsburgh |

½ bushel cartons no grade mark, various yellow flesh varieties

| | | |
|---|---|---|
| | **NJ** 2 ¾" up 8.00-10.00 | Detroit |
| | **NJ** 2 ½" up 6.00-8.00 | Detroit |
| | **NJ** 2 ¼" up 4.00-5.00 | Detroit |

## Prune Plums

30 lb cartons

| | | |
|---|---|---|
| | **MI** 1 ¼" min 13.50-14.00 | Chicago |
| U.S. One Stanley | **MI** 1 ¼" min 12-15.00 | Detroit |
| | **MI** 1 ¼" min 12-13.00 | Pittsburgh |

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