



# Newsletter Extension

## Fruit ICM News

Volume 7, No. 20  
May 29, 2003

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## Calendar

**June 9: Plasticulture Strawberry, Blueberry, Blackberry, Raspberry Twilight Meeting;** OSU South Centers, 1864 Shyville Road, Piketon, Ohio 45661. Field tours are from 5:00-7:00 p.m.; supper will be served from 7:00-8:00. Contact Brad Bergefurd, at 740-289-3727, 1-800-297-2072 (in Ohio only). E-mail: [bergefurd.1@osu.edu](mailto:bergefurd.1@osu.edu). Web site: <http://www.southcenters.osu.edu>.

**June 25: Ohio Fruit Growers Society Summer Tour,** Glen Hill Orchard, 17156 Glen Road, Mt. Vernon, OH. Registration begins at 8:00 a.m. Member registration fees are \$15 per family and \$10 per individual. (Non-member fees are \$20 and \$15.) Morning refreshments and noontime meal will be available for purchase. Rooms are available at the Mount Vernon AmeriHost at a rate of \$60/single or \$64/double. Call the hotel by June 3 for reservations: 800-480-8221. You may contact the Ohio Fruit Growers Society at 614-246-8292 for additional information.

## Summary of Agricultural Assistance Act of April 2003 (Passed as a part of the FY 2003 Omnibus Appropriations Act)

*Source: USAApple via Tom Sachs, Executive Director, Ohio Fruit Growers Society*

This is an updated summary of the 2003 Agricultural Assistance Act. Since passage of the bill, the U.S. Department of Agriculture (USDA) has set payment limitations at \$80,000 per producer and gross revenue caps at \$2.5 million per potential recipient. The sign-up period begins June 6, 2003. For more detailed information, please refer to USDA's Disaster Assistance Web Site <http://disaster.fsa.usda.gov/>. You are also strongly encourage you to contact your local Farm Service Agency agent.

- Growers to choose disaster coverage for the 2001 or 2002 crop.
- All growers and all crops, meeting certain requirements, are eligible for disaster payments. The amount of federal money available for payments is not limited to the original \$3.1 billion estimate.
- Loss Coverage: Quantity and quality losses are covered. Quantity: A grower must lose 35 percent of his/her crop to be eligible. Quality: A minimum of 20 percent quality loss must occur to be eligible.
- Payment Rate: Up to 65 percent of average production times: 50 percent of applicable crop price for producers who bought crop insurance or for which crop insurance was not available;

45 percent of the applicable crop price for producers who did not buy available crop insurance.

- Growers who receive disaster payments on a specific crop and did not have crop insurance (including CAT), if available, must purchase crop insurance (above CAT), if available, for that crop for the 2004 and 2005 crop years. Violators must reimburse the U.S. Department of Agriculture for the full amount of the disaster assistance provided.
- Payment limitations: Together, the value of any crop that was not lost, crop insurance payments and disaster payments may not exceed 95% of what the value of the crop would have been without disaster. AMLAP payments are not counted toward the 95% payment limitation, since they are for previous crop years. Payments are limited to \$80,000 per producer. Persons with gross revenue exceeding \$2.5 million are ineligible for program benefits. The bill will be paid for through spending reductions in conservation provisions of the farm bill.
- Sign-up begins June 6, 2003 for the Crop Disaster Program. See your local FSA office to participate, or for additional details. Information is available at USDA's Disaster Assistance Web site <http://disaster.fsa.usda.gov/>

## Management of Bacterial Spot of Peach Part II

*Source: Dave Ritchie, NC State Univ. & Phil Brannen, Univ. of Georgia, Edited by Bill Turechek - for the complete article w/ pictures see the Southeast Peach Regional Newsletter Vol 3 No 2 at <http://newsletters.caes.uga.edu/SRPN/>*

This is part II of the article written by Dave Ritchie and Phil Brannen on managing bacterial spot; part I was printed in *Ohio Fruit ICM News* on April 3, 2003. The original article, "Managing Bacterial Spot without Mycoshield", was written in response to an apparent shortage of Mycoshield in the southeast. But according to Syngenta, the manufacturer of Mycoshield, this shortage does not affect NY.

Nonetheless, the information on alternative chemical programs for bacterial spot management in this article is informative and interesting. Because the article was split in two, I have edited the article where necessary to maintain flow and made adjustments specifically for New York.

Rainy weather from bloom through shuck split, such as we've been experiencing in western New York, typically favors the development of bacterial spot. However, even though it has been wet, bacterial spot generally requires much warmer weather before it becomes problematic in western New York. Nevertheless, growers should be aware that a few warm and rainy days during this post-shuck split period is all that is needed during this period to initiate an epidemic.

### **Mycoshield**

There currently are no post-shuck split chemical alternatives that are as effective as Mycoshield for

controlling bacterial spot on peaches -- without causing phytotoxicity. Without question, Mycoshield should be your *first choice* when bacterial spot pressure is high or when treating highly susceptible varieties like 'Babygold 5'. Mycoshield was registered for use on peaches in the early 1980's. No other products have shown efficacy comparable to Mycoshield, nor have any been registered for use on peaches since the registration of Mycoshield. Thus, to see what alternatives may be available, we need to look at chemicals that were evaluated prior to Mycoshield and remain available for use on peaches today.

### **Copper-Containing Materials**

There are several copper formulations labeled for bacterial spot. A standard program with copper might begin with the highest labeled rate of Kocide, for example, starting at dormant, followed at 1-5% bud swell using reduced rates, pink to 5% bloom with even lower rates, continued through petal fall to 1% shuck split. At 75% shuck split to 1% shucks off, growers are generally offered a choice between continuing with copper applications at low rates or Mycoshield. Copper is very toxic to the bacterial spot pathogen, but it can be very damaging to peach leaves. Although leaf "shot-hole" can occur from use of copper, the greater damage is associated with excessive defoliation, which can reduce fruit quality (including smaller fruit size and delayed ripening). At recommended rates of copper, no direct injury to fruit finish has been observed.

### **Captan Tank-Mixed with Dodine (Syllit 65W)**

This is a combination that was evaluated in the 1960's and 1970's, and the recommendation remains on the Syllit 65W label. It is recommended for use when bacterial spot pressure is light to moderate. This hopefully is the situation in orchards where the early season copper spray program was followed. Data from the average of seven experiments (1961-1971) using this chemical combination showed about 50% of the bacterial spot incidence of the non-sprayed check. In these experiments, the Captan-plus-Syllit sprays were started at petal fall or shuck split, without any earlier sprays for bacterial spot.

In years with frequent rainfall, newly emerged leaves can be infected earlier than petal fall, thus providing an abundant source of bacteria for fruit infection starting at shuck split. Therefore, this spray combination may be even more effective if earlier copper sprays have been applied. The rate listed on the Syllit 65W label is 0.5 lb-plus-1.0 lb Captan 50WP per 100 gal. Some leaf "shot-hole" has been observed with this combination, but this has not resulted in significant defoliation. This combination also provides peach scab control (if sprays are applied at the proper time for scab control and at least 4.0 lb of Captan 50WP is used).

### **Zinc-Containing Materials**

Different forms of the metal zinc have been evaluated, often formulated as zinc sulfate. Disease control obtained has been less than that using copper products, and there remains the risk of phytotoxicity from zinc, which also responds to pH (similar to that described for copper). The fungicide Ziram contains metallic zinc, sold under the brand names Ziram 76DF and Ziram Granuflo. Each of these products contains 16.25% metallic zinc. This is approximately 2.6 oz of zinc per pound of material. The use rate is 4-8 lb per acre, and one should not exceed 72 lb per acre per year.

Both of these formulations are labeled for use on peaches up to 14 days before harvest, BUT neither has bacterial spot listed on the label. Ziram has been occasionally evaluated during the last 20-30 years, with some indication of bacterial spot suppression. No foliar or fruit injury has been observed with the use of Ziram; however, Ziram should not be relied upon for adequate peach scab control.

## General Recommendations:

- The focus should be on preventing bacterial spot from starting. The optimal time to use Mycoshield is at late shuck split to the start of shucks off and then for the following 3-4 weeks on a 7-10-day schedule if weather conditions remain wet. Wet can be defined as having at least one measurable rainfall per week or heavy dews that result in several hours of leaf wetness. Do not use less than 0.75 lb of material per acre in an attempt to "stretch" the use of Mycoshield by using low rates.
- Disease control is most effective when chemicals are applied within a 24-hour period prior to anticipated rainfall but with a sufficient time period for the pesticide to dry. In wet or rainy seasons, additional applications of Mycoshield may be needed on a 10-14-day schedule and can be applied up to 3 weeks before harvest. If wet weather continues for the few weeks after shuck fall, continue Mycoshield applications on a 7-10-day interval.
- If at all possible, insecticide and fungicide application should be conducted only when foliage is dry. Spraying when the foliage is wet can further distribute the bacteria.
- Once pit hardening occurs, at which time fruits apparently become less susceptible, evaluate the bacterial spot situation on fruit as well as the foliage. If few or no lesions are observed, but weather conditions remain favorable for disease, consider alternating a low rate of copper or a Syllit 65W-plus-Captan application with Mycoshield. Also, focus the use of Mycoshield on the most susceptible varieties.
- If you do not have or choose not to use Mycoshield, continue to apply the reduced rates of copper sprays, carefully monitoring for injury before each application until a point is reached that injury is considered too great to continue the use of copper. Switch to Syllit 65W-plus-Captan sprays at this time.

## Caution with Captan

*Source: Dave Rosenberger, Plant Pathology, Highland, Scaffolds Fruit Journal*

Fruit growers should be very cautious about using captan during the next 7-10 days because weather conditions over much of the state have left apples, peaches, plums, and cherries unusually susceptible to captan injury. Captan is an effective, broad-spectrum fungicide that is labeled for many fruit crops. However, when absorbed into plant tissue, captan causes phytotoxicity that appears as leaf spotting, shot-holing, and leaf yellowing. When combined with other products that enhance uptake into leaves, captan applied at this time of year can cause complete defoliation of peach and nectarine trees. To be safe, growers should avoid applying captan until trees have had several days of sunny, dry weather.

The risk of captan injury is greatest when the annual spring growth flush of fruit trees coincides with an extended period of cloudy, cool, damp weather. The growth flush on fruit trees begins when terminal shoots start growing during or shortly after bloom. The cuticle (the waxy layer on the leaf and fruit surfaces) develops in response to heat and water stress. During cloudy and damp weather, there is little danger from heat or water loss and trees therefore produce only a thin cuticle to protect the newly formed leaves and enlarging fruitlets.

The same waxy cuticle that serves to prevent water loss also prevents captan from entering and injuring living cells beneath the plant cuticle. Some varieties of plums and cherries almost always develop a leaf spot or shot-hole after captan is applied because, even under the best conditions, some captan enters and kills leaf cells of these varieties. For most other fruit crops, captan causes little or no injury except during unusual seasons when weather conditions inhibit cuticle development.

Even when plant tissue has only a thin cuticle, captan by itself will rarely cause phytotoxicity (except to those plum and cherry varieties that are especially susceptible to captan injury). Problems often arise, however, when captan is mixed with other agrichemical products. Spray adjuvants that enhance the transport of captan through the plant cuticle can greatly increase the phytotoxicity of captan, especially when the plant cuticle is thin at the time spray is applied. Adjuvants that enhance uptake of captan include spray oils, some spreader-stickers, and other petroleum-based carriers commonly found in products that are formulated as liquids or emulsifiable concentrates.

Where apple scab symptoms are appearing in orchards, the best option for stopping further spread of apple scab is to apply a combination of an SI fungicide along with the maximum label rate of captan. To avoid phytotoxicity problems, however, growers may need to use an SI-plus-mancozeb combination for the next week to avoid the potential phytotoxicity that could result if captan is applied at this time. This is especially true if Sevin XLR Plus will be applied for thinning or if spray oil will be applied with a miticide during the next week. Those who opt to apply captan despite the risks are advised not to use spray adjuvants that might enhance trans-cuticular movement of captan.

## **Antioxidants, Nutrition and Gardening**

*Source: Richard C. Funt, The Ohio State University*

Fresh fruits and vegetables are good for you! Fruits and vegetables provide a wide range of vitamins, minerals, fiber, and antioxidants for keeping your body healthy. They help maintain a healthy weight, protect against the effects of aging, and reduce the risk of certain cancers and heart disease.

Medical research has brought forth convincing information about fresh fruits and vegetables in the past 25 years. A human diet and daily exercise can mean fewer doctor bills. Some studies indicate that eating five to six servings of fruits and vegetables plus grains that are high in fiber are ways to improve your health and can reduce your medical bills by \$1,400 per year.

Beyond the suggested daily intake, medical and agricultural research have pinpointed plant based components, such as lycopene in tomatoes and watermelon, ellagic tannins in berries and grapes that form ellagic acid, and antioxidants which can provide even greater benefits as functional foods. Functional foods eaten as whole fruits and vegetables have many components that reduce the risk of cancer and heart disease.

My current research goals are to find berries and produce fresh berries that have high levels of antioxidants, as vitamin A, C, E, and selenium. Increasing these in the human body on a daily basis can provide health benefits.

When berry plants are grown in amended soils using composts and under high levels of sunlight, they tend to be higher in certain components than other fruits. Good growing conditions allow more flavonoids to be produced by plants to ward off their own diseases and bacteria. Medical research indicates that fruits eaten close to the bush are better than cooked or frozen products. Berries that are picked and left in heat will have the amount of certain antioxidants decreased by 40%. Therefore, eating fresh or fresh frozen berries are likely to be the most beneficial.

Our current research deals with preventing prostate cancer. However, these findings can lead to other research, in areas such as breast cancer and possibly asthma and arthritis. We must provide the best berries for bio-availability studies and human clinical trials at The Ohio State University. The Ohio State University leads the nation in working with combined agricultural and medical research, from the field

to the plate. Plant foods are better and less expensive than medicines. May I serve you a black raspberry milkshake?

## Section 24C for Stinger on Strawberries

A Section 24C for Stinger on Strawberries is now legal in Ohio, according to Doug Doohan, OSU Weed Specialist. Doug will send additional information in time for next week's newsletter.

## Pest Phenology

Coming Event	Degree Day Accum. Base 50° F
Peachtree borer 1 <sup>st</sup> catch	299 - 988
Codling moth 1 <sup>st</sup> flight peak	307 - 824
Obliquebanded leafroller 1 <sup>st</sup> catch	392 - 681
Lesser peachtree borer flight peak	392 - 1526
San Jose scale 1 <sup>st</sup> flight subsides	434 - 656
Oriental fruit moth 1 <sup>st</sup> flight subsides	442 - 1026
European red mite summer egg hatch	442 - 582
Pear psylla 1 <sup>st</sup> summer adults present	443 - 512
Spotted tentiform leafminer 2 <sup>nd</sup> flight begins	449 - 880

## Degree Day Accumulations for Ohio Sites May 28, 2003

Ohio Location	Degree Day Accumulations			
	Base 45° F		Base 50° F	
	Actual	Normal	Actual	Normal
Akron/Canton	670	641	387	402
Cincinnati	968	976	645	649
Cleveland	632	605	369	378
Columbus	902	773	588	498

Dayton	848	789	544	514
Kingsville	479	521	251	321
Mansfield	627	626	351	391
Norwalk	612	593	350	371
Piketon	1018	992	662	664
Toledo	584	581	323	364
Wooster	750	588	455	360
Youngstown	584	570	319	350

## Fruit Observations & Trap Reports

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

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

### Apple: 5/21/03 to 5/28/03

CM: 10.0 (down from 22.7)  
 ESBM: 0 (same as last week)  
 LAW: 24 (down from 55)  
 OBLR: 8 (up from 0)  
 RBLR: 0 (same as last week)  
 SJS: 0 (down from 4)  
 STLM: 2 (up from 0)  
 TABM: 1 (down from 7)  
 VLR: 0 (same as last week)

### Peach: 5/21 to 5/28/03

OFM: 0 (same as last week)  
 LPTB: 2 (down from 7)  
 PTB: 0 (same as last week)

**Site: Medina, Wayne, & Holmes Counties**

Ron Becker, IPM Program Assistant

**Apple:** 5/21 to 5/28/03

STLM: Holmes: 0 (same as last week)

Medina: 0 (same as last week)

Wayne: 0 (same as last week)

RBLR: Holmes: 0 (down from 0.3)

Medina: 0 (down from 2)

Wayne: 0 (down from 0.3)

CM: Holmes: 1.0 (down from 12.9)

Medina: 0.2 (up from 1.8)

Wayne: 31.6 (down from 48.1)

**Biofix for CM - May 2 in Wayne Co.**

**Peach:** 5/21 to 5/28/03

LPTB: Holmes: 3 (down from 5)

Medina: 5 (up from 2)

Wayne: 6 (up from 0)

OFM: Holmes: 0 (same as last week)

Medina: 0 (down from 12)

Wayne: 4 (up from 1)

PTB: Holmes: 0 (same as last week)

Medina: 0 (same as last week)

Wayne: 0 (same as last week)

Light number of aphid, European red mite, and leaf mines were found in apples this week. Slug, two-spotted spider mite, and aphid activity is increasing in strawberries.

**Site: East District: Erie & Lorain Counties**

Jim Mutchler, IPM Scout



**Apple:** 5/21 to 5/27/03

CM: 2.1 (down from 4.7)  
OFM: 1.4 (down from 4.9)  
RBLR: 0.4 (down from 5.5)  
STLM: 30 (down from 159)

Other pests include green apple aphid, rosy apple aphid, and white apple leafhopper

**Peach:** 5/21 to 5/27/03

LPTB: 10.7 (first report)  
OFM: 0.3 (same as last week)  
RBLR: 0.7 (down from 5.4)

**Site: West District: Huron, Ottawa, Richland, & Sandusky Counties** - Gene Horner, IPM Scout

**Apple:** 5/20 to 5/27/03

CM: 0.4 (down from 1.3)  
OFM: 0.1 (down from 20.9)  
RBLR: 1.7 (down from 9.0)  
STLM: 9 (down from 177)

**Peach:** 5/20 to 5/27/03

LPTB: 1.1 (down from 4.6)  
OFM: 1.9 (down from 6.7)  
PTB: 0 (first report)  
RBLR: 0.5 (down from 5.4)

Beneficials found include lady beetle and banded thrips

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Information presented above and where trade names are used, they are supplied with the understanding that no discrimination is intended and no endorsement by Ohio State University Extension is implied. Although every attempt is made to produce information that is complete, timely, and accurate, the pesticide user bears responsibility of consulting the pesticide label and adhering to those directions.

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Keith L. Smith, Associate Vice President for Ag. Adm. and Director, OSU Extension.

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