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Horticultural News

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

The New Jersey State Horticultural Society was organized on August 17, 1875 at Geological Hall, Rutgers College, New Brunswick, NJ. It remains the oldest Horticultural organization in New Jersey.

Horticultural News began as the *The New Jersey State Horticultural Society News*, in October of 1920. The Society began "collecting paid membership in order to obtain funds to promote new features of the society and extend the usefulness of the society. The Horticultural Society News was started to be the official society publication." Published M. A. Blake, Professor at Rutgers College was the first president and chair of the publication committee.



Editors served as follows:

1920 - 1947
1948 - 1980
1981 - 1988
1988 - 1990
1991 - 1995
1995 - 2010

June 2010: *Horticultural News* has moved to an online web-based format. The New Jersey State Horticultural Society has partnered with the University of Massachusetts *Fruit Notes*, Dr. Wesley Autio, Editor. Cowgill and Autio will be the new editors of *Horticultural News* and *Fruit Notes*.

Horticultural News is distributed to growers, extension personnel and researchers and libraries across North America. Horticultural News focuses primarily on tree-fruit culture, but addresses small-fruit cultural issues as well. Most reports are from current research at Rutgers University, University of Massachusetts, and other universities.

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Correspondence should be sent to:

New Jersey State Horticultural Society P.O. Box 116 Clayton, NJ 08312 TEL (856) 307-6450 Ext.1 FAX (856) 307-6476 Win Cowgill <u>wincowgill@mac.com</u>

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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).



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.



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 Sndyer 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 demostrates 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 Synder 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.



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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. ^z					
	Marketable	Average	Average		
Genotype	yield (lb/A)	fruit size (g) [×]	°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		
^x Twenty representative fruit/plot.					

^yMean of fruit samples from eight harvest dates.

^zMean 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 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.







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 vigourous, 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 ¹/₄ inches. Soluble solids concentration (SSC) was 9.6% in 2010.

USDA BY 88Z1092 – A globose, small, 100% dark bluish black, clingstone yellow-greenfleshed 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 $\frac{1}{4}$ ". 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 that 2 $\frac{1}{4}$ 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 $\frac{1}{4}$ inches in diameter.

Shiro - It is a globose to heart shaped, mediumsized (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 $\frac{1}{4}$ inch and 7 % 2 $\frac{1}{4}$ 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 $2\frac{1}{2}$ 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, greenishyellow 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 $2\frac{1}{4}$ inches and 2% at $2\frac{1}{4}$ 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 $\frac{1}{4}$ inches and 50% 2 $\frac{1}{4}$ to 2 $\frac{1}{2}$ 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 $\frac{1}{4}$ inches in diameter. SSC was 13.2% % in 2010.

Vanier - A small to medium globose, bluish-red, yelloworange-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 ¹/₄ inches. SSC was 14.3% in 2010.

USDA BY 93M597 – A small, globose to heart shaped, 100% reddish purple, greenish yellowfleshed 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 $\frac{1}{4}$ 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 greenfleshed, freestone plum ripening on August 10-18. The flesh is medium firm stringy, dry with



good flavor. The trees are is 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 2¹/₄ to 2¹/₂ 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 reddishpurple, 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 $\frac{1}{4}$ inches, 15% 2 $\frac{1}{2}$ inches and 40% 2 $\frac{3}{4}$ 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.

Arial – 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 ¹/₄ 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 yellowfleshed, 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 $2\frac{1}{4}$ inches and 30% over $2\frac{1}{4}$ 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.



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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.

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New Jersey News

Remembering Dr. Richard Merritt

Win Cowgill

My friend, mentor and colleague Dr. Richard (Dick) Merritt passed away October 30, 2011. I miss him greatly. Many in the horticulture profession new Dr. Merritt, he was an institution at Cook College,

Rutgers University for over 60 years. He trained and influenced 1000's of students in his career and positively impacted 100's of New Jersey Farmers through his efforts as well.

As the youngest Dean of Students in the Country at Cook College, Rutgers, in the 1970's, Dick was the driving force behind the development of the institution we new to become Cook College. I first worked with Dick in the 1980's when we worked on key committee together to shape the future of Cook College and our NJ Agricultural Experiment station. We became friends and colleagues. He really served as one of the few mentors in my life that guided me through much of my career at Rutgers. In many ways he was like a dad to me, always knowing the right questions to ask and always had the best advice when needed, on life issues as well as work. Many times he would just talk and talk, but was ok, he was opinionated and had his own view of the world but I found myself agreeing with it most of the time!

I remember when he proofed a paper of mine in 1993, he figured out I had dyslexia- I have struggled with this reading and writing disorder all my life, but he is the first one that told me what it was...Amazing, I was 42 before I learned what I had, thanks to Dick.

He was an avid gardener and horticulturist. I gave him many fruit trees over the years and we was glad to



have my advice on their cultivation, even thought he still considered himself a pomologist.

He often invited me over for dinner, I still wonder if he told Bonnie I was coming many times, but we always enjoyed excellent home cooking and lively conversation.

I will let the others fill in some blanks about Dick Merritt.

Memorial Service

At a memorial service in January, 2012 may of his friends and coworkers gathered to remember him, here are some excerpts from their remarks.

Dan Rossi: Dick Merritt will be remembered for many and varied accomplishments. He was an outstanding and motivating teacher, a creative and accomplished researcher, an experienced and dedicated mentor and advisor who knew when to be brutally frank to make sure his advisees achieved their potential, a visionary and inspiring dean, a innovative and internationally recognized developer of curricula, a loyal and passionate son of Rutgers, a patriotic and committed citizen, and a loving and selfless husband, father, and friend. He along with Charlie Hess played an instrumental role in the conceptualization and development of Cook College. Perhaps lesser known were his roles in organizing the Cook alumni and parents into strong advocates for the college and the university.

Dick was influential in raising tens of thousands of dollars in support of other scholarship funds at Rutgers. He had a positive influence on literally thousands of Rutgers students during his over 50 years as a Rutgers Professor. His impact, however, continued well beyond graduation. He successfully engaged hundreds of alumni to remain active and contributing members of the Rutgers community. He was also the primary reason why Rutgers cooperative living alumni have contributed towards the largest undergraduate scholarship endowment fund at Cook College. The endowment currently totals over \$2 million and supports 38 cooperative living students at \$2,200 per student per year.

For those who knew Dick Merritt well, you know that there were two very different sides to this very complex man. There was a public side. Dick was the ultimate professional. However, he could be rough and tough when necessary. He had little patience for B.S. He had the ability to cut to the chase in meetings. And it did not matter if you were a university president,



dean, faculty member or student. As you know, Dick definitely had his view of the world.

But there was a private side to Dick that if you were fortunate you got a chance to experience. Dick was caring and compassionate. He was there so many times of challenges in my life. And it was not necessary to go to him. He would seek me out when he heard I needed help.

Charlie Hess: It's hard to summarize 61 years of close working relationships and deep friendship, 'but I would like to share with you a few of my memories. Dick and I first met in 1950 as Rutgers undergraduates in Plant Science in the College of Agriculture and Environmental Sciences (CAES). We were reunited in 1966 when I returned to Rutgers as Chair of the Department of Horticulture and Forestry by which time Dick had become Associate Dean and Director of Resident Instruction. This began a period in which the professional and personal interactions with Dick grew and matured into one of the deepest friendships I have experienced.

A major activity was working together with the faculty of CAES to develop a new concept for the college focusing on people and the environment and the challenges for agriculture in the nation's most urban state. Dick took the lead in developing the curriculum for the new college. The result was Cook College, a self-contained college with its own majors and dorms and programs that integrated student life and academic programs. Cook College became one of the most popular colleges on the New Brunswick Campus of Rutgers University. Without Dick's leadership Cook College would not have been a reality. Dick Merritt was a preeminent leader in academic administration.

In all of the many shared experiences - professional and personal the characteristic of Dick's that I remember the most was his self confidence. Dick was never ambivalent, and he was always sure that he was right. And, in fact, he usually was!

Roger Locandro: My brother Ron said it best, 'He was a great man and he did something good for the world!'

When Dick began as the director of Resident In-

struction at Cook, later, Academic Dean, he was a young man and the College of Agriculture had about 370 students. Aggies- When he completed his mission, there were over 3,000 students, new dorms, this beautiful campus center, a modern recreation facility and active parents and alumni associations- plus a growing number of graduate students and faculty, and a redefined mission for Cook College.

His special place was in the garden; the greater garden of life, the source of the greater good that he preformed. It is all there, light, soil, water, air peace and solitude. A good place for life and seeking who we are and what we are about.



Dean Polk, Statewide Tree Fruit IPM Agent, New Jersey Agricultural Experiment Station, Rutgers University, presented "New Problem Insect Pests: A Preview from Down South" to the Annual Summer Meeting of the Massachusetts Fruit Growers' Association. The meeting was held on July 16, 2012, at the UMass Cold Spring Orchard Research & Education Center. Left photo: Dean Polk discussing spotted-wing drosophila. Right photo: left to right, Wes Autio (UMass Professor of Pomology and Director of the Stockbridge School of Agriculture), Dean Polk, and Jon Clements (UMass Tree-fruit Extension Educator).

Thomas "Dick" Battaglia Passes

Thomas "Dick" Battaglia, age 86, of Hammonton, passed away Monday, March 12, 2012 at his residence. Born in Hammonton, he founded in 1980 and was the president of Hammonton Package Sales Co. Inc. Dick was president of the National Peach Council, member of New Jersey Farm Bureau, New Jersey Vegetable Growers Assn., Hammonton Exchange Club. Dick was selected as parishioner of the year at St. Anthony of Padua Church.

Dick is predeceased by his wife Virginia and his son in law Donald Leadley. Surviving are his

daughter Virginia Leadley-Flukey and her husband Stephen of Dorchester and his son Richard Battaglia and his wife Beverly of Georgia. Brother in law to Anna Battaglia. Loving grandfather of Donald Leadley and his wife Marianne, Jonel Leadley, Leanne Leadley, Kellie Almond, and Monique Devers and great-grandfather of 10.

Donations may be made to St. Joseph High School Education Fund, 101 Central Ave. Hammonton, NJ 08037.

(Published in Courier-Post on March 14, 2012.)



Photo Caption for New Jersey Section- Vergers (Orchards) Gerald and Paul Lussier, Franklin Center, Quebec, Canada- Gerald Lussier, Win Cowgill and Paul Lussier tour the Lussier orchards on the 2012 - International Fruit Tree Association (IFTA) summer tour. One hundred and eighty growers, extension workers, nurserymen and researchers were welcomed to Quebec for the third time in the last 30 years to learn about their industry.



Dedicated to the Orderly Marketing and Promotion of New Jersey Peaches

New NJ Peach Buyers Guide Dedicated to Al Caggiano

Clayton, NJ. The 2012 New Jersey Peach Buyers Guide is now available to all interested in the New Jersey Peach industry and those buying New Jersey peaches. "This year's 72 page guide is dedicated to Mr. Alfred Caggiano, owner of Sunny Slope Farms in Bridgeton," said Santo John Maccherone, Chair of the New Jersey Peach Promotion Council, publisher of the guide. "The Sunny Slope Brand is emblematic of the highest quality



Jersey Fresh peaches," said Mr. Maccherone. "Mr. Caggiano's leadership in the peach industry and his goal of marketing the premium quality peaches has set the bar high for all of us attempting to market the best fruit," said Maccherone. Sunny Slope is currently managed by Mr. Caggianos family packing and distributing white and yellow fleshed peaches and nectarines out of their modern facility in Bridgeton, New Jersey

"The 2012 guide lists in alphabetical order growers and shippers of New Jersey peaches including their brands, and general information on what and how they ship," states Jerry Frecon, Agricultural Agent with Rutgers NJAES Cooperative Extension. "This section has been completely rewritten for easier use and placement on the New Jersey Peaches web site at <u>www.jerseypeaches.com</u>, and an updated list of direct marketers and community farmer's market members selling New Jersey peaches is also included in the guide" said Frecon, editor of the publication.

Over the years the guide has been an important source of information for the media because it provides details and statistics on the peach industry. Color pictures of some of the most important varieties are highlighted along with details on when they are available for buyers. Other statistics and a history of the NJ Peach Industry are provided.

Information is included on the Jersey Fresh Promotional program for peaches and the Quality-grading program run by the New Jersey Department of Agriculture. Details on officers and directors of the New Jersey Peach Promotion Council are listed along with an outline of plans for the 2012 promotional program on peaches.

For merchandisers the guide contains information on how to store and handle New Jersey peaches; flavor, quality and hydrocooling, and food safety procedures for New Jersey handlers.

The opening page of the guide explains why everyone should buy New Jersey Peaches. Buying New Jersey peaches helps to preserve peach farms and open space in the Garden State.

Information on procuring the guide can be obtained by contacting <u>info@jerseypeaches.com</u> or by writing the New Jersey Peach Promotion Council at 1200 North Delsea Drive, Clayton, N.J. 08312 or 856 307-6456.

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