

Fruit Notes

Volume 77, Number 3: Summer, 2012



Fruit Notes

Editors: Wesley R. Autio & Winfred P. Cowgill, Jr.

Fruit Notes (ISSN 0427-6906) is published four times per year by the Stockbridge School of Agriculture, University of Massachusetts Amherst. The cost of a 1-year subscription is \$25.00. Each 1-year subscription begins January 1 and ends December 31. Some back issues are available for \$6.50 each. Payments via check must be in United States currency and should be payable to the **University of Massachusetts Amherst**. Payments by credit card must be made through our website: <http://www.umass.edu/fruitadvisor/>.

Correspondence should be sent to:

Fruit Notes
Stockbridge School of Agriculture
205 Bowditch Hall
University of Massachusetts Amherst
Amherst, MA 01003

All chemical uses suggested in this publication are contingent upon continued registration, and should be used in accordance with federal and state laws and regulations. Where trade names are used for identification, no company endorsement or product discrimination is intended. The University of Massachusetts makes no warranty or guarantee of any kind, expressed or implied, concerning the use of these products.

Table of Contents

Dogwood Borer Research Dave Kain and Art Agnello.....	1
Sprayer Setup and Calibration Meeting at Rutgers Snyder Farm Win Cowgill.....	4
An Update on the Rutgers New Jersey Agricultural Experiment Station Strawberry Breeding Program Peter J. Nitzsche, William T. Hlubik, Winfred. P. Cowgill Jr., Goyko Jelenkovic, Daniel L. Ward	8
Testing and Evaluation of Plum and Plum Hybrid Cultivars Jerome L. Frecon and Daniel L. Ward.....	12

Cover: Advanced Strawberry Selection Trial at Rutgers Snyder Research & Extension Farm, Pittstown, NJ.
Photo by Peter Nitzsche.

Dogwood Borer Research

Dave Kain and Art Agnello

New York State Agricultural Experiment Station - Geneva, Cornell University

Apples grown on dwarfing rootstocks, such as M.26 or M.9, often develop aggregations of root initials, commonly known as burrknots, on the rootstock portion of their trunks.

Dogwood borer females find these burrknots to be an attractive medium on which to lay their eggs, in order to provision their offspring. Burrknots apparently provide an ideal environment for dogwood borer larvae and easy entry into the trunk. The larvae feed on the root initials that make up the burrknot, but as this tissue is consumed, they may move into the bark of the trunk, where their feeding may eventually cause a decline in the vigor and thriftiness of the tree, and possibly even girdling and death.

The most common signs that borer larvae have been actively feeding on these burrknots are reddish brown frass or translucent, golden-brown, empty pupal cases. Because of the recent increase in acreage of apple trees grown on dwarfing rootstocks that are prone to the development of burrknots, we have seen an increase in dogwood borer populations.

Dogwood borer occurs throughout New York state, as well as in other states. On average, about half of the trees in an orchard on dwarfing rootstock will have burrknots and about a third of those burrknots

will be actively infested by dogwood borer larvae.

One control possibility is Isomate-LPTB, which disrupts dogwood borer mating by repelling male moths rather than confusing them. Researchers discovered this phenomenon while searching for an improved dogwood borer pheromone formulation. They found that a contaminant in a blend being tested repelled male moths, and that this contaminant was a constituent of lesser peachtree borer sex pheromone. In field tests, trap capture of male dogwood borer moths was almost completely shut down; a strong indication that mating disruption had taken place. We tested this promising approach, evaluating trap capture and actual burrknot infestation in commercial orchards over the course of three growing seasons.

Results of mating disruption trials using Isomate-LPTB in 2008 and 2009 were recorded in the fall of 2010. The recent data indicate that borer infestation steadily decreased. Relatively low trap capture numbers in the check plots adjacent to treated plots in 2010 suggest that the effect may have even carried over into the untreated trees. In short, Isomate-LPTB achieved mating disruption of dogwood borer. However, because of the registrant's decision to pursue a label for Isomate-DWB for this use, we have started another



Adult dogwood borer female (left) and male (right). From: A. Seaman, H. Riedl, and J. Cummins. Dogwood Borer (<http://nysipm.cornell.edu/factsheets/treefruit/pests/dwb/dwb.asp>).



Dogwood borer larva. From: A. Seaman, H. Riedl, and J. Cummins. Dogwood Borer (<http://nysipm.cornell.edu/factsheets/treefruit/pests/dwb/dwb.asp>).

three-year trial to confirm the efficacy of the new product and examine the best way to use it.

As in the Isomate-LPTB trial, three orchards on size-controlling rootstocks were selected for this trial, all with abundant burrknots exhibiting varying levels of dogwood borer infestation. We selected younger orchards with populations that were relatively low compared with those used in the Isomate-LPTB trials, to see if beginning mating disruption early in the life of the orchard, before infestation reached high levels, would be more effective and possibly prevent infestation from occurring.

Each orchard was divided into a treated plot of 10 acres and an adjacent untreated plot of differing size. Orchards were treated at a rate of 150 Isomate-DWB dispensers per acre on May 25 and 27, before the dogwood borer flight began. Additionally, in untreated orchards, five subplots, with 10 trees in a row in each subplot, were sprayed with Lorsban 4EC at a rate of 1.5 quarts per 100 gallons as a standard treatment. Sticky traps were baited and hung in treated and untreated plots, prior to the beginning of the dogwood borer flight, and monitored weekly until Sept. 1.

Capture of male dogwood borer was substantial in the untreated plots, but completely shut down in the treated plots, indicating that mating disruption had taken place. In addition, in early fall, when larvae that will spend the winter in burrknots are actively feeding, burrknots were examined for the fresh reddish-brown larval excrement (frass). One hundred tree trunks were sampled in each treated and untreated plot. Results indicate that infestation was reduced by about 50 percent. Where infestation was highest initially, the percentage of burrknots infested in the treated plot, while reduced, was still relatively high. This supports the idea that treatment with Isomate-DWB will work best when infestation is low or moderate. However, using Isomate-LPTB, higher populations can be reduced to a manageable level by treating with the pheromone for more than one season. We would expect the same would be the case using Isomate-DWB; results from the next two seasons' trials will address this question.

From other trials that have been conducted, indications are that Isomate-DWB should work at least as well as, and maybe better than, Isomate-LPTB. Results from the first season of our trial suggest that, at this early stage, it has been comparable in efficacy to Isomate-LPTB.

We have estimated the cost of applying chlorpyrifos (Lorsban 4E) based on a plant density of 800 trees per acre, \$8 per hour for labor and a price of \$30 per gallon for Lorsban 4E, at approximately \$25 per acre. Treatment with Isomate-DWB dispensers at a rate of 150 per acre the first season, followed by 100 per acre thereafter, using the same labor rate, costs approximately \$63.60 per acre for the first season and \$42.40 per acre in subsequent seasons.

Assuming that the efficacy of Isomate-DWB is equal or superior to that of Isomate-LPTB, then the ease with which pheromone dispensers are applied, the fact that no special equipment is needed and, presumably, the improved worker safety, may make the use of this product an attractive alternative for some growers.



Thanks for another great season!

It's never too early to get ready for next year!

Call **800-435-8733** to order now, so you can guarantee **best selection** from our 2013 crop and take advantage of **pre-bud contract specials**.



Shawn



Debi



Della

Stark Bro's Nurseries & Orchards Co.

PO Box 398 • Louisiana, MO 63353 • 573-754-5111 • Fax 573-754-3701

Sprayer Setup and Calibration Meeting at Rutgers Snyder Farm

Win Cowgill

New Jersey Agricultural Experiment Station, Rutgers University

On Thursday June 9, 2011 a grower meeting was held at Rutgers Snyder Farm in Pittstown, NJ. The theme was saving money with proper sprayer setup and calibration. Lunch was provided by GrowMark FS, Bloomsbury, NJ and Helena Chemical Co., Woodstown, NJ. Twenty-seven growers were updated on brown marmorated stink bug control and its ramifications for NJ crop insurance claims.

Dr. John Grande, Director of the Rutgers Snyder Farm, covered sprayer tune-up, nozzles, particle size, and how to get good coverage and control and avoid drift. Dr. Brad Majek, Specialist in Weed Science, Rutgers Cooperative Extension, covered the application techniques and Phil Brown Weed Sprayer setup for improved weed control and (crop) safety.

The group then moved outside for demonstrations



The patternator collects material from various locations from near the soil surface to what would represent the top of the tree.



The collected water (here died blue) visually demonstrates the pattern of application from the lowest collector (right) to the highest collector (left).

of air induction nozzles and their ability to control drift with an airblast tower sprayer. The use of Surround™ clay was demonstrated as a visual tool to check sprayer drift and coverage on both full dwarfing and standard size trees. Two Phil Brown weed sprayers were demonstrated in the field with the correct nozzling to get double overlap coverage.

Last but not least, our special guest, Jon Clements, Extension Educator, University of Massachusetts, conducted a special hands on session for air blast sprayer setup and calibration. He utilized specialized equipment (Patterntator, purchased with a grant from EPA Region 1) to evaluate the Snyder Farm Rears Airblast Tower sprayer. The topics covered were: (1) measuring the three components of air blast sprayer output/calibration using a sprayer ‘test bench’; (2) tractor speed; (3) sprayer pressure; and (4) sprayer nozzle output.



Jon Clements, UMass Extension Educator, conducted the demonstration at Rutgers Snyder Farm.

Targit Sales

“Specializing in Farm Market Packaging”
1-800-526-9224

Biodegradable

PLASTIC BAGS



Targit Sales is proud to introduce our line of Biodegradable plastic bags. Our bags use a proprietary additive that renders the plastic ultimately biodegradable.



We are offering the Biodegradable bag program with all of our “Custom Imprinted” plastic bags. Our Biodegradable bags have the “EPI” (the additive company) logo on the bag as proof of its biodegradable properties.

Advertise your business along with a “tag line” to express your company’s efforts to keep your community and planet green.

Targit Sales can fully customize your bags to your specifications. We can make any size, strength, and style of bag to fit your needs. We can assist you with your design, setup, and artwork.

COMMON SIZES OF BAGS:

- 13 x 10 x 24 (Great for pies, cakes and corn)
- 12 x 8 x 24 (Great for your store front)
- 8 x 5 x 21 (Perfect size for tailgate markets)

BIODEGRADABLE PLASTIC BAG BENEFITS!

- * Superior Strength!
- * Less expensive to make and ship versus paper bags!
- * Superior imprinting capability and quality...(looks better)!
- * Easier and more affordable to store (inventory)!
- * Flexibility! (customize the size, thickness, color and style to your specifications)
- * Reusability!
- * Biodegradable..breaks down quickly!

MOST COMMON QUESTIONS asked about biodegradable bags.

Will the bags begin to break down while being stored? No, the bags will retain its strength and integrity while properly stored. The breakdown only begins after it is directly exposed to certain environmental conditions such as: soil/landfill, heat/moisture, and sunlight.

Is this process more expensive? Not really, the cost increase is only a few percentage points higher. You will more than make this up with the goodwill you will be conveying to your community and customers.

Does the bag lose its strength or feel...does it look different? No, it is almost impossible to tell the difference between the Biodegradable bags and the traditional plastic bags. This is why we recommend putting a tag line on your printed biodegradable bags.

Can these bags be recycled and/or reused? Yes, these bags can be recycled and reused.

For more information or to order contact
Targit Sales
1-800-526-9224 • www.targitsales.com



RIGHT...FROM THE START

Start your orchard RIGHT with Willow Drive Nursery's Proven Performers™. Call for a complete and updated inventory.

Calling us today can help you tomorrow!



APPLES

Braeburn

Mariiri Red™ (Eve®)
Kumeu Crimson®

Fuji

Aztec Fuji® (DT 2 Variety)
Rising Sun®
Morning Mist™
Early Fuji

Gala

Brookfield® Gala
Buckeye® Gala
Ultima Gala®

Other

Cameo® brand
Granny Smith
Honeycrisp™

It® Red Delicious
Morren's® Jonagored
Supra™
Ruby Jon®
RubyMac®
Smoother® Golden
Spartan



CHERRIES

Attika®

Benton™

Bing

BlackGold™

BurgundyPearl™

Chelan™

Early Robin®

EbonyPearl™

Lapins

Montmorency

Rainier

Regina

Rynbrandt

Schmidt

Selah™

Skeena™

Sweetheart™

Tieton™

Ulster

WhiteGold™



PEARS

Bartlett

Columbia Red Anjou™

Concorde™

Comice

D'Anjou

Forelle

Golden Russet Bosc®

Red Clapp's Favorite



PEACHES

Stellar Series

Allstar®

Autumnstar®

Brightstar™

Coralstar®

Earlystar™

Flamin' Fury

PF 8 Ball

PF Lucky 13

PF 19-007

PF 25

PF 35-007



WILLOW DRIVE NURSERY, INC.

1-888-54-TREES

Ephrata, Washington · 1-888-548-7337 · Web Site: www.willowdrive.com

An Update on the Rutgers New Jersey Agricultural Experiment Station Strawberry Breeding Program

Peter J. Nitzsche, William T. Hlubik, Winfred. P. Cowgill Jr., Goyko Jelenkovic, and Daniel L. Ward

New Jersey Agricultural Experiment Station, Rutgers University

Rutgers University professor, Dr. Gojko Jelenkovic has been working for over 35 years to breed improved strawberry cultivars for production in eastern North America. Dr. Jelenkovic has utilized traditional breeding techniques with the aim of improving strawberry fruit quality, yields, disease resistance and most importantly flavor. Dr. Jelenkovic’s work has resulted in four advanced selections worthy of consideration for commercial production. Supported by a generous grant from the New Jersey Small Fruits Council a team of Agricultural Agents, Specialists, and researchers have been conducting further evaluations of these selections with a goal of releasing some of them to farmers and gardeners.

In 2009 the selections were virus tested and put into tissue culture to create clean disease free stock material (Figure 1). This clean stock was then propagated and utilized to generate plug plants for replicated field trials at three locations, Snyder Research and Extension, Pittstown, NJ, the Earth Center, North Brunswick, NJ and the Piedmont Research Station, Salisbury, NC in cooperation with Dr. Jeremy Pattison the Strawberry breeder at North Carolina State (Figure 2). In cooperation with a Kube-Pak Corp., Allentown, NJ a strawberry tip plug producer plants were also generated for grower trials on several New Jersey farms (Figure 3, 4)

At least two of the selections have performed very well in the replicated trials and in grower fields. While in some of the replicated trials yields have been somewhat lower than the commercial standard ‘Chandler’, fruit size, shape, color, and flavor have been much improved (Table 1, Figure 4, 5)

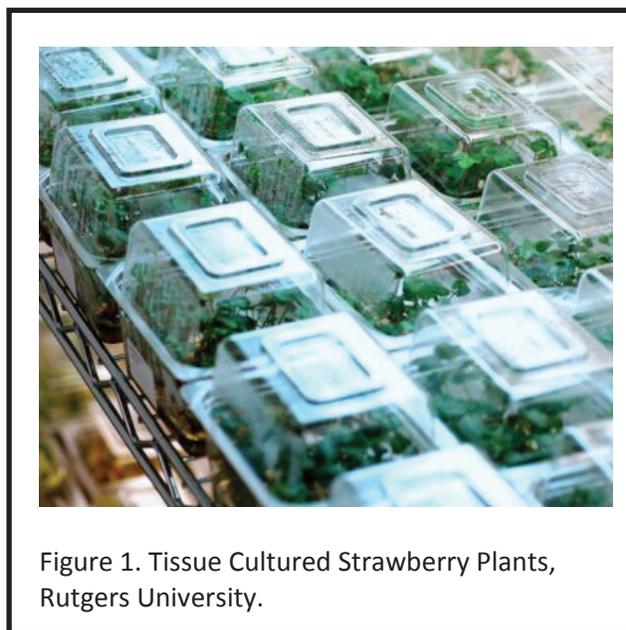


Figure 1. Tissue Cultured Strawberry Plants, Rutgers University.

Table 1. Field performance of NJAES strawberry selections, Pittstown, NJ 2010.²

Genotype	Marketable yield (lb/A)	Average fruit size (g) ^x	Average °Brix ^y
Chandler	11,372 b	17.1 c	8.4de
NJAES – A	9,719 b	19.2 b	9.4 bc
NJAES – B	12,273 b	20.4 a	9.7 ab
NJAES – C	19,886 a	16.9 c	8.2 e
NJAES – D	6,740 b	17.2 c	10.0 a

^xTwenty representative fruit/plot.

^yMean of fruit samples from eight harvest dates.

²Mean separation within columns by Fisher’s Protected LSD ($P = 0.05$).



Figure 2. Replicated Field Trial Plots, Rutgers Snyder Farm, Pittstown, NJ April 4, 2010.



Figure 3. Rutgers NJAES Strawberry Selections Grower Trial, Hackettstown, NJ.



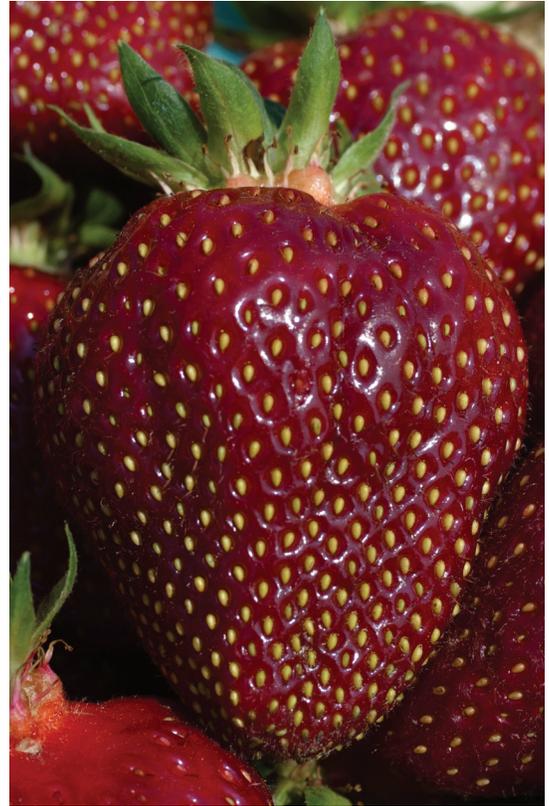
Figure 4. Strawberry Runner Tip Production at Kube-Pak Corp., Allentown, NJ.



Figure 5. Rutgers NJAES – An Advanced Strawberry Selection.

Currently patent applications and release papers are being prepared for these promising advanced selections. At the same time discussions are occurring with a commercial nursery about propagating these selections in larger quantities. Hopefully commercial growers will be able to buy these selections as varieties in the near future and take advantage of the improved fruit qualities they offer.

Dr. Jelenkovic has also made additional crosses and these new selections have exceptional size and flavor and are currently being cleaned up and propagated for replicated trials.



Since 1932

The Best Berry Plants

80 YEARS

- Strawberries, raspberries, blueberries, blackberries, asparagus and more!
- Where the pros go for plans and plants.
- Call for a free catalog and plasticulture guide!

41 River Road, South Deerfield, Massachusetts 01373



www.noursefarms.com 413.665.2658

Testing and Evaluation of Plum and Plum Hybrid Cultivars

Jerome L. Frecon and Daniel L. Ward

New Jersey Agricultural Experiment Station, Rutgers University

Introduction & Methods

This report is a continuation of plum, and interspecific hybrids research first started by the senior author in 1989 and continued through 2011.

The Japanese type plum varieties adapted to the milder temperate climates of the Northeastern US are of great diversity. Many of these plum varieties are the result of interspecific hybridization. Most plums described as Japanese are the result of crosses of the Japanese plum, *Prunus salicina*, with the American plum, *Prunus americana*, or the *Apricot plum* or *Simon plum*, *Prunus simonii*. More recently the Chickasaw plum, *Prunus angustifolia*, has been used by southern breeders to improve adaptability.

Generally, the Japanese type plum varieties grow on upright spreading, or spreading to drooping trees and produce round to heart-shaped fruit (pronounced apex) with yellow, to red, to almost black skin color. Plumcots are interspecific hybrids of Japanese plums, *Prunus salicina*, and apricots, *Prunus armeniaca*. Plumcot is a generic term for these hybrids coined by Luther Burbank. Pluots® are later-generations that show more plum than apricot characteristics; the fruit's exterior has smooth skin closely resembling that of a plum. Pluots were developed by Floyd Zaiger and Zaiger Genetics, and "Pluot" is a registered trademark of Zaiger Genetics. Apriums® are complex plum-apricot hybrids that show more apricot traits; genetically they are often one-fourth plum and three-fourths apricot. Aprium varieties were developed in the late 1980s by Floyd Zaiger and Zaiger Genetics, and "Aprium" is a registered trademark of Zaiger Genetics. NectaPlums are hybrids between plums and nectarines, *Prunus persica*. These also have been developed by Zaiger Genetics. The European, or common garden plum, *Prunus domestica* varieties are more upright in growth habit and produce oval- to ovate-shaped plums with blue to black skin color. Some varieties have a dry texture, very high sugar content, and are processed into prunes. For this reason, many of

these cultivars are commonly called prunes. A botanical species, *Prunus insititia* or damson plum, is one of these cultivars. Varieties of the American, or wild, plum grow on spreading trees and produce small, round fruit of various colors. These later two species have not been extensively evaluated in New Jersey and thus will not be discussed in this report.

Varieties

The Japanese type varieties grown on available rootstocks are generally short-lived and relatively unproductive (there are exceptions). The trees are easily stressed by many of the same problems affecting peach trees, namely winter injury, spring frost, moisture stress, nematodes, root rots, and short life. Some Japanese varieties also experience latent incompatibility with available rootstocks and decline slowly.

Fruitfulness is also a problem in Japanese plums because of bloom variability, pollen incompatibility, and sensitivity to variation in temperatures and sunlight. The Japanese varieties bloom earlier than other plum species. Plumcots generally bear earlier than most Japanese type plums.

The following varieties have been suggested for small commercial plantings. The early season varieties are: Early Golden, Methley, and Shiro. **The midseason varieties are** **Crimson Beauty (USDA BY 8158-50)**, Au Rosa, Santa Rosa, Black Ruby, Red Ace, Redheart, Ozark Premier, Black Amber, Wickson, Queen Rosa. **The late season varieties are;** Rubysweet, Vanier, South Dakota, Ruby Queen, and Fortune.

There are many other Japanese and Japanese X American hybrid varieties that have not been observed or tested in New Jersey.

Pollination

All Japanese plums benefit from cross-pollination.

Methley, Shiro and Early Golden will set heavy crops in some years without cross-pollination. All other varieties should be planted in an orchard design with at least three varieties.

Do not pollinate Japanese type plum varieties and the interspecific hybrids with European plum varieties.

Management

The first test block of Japanese type plums was planted in a commercial orchard in Hardingville, New Jersey. Four tree replicates of popular commercial varieties on Lovell and Halford peach rootstocks on an old peach orchard site. The block received normal care and attention similar to the care given adjoining peach blocks. Fruit, flower and foliage characteristics were evaluated over the next five years but tree decline and death resulted in the trees being removed after six years. In 1987 the first of a series of Japanese plum hybrids were received from Dr. William "Dick" Okie. Research Horticulturist and Fruit Breeder with the USDA-ARS Southeastern Fruit Research Station in Byron, Georgia. Trees of these selections and other commercial varieties were planted over a 22 year period as two to four tree replicates in four research blocks interspersed with peaches and nectarines on commercial farms. Most blocks received normal care and attention throughout the season by the management of each farm. There are currently 40 varieties under test in these blocks, some that have duplicates. Other old varieties have been removed. A few varieties were evaluated in test blocks at Adams County Nursery in Aspers, PA.

The following are selections and cultivars that were or are currently under test or have been evaluated.

PLUMS AND PLUOTS OF INTEREST (In Order of Ripening)

Tasty Rich Aprium – No fruit on these three year old weak trees. All trees died in 2009.

Spring Satin – A globose ovate, medium, 90-100% purplish red overcolor with light yellow to clear flesh (some red pigmentation around edges ripening from



June 28-July 1. The skin has light pubescence. The flesh is medium firm, juicy, grainy and very sweet with very good flavor. The trees are vigorous, spreading, and have been productive particularly for a plumcot. Fruit size was respectable for an early season plumcot over 2 inches in diameter. It is susceptible to bacterial spot.

USDA BY 96M514 – A yellow-fleshed clingstone plum ripening on June 20. The average fruit weight was 78 grams with 100% below 2 ¼ inches. Soluble solids concentration (SSC) was 9.6% in 2010.

USDA BY 88Z1092 – A globose, small, 100% dark bluish black, clingstone yellow-green-fleshed plum ripening on June 27-July 6. The flesh is medium firm, juicy, melting and sweet with good flavor. The tree is spreading, vigorous, and lightly productive. Average fruit weight was 26 grams and 9.6% SSC in 2010.



Honey Rich Aprium – This ovate, small, yellow-orange skinned fruit with a prominent suture ripens from July 1-7. The flesh is yellow, meaty, sweet and of excellent flavor. The trees bloom very early and are of low vigor, upright spreading and lightly productive. SSC was 16.7 % in 2010, Very few fruit in 2011. This variety blooms very early so another very early blooming apricot is needed for pollination. It blooms so early it may have little use in New Jersey.



Earliqueen plum – A globose, small to medium small; 100% dark reddish purple, light yellow-fleshed clingstone plum ripening on July 2-8. The flesh is medium firm, juicy with fair flavor. The tree is vigorous, spreading and lightly productive and very susceptible to bacterial spot. After 15 years all of the trees were removed. This variety has never been consistently productive,



USDA BY 8158-54 – A

globose to heart shaped, medium small, 90-100% purplish red overcolor with a greenish red groundcolor, red-fleshed semi clingstone ripening on July 2-6. The flesh is medium firm, melting, stringy, sweet and acidic with fair to good flavor. The tree is upright spreading, vigorous, moderately productive with high susceptibility to leaf spotting.



USDA BY 8158-142 – A

globose, small 50 to 80% bright red over yellow undercolor, clingstone reddish yellow-fleshed plum ripening on July 2 to July 8. The flesh is medium firm, juicy, melting and moderately sweet with fair to good flavor. The tree is spreading. Vigorous and lightly productive with moderate susceptibility to bacterial spot. The average fruit weight was 32 grams with 100% less than 2 ¼ inches. SSC was 12.6% in 2010.



USDA BY 86M516 -

A small, globose, 80-90% pinkish red with a slight yellow green ground-color yellowish, red-fleshed, clingstone, plum ripening on July 2 -9. The flesh is medium firm, sweet, acidic with very good flavor. The tree is very vigorous, spreading and has produced only light crops. It has never exhibited much leaf spotting. Average fruit weight was 27.1grams or 100% less than 2 ¼". SSC was 10.3% in 2010.



USDA BY 91M97 – A

small globose, 100% reddish deep purple, clingstone red-fleshed, plum ripening July 3- 10. The flesh is medium firm, sweet, acidic with very good flavor. The tree is large, vigorous and spreading and lightly productive with medium susceptibility to bacterial spot. Average fruit weight was 42 grams with 100% less than 2 ¼ inches. SSC was 14.7% in 2010.



USDA BY96M1275 –

A globose to slightly heart-shaped, 80-100% light speckled red over a yellow green ground color; pinkish-yellow fleshed plum ripening on July 10-16. The flesh is medium firm, melting, juicy, sweet with very good flavor. The tree is vigorous, spreading, and lightly productive with medium susceptibility to bacterial spot. SSC was 16.9% in 2010. The average fruit weight was 56 grams with 100% less than 2 ¼ inches in diameter.



Shiro - It is a globose to

heart shaped, medium-sized (mostly 2 inches) yellow skinned plum ripening July 12-19 or 10 days after Early Golden a similar but smaller fruited variety. The yellow semi-clingstone flesh is soft but juicy with very good flavor. It is partially self-incompatible and pollinated by, Methley, Vanier and Ruby Queen. Shiro is a good pollinizer for other early blooming plums.



USDA BY 93M364 -

A globose, small, 90-100% purplish red over greenish yellow ground color; yellow-fleshed clingstone plum ripening on July 14-20. The flesh is firm, melting, and acidic with good flavor. The tree is vigorous, upright, and productive with medium susceptibility to bacterial leaf spot. SSC was 11.2% in 2010. The average fruit weight was 39 grams with 100% of the fruit less than 2 ½ inches.



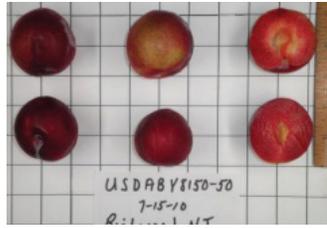
Methley – It is a globose purplish

red plum with red clingstone flesh ripening July 15-22. The fruit is small to medium size. The soft juicy flesh has fair to good flavor, although the skin has a slight aftertaste. It has the virtue of being self fertile and very productive and will pollinate other early blooming varieties of Japanese plums. Direct market growers will plant it because of its long lived- tree and productivity.



USDA BY 8150-50

– A globose, medium small 90% pinkish red overcolor red- fleshed semi-clingstone plum ripening on July 15-22. The flesh is firm, melting, sweet tart with good flavor. The tree is vigorous, spreading, and moderately productive, with medium susceptibility to bacterial leaf spot. SSC was 10.7% in 2010. The average fruit weigh is 89 grams with 83 % less than 2 ¼ inch and 7 % 2 ¼ inch.



USDA BY 8327-65 - A

globose to heart shaped, small, 100% dark reddish purple, red-fleshed semi clingstone plum ripening on July 18-24. The flesh is medium firm, stringy, sweet mild, with very good flavor. The tree is spreading, vigorous, and moderately productive with low susceptibility to bacterial spot. The average fruit weight is 59 grams with 100% less than 2 ½ inches SSC was 15.9% in 2010.



Bubblegum Plum(R) Plum

Prunus salicina hybrid ‘Toka’ cv. It is a small bronze red globose plum ripening on July 20-26. The flesh is soft, clingstone and yellow with a good but gummy texture. The tree is upright, vigorous, lightly productive, and self incompatible and needs a pollinizer of one of the other American x Japanese hybrids. Bubblegum is a registered trademark of Paul Friday, Coloma Michigan. This cultivar blooms early, flowers heavily but has not set much fruit.



USDA BY 8334-16-

A oval to ovate very small, 100% purplish red overcolor, greenish-yellow fleshed clingstone plum ripening on July 22-25. The flesh is firm, melting, and sweet, with good flavor. The tree is very vigorous, spreading, and lightly productive, with high susceptibility to bacterial leaf spot. All trees died in 2009.



Black Ruby - A

globose, medium sized, 90-100% reddish black fleshed, semi freestone plum ripening on July 23-30. The flesh is medium firm, melting, stringy, sweet with good flavor. The tree is vigorous, spreading, lightly productive and susceptible to bacterial leaf spot. Productivity improves in NJ with pollination by Ruby Queen, Methyl, Shiro and Vanier. For many years we have been calling a smaller, earlier maturing, red-fleshed clingstone variety Black Ruby. We are confident this variety description and picture fits the true Black Ruby.



USDA BY 88M878 –

A globose, small, 100% purplish red, red-fleshed, clingstone, ripening from July 25 -31. The flesh is medium firm, melting, juicy, sweet acidic, with very good flavor. The tree is spreading, vigorous, and lightly productive with medium susceptibility to bacterial spot. The average fruit size was 42 grams with 98 % below 2 ¼ inches and 2% at 2 ¼ inches. SSC was 14.1% in 2010.



Ozark Premier –It is a

globose, large, red skinned plum ripening from August 1- 7. The yellow clingstone flesh has good flavor. The tree is vigorous but crops irregularly. It is self incompatible and needs cross pollination. Vanier is an excellent pollinizer for Ozark Premier.



Fortune - Large, globose,

reddish purple blush over yellow ground color, yellow-fleshed clingstone, ripening on August 6-12. The flesh is firm, juicy and sweet with very good flavor. The tree is upright-spreading, vigorous and productive. It is pollinated by other Japanese type varieties.



Coparose Pluot

-Evaluated from Adams County Nursery. A globose to slightly ovate, medium to large, bluish red skinned, pluot ripening August 8-16. The flesh is a firm golden flesh, semi freestone, and a flavor that is very good. The vigorous tree requires a pollinizer such as Dapple Dandy according to Dave Wilson Nursery. It has been moderately vigorous and lightly productive. We have limited experience with pollinizers in the eastern US.



Flavor Grenade Pluot

- A globose to slightly ovate, medium sized yellowish green ground color overlaid with a speckled reddish orange, greenish yellow flesh, semi freestone pluot ripening August 10 -18. The flesh is firm, fine grained, sweet, low acid with excellent flavor. The trees are vigorous, lightly productive and susceptible to leaf spotting. The fruit weight was .83 grams with 50% less than 2 ¼ inches and 50% 2 ¼ to 2 ½ inches. SSC was 17.1% in 2010.



USDA BY 88M1010

- A medium, globose, yellow, firm-fleshed, clingstone plum ripening on August 9 -15. The skin is a greenish red. The flavor is very good. The tree is vigorous, upright and moderately productive. The average fruit weight was 69 grams with 100% of the fruit less than 2 ¼ inches in diameter. SSC was 13.2% in 2010.



Vanier - A small to medium globose, bluish-red, yellow-orange-fleshed clingstone, ripening in August 15 -23. The flesh is moderately firm, juicy with good flavor. The fruit hangs on the tree well. The tree is upright-spreading, vigorous, and moderately



productive with low susceptibility to bacterial spot. It is self-incompatible and pollinated by Shiro, Ruby Queen, Ozark Premier and Santa Rosa. The average fruit weight was 45 grams and 100% of the fruit is less than 2 ¼ inches. SSC was 14.3% in 2010.

USDA BY 93M597

- A small, globose to heart shaped, 100% reddish purple, greenish yellow-fleshed clingstone plum ripening on August 12-18. The flesh is firm, juicy, and acidic with good flavor. The tree is very vigorous, upright, medium productive, and susceptible to leaf spot. The average fruit weight was 56 grams with 100% less than 2 ¼ inches in diameter. SSC was 14.7% in 2010.



Castleton(European type plum)

- An ovate to oval small to medium small, 100% bluish black, yellowish green-fleshed, freestone plum ripening on August 10-18. The flesh is medium firm stringy, dry with good flavor. The trees are moderately vigorous, upright, very productive, and tolerant of bacterial spot. The average fruit weight is 43 grams with 100 % less than 2 21/4 inches. SSC was 17.3% in 2010. Like many blue black European plums it sometimes gets picked too early.

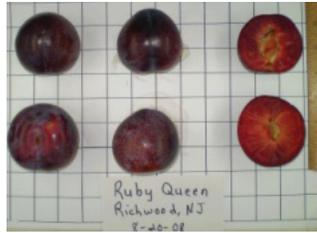


SpiceZee NectaPlum.

Evaluated from Adams County Nursery It is a 2¼ to 2½ inch globose, light bronze, pinkish, red skinned nectaplum ripening from August 15 to 22. The firm freestone cream colored flesh. It has a slightly acidic and spicy sweet flavor. Dave Wilson says it is a beautiful ornamental tree with a tremendous spring bloom followed by dark red leaf in the spring that matures to a rich green-red in late summer. This variety is self-fruitful and very productive.



Ruby Queen - Large, globose, dark reddish-purple, red-fleshed, semi freestone plum ripening in August 17-23. The fruit hangs and ripens over a long period of time. The flesh is firm, and juicy with excellent flavor. The tree is medium, spreading, vigorous, and productive with moderate susceptibility to bacterial spot. It is pollinated with another Japanese type variety like Shiro, Vanier, and Black Ruby. Tested as USDA BY8155-70. SSC was 18.5% in 2010.



Flavor Queen - A globose, medium to large, yellowish green, semi-freestone light yellow-fleshed plum ripening from August 21 -30. The flesh is firm, juicy, melting, sweet and low acid with excellent flavor. The tree is vigorous, low productivity with high susceptibility to leaf spotting. The average fruit weight was 146 grams with 14% 2 ¼ inches, 15% 2 ½ inches and 40% 2 ¾ inches. SSC was 18.3% in 2010. 2010 was first year out of 12 year that this variety has had a full crop. In 2011 the crop was very light.



USDA BY 8356-33 - A small, globose, 80-90% yellowish red overcolor over a slight greenish yellow ground color yellow-fleshed clingstone plum ripening on August 25-30. The flesh is medium firm, melting, sweet, acidic with very good flavor. The tree is vigorous, spreading, moderately productive, and susceptible to leaf spotting.



Flavor King Pluot - A medium globose to heart shaped small 80-90% purplish red; reddish yellow clingstone pluot ripening on August 22-30. The flesh is firm



juicy, melting sweet and low acid with excellent flavor. The tree is moderately vigorous, upright, lightly productive and very susceptible to leaf spotting and shot holing. The average fruit weight was 83 grams with 90 % less than 2 ¼ inches and 10 % over 2 ¼ inches. SSC was 17.7% in 2010.

New York 6 -A small, oval to ovate, blue greenish, yellow-fleshed freestone plum ripening on August 22 -30. The tree is upright spreading vigorous, spreading, productive, and tolerant to leaf spotting. Trees were removed in 2011.



Crimson Royale Pluot. Evaluated from Adams County Nursery. It is an ovate to globose, red skin over a dull yellow undercolor pluot ripening August 24 to September 1. It has a cream yellow, very firm, semi-freestone flesh with excellent quality and flavor. The trees are vigorous, spreading, and lightly productive. It requires a pollinizer but must be studied further in the Eastern United States.



Ariel -A small, globose, yellowish brown russeted plum with yellow green flesh ripening in late August. The trees were very weak and all trees died in the spring of 2010. The trees never produced enough quality fruit to get a good evaluation.



Dapple Dandy Pluot - A globose, medium, red-freckled skin over yellow green undercolor; semi-freestone pink to red flesh pluot ripening August 24 to September 2. The flesh is medium firm,



juicy, acidic and sweet with excellent flavor. The trees are small, moderately vigorous, spreading, with high susceptibility to bacterial spot. The average fruit size was 109 grams with 36% less than 2 ¼ inches and 64 % over 2 1/inches. SSC was 17.5 % in 2010.

Autumn Sprite Aprium

– Evaluated from Adams County Nursery. It is a globose to ovate yellowish-pink skinned ripening from August 25 to September 2. The flesh is yellow and freestone with very good sweet flavor. The fruit is medium size, about 2 inches. The tree is vigorous and spreading. Dave Wilson Nursery states that it is self fertile. If this leads to high productivity in the Eastern US this could be a promising variety as young trees had a good crop.



Flavor Rich Pluot

– A generally globose, small to medium sized, 100% purplish black greenish yellow-fleshed, clingstone pluot ripening on August 25 to September 2. The flesh has fair flavor but stays so firm it is hard to determine maturity. The tree is vigorous, spreading and of all the pluots is the most productive. The average fruit size is 79 grams with 70 % less than 2 ¼ inches and 30% over 2 ¼ inches. SSC was 13.6% in 2010. Trees were removed in 2011.



Flavor Heart Pluot.

Evaluated from Adams County Nursery. It is a globose to heart shaped, large sized, bluish black pluot ripening from August 22 to September 1. The semi freestone light yellow flesh is firm but softens quickly. It has excellent flavor. Flavor Heart requires a cross pollination according to Dave Wilson Nursery. The tree was small with a light crop.



Candy Stripe Pluot

– Evaluated from Adams County Nursery. It is a globose medium large sized, pinkish red overcolor with a yellow undercolor ripening September 1-10. The flesh is yellow, freestone, firm, and juicy with a very good acidic flavor. Dave Wilson Nursery says it requires a pollinizer such as Flavorfall. The young trees had a light crop so more work needs to be studied on pollinizers in the Eastern US.



Autumn Giant

– A globose to heart shaped, small to medium 80-90% bright orange red over a orange-yellow ground color; yellow-fleshed clingstone ripening in late September. The flesh is melting, very firm, stringy, mild and acidic with fair flavor. The tree is upright and slightly spreading, moderately productive. This plum ripens so late it is hard to get a reading on good quality.



Rootstocks

Myrobalan (*Prunus cerasifera*) seedlings and **Myrobalan 29C** clonal stocks are the recommended rootstocks for all European plum varieties. They are also compatible with many Japanese and Japanese X American hybrid varieties, but tend to be shorter-lived on sandy or drought sensitive soils. They are more adapted and longer-lived on loamy or clay-loam soils.

Lovell and Halford peach seedlings are used on many Japanese plum varieties. Trees are short-lived and susceptible to most problems experienced with peach varieties. Japanese plum varieties on Lovell and Halford peach seedlings are better adapted to sandy soils than European varieties on Lovell or Halford.

Mariana 2624 clonal rootstock is compatible with most plum varieties. Trees of all varieties are more sensitive to low winter temperatures on this rootstock than other rootstocks.

Citation appears to be a promising rootstock for

semi-dwarf plum trees.

Krymsk 1. A New rootstock from Russia has not been tested in New Jersey but is being offered with Japanese plums as very winter hardy and producing a

semi dwarf tree.

Pumiselect is a dwarfing clonal selection of *Prunus pumila* sold with Japanese type plum.

Editors' Note: These plums were evaluated in southern New Jersey, and there, the ripening date is about the same as for comparable trees at Adams County Nursery in Aspers, PA. Northern New Jersey ripening dates range from 5 to 10 days later, depending on location.

PEACHES

Still growing strong!

**Delaware & California Grown
Certified Peach Trees.
Order Now for Spring.**

ACN INC.®
SINCE 1905

**Adams County Nursery, Inc.
Aspers, PA
(800) 377-3106 • (717) 677-4124 Fax
Website: www.acnursery.com
Email: acn@acnursery.com**

**Buying fruit trees should be as simple
as Black and White ... But it isn't!**

Let us simplify your life.

Our highly qualified staff is waiting for your call.



800-424-2765
www.summittreesales.com

Orchard Equipment and Tools for Every Grower

Silky
ARS
BAHCO
FELCO
BARNELL USA

REARS
REARS Pulblast

jacto

CARRAROSPRAY
by OELER

MS
MS 3-PT Hitch Boom Sprayer

ATVM

ATV

Parts & Service for all we sell!
P.O. Box 540, Rte. 116 • Conway, MA 01341
800-634-5557 • 413-369-4335
info@oescoinc.com

Order online at www.oescoinc.com

Maximize Your Fertilizer Efficiency and Crop Quality.

System-Cal

System-Zinc

System-Mag

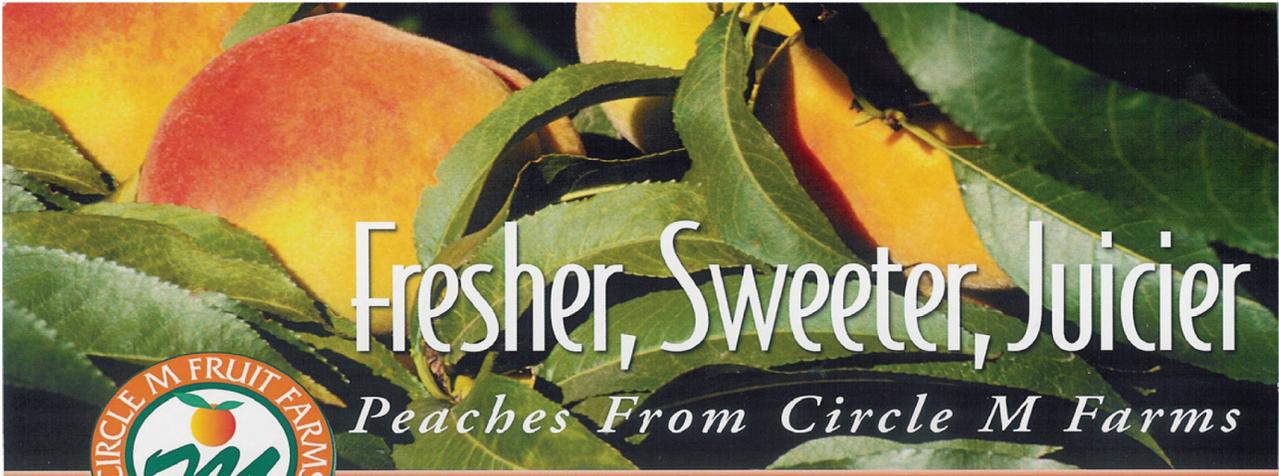
System-Manganese

System-K

Agro-K, the premier name in manufacturing high quality foliar nutrients world-wide for over 30 years has partnered with CPS to provide Northeast fruit and vegetable growers with the nutrient tools they need maximize crop quality – size, firmness, storage life, and more. Agro-K produces a full line of quality foliar nutrient products including the **System™** line of phosphite-based micronutrients (including calcium, zinc, magnesium, manganese and potassium), to help growers improve their ground fertilizer efficiency, overall plant health and crop quality. Agro-K also offers a complete line of OMRI approved nutrients for use in organic farming.

For more information contact your local CPS crop specialist or Agro-K's Northeast Regional Mgr., Jeff McClellan at 814-574-5663 or jeff@agro-k.com.

AGRO-K CORPORATION
 8030 Main Street, NE • Minneapolis, MN 55432
 800-328-2418 • www.agro-k.com



Fresher, Sweeter, Juicier

Peaches From Circle M Farms



*Exceptional quality and flavor at attractive prices
Brought to you from the 4th generation family
farm of Santo John Maccherone*



- PLU Stickers Available Upon Request
- Low in Calories
- Nutritious and Delicious
- Exceptional Flavor



SANTO SAYS...

"Peaches from Circle M Farms just plain taste better. Their size and color are what your customers want, and their flavor is the icing on the cake.

That's because our orchards are tended with care and attention, and their fruit is left on the tree to ripen naturally until they reach their optimum sweetness. Then they are picked by hand, taste-tested by me to ensure quality, and packed gently into

25 lb. volume boxes for shipping. Single layer cartons are available upon request.

Circle M's 30 varieties of peaches and nectarines are known for their sweetness and their luscious color. They look as good as they taste.

Discriminating customers appreciate our white flesh peaches because of their lower acid levels and supremely sweet taste.

Add it all up: Peaches from Circle M Farms are fresher and sweeter, picked by hand when their time has come, and packed with care for a longer shelf life.

Yellow, white and donut peaches and yellow and white nectarines are available early July to late September."



**Call us at 856 856 207-4542 or
609 381-6465. Fax your order to
856 878-0404**



Available in 16 oz. and 64 oz. sizes

**Made from fresh New Jersey Peaches
"Peach Cider Drink, Peach Salsa, Peach
Preserves"**

**Santo John Maccherone
circlemfarmsllc@gmail.com**

**Circle M Farms
88 Sandy Ridge Road
Salem, N.J. 08079**



FruitNotes

University of Massachusetts Amherst
Stockbridge School of Agriculture
205 Bowditch Hall
Amherst, MA 01003-9294

104911