UK COOPERATIVE EXTENSION SERVICE
University of Kentucky – College of Agriculture

Lexington KY 40546

Kentucky Fruit Facts

July 2006 (7/2006)

Fruit Facts can be found on the web at: http://www.ca.uky.edu/fruitfacts/

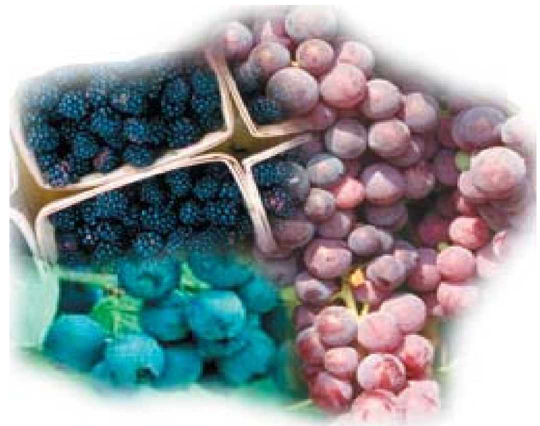
John Strang, Extension Fruit Specialist, Editor
Karen Shahan, Administrative Assistant

Fruit Crop News

Peach, early apple, thornless blackberry, raspberry and blueberry harvest are progressing nicely. We are looking at bumper crops for most growers. The few blueberry growers that I have talked with indicate that sales have been strong. There have been a number of instances where blackberry fruit have not filled out completely. John Hartman discusses this in an article in this issue. I suspect that this is a pollination or anthracnose problem in most cases, due to the relatively rainy spring, since a number of growers have reported this. The early July rain storms were needed and appreciated by many growers.

Fire blight is apparent in many orchards and potato leafhoppers have left their mark on many apple trees. Japanese beetles are going strong in the western end of the state and in pockets in other parts. Pay attention to the pre-harvest intervals when spraying for Japanese beetles as these vary between crops.

July 15 to August 15 is the time to take tissue samples from tree fruit and grapes. Tissue analysis is an excellent way to determine where your crop(s) sit nutritionally and enable you to rectify deficiencies before they become apparent. Instructions may be found on the Horticulture web site at: www.uky.edu/Ag/Horticulture Click on commercial horticulture and then fruit. Look for the fact sheet entitled, Fruit Tissue Analysis. If you do not have access to the web, your County Extension Office would be happy to provide you with the information.



Inside This Issue:

Upcoming Meetings

Jul. 22 Kentucky Vineyard Society Summer Meeting, Talon Winery, Lexington, Contact Jim Wight 502-543-8681. See program below.

Jul. 22 Kentucky Nut Growers Association Grafting and Budding Workshop, Wilmoth Nursery, Elizabethtown. Contact Les Wilmoth 270-369-7403.

Aug. 1 UK Horticultural Research Farm Twilight Tour, Horticultural Research Farm, Lexington, KY. The tour of fruit, vegetable, floriculture and woody ornamental research begins at 6:00 p.m. Contact: Pam Compton. Phone: 859-257-2909; e-mail: pscomp1@uky.edu

Aug. 30-Sept.1 North American Fruit Explorers (NAFEX) and SFF Annual Meeting, Holiday Inn North, Lexington, KY. Contact John Strang 859-257-5685; e-mail: jstrang@uky.edu See program and registration materials in the June Fruit Facts Newsletter.

Sept. 18 Harvesting the Fruits of Your Labor, SunRay Orchard on Alpar Lane, Shepherdsville. 6:00 p.m. Contact Darold Akridge 502-543-2257.

Sept. 21 Grape and Pawpaw Field Day. KSU Research Farm, Mills Lane, Frankfort. Contact Kirk Pomper at 502-597-5942; e-mail: kirk.pomper@kysu.edu

Sept. 28 Robinson Horticultural Tour and Farmers' Market Workshop, Robinson Station, Quicksand. Contact Terry Jones 606-666-2438 x 234.

Oct. 28 Kentucky Nut Growers Assoc. Fall Meeting. KSU Research Farm, Mills Lane, Frankfort. Contact Kirk Pomper at 502-597-5942; e-mail: kirk.pomper@kysu.edu

Nov. 9-10 2006 Tomato Disease Workshop, North Carolina State University, Mountain Horticultural Crops Research and Extension Center, 455 Research Drive, Fletcher, NC. 28732. This meeting is coordinated by Dr. Kelly Ivors and Dr. Randy Gardner. Registration ($50) should be completed and sent in on or before October 23, 2006 and includes lunch . Contact Kelly Ivors, e-mail: kelly_ivors@ncsu.edu or Jeanine Davis phone: 828-684-3562 for registration information.

Jan. 8-9 Kentucky Fruit and Vegetable Conference and Trade Show, Holiday Inn North, Lexington, KY. Contact John Strang 859-257-5685; e-mail jstrang@uky.edu

Kentucky Nut Growers Association Grafting and Budding Workshop

Saturday, July 22
Wilmoth Nursery
5960 Bacon Creek Road
Elizabethtown, KY 42701
Phone: 270-369-7493

Directions:

Take exit 86 from I-65 West on KY 222, proceed about five miles west to KY 1904. At this junction, turn left and go about 1.5 miles.

OR

Take KY 222 East from US 62 (about seven miles west of Elizabethtown or 2.5 miles east of Stephensburg). Travel east on KY 222 about 2.5 miles to KY 1904, turn right and go about 1.5 miles.

This will be an all-day meeting with a pot-luck luncheon; there will be no charge, but please bring a dish along for the meal and a folding chair. The KNGA offers an excellent hands-on learning experience when you attend this workshop. With grafting skills you will be able to propagate and preserve valuable seedling trees which may be found in your area as well as named varieties which have been discovered by others. Hands-on practice is really the only way to learn. Budding material (bud sticks) may be collected from the Wilmoth Nursery as desired.

Kentucky Vineyard Society 2006 Summer Meeting

Saturday, July 22
Talon Winery
7086 Tates Creek Rd.
Lexington, KY 40515
Harriet Allen and Charles Tackett, owners
John Pitcock, winemaker
Phone: 859-971-3214

Directions:

Upon arriving in Lexington, follow New Circle Rd. or Man O'War Boulevard towards the south side of town to Tates Creek Rd. (Rt. 1974). Follow Tates Creek Rd. south for a little over 5 miles to Talon Winery. Along the way you will pass 1981 on your right and the winery is about a mile past this. You will pass a bed and breakfast on your right and go into a sharp curve to the right. The farm entrance is the first drive on your left just after this.

Look for a tall white cylindrical water tower and drive towards the tower. Drive straight past the vineyard, barn, and winery. The meeting will be held at the pavilion.

Program (EDT):

9:15 a.m.	Registration
9:30	Opening Remarks - Jim Wight, KVS President
9:45	Welcome to Talon Winery - Harriett Allen and John Pitcock
10:00	Grape Harvest Parameters - Kaan Kurtural, Extension Viticulturist
10:45	Crop Load Study on Vidal Blanc and Traminette - Patsy Wilson and Brandon O'Daniel, U.K. Graduate Students
10:55	Grape Disease Control - Chris Smigell, Small Fruit Extension Associate
11:25	Wine Evaluation - Tom Cottrell, Extension Enologist
12:00 p.m.	Lunch.

Please preregister by July 19 by calling Talon Winery at 859-971-3214 so that we can plan the meal. The cost of lunch is $10.00 which includes wine tasting.

1:00 p.m.	Election and Welcome of New Officers
1:30	Social and Short KVS Board of Directors Meeting

Horticulture Research Farm Twilight Tour, August 1, 2006

4320 Emmert Farm Lane
Lexington, KY 40514

The U.K. Horticultural Research Farm is located on the south side of Lexington approximately one block west of the intersection of Man O'War Boulevard and Nicholasville Road (U.S. 27). The entrance to the farm (Emmert Farm Lane) is off of Man O'War Boulevard at the traffic light opposite the entrance to the Lowe's and Walmart.

Tours will begin at 6:00 p.m. There will be two concurrent tours that will be repeated until dark. Speakers will remain at their stops to discuss their work in more detail with tour participants between wagon stops. Both tours will start at the research center parking lot. Cold drinks and perhaps some specialty melons if they mature in time will be provided for participants.

Questions? Contact: Pam Compton phone: 859-257-2909. e-mail: pscomp1@uky.edu

Program:

Welcome — Dewayne Ingram, Chair
U.K. Horticulture Department

Vegetable Tour

1. Transplant Greenhouses
   Bob Anderson, Extension Floriculturist
2. Matted Row Strawberry Variety Trial
   Rick Durham, Extension Consumer Horticulture
3. Ornamental Corn, Specialty Gourds, and Winter Squash
   Sharon Bale, Extension Floriculturist
4. Stinkbugs in Peppers
   Ric Bessin, Extension Entomologist
5. Biological Control of European Corn Borers in Peppers
   Katie Russell, Entomology Graduate Student
6. Tomato and Pepper Varieties
   Dave Spalding, Extension Associate
7. Sorghum Varieties
   Morris Bitzer, Extension Grain Crops
8. Specialty Melon and Winter Squash Variety Trial
   Katie Bale, Research Analyst
9. Unusual Vegetables
   John Snyder, Vegetable Research
10. Recombinant Tomatoes
    Bruce Downie, Seed Biology Research
11. Squash Bug Control in Summer Squash
    Kimberly Decker, Entomology Graduate Student
12. Growing Tomatoes in Four Organic Production Systems
    Delia Scott, Horticulture Graduate Student
13. Organic Mixed Vegetables for CSA and the Sustainable Agriculture Curriculum
    Mark Williams, Organic Horticultural Production Systems Research

Fruit Tour

1. Raspberry and Blueberry Variety Trials
   John Strang, Extension Fruits and Vegetables
2. Organic Apple Thinning
   Doug Archbold, Fruit Crop Physiology Research
3. Grape Training, the Fan vs. VSP
   Chris Smigell, Extension Associate
4. Grape Cultivars and Training Systems
   Kaan Kurtural, Extension Viticulturist
5. H Braces
   Patsy Wilson, Horticulture Research Analyst
6. Japanese Beetle and Green June Beetle Studies
   Derrick Hammons, Entomology Graduate Student
7. Grape Wine Evaluation Studies
   Tom Cottrell, Extension Enologist

Leaf Yellowing in Honeycrisp

by Peter Hirst, Pomologist, Purdue University

Since the early days of Honeycrisp, growers of this variety have been concerned about a leaf disorder that shows up about the middle of the growing season. Typically, leaves become thick and leathery, and turn lighter green, yellow, or even brown later in the season. These symptoms were similar to damage caused by potato leafhoppers, but research by Jim Schupp and others in New York showed that trees protected from leaf-hoppers still exhibited the disorder. The leaf yellowing symptoms typically show up about the time that shoots stop growing and are more severe on trees with a light crop. As leaves produce carbohydrates from photosynthesis, these carbohydrates need to be transported to other parts of the tree where they are needed, such as developing fruit and roots. Dr. Lailiang Cheng and his coworkers at Cornell University found that Honeycrisp has trouble transporting carbohydrates out of leaves, and therefore they accumulate. The leaf responds by reducing the amount of chlorophyll in the leaves, leading to yellow leaves. The best remedy is to leave a moderate crop load on the tree to reduce the yellowing, but thinning must be done early to avoid biennial bearing.

Causes of Early Summer Leaf Spots, Part I

by Dave Rosenberger, Plant Pathologist, Cornell University from Fruit Notes Newsletter

Leaf spots on fruit trees are caused by a wide variety of pathogens and abiotic factors. Most growers can identify typical leaf lesions caused by apple scab, cedar apple rust, powdery mildew, and cherry leaf spot. However, when leaves develop small, nondescript brown leaf spots or small shot holes, even experienced plant pathologists often have difficulty identifying the causes.

Fortunately, the nondescript leaf spot diseases in the northeastern United States rarely cause economic losses, even when their appearance temporarily disfigures the tree canopy. The fungi causing apple leaf spot diseases either do not have secondary cycles on leaves or they are easily controlled with fungicides and appear only when fungicide protection is disrupted by extended spring rain events. Abiotic leaf spots that develop shortly after petal fall are often attributable to agrichemical mixtures that have caused localized phytotoxicity.

Following are some of the most common causes of early season leaf spots and clues for determining their causes. This article focuses on leaf spots that may appear in May, June, and July. Leaf spots with other causes and symptoms sometimes appear during August and September, but they will not be discussed here.

Frog-eye leaf spot, caused by *Botryosphaeria obtusa*, is the stereotypical leaf spot disease on apples. Frog-eye leaf spots are round, dark brown spots, 2-5 mm in diameter, with an almost black border and a tan center. Individual leaves may have a single spot or as many as 30 to 50 spots. Frog-eye can usually be differentiated from other kinds of leaf spots by its non-random distribution and its association with nearby inoculum sources. In sprayed orchards, frog-eye leaf spots are usually concentrated in the vicinity of mummified fruitlets that were retained after fruit thinning. Fruitlet mummies can be colonized by *B. obtusa* and then provide inoculum for infecting the leaves the following season. Splashing rain between tight cluster and about second cover disperses spores. Frog-eye is most common on apple cultivars such as Cortland, Northern Spy, and Honeycrisp, which retain many fruitlets after chemical thinning. However, all cultivars may retain thinned fruit in years when weather conditions fail to promote rapid abscission of thinned fruitlets.

Frog-eye leaf spot may cause premature drop of severely affected leaves, but most damage from frog-eye is cosmetic. The same fungus that causes frog-eye leaf spot also causes black rot fruit decay, but there is no evidence that leaf spots contribute to fruit infection. Instead, the inoculum for fruit infection comes from the same fruit mummies that provide the inoculum for leaf infection. Thus, frog-eye on leaves can be viewed as an indicator for conditions that may have favored infection of fruit, but the leaves themselves do not contribute directly to the development of black rot on fruit. Black rot infections in fruit may remain quiescent until fruit ripen because green fruit contain inhibitors that prevent fungal growth.

Most fungicides control frog-eye leaf spot, but the SI fungicides (Rubigan, Nova, Procure) and the 3 lb/A rates of mancozeb or Polyram are less effective than captan, Flint, and Sovran. The fungicide program that was used the previous season may affect severity of leaf spotting around fruitlet mummies. This is, because fungicides used after thinning may prevent the fruitlets from becoming infected as they dry out during summer. However, the relationship between spray programs, colonization of retained fruitlets by *B. obtusa*, and inoculum levels within trees has not been documented for most of the fungicides currently available.

Rust-induced leaf spots develop when cedar apple rust and hawthorn rust infections are killed either by subsequent application of SI fungicides or by host incompatibility reactions.

SI fungicides applied within 96 hours of the start of wetting periods will eliminate rust infections before they can cause visible damage to leaves. However, if SI fungicides are applied more than 4 days after infection, leaf cells invaded by the rust fungi will die even though the rust fungus is eradicated. These killed leaf cells result in small 1-2 mm diameter leaf spots that are tan or brown, sometimes with a tiny orange rust fleck in the center of the leaf spot. Similar lesions can appear on McIntosh, Empire, Liberty, and other rust-resistant cultivars if trees are subjected to high levels of rust inoculum in the absence of fungicide protection. On the rust-resistant cultivars, fungal development is arrested by the genetic resistance of the host rather than by fungicide activity, but the resulting leaf spots are similar.

Leaf cells killed by the initial phases of rust infections provide an entry point for other less-pathogenic leaf spot pathogens such as *Botryosphaeria*, *Alternaria*, or *Phomopsis* species. These fungi invade cells killed or damaged by failed rust infections and then move into adjacent healthy tissue, thereby enlarging the leaf spots until the individual lesions look like frog-eye leaf spots. Rust-induced leaf spots can be distinguished from frog-eye leaf spots because the former are uniformly distributed throughout tree canopies, whereas the latter are clustered near inoculum sources. Sometimes the original orange-yellow rust lesion remains visible in the center of rust induced leaf spots, whereas frog-eye leaf spots never have such bright orange centers.

Other leaf spots resulting from fungus-fungicide interactions can develop when SI fungicides, strobilurin fungicides (Sovran, Flint, Pristine), or Topsin M are applied to leaves that contain incubating apple scab or mildew lesions. Scab spots that are arrested during the early part of the incubation period (roughly 5 to 8 days after infection) can produce "ghost lesions."

Ghost lesions are indistinct pale spots 2-3 mm in diameter that develop where the scab fungus has disrupted normal cell function before the fungus was inactivated by the fungicide. The same fungicides applied just before scab lesions become visible can result in rusty, red-brown lesions that exhibit the usual size and shape of normal scab spots.

Post-infection application of the SIs and strobilurins can also cause "burned out" mildew lesions on leaves. Mildew lesions arrested by fungicides can appear on the upper leaf surface as large chlorotic lesions with indistinct margins, or on the lower leaf surface as more sharply-defined red blotches.

Portions of the leaf compromised by mildew may be more susceptible to subsequent invasion by secondary pathogens that may cause necrotic spots or larger irregular areas of leaf necrosis.

Alternaria leaf spot appears as brown spots similar in size to frog-eye leaf spots. Alternaria species can be isolated from leaf spots in many orchards, especially in late summer, but Alternaria leaf spot does not cause economic damage in the northeast. In most cases, Alternaria is a secondary invader of damaged leaf tissue. In North Carolina and Virginia, however, a severe form of leaf spotting known as Alternaria blotch spreads rapidly during summer and causes premature defoliation of affected trees. Delicious is particularly susceptible. The strain of *Alternaria mali* that causes defoliation in the southeast may be different from the common *Alternaria mali* present in northeastern orchards. None of our fungicides are very effective for preventing Alternaria leaf spot or Alternaria blotch.

Causes of Early Summer Leaf Spots, Part II; Phytotoxicity

Leaf spotting caused by phytotoxicity from pesticide sprays can be confused with leaf spotting diseases caused by fungi. Phytotoxicity may result when pesticides are applied at inappropriate rates, under unusual environmental conditions, or in untested mixtures with other products. It is impossible to list all of the potential materials or mixtures that might cause phytotoxicity because no one can evaluate all of the combinations that fruit growers mix in a spray tank, or to duplicate all of the foliage and environmental conditions that occur in orchards. Some of the more common culprits of phytotoxicity are listed below.

Captan is a potent fungicide on leaf surfaces, but captan is phytotoxic when it moves inside leaves or fruit. Most growers know that captan, if applied shortly before or after an oil spray, can cause severe leaf spotting, especially on Delicious. There is no set delay that can be used for separating captan sprays and oil sprays because leaf condition at the time of application, rates of the two products, and varietal susceptibility to captan make a simple answer impossible. Captan-oil leaf spotting occurs because oil acts as an emulsifier that enables captan to diffuse into leaf cells. Even in the absence of oil, captan penetrates leaves more easily when leaves have developed under extended periods of cloudy, cool weather, because sunlight and dry conditions are required to stimulate development of the cuticle layer that prevents captan from reaching leaf cells. As might be expected, leaf spotting caused by captan-oil interactions is also more severe and the period of susceptibility is more extended when cloudy weather has limited cuticle development.

Captan-related leaf spotting can also occur when captan is tank-mixed with other products that are formulated with special wetting agents or penetrants. The captan label specifically states "The use of spreaders that cause excessive wetting is not advised."

Captan almost always causes some leaf spotting and/or shot-holing on captan-sensitive cultivars of sweet cherry and plum. The severity of the injury varies with the prior weather conditions and resulting leaf condition at the time of application. Leaf injury can be especially severe if captan is applied following cloudy, cool weather during a period of rapid shoot growth.

Over the past 20 years, I have seen cases of leaf spotting that have been traced to applications of various other pesticides, including Sevin XLR, Guthion, Lorsban, and Asana. In some cases, these products had been applied in mixtures with captan, whereas other cases involved mixtures with other pesticides. Most of these incidents did not result in serious leaf damage, and they are cited here only to illustrate that many different pesticides may cause phytotoxic leaf spotting under certain conditions.

In some cases, unusual sequences of pesticide combinations may contribute to phytotoxicity. Last week I visited an orchard with rather severe leaf spotting on mature Red Delicious trees where a tank-mix of Azinphos-methyl plus urea was applied in mid-May and was followed four days later with an application of Agrimek plus 1 gal of summer oil per acre. Adjacent Rome and Spartan trees showed very little injury, and no injury was evident in other orchard blocks that received the first spray of Azinphos-methyl plus urea but not the follow-up spray of Agrimek plus oil. I suspect that the urea softened the leaves enough to allow increased uptake of oil or of oil plus Azinphos-methyl residues when the second spray was applied 4 days after the first spray. Cool, cloudy conditions throughout mid-May was also a contributing factor.

As noted on the product label, Sovran can cause leaf spotting on some sweet cherry cultivars. I have seen this damage on several farms where cherries were growing adjacent to apple trees that had been sprayed with Sovran.

The strobilurin fungicide azoxystrobin (Abound, Quadris, Heritage) is extremely phytotoxic to McIntosh, Gala, and some other apple cultivars. Drift from azoxystrobin applied to other crops can cause a leaf spotting on McIntosh that is indistinguishable from frog-eye leaf spot. Higher concentrations (as may result from residues left in a sprayer when switching from one crop to another) will cause extensive necrosis of leaf tissue and browning or russetting of the skin on apple fruit. The large number of labeled uses for azoxystrobin raises the probability that apple growers in the northeast will experience occasional problems due to off-site drift of azoxystrobin. Azoxystrobin injury should be easy to diagnose because the leaf spotting will appear suddenly, will be evenly distributed throughout the canopy, and will occur only on McIntosh, Gala, and other Mac-related cultivars, whereas adjacent cultivars will be completely unaffected. The varietal susceptibility of apples to azoxystrobin injury is a useful distinguishing characteristic, because no other pesticide or fungal pathogen that might cause leaf spotting on apples would be similarly delimited by cultivar.

Gramoxone herbicide drifting onto apple leaves can cause a brilliant yellow leaf spot although the spots eventually turn brown and necrotic. Injury from herbicide drift is often more prevalent on low branches, but small spray droplets can drift throughout a tree canopy, sometimes causing an even distribution of leaf spotting that one might not associate with herbicide drift. Mixing a drift inhibitor with the herbicide can reduce the potential for foliage injury with gramoxone. Drift inhibitors reduce the production of small spray droplets that are easily carried into the tree canopy by even the slightest breeze.

Summary: In commercial orchards that receive timely fungicide applications, most early season leaf spots are attributable to injury from agrichemical sprays. Risks of encountering phytotoxicity on leaves can usually be reduced by using proper sprayer calibration, following label restrictions on pesticide mixtures, and by keeping spray mixtures as simple as possible. The latter includes avoidance of untested mixtures of pesticides, micronutrients, and plant growth regulators, and avoidance of spray adjuvants not specifically required by either pesticide labels, unique water quality or other application conditions. Special care is required in years when the spring growth flush after bloom coincides with an extended period of cloudy, cool weather, because leaves that develop under those conditions are especially susceptible to injury by pesticide applications. For color photos of many of the symptoms discussed, visit the Scaffolds newsletter website: http://www.nysaes.cornell.edu/ent/scaffolds/2006/

Brambles - Diseases May Cause Poor Fruit Set and Sterility

by John Hartman, U.K. Extension Plant Pathologist

Samples of bramble fruits (red and black raspberries and blackberries) with poor or no fruit set are appearing in the Plant Disease Diagnostic Laboratory this month. Sterility symptoms being observed include no fruit set, small, misshapen berries, and small and crumbly fruits.

<u>Potential causes of sterility in brambles:</u>

***Anthracnose disease.** Fungi causing anthracnose diseases were active during cool, moist periods this spring. Infections of flowers during bloom could result in damaged fruit or no fruit set. The new canes emerging this spring may also begin to show anthracnose lesions and cankers.

***Virus diseases**. A number of viruses affect raspberry and blackberry fruit production. Some cause sterility problems.

***Raspberry Mosaic Viru**s causes small, crumbly berries. Leaves may have mosaic symptoms consisting of light green to dark green or yellow to green mottling and blistering of leaves. The plants show a progressive stunting of growth and poor yield.

***Raspberry Leaf Curl Virus** reduces fruit production and fruits may be small, crumbly, and seedy. Infected leaves are rounded, downward curled, and have a dark green greasy appearance.

***Tobacco Streak Virus** also reduces fruit production. Leaves are deformed with yellow blotches.

***Tomato Ring Spot Virus** causes small, crumbly fruit. Leaves may show pale yellow rings and plants are stunted.

***Lack of bee activity** may result in a crumbly berry condition. Normally, raspberry flowers have 100-125 pistils. Typically, 75-85 drupelets will develop. When pollination is incomplete and fewer drupelets develop, the berry will often crumble when it's picked.

***Crumbly berry and poor fruit set** can also be caused by drought, low soil fertility, insect damage, winter damage, hereditary abnormalities, variations in male and female sterility, deep cultivation and nematode infestations.

<u>Managing sterility in brambles:</u>

*Determine the cause and extent of the problem. Care must be taken to insure that the symptoms of sterility are not confused with cultural problems. If a bramble planting blooms and sets fruit well one season and then the planting has a poor crop the next season, suspect disease or insect injury to the berry cluster stems or poor pollination.

*Virus problems spread in the planting more gradually from year to year. Virus-infected plants may also show leaf symptoms. If these plants are also showing sterility symptoms, drastic action may be needed. Sterility problems related to virus infections can destroy a planting, growers will not want to take any chances.

*Remove and burn plants that fail to set fruit, and dig up roots to prevent new shoots from appearing.

*Avoid replanting in the spot for several years afterward.

Plant only state-certified plants that were from fruitful stock from reputable nurseries.

*Eliminate nearby wild brambles.

*Maintain good weed control.

*Provide a sunny and open environment for growing blackberries and raspberries.

*Apply fungicides as needed to control anthracnose disease.

EPA Seeking Comments on Guthion Phase Out and New Imidan Restrictions

By Ric Bessin, U.K. Extension Entomologist

To increase protection for farm workers and the environment, EPA is proposing to phase out the remaining uses of azinphos-methyl (AZM, commonly sold as Guthion). Use on almonds, Brussels sprouts, pistachios, walnuts, and nursery stock will be phased out by 2007, and use on apples, blueberries, cherries, parsley, and pears by 2010.

During the phaseout, EPA is proposing additional restrictions, including reduced annual application rates, additional worker monitoring, and larger buffer zones to help minimize risks. The Agency expects growers of these crops to successfully adopt and transition to the available safer alternatives. All other uses of this pesticide have been voluntarily cancelled by the manufacturer.

EPA is also seeking comment on lengthening the Restricted Entry Intervals (REIs) for nine phosmet (commonly sold as Imidan) uses. The Agency is proposing these additional restrictions to mitigate potential risk to farm workers.

Both AZM and phosmet are organophosphate (OP) insecticides and are alternatives for one another in many instances. While AZM provides important pest control benefits to growers of apples and other crops, it poses potential risks of concern to farm workers, pesticide applicators, and aquatic ecosystems. The risk of concern for phosmet is for workers reentering treated areas.

These steps are being taken as part of an ongoing reevaluation of existing pesticides. The Agency has carefully considered grower impacts and ecological and worker risks based on new data and information. EPA is publishing this proposal and inviting public comments for 60-days before issuing a final decision. The Federal Register notice is available on EPA's Web site at http://www.epa.gov/fedrgstr/EPA-PEST/2006/June/Day-09/p8929.htm. Comments may be submitted electronically at http://www.regulations.gov in docket number EPA-HQ-OPP-2005-0061 for AZM and docket number EPA-HQ-OPP-2002-0354 for phosmet. For additional information on AZM, please visit www.epa.gov/pesticides/op/azm.htm. More information on phosmet is available at www.epa.gov/pesticides/op/phosmet.htm.

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