



# Newsletter

Extension

## Fruit ICM News

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## Calendar

**September 16-18: Farm Science Review**, Molly Caren Agricultural Center, London, Ohio. See 2,100 acres showcasing a dynamic Ohio agricultural industry. For information contact Craig Fendrick, 614-292-4278 or email at [fendrick.1@osu.edu](mailto:fendrick.1@osu.edu). Web site: <http://fsr.osu.edu/>

**November 20, 2003 - Food Safety Workshop II- Managing Liability for Fruit and Vegetable Growers**, Marriott North Hotel, Columbus, Ohio. Sponsored by the Ohio Specialty Crop Food Safety Initiative. The workshop will focus on managing liability for fruit and vegetable growers, packers, and shippers to increase the marketability and safety of their produce. While the Initiative stresses the prevention of microbiological contamination of fresh fruits and vegetables, it is best to prepare should such contamination occur.

Mary Donnell, Extension Agent, Ohio State University Extension Agricultural Business Enhancement Center and workshop coordinator says that topics will include developing crisis management plans, understanding how to work with media during difficult times, building a food recall system, and exploring options in product liability insurance.

The featured presenter is Gil Meyer, Director, Issues and Program Management, Dupont Agriculture & Nutrition, where one of his roles is serving as crisis coordinator. Meyer also serves on the executive committee of the International Food Information Council, a leading organization of the food industry and conducts workshops on crisis management.

Additional presenters include Paul Panico, Chief, Division of Food Safety, Ohio Department of

Agriculture; Mary Donnell; John Wargowsky, Executive Director, Mid American Ag and Hort Services; Martha Filipic, Technical Editor, Communications and Technology, Ohio State University Extension; Dr. Shari Plimpton, Program Manager, Industry Outreach, Center For Innovative Food Technology; Scott Bell, Loss Control Manager and Christal Leggett, Custom Accounts Underwriter with Farmland Insurance-Nationwide Agribusiness Companies.

The workshop fee of \$40 includes a continental breakfast, lunch, workshop notebook, and certificate of attendance. Attendance is limited to 100 participants. Growers, packers, and shippers from Ohio and other states as well as professionals working with fruit & vegetables are welcome to register. November 1 is the hotel registration deadline; the workshop registration deadline is November 10. Complete workshop information is available by contacting Jennifer Hungerford at 614-246-8289, [maahs@ofbf.org](mailto:maahs@ofbf.org), or <http://www.midamservices.org>, click on "projects."

## **Bacterial Spot of Peaches**

*Source: Ted Gastier, Huron County Agent, ANR, 2003 Commercial Tree Fruit Spray Guide, <http://www.extension.iastate.edu/pubs/PM1282/CTFSPBODY.pdf> (page 26)*

Dr. Mike Ellis and I had the opportunity last Friday to visit several peach orchards in North-central Ohio. Bacterial spot was very evident in each of these orchards so the following is included for your consideration in the 2004 growing season.

Bacterial spot of peach can be a serious problem on certain varieties in localized areas in certain years. The disease is favored by stormy, rainy weather during June and July. It has caused the most damage in areas where the soil is sandy and where the sand is blown by strong winds. Planting cultivars that are resistant to bacterial spot provides the best control.

Control programs using foliar sprays of zinc sulfate plus lime, or fall applications of copper with or without lime have been tried in the past. None of these programs offered reliable control and, in some cases, cause foliar and twig damage. An antibiotic, oxytetracycline (Mycoshield Agricultural Terramycin 17 percent AI), gave good control when properly applied. For best results, oxytetracycline must be used at 12 ounces per 100 gallons of dilute spray. Use dilute or 2X; higher concentrates are not effective and may be phytotoxic.

Once per week spraying of the entire tree is essential. If only one side of the tree is sprayed (alternate middle row), make certain the other side of the tree is sprayed within 3 to 4 days. Begin sprays at shuck-split and continue at 7-day intervals until 3 weeks before harvest. Captan and Syllit are also labeled for control of bacterial spot; see Syllit label for further information (dodine, formerly known as Cyprex, is currently marketed as Syllit). Copper sprays applied for peach leaf curl at leaf drop may also aid in control of bacterial spot.

## **Nova and Cabrio for Control of Orange Rust**

*Source: 2003 Commercial Small Fruit & Grape Spray Guide, [http://www.hort.purdue.edu/hort/ext/sfg/2003\\_pdfs/03complete.pdf](http://www.hort.purdue.edu/hort/ext/sfg/2003_pdfs/03complete.pdf) (page 29)*

Based on information currently available on the disease cycle of orange rust, there appear to be two main periods during the growing season when fungicides should be effective to control the disease. Growers should review the orange rust section in the *Midwest Small Fruit Pest Management Handbook*

( <http://ohioline.osu.edu/b861/index.html>) to become familiar with the disease cycle and cultural practices for disease control.

The first period is during the spring when aeciospores (bright orange spores) are being produced. Sprays at this time would control "localized" leaf infections and, therefore, teliospores would not be produced later in the growing season. The timing for these sprays would be from just before the aeciospores are released in the spring (generally early to mid-May) until the infected leaves die and dry up, and spores are no longer present (mid-June through mid-July). It is important to note that as temperatures get above 77°F, aeciospore germination is very slow, and disease development greatly reduced. In short, during the hot days of summer, infections should not be occurring.

**The second period is during late summer or fall** as temperatures decrease and the threat of "systemic" (teliospore) infections occurs. **Mike Ellis, OSU Extension Plant Pathologist suggests that present weather conditions are favorable for the development of orange rust.** Even if complete control of early season aeciospore infections is achieved, some teliospores could still be blown into the planting from infected wild hosts. Nova or Cabrio applied on a 10-14 day schedule during these periods should be beneficial for control. In wet weather the shorter interval should be used. Nova and Cabrio should be alternated with each other in the spray program in order to prevent fungicide resistance development. A good approach would be to alternate them with each other in 2-spray blocks. Do not apply more than two sprays of Nova or Cabrio without alternating to another class of fungicide.

For the most current suggestions for timing fungicide applications for orange rust control, contact Mike Ellis. Phone: 330-263-3849. E-mail: [ellis.7@osu.edu](mailto:ellis.7@osu.edu).

Cabio 20 EG fungicide was recently registered for use on all brambles (blackberry and raspberry) for control of anthracnose, leaf spot and blotch, powdery mildew, rusts, and spur blight. It is a strobilurin fungicide and has good activity against these diseases. It cannot be applied more than four times per season and cannot be applied in more than two sequential sprays without alternating to another fungicide with a different class of chemistry. It has a 24 hour REI (re-entry interval) and a 0 day PHI (pre-harvest interval).

## Managing Late Season Fruit Scab

*Source: Bill Turechek & Dave Rosenberger, Plant Pathology, Geneva & Highland, Scaffolds Fruit Journal, Volume 12, Issue 25, September 2, 2003*

As apple harvest approaches, growers should be concerned about managing "pin-point" scab. Pin-point scab refers to infections of the fruit that occur late in the season and are usually detected in late August and September as fruit matures. Pin-point scab lesions are usually quite small and may appear as black "pin-points" or as larger dots on the apple skin. The term storage scab refers to incipient infections that were too small to see prior to fruit storage or may be the result of infections during storage that occur as a result of sporulation from older, undetected scab lesions.

Simply put, orchards with many *actively* sporulating lesions are at the greatest risk of developing pin-point and storage scab. Aging fruit and foliar lesions exposed to hot summer temperatures (>86F) or lesions exposed to a strict fungicide program have far fewer viable conidia and a considerably reduced capacity to produce new spores, thus reducing orchard risk for pin-point scab. None of the currently available fungicides seem to "burn out" lesions the way that dodine and the benzimidazoles did before scab became resistant to those fungicides.

Given extended periods of cool and damp weather, many lesions that appeared during summer may still produce viable conidia during the fall. Determining whether or not viable conidia will go on to infect maturing fruit is largely dependent on the availability of moisture and, to a lesser degree, the susceptibility of the variety.

Researchers have long known that, relative to foliar infections, much longer wetting periods are required for mature fruit infection. At the optimum temperature for scab development (68F), the minimum wetting period for "light" fruit infection is about 30 hours with high inoculum pressure; however, economic damage is not likely unless wetting periods exceed 48 hours. Very severe infections could be expected if we should encounter continuous wetting periods of more than 96 hours. However, unlike foliar infections, discontinuous wetting (dry periods between any two individual wetting events) substantially reduces the level of infection. In fact, a drying period of as little as 1 or 2 hours can greatly reduce pin-point scab.

In another study, it was shown that interrupting a wet period with a 24 hour dry period begun at 24, 48, or 72 hours after inoculation at 68 degrees F reduced the amount of scab by 67, 87, and 36%, respectively. Note that the longer the initial wetting period, the smaller the effect the drying had.

The most detailed study relating the effect of temperature on mature fruit infection was done with a single (susceptible) variety, exposed to a single (long) wetting period, and inoculated with a single (high) inoculum concentration. Unfortunately, none of the factors that combine to reduce infection in the field were considered.

The general consensus among apple researchers is that, practically speaking, the temperature that trees are exposed to in late August and September has far less impact on the development of pin-point scab than does the length of the wetting period and the severity of scab in the orchard.

Varieties differ in their susceptibility to developing pin-point and storage scab. Although no comprehensive cultivar evaluations have been conducted, it appears that the relative susceptibility of cultivars follows field-based ratings, although the absolute susceptibility is dependent on inoculum concentration and environmental conditions as described above.

Infections occurring two weeks prior to harvest have a low probability of developing in storage. Thus, there is probably no reason to spray trees that will be harvested within several weeks. Delays in cooling fruit after harvest might increase the possibility that late-season infections will develop symptoms during storage, so harvested fruit should be cooled quickly.

How does one decide which blocks need a September fungicide spray? We can only guess because there are too many unanswered questions, especially if Flint or Sovran were applied during August. We know that Flint and Sovran are effective anti-sporulants, but we do not know how long that anti-sporulant activity is effective following applications in late summer. We know that Flint and Sovran are absorbed into the apple cuticle, but we don't know how quickly these fungicides dissipate when fruit are exposed to extended periods of heavy rain. Flint provides only 48-72 hours of post-infection activity against scab in spring, but we don't know if it has more extended "kick-back" activity against pin-point scab.

Because we lack the detailed information needed to accurately predict development of pin-point scab, a conservative approach is warranted for protecting the apple crop from now until harvest. We know that postharvest drench treatments will not control pin-point scab infections.

Topsin M generally has no activity against scab because of resistance. Where a captan/Topsin M

combination was applied in the last spray in August, only captan will contribute to scab control. Where captan was applied at one-half pound of active ingredient per 100 gallons (i.e., 1 lb of Captan 50W/100 gal.), fruit should be protected against pin-point scab through 1.0-1.5 inches of rain. If captan was applied at the full label rate of 1 lb a.i./100 gallons, then residual activity on fruit in the fall might survive through 2 inches of rain.

Our guess is Flint or Sovran may remain active against scab through at least 3 inches of rain, but that is only a guess. Orchards that are still at least 14 days away from harvest could be covered with Flint, but Captan is probably a more cost-effective option for September sprays. Sovran cannot be applied within 30 days of harvest and therefore is not useful for September applications.

If weather conditions favor late-season scab development and high-inoculum blocks are not protected with fungicide, then the best solution will be to sell the potentially affected fruit as soon as possible after harvest. In experiments conducted in South Africa, the first symptoms of pin-point scab appeared on Granny Smith after 80 days at 34-36 degrees F as compared with 35-45 days for fruit at 68degrees F. However, scab lesions might appear in less than 80 days at 34-36 degrees F on fruit that were infected earlier during the preharvest interval.

Other studies have shown that new lesions appear more quickly at higher temperatures, but the total number of lesions is ultimately the same if apples are stored long enough to allow symptoms to develop at cold temperatures. Storing apples under reduced relative humidity can minimize lesion size because lesions develop greater size when fruit are held under high-humidity conditions, especially if the latter results in condensation developing on the fruit surface during storage.

The bottom line is that active lesions, in combination with long wetting periods, create conditions favorable for mature fruit infection. Orchards with very low levels of scab shouldn't expect pin-point or storage scab to develop unless exposed to 4 or 5 days of continuous wetting. For orchards at risk, captan 50W at 2 lb/100 gal (or equivalent formulation) should be applied prior to any wetting event or, in problem orchards, captan should be applied on a protective schedule until 2 weeks before harvest. The DMI fungicides (Nova, Procure, and Rubigan) are ineffective against fruit scab.

## SmartFresh The Smart Choice for Apples

Source: <http://www.fruitgrowersnews.com> and <http://www.smartfresh.com> and SmartFresh product information

Due to space limitations in last week's newsletter, several apple varieties were omitted from the chart of specific varietal recommendations. The complete list appears on the following page.

### Specific Varietal Recommendations for SmartFresh

Variety	Starch Index*		Firmness	Harvest to Treatment with SmartFresh Intervals (days)	
	Scale 1-6	Scale 1-8	Pounds	Minimum	Maximum
Cameo	2.0 - 3.5	2.5 - 4.5	18.0 min	10	21
Cortland	-	1.5 - 3.5	15.0 min	-	10
Empire	-	3.0 - 5.5	16.0 min	-	10

Fuji	1.5-4.5	2.0-6.0	16.0 min	10	21
Gala	2.5-4.5	3.0-6.0	16.0 min	-	7
Gingergold	2.5 - 5.0	3.0 - 6.5	17.0 min	-	7
G. Delicious	2.5-5.0	3.0-6.5	15.0 min	-	10
Granny Smith	1.5 - 3.0	2.0 - 4.0	16.0 min	-	7
Honeycrisp	-	6.0-7.5	14.0 min	-	7
Idared	-	2.5 - 4.5	15.0 min	-	10
Jonagold	3.0 - 5.5	4.0 - 7.0	15.0 min	-	10
McIntosh	-	4.0-6.0	15.0 min	-	3
Mutsu	-	3.5-5.5	16.0 min	-	10
Pink Lady	2.0 - 3.5	2.5 - 4.5	17.0 min	10	21
R. Delicious	1.5-3.5	2.0-4.5	16.0 min	-	7
Rome	-	2.5 - 6.0	19.0 min	-	7
*Starch Index: Scale 1-6 = WA, Scale 1-8 - Cornell					

Varieties Without Recommendations: Braeburn, Jonathon, Northern Spy, Spartan, and York

### General Recommendations for All Varieties

1. Do not treat fruit with pulp temperature greater than 80F.
2. For maximum benefit, fruit maturity at application should be similar to maturity for long-term CA storage.
3. Ethephon treatments may compromise SmartFresh benefits.
4. Fruit lots highly variable in firmness and/or starch index may not respond to SmartFresh uniformly. We recommend your data shows that at least 75% of fruit in a room falls within starch and firmness recommendations listed in these Use Recommendations (see above chart).
5. Symptoms associated with low fertility, calcium deficiency, and exposure to severe drought and/or sum may be exaggerated in fruit stored with SmartFresh for Apples.
6. Refrigerated or common storage rooms must meet air-tightness standards set by AgroFresh at the time of treatment.

## Draft Rules for Certain Farm Markets, Farmers Markets, & Produce Auctions

Source: John Wargowsky, Director, Labor Services, Ohio Farm Bureau Federation, Inc.

Many of you recall efforts in 2000 and 2001 to make reasonable exemptions of certain farm markets, farmers markets, and farm produce auctions from licensing and inspection as part of the Ohio Uniform Food Safety Code. The same legislation that exempted some of these entities from the Ohio Uniform Food Safety Code also mandated the Ohio Department of Agriculture would inspect the exempted facilities.

The first set of **draft rules** for industry to review has been provided to me by Paul Panico, Chief of the Division of Food Safety at ODA. He has requested that I review and comment before these draft rules

become proposed rules and move through the formal rule-making process at the Ohio Department of Agriculture.

**Request:** I urge you to review these draft rules to let me know if you have concerns or suggestions that I should consider before replying to Paul. I need your input by September 12 so I can reply to Paul by September 19. I will consult with Ohio Farm Bureau and Ohio Fruit and Vegetable staff before providing comments to Paul. There will be future opportunities for comment in the rule-making process, and all concerned parties will have the opportunity to participate in that process with their personal comments. I prefer a response by e-mail or fax (see number below). If your comments require discussion, you may call me at the number provided below.

FAX: 614-246-8686

E-mail: [jwargows@ofbf.org](mailto:jwargows@ofbf.org)

Voice: 614-246-8286

**Additional Information Sources:** Some of you may find the following web sites helpful for background on the Ohio Uniform Food Safety Code; exemptions and registration requirements for Farm Markets, Farmers Markets & Farm Produce Auctions; and more.

ODA Food Safety page: <http://www.state.oh.us/agr/Food%20Safety/FoodSafetyDiv.HTML>

ODA Ohio Uniform Food Safety Code page: <http://www.state.oh.us/agr/FOOD-rfsac-index.HTML>

### **Draft Farm Market, Farmers Market, and Farm Product Auction Rules**

#### **901:3-xx-01 Authority of the Director of Agriculture; definitions.**

(A) Pursuant to section 3717.221 of the Revised Code, the director shall administer the applicable provisions of Chapter 901:3-xx of the Administrative Code to farm markets, farmers markets, and farm product auctions that have registered with the Ohio Department of Agriculture. A farm market, farmers' market, or farm product auction defined in paragraph (B) of this rule that is not registered with the Ohio Department of Agriculture shall be licensed and regulated pursuant to Chapter 3717 of the Revised Code as a retail food establishment.

(B) Definitions As used in Chapter 901:3-xx of the Administrative Code:

1. "Adulterated" has the meaning stated in section 3715.59 of the Revised Code.
2. "Cottage food production operation" as defined in section 3715.01 of the Revised Code, means a person who, in the person's home, produces food items that are not potentially hazardous foods, including bakery products, jams, jellies, candy, fruit butter, and similar products specified in rules adopted pursuant to section 3715.025 of the Revised Code. A cottage food production operation shall not process acidified foods, low acid canned foods, or potentially hazardous foods.
3. "Director" means the director of the Ohio Department of Agriculture.
4. "Farm market" means a producer-operated facility where only one or more of the following food items are offered for sale:
  - a. Fresh unprocessed fruits or vegetables;
  - b. Products of a cottage food production operation;
  - c. Maple syrup, sorghum, or honey that is produced by a maple syrup or sorghum producer or beekeeper described in division (A) of section 3715.021 of the Revised Code;
  - d. Commercially prepackaged food that is not potentially hazardous, on the condition that the food



is contained in displays, the total space of which equals less than one hundred cubic feet on the premises where the person conducts business at the farm market;

- e. Cider and other juices manufactured on site at the farm market;
- f. Raw eggs, raw poultry and raw non-amenable meat on the condition that those products were produced by the farm market operator, and further conditioned that, with respect to the eggs offered, the farm market operator annually maintains five hundred or fewer birds, and with respect to the dressed poultry offered, the farm market operator annually raises and slaughters one thousand or fewer chickens, or two hundred fifty or fewer turkeys.

5. "Farmers' market" means a location where producers congregate to offer one or more of the following food items for sale:

- a. Fresh unprocessed fruits or vegetables;
- b. Products of a cottage food production operation;
- c. Maple syrup, sorghum, or honey that is produced by a maple syrup or sorghum producer or beekeeper described in division (A) of section 3715.021 of the Revised Code;
- d. Commercially prepackaged food that is not potentially hazardous, on the condition that the food is contained in displays, the total space of which equals less than one hundred cubic feet on the premises where the person conducts business at the farmers' market.

6. "Farm product auction" means a location where the following products are offered for sale at auction:

- a. Raw eggs, raw poultry, or raw non-amenable meat species on the conditioned that, with respect to the eggs offered, the producer annually maintains five hundred or fewer birds, and with respect to the dressed poultry, the producer annually raises and slaughters one thousand or fewer chickens, or two hundred fifty or fewer turkeys.
- b. Fresh unprocessed fruits or vegetables;
- c. Products of a cottage food production operation;
- d. Maple syrup, sorghum, or honey that is produced by a maple syrup or sorghum producer or beekeeper described in division (A) of section 3715.021 of the Revised Code.

7. "Home" as defined in section 3715.01 of the Revised Code, means the primary residence occupied by the residence's owner, on the condition that the residence contains only one stove or oven used for cooking, which may be a double oven, designed for common residence usage and not for commercial usage, and that the stove or oven be operated in an ordinary kitchen within the residence.

8. "Misbranded" has the meaning stated in section 3715.60 of the Revised Code.

9. "Non-amenable meat" means the meat of farm raised mammals such as bison, rabbit, and deer.

10. "Potentially hazardous food" means a food that is natural or synthetic that requires temperature control because it is in a form capable of supporting the rapid and progressive growth of infectious or toxigenic microorganisms, the growth and toxin production of *Clostridium botulinum*, or in the case of raw shell eggs, the growth of *Salmonella enteritidis*. Potentially hazardous food does not include a food that has:

- a. A pH level less than 4.6 when measured at seventy-five degrees Fahrenheit or twenty-four degrees Celsius.
- b. A water activity value less than 0.85.

11. "Producer" means a person who raises agricultural products on land owned or leased by themselves.

## **901:3-xx-02 Food**



- (A) Food shall be obtained from sources that comply with law.
- (B) Food shall be labeled as specified in law, and shall be honestly presented in a way that does not mislead or misinform the consumer.
- (C) Except for products of a cottage food production operation, food in a hermetically sealed container shall be obtained from a food processing plant that is regulated by the food regulatory agency that has jurisdiction over the plant.
- (D) Shell eggs shall be clean and sound.
- (E) Ice used as a cooling medium shall be made from water of drinking water quality.
- (F) All food products shall be safe, unadulterated, and honestly presented. Food or color additives, colored overwraps, or lights may not be used to misrepresent the true appearance, color, or quality of a food.
- (G) Food may not contain unapproved food additives, additives in unsafe amounts, or additives that exceed the amounts necessary to achieve the needed effect.
- (H) Food shall be protected from contamination.
- (I) Eggs shall be maintained at an ambient air temperature of 45° Fahrenheit or less.
- (J) Poultry and non-amenable meats shall be maintained frozen or at an internal temperature of 41° Fahrenheit or less.
- (K) Food packages shall be in good condition and protect the integrity of the contents so that the food is not exposed to adulteration or potential contaminants.
- (L) Food that is unsafe, adulterated, or not honestly presented shall be discarded.
- (M) Except for raw agricultural products, foods shall not be displayed or stored on the ground.
- (N) Cider and other juices manufactured on site of a farm market shall be processed in accordance with the good manufacturing practices established in Chapter 901:3-1 of the Administrative Code.

### **901:3-xx-03 Equipment and Facilities**

- (A) Except as specified in paragraph (B) of this rule, foods requiring refrigeration or freezing shall be held in mechanical refrigeration or freezer units at temperatures specified in rule 901:3-xx-02 of the Administrative Code.
- (B) 1. At a farm product auction, fresh dressed poultry may be held for auction by submersion in crushed ice.  
2. At a farm product auction, frozen non-amenable meats may be held frozen by the use of adequate amounts of dry ice.
- (C) Toilet facilities shall be readily accessible to farm market, farmers' market and farm product auction personnel.

(D) All equipment and facilities used in a farm market, farmers' market, and farm product auction shall be maintained and clean.

#### **901:3-xx-04 Wash, Rinse and Bactericidal Treatment.**

(A) Each farm market or farm product auction that offers raw poultry, non-amenable meats, or both for sale shall clean and sanitize utensils and food contact surfaces of equipment used in the preparation, display, and sale of the raw poultry and non-amenable meats in:

1. A three-compartment sink;
2. A two-compartment sink; or
3. If approved by the director, receptacles that sub-stitute for compartments of a multi-compartment sink; or
4. Another method approved by the director.

(B) The following procedure shall be used to manually wash, rinse, and sanitize utensils and food contact surfaces of equipment in a three step process as follows:

1. Equipment and utensils shall be thoroughly washed in a detergent solution that is kept clean;
2. Equipment and utensils shall be rinsed free of detergent and abrasives with clean water;
3. Equipment and utensils shall be sanitized by either immersion for at least one half minute in clean hot water at a temperature of at least one hundred seventy degrees Fahrenheit; or immersion for at least thirty seconds in a clean solution containing at least fifty parts per million of available chlorine as a hypochlorite. Equipment too large to sanitize by immersion may be rinsed, sprayed, or swabbed with a solution of one hundred parts per million chlorine.

(C) The following procedure shall be used to manually wash and sanitize utensils and food contact surfaces of equipment in a two step process as follows:

1. Equipment and utensils shall be immersed and thoroughly washed with an approved detergent-sanitizer solution that is kept clean;
2. Equipment and utensils shall be immersed and thoroughly sanitized with an approved detergent-sanitizer solution that is kept clean. The same approved detergent-sanitizer product shall be used for both the cleaning and sanitizing steps.

(D) A chemical sanitizer must conform to C.F.R. 178.1010, be registered with the United States Environmental Protection Agency, have a label that states it can be used on food contact surfaces and does not require a potable water rinse after use. A chemical sanitizer shall be used according to the manufacturer's label.

#### **901:3-xx-05 Handwashing**

(A) Personnel shall wash their hands to prevent the contamination of food, especially after using the toilet room or handling raw meat or poultry.

(B) Except as permitted in paragraph (C) of this rule, handwashing facilities shall consist of potable running water, soap, and disposable towels.

(C) Based upon the types food products being offered for sale and the amount of food handling at the facility, the director may approve an alternative method of handwashing, such as the use of alcohol towelets or a non-permanent handwashing facility.

#### **901:3-xx-06 Water Supply**

Water provided for handwashing and cleaning shall be of drinking water quality.

**901:3-xx-07 Right of Entry**

A person or government entity operating a farm market, a farm product auction, a farmers' market, or a stand at a farmers' market shall permit the director to inspect the farm market, the farm product auction, the farmers' market, or their stand at a farmers' market, for the purpose of determining compliance with this Chapter or investigating a complaint. On request of the director, the operator of the farm market, farmers' market or a stand at a farmers' market, or farm product auction shall permit the director to examine their records to obtain information about the purchase, receipt, or use of food, supplies, and equipment.

**901:3-xx-08 Retail Food Establishment Referral**

When a farm market, farm product auction, or participant at a farmers' market is offering food products for sale that are of a type or that exceed the scope of those permitted in Section 901:3-xx-01 of the Administrative Code, the director shall refer the licensing and regulation of such facility to the local board of health with jurisdiction. Such facility will be assessed and regulated under Chapter 3717 of the Revised Code.

**Degree Day Accumulations for Ohio Sites September 3, 2003**

Ohio Location	Degree Day Accumulations			
	Base 45° F		Base 50° F	
	Actual	Normal	Actual	Normal
Akron/Canton	3028	3078	2255	2341
Cincinnati	3578	3859	2765	3033
Cleveland	3124	3025	2371	2302
Columbus	3470	3395	2666	2624
Dayton	3328	3477	2534	2704
Kingsville	2691	2817	1973	2130
Mansfield	2881	3052	2114	2320
Norwalk	3018	3010	2261	2293
Piketon*	3627	3764	2781	2940
Toledo	3014	3004	2264	2289
Wooster	3142	2900	2357	2176
Youngstown	2753	2842	1998	2127

\* Piketon data partially missing, Jackson data substituted

**Fruit Observations & Trap Reports**

**Insect Key**

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: 8/20 to 8/27/03**

AM: 0.0 (down from 3.7)  
CM: 18.0 (down from 50.0)  
ESBM: 0 (same as last week)  
LAW: 3 (same as last week)  
OBLR: 1 (up from 0)  
RBLR: 38 (down from 46)  
SJS: 9 (down from 33)  
STLM: 618: (up from 388)  
TABM: 0 (same as last week)  
VLR: 7 (up from 3)

**Peach: 8/20 to 8/27/03**

OFM: 1 (up from 0)  
LPTB: 5 (up from 3)  
PTB: 16 (down from 25)

**Apple: 8/27 to 9/3/03**

AM: 0.0 (same as last week)  
CM: 9.3 (down from 18.0)  
ESBM: 0 (same as last week)  
LAW: 2 (down from 3)  
OBLR: 0 (down from 1)  
RBLR: 35 (down from 38)  
SJS: 12 (up from 9)  
STLM: 347 (down from 618)  
TABM: 0 (same as last week)  
VLR: 7 (same as last week)

**Peach: 8/27 to 9/3/03**

OFM: 0 (down from 1)  
LPTB: 0 (down from 5)

PTB: 1 (down from 16)

**Site: East District: Erie & Lorain Counties**  
Jim Mutchler, IPM Scout

**Apple:** 8/26 to 9/2/03

AM: 0.0 (down from 1.3)  
CM: 8.9 (down from 10.8)  
LAW: 22.3 (down from 25.3)  
OFM: 3.8 (up from 2.9)  
RBLR: 15.5 (down from 22.0)  
SJS: 0.0 (same as last week)

Other apple pests: obliquebanded leafroller

Beneficials: green lacewing and brown lacewing

**Peach:** 8/26 to 9/2/03

LPTB: 7.0 (down from 18.0)  
OFM: 1.7 (down from 7.0)  
PTB: 0.8 (down from 4.3)  
RBLR: 18.7 (up from 16.3)

Other peach pests: lilac borer

Beneficials: brown lacewing

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

**Apple:** 8/26 to 9/2/03

AM: 0.7 (down from 1.2)  
CM: 3.9 (up from 3.3)  
LAW: 3.3 (up from 0.1)  
OFM: 11.5 (up from 2.4)  
RBLR: 30.5 (up from 24.1)  
SJS: 3.3 (down from 9.1)  
STLM: 28.3 (down from 61.7)

Other apple pests: eyespotted bud moth, potato leafhopper

Beneficials: green lacewing, syrphid flies (white maggot adults), brown lacewing, and multi-colored Asian ladybeetle

**Peach:** 8/26 to 9/2/03

LPTB: 7.0 (down from 11.0)  
OFM: 1.8 (up from 0.9)  
PTB: 0.7 (down from 1.5)  
RBLR: 17.8 (down from 23.3)

Other peach pests: dogwood borer and lilac borer

Beneficials: green lacewing, brown lacewing, and multi-colored Asian ladybeetle

## Lesser Peachtree Borer Control in September

*Source: Ohio State University Extension Fact Sheet, HYG-2033-94, Celeste Welty, Extension Entomologist*

Last week's orchard visit also revealed some lesser peachtree borer infestation in peaches. While this is not the usual time for applying control materials, Celeste believes that the fumigant action of insecticides would be of benefit.

Borers that feed under the bark of trunks and branches are one of the most serious problems of peaches both in commercial orchards and home fruit plantings. These borers also attack cultivated plums, cherries, nectarines, and apricots, and wild cherries and plums. There are two species of borers: the peachtree borer (*Synanthedon exitiosa*), which is sometimes referred to as the greater peachtree borer, and the lesser peachtree borer (*Synanthedon pictipes*). The peachtree borer is common in young nonbearing trees or in unmanaged plantings, while the lesser peachtree borer is common in large managed orchards.

### Damage

The lesser peachtree borer infests the upper parts of the trunk and scaffold branches and is most troublesome on injured or weak trees. Borers feed on the growing inner bark of trees, and tunnel between the inner bark and the sapwood. The bark eventually peels off of damaged areas. Damage weakens the tree and predisposes it to attack by other pests and diseases. A gummy mass mixed with sawdust is usually found on the outer bark at the place where a borer started an attack. Entries are often found where there are cankers or wounds caused by other factors such as pruning or winter injury.

### Life Cycle

Lesser peachtree borer usually has two generations per year in Ohio, with adult emergence in May and June, then again in August and September. In some years they may have only one generation. The lesser peachtree borer overwinters as an inactive larva under the bark. The larva resumes feeding and completes its larval stages in the spring. When fully grown, the larva pupates under the bark then emerges as a new adult. The adult is the only stage that leaves the tree. Soon after emerging, the female moth lays her eggs under bark scales or on rough bark. Each female lays about 400 eggs. Eggs hatch in eight to ten days into larvae that bore into the tree.

### Chemical Control

Chemical control is preventive when insecticide is applied to trees before borer eggs hatch, so that small borer larvae contact a toxic residue as they crawl into trees. Control may also be achieved by fumigant action of the insecticide, which can kill larvae already in trees at the time of application. An insecticide with long residual action gives the best control of borers. Thorough coverage is necessary. Insecticide should be applied as a bark drench to the trunk and scaffold branches at a rate of at least one-half to one gallon of spray mix per tree.

### Timing

The best time to treat and the number of insecticide applications needed for lesser peachtree borer

control depend on whether trees are known to be infested with this pest. In orchards where trees show little or no sign of infestation by lesser peachtree borer, one treatment is adequate; it should be applied at the time that the second adult flight is peaking, usually in early September, usually as a post-harvest application. In orchards where trees do show signs of infestation by lesser peachtree borer, then an earlier application is needed to target the first generation in June, as well as the early-September application that targets the second generation. The first treatment should be applied 10 days after adults begin to emerge, which will probably be in mid-May.

Sprays containing Asana XL, Ambush, Lorsban, Pounce, and Thiodan are labeled for control of lesser peachtree borer on peaches. In commercial orchards, insecticides applied with an air-blast sprayer will do little for lesser peachtree borer control. Directed sprays should be applied uniformly to drench the trunk and scaffold limbs to about 8 feet above ground. Thorough coverage of the trunk and limbs is necessary. Only one application of Lorsban 4E is allowed per season for peaches and nectarines.

The preharvest interval (PHI) is 14 or more days for all these products, therefore harvest must have been completed before application.

## Preliminary Monthly Climatological Data for Selected Ohio Locations, August, 2003

Weather Station Location	Monthly Precip	Normal Monthly Precip	Year-to-Date Precip	Normal Year-to-Date Precip	Avg High	Normal High	Avg Low	Normal Low	Mean Temp.	Normal Mean
Akron-Canton	3.19	3.65	35.06	26.49	81.2	80.3	62.3	60.2	71.7	70.3
Cincinnati	4.80	3.79	29.54	30.08	83.5	84.8	65.7	64.2	74.6	74.5
Cleveland	1.96	3.69	26.03	25.68	82.2	79.2	64.1	61.2	73.2	70.2
Columbus	11.42	3.72	34.64	27.15	82.3	83.8	65.0	63.2	73.6	73.5
Dayton	3.84	3.49	28.78	27.83	81.8	82.3	64.1	62.2	73.0	72.3
Fremont	3.50	3.35	25.66	23.79	82.9	81.9	59.2	59.3	71.1	70.6
Kingsville	3.83	4.43	33.65	24.23	79.6	79.0	60.7	60.0	70.2	69.5
Mansfield	4.52	4.60	26.31	30.09	80.2	79.6	61.2	58.9	70.7	69.3
Norwalk	2.81	3.46	28.07	24.59	81.1	79.9	62.9	59.6	72.0	70.0
Piketon*	4.01	3.60	33.53	30.30	84.7	83.2	63.4	61.2	74.0	72.2
Toledo	3.32	3.19	24.02	22.60	82.8	81.0	62.8	60.6	72.8	70.8
Wooster	3.74	3.72	30.13	23.67	82.9	82.0	60.9	57.9	71.9	70.0
Youngstown	3.32	3.43	31.72	25.64	80.3	79.3	59.5	57.5	69.9	68.4

Temperatures in degrees F, Precipitation in inches

Piketon\* Piketon data missing from 8/09 to 8/24, Jackson data substituted



*Table Created by Ted W. Gastier, OSU Extension from National Weather Service, OARDC & Local Data*

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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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