

# PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

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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 (canola) to avoid burning the foliage. The rate is three quarts of canola oil per 100 gallons. The 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. The oil equally softened Champ DP as it did Bordeaux. **Caution/Note:**

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# Apple Maturity Update for North-Central New Jersey

Win Cowgill, Agricultural Agent

## Rutgers NJAES -CE of Hunterdon County

North Jersey has continued to get welcome rains to size the apple crop. Some growers without irrigation have reported small fruit size on late maturing September peaches.

This weekend unseasonably warm temperatures (high 80's) have adversely impacted some apple cultivars. Some Macoun and Cortland blocks show signs of sunburn and other varieties have had a loss of red color. Cooler nights since will help.

North Jersey growers are finishing Gala and McIntosh harvest is all but done except in Warren County and North.

## McIntosh

<b>Warren-Blairstown</b>	<b>Date</b>	<b>Retain</b>	<b>Pressure</b>	<b>Brix</b>	<b>Starch-Iodine</b>
McIntosh-	9/14	no	13	11.6	5.8
<b>Warren-Hackettstown-</b>	<b>Date</b>	<b>Retain</b>	<b>Pressure</b>	<b>Brix</b>	<b>Starch-Iodine</b>
MacSpur McIntosh	9/7	yes	14.7	11.8	4.8
MacSpur McIntosh	9/14	yes	15	12	5
<b>Morris -Harding Twp</b>	<b>Date</b>	<b>Retain</b>	<b>Pressure</b>	<b>Brix</b>	<b>Starch-Iodine</b>
Rogers Red McIntosh	9/8	yes	16.2	12.1	3.5
Rogers Red McIntosh	9/16	yes	14.2	12.6	5.6

## HoneyCrisp

The Honeycrisp blocks have been picked one – two times to date. Red color has been slow to develop in some blocks. This year we must pick by color, it will take 3-5 picks to get all the fruit at the optimal time. Varietal flavor is necessary to command the premium prices and is coming slowly this season.

**The recommended maturity for the harvest of Honeycrisp in NJ is starch=7.0, internal pressure > 13.5 pounds, soluble solids > 13 brix, and the presence of good varietal flavor.** A lousy eating Honeycrisp is a lousy apple.

However, monitoring varietal flavor and background color change from green toward cream may be more useful when timing the harvest of Honeycrisp.

<b>Warren-Blairstown</b>	<b>Date</b>	<b>Retain</b>	<b>Pressure</b>	<b>Brix</b>	<b>Starch-Iodine</b>
Honey Crisp	9/14	no	13.7	12	7.5

## Cortland

Cortland is an apple that has increased in popularity with newer strains being highly colored. Cortland is usually picked one week after Macs (remember Macs can be picked over 3 weeks if stop drop is used. Normally around mid- September at the Rutgers Snyder farm. They do not starch test well but SI testing can be used as guideline, target a starch of 5-6.

<b>Morris-Harding Twp</b>	<b>Date</b>	<b>Retain</b>	<b>Pressure</b>	<b>Brix</b>	<b>Starch</b>
Cortland-RedCort	9/15	yes	14.4	12.4	1.1
<b>Hunterdon-</b>	<b>Date</b>	<b>Retain</b>	<b>Pressure</b>	<b>Brix</b>	<b>Starch</b>
Snyder Farm RedCort	9/14	no	15.5	12.8	1
Pittstown	9/16	yes	14.7	14.1	2.5
<b>Warren-</b>	<b>Date</b>	<b>Retain</b>	<b>Pressure</b>	<b>Brix</b>	<b>Starch-Iodine</b>
Hackettstown-RedCort	9/14	no	17.5	12	1.5
Blairstown-Cortland	9/14	no	16	12.4	2.6

**Macoun** - No Macouns tested had varietal flavor yet and were not ready to be harvested.

<b>Warren</b>	<b>Date</b>	<b>Retain</b>	<b>Pressure</b>	<b>Brix</b>	<b>Starch-Iodine</b>
Macoun-Hackettstown	9/08	yes	20	12.8	2
Macoun- Hackettstown	9/14	yes	17.5	12.9	2
Macoun-Blairstown	9/14	no	15.9	12.2	4.1
<b>Hunterdon</b>	<b>Date</b>	<b>Retain</b>	<b>Pressure</b>	<b>Brix</b>	<b>Starch-Iodine</b>
Macoun-Snyder Farm	9/8	no	16.2	11.2	3.6
Macoun-Snyder Farm	9/14	no	16.2	12	3.5
<b>Morris-</b>	<b>Date</b>	<b>Retain</b>	<b>Pressure</b>	<b>Brix</b>	<b>Starch</b>
Macoun-Harding Twp	9/8	yes	16.8	13.1	3.7
Macoun-Harding Twp	9/15	yes	17.2	13.2	4.7

## Jonathan

<b>Warren-</b>	<b>Date</b>	<b>Retain</b>	<b>Pressure</b>	<b>Brix</b>	<b>Starch</b>
Hackettstown-Jonathan	9/14	no	16.3	13.6	6.6

**Jonagold** - is ready at several locations. We would like to see a 6 on starch for retail sales and 14-16% brix. We are harvesting Jonagold today at Snyder

SEE APPLE MATURITY ON PAGE 3

Hunterdon	Location	Date	Retain	Pressure	Brix	Starch
JonaGoRed	Snyder	9/16	no	14.2	14	5.5
Jonagold	Pittstown	9/16	yes	16.5	14.4	5.8
Morris	Location	Date	Retain	Pressure	Brix	Starch
Jonagold	Harding Twp	9/15	yes	16.6	15.8	5.5

**Liberty**

Hunterdon	Location	Date	Retain	Pressure	Brix	Starch
Liberty	Snyder Farm	9/16/08	yes	18.3	11.8	2.0

**Early Fuji Strains** - there are four to five new strains of early Fuji. We made our first harvest Monday (9/15) of all 6 strains we have under test. We will make two pickings. Our Asian population continues to grow (NJ's population is now 10% Asian) and there is a significant marketing opportunity to this group. Fuji is their apple of choice followed by Gala and Golden Delicious. Currently I have six of these cultivars under extensive testing (30-50 trees each) at the Rutgers Snyder Farm. These include BeniShoegun Fuji, September Wonder Fuji, Auvil Early Fuji, Rising Sun Fuji, Daybreak Fuji, and Morning Mist Fuji. These are very interesting as we look at the early PYO market with Fuji types. These are true Fujis as contrasted to the older Yataka Fuji which is not a true Fuji.

Hunterdon-Early Fuji's	Location	Date	Retain	Pressure	Brix	Starch
September Wonder	Snyder	9/15	no	13.7	14	7.1
Auvil Early	Snyder	9/15	no	13.2	14	5.8
Beni Shogun	Snyder	9/15	no	14	14.2	6.5
Rising Sun Fuji	Snyder	9/15	no	13.1	14.6	6.6
Morris-Early Fuji's	Location	Date	Retain	Pressure	Brix	Starch
Daybreak Fuji	Harding Twp	9/15	yes	13.4	14.6	7

**Empire** - was not ready for retail sale type harvest in any sample tested. We would look for starch of 5-6, brix of 13-14%, pressure 16 lbs.

Hunterdon	Location	Date	Retain	Pressure	Brix	Starch
Empire	Snyder	9/16	yes	16.6	10.8	2.4

**Golden Delicious** - Golden's are moving along as well. Non-Retained fruit is a bit ahead of normal.

Hunterdon	Location	Date	Retain	Pressure	Brix	Starch
Gibson Golden	Snyder	9/16	no	126.8	14.6	4.5

**Ambrosia** - A clubbed variety from British Colombia- some growers have it planted before it was restricted.

Hunterdon	Location	Date	Retain	Pressure	Brix	Starch
Ambrosia	Snyder	9/16	no	16.8	14.6	4.5

**Retain®:** it is too late to apply retain except for late October varieties like Suncrisp, Stayman, Fuji. Reminder: Retain® should be applied 21-28 days before anticipated harvest on alter varieties, with a 7 day Pre Harvest Interval (PHI). If blocks were not treated with Retain®, it is not too late this season to apply for late September apples like Red Delicious and Empire, and too early for October maturing apples such as Suncrisp, Fuji, Stayman.

Photo: Early Fuji trial, Rutgers Snyder Farm 2005. Credit: Win Cowgill



BACTERIAL CANKER FROM PAGE 1

Champ 2 Flowable is not compatible with Vegetable Oil, do not use it. I would stick with the homemade Bordeaux mix. There have been great improvements in copper sulfates, they are easier to mix and go into solution very well. For additional information please do not hesitate to contact me at 908-788-1339 or [cowgill@njaes.rutgers.edu](mailto:cowgill@njaes.rutgers.edu).

**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**

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. 88-086 available at <http://www.omafra.gov.on.ca/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 losses of up to ten percent of the trees. On mature trees it can reduce yields from 10-50%.

There are numerous fact sheets online for Bacterial Canker; many include color photographs for reference:

**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>



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