



# Ohio Fruit ICM News

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If you have articles for the newsletter that you would like to have considered to be included in upcoming issues, please submit to either Howard Siegrist at [siegrist.1@cfaes.osu.edu](mailto:siegrist.1@cfaes.osu.edu) or Melissa Swearingen at [swearingen.34@cfaes.osu.edu](mailto:swearingen.34@cfaes.osu.edu)

## North Central Ohio Tree Fruit IPM Program Report Prepared by Cindy Crawford (Erie County Adm. Assoc.)

**Mike Abfall** – East District IPM Scout  
(Erie and Lorain Counties)

**Date – 5/10/10**

### Apples

Spotted Tentiform Leafminer –  
156.8 (down from 379)  
Codling Moth – 1.2 (up from 0.3)  
San Jose Scale – 0 (same)  
Oriental Fruit Moth – 1.28 (down from 5.06)  
Redbanded Leafroller – 0 (same)

### Peaches

Redbanded leafroller- 0 (same)  
Oriental Fruit Moth – 0.3 (up from 0)  
Lesser Peach Tree Borer – 3.7 (up from 0)  
Peach Tree Borer – 0 (same)

**Ted Gastier** – West District IPM Scout  
(Sandusky, Ottawa, Huron and Richland Counties)

**Date – 5/10/10**

### Apples

Spotted Tentiform Leafminer – 8 (up from 23)  
Codling Moth – 1.9 (up from 0.4)  
San Jose Scale – 0 (same)  
Oriental Fruit Moth – 8 (down from 27.8)  
Redbanded Leafroller – 0 (same)  
Lesser Appleworm – 0 (same)

### Peaches

Redbanded leafroller- 0 (same)  
Oriental Fruit Moth – 0.5 (down from 7)  
Lesser Peach Tree Borer – 1 (up from 0)  
Peach Tree Borer – 0 (same)

## Wayne County Insect Trap Reports

**Ron Becker** -  
Program Coordinator

**week of 5/3-7**

Codling Moth -  
Avg. /trap , 3 traps per block

Wayne-2.78  
Medina-1.08  
Holmes-6.83

**week of 5/10-14**

Codling Moth

Wayne-11.22  
Medina-.08  
Holmes-8

**week of 5/17-21**

Codling Moth

Wayne-28  
Medina-.67  
Holmes-4

### Oriental Fruit Moth -

Wayne-0  
Medina-2.5  
Holmes-1.5

Frost rings are a common find on apples. Also finding Tarnished Plant Bug stings on apples.

## Blackberry Orange Rust

John Hartman, Plant Pathologist

University of Kentucky Cooperative Extension Service

Orange rust is now visible as bright orange pustules on blackberry leaves in commercial and native bramble plantings in Kentucky. The disease will continue to be very obvious on fully expanded leaves in the coming weeks and can often be seen on wild brambles growing along fencerows or along the highway. Spores produced on these infected leaves now can contaminate commercial plantings, causing unwanted infections. Orange rust also affects black raspberry, but not red raspberry.

**Cause and symptoms:** Depending on the region and the host, there are two different, but almost identical, fungi that cause orange rust disease. These two fungi, *Arthuriomyces peckianus* and *Gymnoconia nitens*, cause orange rust, the most important of several rusts of blackberry and black raspberry. Infected plants can be easily identified shortly after growth appears in spring when newly formed shoots appear weak and spindly. The new expanding leaves on such canes are stunted or misshapen and pale green to yellowish (Figure 1). At this stage, leaf edges may have a bronze color. The lower leaf surfaces of these infected shoots bear tiny orange pustules, visible with a hand lens. Later in spring, the lower surface of infected fully expanded leaves are covered with the highly visible waxy, bright orange blister-like pustules (Figure 2) that are being observed now. Spores from these pustules, when blown to nearby healthy plants, will initiate new infections. Diseased blackberries become infected systemically, even below ground, and will bear little or no fruit. It is important to remove and destroy plants with infected canes now. If growers wait a few weeks, they run the risk of contaminating their healthy plants and having even more orange rust next year. Because orange rust is also widespread on wild blackberries and black raspberries in Kentucky, it is important to not only remove infected plants from the blackberry planting but also remove diseased plants from wild areas nearby. Fungicides with proven effectiveness against this disease have not been found. Thus, timely eradication of diseased plants is essential.

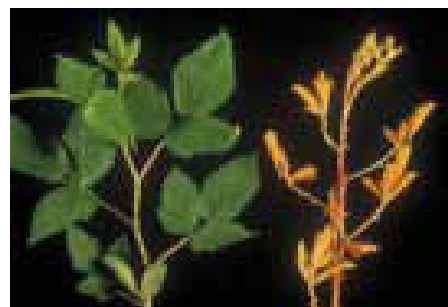


Figure 1. Newly emerging blackberry shoot with orange rust (right) (JR Hartman photo)



Figure 2. Orange rust appearing as conspicuous pustules on black raspberry leaves (CA Kaiser photo)



Figure 2. Ashy white cane blight lesion on thornless blackberry.



Figure 3. Orange rust on black raspberry fruiting laterals.

## Cane Disease in Brambles

Bruce Bordelon

Department of Horticulture and Landscape Architecture

Purdue University Extension

We are seeing a high incidence of cane blight in blackberries, and orange rust in wild black raspberries. Cane blight shows up occasionally, especially after severe winters. (See Fig. 2) Despite the lack of severe cold this year, it has been reported widely. It occurs on all types of blackberries, but seems to be more common on thornless than thorny varieties. Ashy gray lesions form on the floricanes, usually originating at a node. Lateral, fruiting branches on the portion of the floricanes above the lesion will usually grow poorly and typically die when warm weather occurs. Orange rust is a systemic disease that affects blackberries and black raspberries. Infections occur on the primocanes and remain asymptomatic.

The fungus grows down the canes into the crown and roots, and the following year, the floricanes will produce the orange spores on the lower leaf surface. (See Fig. 3) Control can be difficult. There is a good discussion of fungicide management of orange rust in the Midwest Small Fruit and Grape Spray Guide.

## Grape Crown Gall

John Hartman, Plant Pathologist

University of Kentucky Cooperative Extension Service

Crown gall is still a problem for many grape growers. Crown gall is especially devastating to grapes in Kentucky and some vineyards have been lost due to the disease. Crown gall can also affect other fruits such as apples, stone fruits, and brambles, but that crown gall bacterial strain is different from the one found in grapes. There are more than 600 types of plants susceptible to crown gall diseases. In grapes, *Vitis vinifera* cultivars are more susceptible to crown gall than *V. labrusca* cultivars.

**Symptoms:** The disease is characterized by galls or knobby overgrowths that form on susceptible plant tissues, generally on grape trunks (**Figure 3** – on following page) at or above the graft unions. Galls are rarely observed on the roots, but roots may develop necrosis. New galls first appear in early summer as white, fleshy, calluslike growth. Galls turn brown by late summer and in the fall become dry and corky. The woody tumors may be gnarled with rough surfaces (**Figure 4** – on following page). Galls can develop rapidly and completely girdle a young vine in one season, or they may take a few years to develop. Galled vines frequently produce inferior shoot growth, and portions of the vine above the galls may die. When galls are numerous they disrupt the translocation of water and mineral elements, from the roots to the top of the plant leading to poor growth, smaller and off-color leaves, gradual die-back, and sometimes death of vines (**Figure 5** – on following page). In general, affected plants are more susceptible to adverse environmental conditions, especially winter injury.

**Cause and biology of the disease:** Grape crown gall is caused by the soil-borne bacterium, *Agrobacterium vitis*, formerly thought to be a strain of *Agrobacterium tumefaciens*, the cause of crown gall in other fruit crops. The bacterium survives at low levels for long periods of time in soil, and also in galls and in diseased plants. The crown gall bacterium is widely present in Kentucky soils and may be systemically present in many grape vines, but the bacterium seldom causes disease unless the vine is injured. Galls develop following an injury to grape cells permitting entrance of the pathogen into the plant cells. Once inside the cells, crown gall bacteria induce the grapevine to produce galls through excessive cell division. The initial cell injury permitting entry of crown gall bacteria often occurs as a result of intermittent freezing and thawing weather common to Kentucky each winter. This kind of frequent freezing and thawing may not occur as much in other grape growing regions, such as New York or California. Overwintering bacteria may be spread to wound sites by splashing rain, by running water, on cultivation implements, and on pruning tools. Contaminated nursery stock may be another source of the disease.

### Crown gall disease management:

- Use disease tolerant cultivars. In general, *Vitis vinifera* grapes are more susceptible than *V. labrusca*. Highly susceptible cultivars include Baco Noir, Cabernet Franc, Cabernet Sauvignon, Chancellor, Chardonnay, Gewürtztraminer, Limberger, Merlot, Muscat Ottonel, Pinot Blanc, Pinot Gris, Pinot Meunier, Pinot Noir, Riesling, and Sauvignon Blanc. Less susceptible cultivars include Catawba, Cayuga White, Concord, Cynthiana/Norton, Delaware, Einset Seedless, Foch, Fredonia, Ives, Mars, Steuben, Vanessa, and Ventura.
- Use crown gall resistant rootstocks. Susceptible grapes on *V. riparia* or *V. rupestris* rootstocks may get less crown gall than those on *V. vinifera*.
- Select planting sites with no history of crown gall, or wait a few years before replanting such sites.
- Soil fumigation is generally not effective for destroying the crown gall pathogen.
- Plant the vineyard on northeast facing sites to help reduce freeze injury.
- Plant vines in well drained soil.
- Minimize root injuries during planting.
- Plant only certified, disease-free nursery stock.
- Discard plants with galls.
- Adopt management practices that minimize wounding. Hill up soil around grapevines or otherwise protect the lower trunk in fall to reduce winter injury and resulting wound sites needed for infection. Hilling also ensures the development of new scion shoots that may be needed for trunk renewal. In some areas growers bury young vines in the fall to reduce freeze injury.
- Generally, remove and destroy infected plants, however, galls on the upper parts of the trunk or on canes can sometimes be pruned out. *A. vitis* does not invade green shoots.
- Where feasible, apply Gallex (AgBioChem, Inc.), a crown gall eradicator paint derived from petroleum compounds. This treatment is applied to already existing galls and following treatment, the galls gradually shrink and disappear. Gallex only affects treated galls and will not stop nearby untreated galls. Treatments may need repeating in future.
- The multiple trunk system of training may be a useful system for minimizing losses due to crown gall. If one or two trunks are infected, they can be removed. The remaining trunks can be pruned leaving a full number of buds until more trunks can be renewed.
- Grape vines with poor vigor are more susceptible to winter injury, thus it is important to use proper pruning practices and leave proper crop loads for maximum vine vigor to result in stronger plants that are less susceptible to winter injury. Manage other vine-weakening grape diseases such as downy mildew and powdery mildew, so as to insure maximum vine vigor.

**Pictures (Figures 4,5, and 6) continued on Page 4.**

## Continued from Page 3: Grape Crown Gall



**Figure 3.** Crown gall symptoms on a grapevine. Note the roughened, lumpy appearance along the trunk surface (JG Strang Photo).



**Figure 4.** An individual large gall resulting from crown gall disease (JR Hartman photo).



**Figure 5.** A vineyard with missing grapevines where crown gall has killed numerous vines.

### Apple Rootstock Testing

Peter Hirst, Department of Horticulture & Landscape Architecture  
Purdue University Extension

We have just finished planting a long-term NC-140 apple rootstock trial at the Purdue Meigs farm. Honeycrisp trees have been planted on 31 different rootstocks. The goal is to determine which new rootstocks are best suited to Indiana orchards, in terms of precocity, productivity, disease resistance and other horticultural characteristics. Most of these new rootstocks are in the M.26 vigor range rather than the B.9 range. We are one of 22 test sites for this planting, ranging from British Columbia to NY to Mexico. Rootstocks included in this test planting are 8 from the Budovgovsky series (in addition to Bud. 9 as a check), 13 Cornell-Geneva stocks, and a couple from the Czech Republic and Germany. Of course we won't have any useful data on these for a couple of years, and it will probably be 10 years before we can make grower recommendations based on this test. But at this point I did want to let growers know that at Purdue we are continuing our rich history in rootstock testing and evaluation started by Dr. Hayden as a founding member of NC-140 in the 1970's. I also want to thank those who have contributed to the Return Bloom Fund. The cost of establishing a trial like this is over \$3000 and support from the Return Bloom Fund is critical in continuing this work.

### 2010 Upcoming Events:

**Wednesday, June 30 - OPGMA Summer Tour & Field Day –** <http://www.opgma.org/>

**Wednesday, July 7 - Central Ohio Twilight Fruit Field Meeting -** Mark Schmittgen Farm, Thornville. Sponsored by Licking and Muskingum OSU Extension Offices. Mark your calendars, details to follow.

**August 18-21 - North American Fruit Explorers (NAFEX) Annual Meeting and Midwest Fruit Showcase.** Lafayette, IN. See <http://www.nafex.org> for details.

**August 19-20 - Apple Crop Outlook Conference, US Apple Association, Ritz-Carlton Hotel, Chicago.** See [www.usapple.com](http://www.usapple.com) for details.



### Rainfast Characteristics of Insecticides

John Wise, Trevor Nichols Research Complex and Entomology  
Michigan State University Extension

The numerous rainfall events experienced in Michigan over the last several weeks has prompted many questions about the relative “rainfastness” of the insecticides used in fruit production. In 2006, the Michigan Agriculture Experiment Station provided funds to purchase and install a state-of-the-art rainfall simulation chamber at the MSU Trevor Nichols Research Complex (TNRC), after which we have begun conducting trials (generously funded by Michigan fruit commodity groups) on fruit crops for a range of insecticides.

It is important to understand that there are four critical factors that influence impact of precipitation on a pesticide’s performance. First is the wash-off potential of individual compound from a rainfall event. Second is the inherent toxicity of an insecticide on the target pest. A given compound may be highly susceptible to wash-off, but if the target pest is very sensitive to the compound, there may be sufficient residue remaining to protect the crop. Related to this is the importance of understanding pest biology and behavior, and the resulting threat to the crop. For an indirect pest that feeds primarily on leaves, the rainfastness of a compound on foliage is the most relevant, and generally tolerance of leaf feeding injury is high compared to that of fruit. For direct pests that threaten a crop, the rainfastness of residues on fruit and leaves are both relevant. We have learned that wash-off potential for a given compound may be different on fruit than on leaves. The fourth factor is the amount of rain received from a precipitation event. Our research suggests that the duration of a precipitation event is relatively unimportant, but the amount of rainfall will significantly impact the insecticide residues remaining on the fruit and leaves of the plant. Thus, the decision making process, whether to re-apply or not, must include knowledge of the pest, the precipitation event as well as the compound’s rainfastness characteristics and relative toxicity to the target pest.

In general, organophosphate insecticides have the highest susceptibility to wash-off from precipitation, although their toxicity level to most insect pests can often overcome the necessity for an immediate re-application. Neonicotinoid insecticides are moderately susceptible to wash-off, although residues that have moved systemically into plant tissue are highly rainfast, and surface residues less so. Pyrethroid, carbamate and IGR insecticides are moderately susceptible to wash-off, and vary in their toxicity to the range of relevant fruit pests. Diamide and spinosyn insecticides have proven to be highly rainfast. There is much more work to be done in this area of research, so we expect to update our findings to you as they develop over the coming years.

Based on the results from the current studies, the following charts have been developed to serve as a guide for general rainfastness characteristics and re-application recommendations for certain insect pests (also printed in the 2010 Michigan Fruit Management Guide E-154). Note that these recommendations should not supersede farm-level knowledge based on site-specific pest scouting, but rather are meant to compliment a comprehensive pest management decision-making process.

#### Rainfastness rating chart: General characteristics for insecticide chemical classes

Insecticide Class	Rainfastness ≤ 0.5 inch		Rainfastness ≤ 1.0 inch		Rainfastness ≤ 2.0 inch	
	Fruit	Leaves	Fruit	Leaves	Fruit	Leaves
Organophosphates	L	M	L	M	L	L
Pyrethroids	M	M	L	M	L	L
Carbamates	M	M	L	M	L	L
IGRs	M	H				
Neonicotinoids	M,S	H,S	L,S	L,S	L,S	L,S
Spinosyns	H	H	H	M	M	L
Diamides	H	H	H	M	M	L
Avermectins	M,S	H,S	L,S	M,S	L	L

\* H – highly rainfast (≤30% residue wash-off), M – moderately rainfast (≤50% residue wash-off), L – low rainfast (≤70% residue wash-off), S-systemic residues remain within plant tissue

## Continued from page 5: Rainfast Characteristics of Insecticides

**Apple Insecticide Precipitation Wash-off Re-application Decision Chart**

Expected codling moth control in apples, based on each compound's inherent toxicity to codling moth larvae, maximum residual, and wash-off potential from rainfall.

Insecticides	Rainfall = 0.5 inch		Rainfall = 1.0 inch		Rainfall = 2.0 inches	
	*1 day	*7 days	*1 day	*7 days	*1 day	*7 days
Guthion				X		X
Imidan				X		X
Asana		X	X	X	X	X
Calypso				X	X	X
Assail		X	X	X	X	X
Proclaim		X		X	X	X
Delegate						X
Altacor						X
Belt						X

\* Number of days after insecticide application that the precipitation event occurred.

X – Insufficient insecticide residue remains to provide significant activity on the target pest, and thus an immediate re-application is recommended.

- An un-marked cell suggests that there is sufficient insecticide residue remaining to provide significant activity on the target pest, although residual activity may be reduced.

**Grape Insecticide Precipitation Wash-off Re-application Decision Chart**

Expected Japanese beetle control in grapes, based on each compound's inherent toxicity to Japanese beetle adults, maximum residual, and wash-off potential from rainfall.

Insecticides	Rainfall = 0.5 inch		Rainfall = 1.0 inch		Rainfall = 2.0 inches	
	*1 day	*7 days	*1 day	*7 days	*1 day	*7 days
Imidan		X	X	X	X	X
Sevin			X	X	X	X
Capture		X		X	X	X
Actara		X		X	X	X
Avaunt		X		X	X	X

\* Number of days after insecticide application that the precipitation event occurred.

X – Insufficient insecticide residue remains to provide significant activity on the target pest, and thus an immediate re-application is recommended.

- An un-marked cell suggests that there is sufficient insecticide residue remaining to provide significant activity on the target pest, although residual activity may be reduced.

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## Apple Diseases Targeted by Early Cover Sprays

Dave Rosenberger, Plant Pathology

Cornell University - NYS Agricultural Experiment Station - Cornell Cooperative Extension

Apple growers often breathe a collective sigh of relief each year when they reach the end of the discharge period for apple scab ascospores. Traditionally, that has meant that the greatest disease threat to the crop has passed, fungicide programs can be relaxed a bit, and the focus for timing pesticide applications can be shifted from disease control to insect control. As of May 10, the NEWA models for apple scab ascospore discharge (see <http://newa.cornell.edu/>) showed that most areas in New York State have already reached the end of the scab ascospore discharge period or will do so later this week. However, even though the supply of scab ascospores may be depleted, maintaining fungicide coverage is still important because scab and other diseases remain as threats for several weeks after scab ascospores are depleted.

**Apple scab:** Although the supply of ascospores in overwintering leaves may be depleted (or, depending on location, will soon be depleted), apple scab remains a threat for at least three weeks after petal fall. The ascospores may be gone, but no one can be certain that early season sprays provided 100 percent control of primary scab. If just a few ascospores managed to find and infect unprotected leaves, then conidia from those primary infections can still cause a lot of damage. The risk of secondary infections is especially high during the first few weeks after petal fall because terminal shoots are growing rapidly and new leaves are being unfolded every day. If these new leaves are not protected with regular fungicide sprays, then conidia dispersed during rains will find receptive host tissue and scab may become so prevalent that the orchard will require high rates of fungicide throughout the remainder of the growing season. That is what happened in many orchards in 2009. Orchards that are carefully scouted and still appear to be scab-free three weeks after petal fall are unlikely to develop severe scab problems later in the season. However, scab risk never totally disappears until we get some hot weather. Production and viability of scab conidia both drop off rapidly following several days with high temperatures in the mid-80s, and repeated exposure to high temperatures almost guarantees that scab will remain inactive through summer. In years like 2009 when the summer remains cool, scab can continue to pose a threat through June and July. Nevertheless, the risk of secondary scab infection is always greatest right after petal fall when it is difficult to maintain fungicide coverage on new terminal leaves.

**Powdery mildew:** The period right after petal fall is also the period of peak risk for powdery mildew. Just as with apple scab, only young unfolding leaves are susceptible to infection by the powdery mildew pathogen. The period after petal fall provides a rapid succession of unfolding leaves. If mildew is not controlled during the several weeks after petal fall, then it often becomes sufficiently established to ensure that there will be abundant inoculum for the following year. Young trees that are still filling their spaces may need mildew protection all the way through August because they will remain susceptible to mildew until most terminal growth has stopped. And don't forget about newly planted trees because mildew can severely compromise first year tree growth if new trees are exposed to high levels of inoculum from adjacent older orchards where mildew is poorly controlled.

**Cedar rust diseases:** Fruit infections from cedar apple rust and quince rust occur mostly between tight cluster and first cover, so the period when fruit are at risk from rust diseases is nearly past. The DMI fungicides provide excellent post-infection activity against rust on both leaves and fruit. Including a DMI in petal fall and first cover sprays usually guarantees that rust will not be a problem on fruit. However, the cedar galls that release cedar apple rust basidiospores remain active for three to four weeks beyond petal fall. Spore releases up to three weeks after petal fall can cause severe infections on newly developing terminal leaves on susceptible cultivars. Where susceptible apple cultivars are grown in the vicinity of cedar trees, trees should be protected from rust for at least three weeks after petal fall, and in high-risk areas, four or five weeks of protection may be required. Captan and Topsin M will NOT provide adequate protection against rust diseases. The QoI or strobil fungicides (e.g., Flint, Sovran, Cabrio), the mancozeb fungicides, Polyram, and Ziram are all effective for protecting leaves, but none of them will provide post-infection activity for suppressing rust on new leaves that become infected between sprays. The DMI fungicides remain the best option for controlling rust diseases from petal fall through early June.

**Black rot:** Fruit decays caused by *Botryosphaeria obtusa*, the black rot fungus, rarely become noticeable until late summer. However, infections can occur after petal fall, remain quiescent through summer, and then appear in late summer, so sprays applied after petal fall can have a large impact on the amount of black rot that appears prior to harvest. Equally as important is the fact that fruitlets that are killed by thinning sprays often become infected by the black rot fungus if the fruitlets fail to drop from the tree. These fruitlets then become mummies (Fig. 1) that supply inoculum for infections later in the summer or during the following year. Captan, Topsin M, and the QoI fungicides (Flint, Sovran, Cabrio) are the most effective for protecting fruit, whereas the DMI fungicides and the mancozeb fungicides have been considered less effective.

Recently, Kerik Cox and collaborators compiled results from a study where they collected mummified fruitlets in late fall from Cortland trees in fungicide test plots that received various fungicides. They then attempted to isolate *B. obtusa* from large numbers of mummies from each plot to determine how sprays applied after petal fall might influence the number of dying fruitlets that become infected. Their results showed that 70–75% of mummies collected from unsprayed trees at the Hudson Valley Lab were infected with *B. obtusa*, whereas only 40–45% of fruitlets from unsprayed trees at Geneva were infected.

## Continued from Page 7: Apple Diseases Targeted by Early Cover Sprays

Differences between locations may have been caused by differences in the strains of Cortland at the two sites, differences in chemical thinners and the times they were applied, differences in weather during the thinning period, etc. None of the fungicide treatments eliminated *B. obtusa* infection of mummies. In the Hudson Valley, fungicides provided only about 10–50% reduction in *B. obtusa*, but at Geneva, the best fungicide treatments reduced infection in mummies by about 80%. Surprisingly, at both locations, mancozeb applied alone was as effective or more effective than Flint applied alone. (Captan was not included in these trials.) Thus, while Flint may be more effective than mancozeb for protecting living fruit, protectant fungicides like mancozeb and captan may be more effective for keeping *B. obtusa* out of dying fruitlets that eventually become mummies and supply inoculum for later infections. Thus, including a contact fungicide such as mancozeb or captan with DMI or QoI fungicides applied after petal fall may help to suppress the amount of black rot inoculum that develops in mummified fruitlets.

**Sooty blotch and flyspeck (SBFS):** Fungicides applied in July and August are usually considered the most important sprays for controlling SBFS. However, sprays applied between petal fall and 3rd cover can also influence the amount of disease that appears at harvest because flyspeck ascospores begin blowing into orchards from wild hosts in the orchard perimeter soon after petal fall. Mancozeb, Topsin M, the QoI or strobby fungicides, and Inspire Super are all very effective for controlling SBFS during the period after petal fall. Captan applied at high rates (e.g., 4 to 5 lb/A of Captan 80W) can provide fairly good control, but Captan-80 at 2 lb/A is relatively ineffective. The first generation DMI fungicides (Rally, Procure, and Vintage/Rubigan) are also ineffective. Thus, combinations such as Rally plus Captan, while good for controlling powdery mildew, black rot, and scab during the period after petal fall, may allow early establishment of SBFS if spray intervals are longer than about 7 days. In summary, the period after petal fall is still a critical period for controlling apple diseases. Careful selection and timing of fungicides during the three to four weeks after petal fall can minimize the risks of having disease problems on fruit at harvest.



Fig 1. Braeburn apple showing lenticel infections from *B. obtusa* that came from spores produced in the attached fruitlet mummy.

## Financial Assistance for Orchardists & Nursery Tree Growers The Ohio Farm Service Agency (USDA-FSA)

The Ohio Farm Service Agency (USDA-FSA) recently announced that orchardists and nursery tree growers may now apply to receive Tree Assistance Program (TAP) benefits beginning May 10 for losses suffered between January 1, 2008 and May 7, 2010.

The final date to submit a TAP application and supporting documentation is July 6. TAP will also provide financial assistance to qualifying orchardists and nursery tree growers to replant or rehabilitate eligible trees, bushes, and vines that were lost by natural disasters occurring on or after January 1, 2008, and before October 1, 2011.

More information on TAP, how to qualify for the program, and how to submit a claim is available at local FSA county offices and on FSA's web site at [www.fsa.usda.gov/tap](http://www.fsa.usda.gov/tap).

