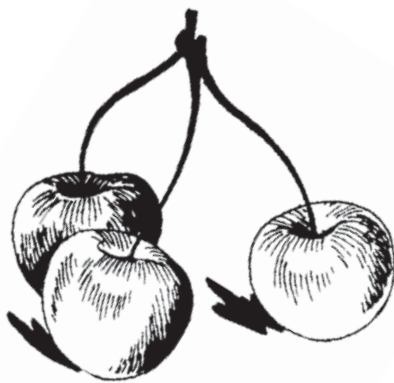


# PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

SEPTEMBER 28, 2004



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## Spray Cherries for Bacterial Canker

*Win Cowgill, Agricultural Agent*

**B**acterial Canker is a serious bacterial disease of cherry in New Jersey, and all other regions where the climate is humid. Bacterial canker has been very active this season in New Jersey in both sweet and tart cherry blocks.

**Bacterial canker** or **bacterial gummosis** of sweet cherry is caused by several *Pseudomonas* bacterium. This disease infects flower buds and spurs. It can completely kill new spurs and leaves and then move into the trunk on cherry. This is especially problematic with our new Geslia Dwarf cherries as losing a scaffold or getting infection into the trunk will limit production as the tree rapidly declines.

### Control Now

Begin spraying now to control Bacterial Canker. Cankers get started mainly in the fall after most of the leaves have fallen and the trees are beginning to go dormant. The only effective way to control this disease is to reduce the number of bacteria before the trees enter their susceptible period; avoid large, dormant pruning cuts; and use summer pruning to minimize the impact of the disease. The bacteria that start these cankers are found on the surfaces of mature leaves and other green tissues, and *do not* come from existing cankers.

The only successful control we have found is repeated applications of the old Bordeaux mixture in September, October, and November and repeated again in the spring. Bordeaux Mix consists of Hydrated lime and Copper Sulphate. The rates and methods of mixing are important. We began our sprays the first week in September. Note, however, that sprays of Bordeaux applied to green leaves must be *softened* with vegetable oil to avoid burning the foliage. Four additional sprays 14 days apart will be applied. Bordeaux mix will also be applied in the spring with several applications before bud break.

It would be my recommendation that in all cherry blocks a program of Bordeaux Mix applications should be made this September. Careful observation and scouting of older blocks should be done now to determine if this bacterial disease is present and control warranted. It is my observation to date that if any Bacterial Canker is observed in sweet cherry I would plan a spray program of Bordeaux mixture.

### Other Coppers

In a research trial at the Rutgers Snyder Farm, Champ DP copper was also evaluated against Bordeaux mix for phytotoxicity on cherry.

*SEE BACTERIAL CANKER ON PAGE 2*

**BACTERIAL CANKER FROM PAGE 1**

The oil equally saftened Champ DP as it did Bordeaux. Caution, Champ2 Flowable may not be compatible with the vegetable oil.

For additional information please do not hesitate to contact me.

**Note:** In our humid climate in New Jersey the cankers can continue to develop in lateral branches and the central leader. In some cases the cankers have grown to girdle and kill two-year wood. I have observed central leader dieback as a result. In older wood the canker looks very much like a fire blight canker in apple. In most cases the canker begins to ooze a brown to amber exudate. It appears that under our humid conditions this disease is very hard to control and can be devastating if control measures and the proper horticultural practices are not followed. Many growers who did not think they had bacterial canker are beginning to see it on three and four year old trees.

The source of inoculum may come from wild cherry trees in our hedgerows; Black Cherry, *Prunus serotina* may be one source of inoculum for the *Pseudomonas* during wind and rainstorms in the spring and summer months. Removal may be beneficial.

**Fact sheets on Bacterial Canker**

There are numerous fact sheets online for Bacterial Canker; many include color photographs for reference. Below are the listings for several:

Overall, the best information on this disease is from a fact sheet from Ontario Canada written by W.R. Allen "Bacterial Canker of Sweet Cherry" NO. 88-0886. You can find it online at <http://www.gov.on.ca/OMAFRA/english/crops/facts/88-086.htm>. It has good color plates and lists control measures, however, it appears that under our humid conditions this disease is very hard to control and can be devastating. This bacterial disease is most troublesome in young plantings where it can cause loses of up to ten percent of the trees. On mature trees it can reduce yields from 10–50%.

**SEE FACTSHEETS ON PAGE 3**

# Apple Maturity Update

*Win Cowgill, Agricultural Agent*

Apple maturity continued to slow with lower average daily temperature. Cool night temperatures continue to enhance red color development.

On Monday evening as I write this report we are waiting for Hurricane Jeanne to pass through New Jersey, with the potential of dumping 2-6 inches of rain. Apple trees loaded with fruit and saturated soils are always at risk if there are high winds accompanying the storm. Proper staking and or support systems are essential under these conditions to avoid tree loss.

Next week will be the last weekly Rutgers Plant and Pest Advisory Fruit Newsletter and hence next week will be the last apple maturity report (issues will continue monthly). With this report, we have included the major fall apples as well to get a baseline on maturity. Fuji is surprisingly far along with a 4 on the Starch Iodine index at two locations in Hunterdon County.

**Note:** Please observe the different harvest dates for each cultivar as you compare the maturities in the charts below.

**Macoun-** in general have excellent color but are not quite ready for harvest in the samples taken. Non Retained fruit is very loose, some fruit on the ground. NAA applied for stop drop will assist, but note it takes 2 days to be effective.

|                         |      |        |          |      |        |
|-------------------------|------|--------|----------|------|--------|
| Hunterdon-Pittstown 2   | Date | Retain | Pressure | Brix | Starch |
| Macoun                  | 9/27 | Yes    | 17       | 12.5 | 3.3    |
| Hunterdon-Glen Gardener | Date | Retain | Pressure | Brix | Starch |
| Macoun                  | 9/27 | No     | 16       | 12   | 3.6    |
| Warren-Hackettstown     | Date | Retain | Pressure | Brix | Starch |
| Macoun                  | 9/27 | Yes    | 17       | 12.5 | 3.6    |

**Empire-**Harvest in underway from Hunterdon County North. Empire should be picked at 3-4 for storage, 5-6 for retail sales or PYO.

|                     |      |        |          |      |        |
|---------------------|------|--------|----------|------|--------|
| Warren-Blairstown   | Date | Retain | Pressure | Brix | Starch |
| Empire              | 9/26 | no     | 15       | 12.5 | 5      |
| Warren-Hackettstown | Date | Retain | Pressure | Brix | Starch |
| Empire              | 9/26 | yes    | 16.4     | 11   | 4      |

**Red Delicious-** is being harvested from Hunterdon North, especially non retained blocks.

|                            |                |        |          |      |        |
|----------------------------|----------------|--------|----------|------|--------|
| Warren-Hackettstown Strain | Date           | Retain | Pressure | Brix | Starch |
| Red Delicious              | Red Chief 9/26 | Yes    | 18       | 10   | 2.5    |

**Golden Delicious-** also is being harvested from Hunterdon North.

|                          |      |        |          |      |        |
|--------------------------|------|--------|----------|------|--------|
| Hunterdon-Snyder         | Date | Retain | Pressure | Brix | Starch |
| Golden Delicious-Smothee | 9/27 | no     | 12       | 14   | 6.5    |

**Liberty-**is a scab immune apple from the PRI breeding program that has a unique high quality taste. The tree is very compact and spur growth habit. Liberty comes back with a full crop every year. The apple has a crisp texture, white flesh, very juicy and a unique flavor. It is an apple that should not be grown with out the use of Retain.

|                   |      |        |          |      |        |
|-------------------|------|--------|----------|------|--------|
| Hunterdon-Snyder- | Date | Retain | Pressure | Brix | Starch |
| Liberty           | 9/28 | Yes    | 16.3     | 13   | 5      |

**Mutsu/Crispin-** a large green excellent eating apple. But tends to be a bit loose and droppy.

|                         |      |        |          |      |        |
|-------------------------|------|--------|----------|------|--------|
| Hunterdon-Glen Gardener | Date | Retain | Pressure | Brix | Starch |
| Mutsu                   | 9/26 | no     | 21       | 13   | 2      |

**SEE APPLE MATURITY ON PAGE 3**

APPLE MATURITY FROM PAGE 2

| Warren-Blairstown   | Date | Retain | Pressure | Brix | Starch |
|---------------------|------|--------|----------|------|--------|
| Mutsu               | 9/26 | no     | 26       | 12   | 2.6    |
| Warren-Hackettstown | Date | Retain | Pressure | Brix | Starch |
| Mutsu               | 9/26 | ?      | 23       | 12.5 | 1.     |

**Cameo**-is a new apple (1987) of very high quality that is becoming a favorite in roadside stands, PYO and in the chain stores as well. A chance seedling found in Washington State, it has been planted fairly extensively. The fruit is firm, crisp and characterized by a highly appealing subacid aromatic flavor. It matures one week before Fuji in normal years, and stores well.

| Hunterdon-Snyder Farm | Date | Retain | Pressure | Brix | Starch |
|-----------------------|------|--------|----------|------|--------|
| Cameo                 | 9/27 | no     | 17       | 13   | 3      |
| Warren-Hope           | Date | Retain | Pressure | Brix | Starch |
| Cameo                 | 9/26 | no     | 18       | 11.5 | 2.2    |
| Morris-Harding Twp.   | Date | Retain | Pressure | Brix | Starch |
| Cameo                 | 9/27 | Yes    | 15.3     | 10.5 | 2.7    |

**Idared**-is a dual purpose apple that stores well. With a SI of 3 Idared is ready for long term storage.

| Warren-Blairstown | Date | Retain | Pressure | Brix | Starch |
|-------------------|------|--------|----------|------|--------|
| Idared            | 9/26 | no     | 14.4     | 11   | 3      |

### Fuji

| Hunterdon-Snyder Farm | Date | Retain | Pressure | Brix | Starch |
|-----------------------|------|--------|----------|------|--------|
| Fuji (Sun)            | 9/27 | yes    | 16       | 13.5 | 4      |
| Hunterdon-Pittstown 1 | Date | Retain | Pressure | Brix | Starch |
| Fuji                  | 9/27 | no     | 17       | 12   | 4.1    |
| Morris-Harding Twp.   | Date | Retain | Pressure | Brix | Starch |
| Fuji(Sun)             | 9/27 | yes    | 15       | 11   | 3.1    |

### Stayman

| Hunterdon-Snyder Farm   | Date | Retain | Pressure | Brix | Starch |
|-------------------------|------|--------|----------|------|--------|
| Stayman                 | 9/27 | No     | 18.5     | 12   | 1      |
| Hunterdon-Glen Gardener | Date | Retain | Pressure | Brix | Starch |
| Stayman                 | 9/27 | ?      | 18       | 10   | 1      |
| Warren-Blairstown       | Date | Retain | Pressure | Brix | Starch |
| Stayman                 | 9/26 | no     | 17.5     | 10   | 1      |
| Warren-Hope             | Date | Retain | Pressure | Brix | Starch |
| Stayman                 | 9/26 | no     | 19       | 11   | 1      |
| Warren-Hackettstown     | Date | Retain | Pressure | Brix | Starch |
| Stayman                 | 9/26 | no     | 17.4     | 10   | 1      |
| Morris-Harding Twp.     | Date | Retain | Pressure | Brix | Starch |
| Stayman                 | 9/27 | no     | 16.2     | 10   | 1      |

**Granny Smith**- is further ahead in maturity than expected, with fruit from two locations a 2.0 and 2.4 on the SI index. Red cheeks have already developed on the fruit observed.

| Hunterdon-Snyder Farm | Date | Retain | Pressure | Brix | Starch |
|-----------------------|------|--------|----------|------|--------|
| Granny Smith          | 9/27 | No     | 19       | 11.5 | 2      |
| Morris-Harding Twp.   | Date | Retain | Pressure | Brix | Starch |
| Granny Smith          | 9/27 | Yes    | 17.6     | 10.5 | 2.4    |

## How to read the charts on fruit maturity

Starch Index (SI) is a measure of how much starch has converted to sugar in the flesh of the apple. The lower the number the more "immature" the fruit is. The higher the number the more "mature" the fruit is. We like to have an SI of between 5-6 to harvest for retail sales. Apples 'eat' best at an SI of 6 or higher.

Brix is a measure of sugar content of fruit. A brix of at least 12 percent should be present for acceptable eating quality, 13-14 is better.

Pressure- flesh pressure is taken after the skin is peeled off; two pressures are taken on each apple. Pressure is one of the truest measures of ripening. Pressure declines rapidly as the fruit matures (gets softer).

**Note:** This report takes approximately two days to prepare in collecting and testing samples and in preparation of the text and data. Six to eight apples of each cultivar are collected at each location.

A note of thanks to all who make this report possible beginning with all the growers who participate, M. Compton who assisted in obtaining fruit samples. This week J. Beyer and I used the 'team' apple testing approach. □

FACTSHEETS FROM PAGE 2

West Virginia University  
[http://www.caf.wvu.edu/kearneysville/disease\\_descriptions/bactcank.html](http://www.caf.wvu.edu/kearneysville/disease_descriptions/bactcank.html)  
 Comparison of healthy trees vs. diseased trees:  
[http://www.caf.wvu.edu/kearneysville/disease\\_descriptions/disease\\_images/fig129c.jpg](http://www.caf.wvu.edu/kearneysville/disease_descriptions/disease_images/fig129c.jpg)  
 University of California  
<http://www.ipm.ucdavis.edu/PMG/r105101511.html>

## Farmers and Farms in S. Jersey: Planning for Agriculture in Your Community

Are you a farmer in a rapidly growing municipal city? Are you a member of a municipal community with rising property taxes? Are you a township or town council, planning board, or environmental commission member dealing with land planning? Are you a county, state or township official dealing with right-to-farm issues? If the answer is "yes" to any of these questions you should attend "Farms and Farmers: Planning for Agriculture in Your Community"! This workshop will be held on Thursday evening, October 14, 2004 from 6:00 - 9:30 pm at the Mid-Atlantic States Food Systems Education Center at Pennsville, located in the Pennsville School District Building at 30 Church Street, Pennsville, NJ. This facility is accessible from Route 295 and the New Jersey Turnpike at Exit 1, just south of the Delaware Memorial Bridge.

An invited panel of experts with experience in planning and agricultural issues will be led by New Jersey Secretary of Agriculture Charles Kuperus, who will emphasize the importance of maintaining a strong agricultural sector in Salem, Cumberland and Gloucester Counties. Brian Schilling, Associate Director of the Rutgers Food Policy Institute, will then present the latest census information about agriculture in the three-county area and identify and address some commonly held misconceptions. Michael Brooks, a young Salem County farmer, will discuss challenges and opportunities for farmers in South Jersey and identify key areas of concern and creativity.

Michael Sullivan, a seasoned professional planner with Clarke Caton Hintz who has vast practical experience and was directly involved in the well-known effort in Chesterfield Township, will lead the second half of the program. The line-up also includes Monique Purcell, Director of the Division of Agricultural and Natural Resources, who will outline the current Smart Growth Plan from a state perspective. Additionally, Helen Heinrich, a professional planner specializing in rural planning issues, will share her views about the model right-to-farm and other ordinances, and Rich Nieuwenhuis, President of New Jersey Farm Bureau, will conclude the program with a summary of the information presented and suggestions about how it might be applied.

Retired judge Paul R. Porreca has graciously agreed to moderate the program. All are welcome to attend this event at no charge. For additional information, including a detailed program agenda and directions, please contact Jerry Frecon at (856) 307-6450 or [frecon@aesop.rutgers.edu](mailto:frecon@aesop.rutgers.edu) or Claire Homitzky at (201) 792-5416 or [homitzky@aesop.rutgers.edu](mailto:homitzky@aesop.rutgers.edu). The agenda and directions

are also available on the Rutgers Cooperative Extension of Gloucester County web site at <http://gloucester.rce.rutgers.edu>.

The program is sponsored by the Mid-Atlantic States Food Systems Education Center at Pennsville in conjunction with the New Jersey League of Municipalities, NJ Department of Agriculture, NJ Farm Bureau, the Rutgers EcoComplex, the NJ Conservation Foundation, Rutgers Cooperative Extension, the Rutgers Food Policy Institute, and the Rutgers Food Innovation Center.

Additional information: There is no fee for this event and light refreshments will be served. This building is handicapped accessible; please call the Center at Pennsville at (856) 540-6203 to make arrangements prior to the event. □

### Pics from the Field



*Bill Tietjen, Warren County Agricultural Agent, addresses 55 commercial growers at the recent twilight Horticultural Research Meeting held at the Rutgers Snyder Farm. Photos courtesy of Win Cowgill.*

*Growers toured the research plots at the farm. One stop was the high density block of apple varieties planted in a Super Slender Spindle Training system. The photograph below shows three year old Cameo on G-16 rootstock planted 10x 2 feet for 2000 trees/Acre. We expect to harvest the equivalent of 450 boxes per acre this year in the third leaf.*



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