
Kentucky Fruit Facts

March 2003 (3/03)

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

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Fruit Crop News

By John Strang, Extension Horticulturist

Fruit growers should have already applied their nitrogen for this seasons fruit crops and be getting ready to apply preemergent herbicides to get a jump on weed control. Its also not too early to begin laying in a supply of pesticides for the coming season. Tree fruit growers should be applying a copper spray for fireblight to cut down on overwintering bacteria on the surface of their trees and those with a San Jose scale problem should be ready to apply a dormant oil spray as soon as we have a few days of warm weather.

The February ice storm in central Kentucky fortunately caused minimal damage to our fruit orchards. We had a few peach trees at our Horticultural Research Farm in Lexington that did not take the ice load gracefully and have rather odd branch structures now. The annual pruning that we do on orchards, which involves removing branches with weak crotch angles and pruning to support a heavy fruit load makes fruit trees



particularly resistant to ice damage. On the other hand, pecan trees sustained serious breakage due to their brittle wood. Most growers are way behind on pruning, because of our poor weather conditions in January and February. Now is the time to get this done.

I recently saw some vigorous 'Golden Delicious'/MM. 111 apple trees that were treated last season with Apogee 27.5 W in James Bennett's orchard, Buffalo, KY (LaRue county). The growth control was excellent and James was very pleased with the treatments. He made three applications of Apogee at 6 ounces per 100 gal. at one inch of new growth, 2-3 weeks later and then a third final spray 2-3 weeks later when growth resumed. The Apogee was directed only to the upper third of the trees, where water sprout growth was the most vigorous. James expected to spend very little time in pruning this section of the orchard. In addition to excellent growth control, he had absolutely no fireblight in these trees. He did have fireblight in 'Golden Delicious' in another section of the orchard that was not sprayed with Apogee.

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Upcoming Meetings

Mar. 13 Bell County Fruit Tree Pruning Demonstration, Bob Sizemore's orchard, Pineville, KY. 10:00 a.m. Contact Stacy White 606/337-2376.

Mar. 13 Small Orchard Management, Harlan County Extension Office, 519 S. Main, Harlan, KY. 6:30 p.m. Contact Jeremy Williams 606/573-4464.

Mar. 15 Lawrence County Grapevine Pruning Demonstration, 1:00 p.m. Queensland Vineyard, Louisa, KY. Contact: John Sparks 606/638-9495 or Connie Queen 606/686-2235.

Mar. 15 Small Fruit Production Roundtable Discussions, Farm To Table Conference, St. Catherine College, Bardstown, KY. Contact Robert Smith 502/348-9204.

Mar. 18 Campbell County Grape Pruning Demonstration, Highland Heights, KY. Contact David Koester 859/572-2600.

Mar. 18 Morgan County Apple Grafting Workshop, 6:00 p.m. Morgan County Ext. office. Contact: Chris Lindon 606/743-3292

Mar. 21 National Organic Agriculture Standards Satellite Broadcast, Washington State University and Washington State Department of Agriculture. 8:00 a.m. to 10:00 a.m. EST. For program details and registration information, go to: <http://ext.wsu.edu/noas/>

Mar. 22 Kentucky Vineyard Society Grapevine Integrated Pest Management and Pruning Workshop, Old Crow Inn, Chateau Vieux du Corbeau Vineyard, Danville, KY. Contact John Strang 859/257-5685. See program and directions below.

Mar. 25 Opportunities in Commercial Fruit Production, Bath County, Owingsville, KY. 7:00 p.m. Contact Gary Hamilton 606/674-6121.

Mar. 29 Kentucky Vineyard Society Grapevine Pruning Workshop, Princeton Research and Education Center, Princeton, KY. 1:00 p.m. CST. Contact: Joe Masabni 270/365-7541, jmasabni@uky.edu See following program and directions.

Apr. 16 Commercial Apple IPM Meeting, The Bramble Ridge Orchard, 2726 Osborne Rd., Mt. Sterling, KY. Contact John

Strang 859/257-5685. See program below.

Apr. 24 Fruit Tree Budding and Grafting Workshop, Boone County Extension Office, Burlington, KY 7:00-8:30 p.m. Contact Mike Klahr 859/586-6101.

Apr. 26 Kentucky Nut Growers' Association Spring Meeting, Hardin County Extension office, Elizabethtown, KY. Contact Hugh Ligon 270/827-9044.

Jun. 10 Commercial Apple IPM Meeting, Reid's Orchard, Owensboro, KY

Jun. 20 Grape Field Day, Connie Queen's Vineyard, Lawrence County. Contact John Sparks 606/638-9495.

Jul. 8-11 American Society for Enology & Viticulture - Eastern Section, 28th Annual Conference, Radison Hotel Corning, Corning NY. For program and registration information visit the ASEV- Eastern Section website: <http://www.nysaes.cornell.edu/fst/asev> or contact Ellen Harkness: phone 765/494-6704. e-mail: harkness@foodsci.purdue.edu

Jul. 15 Commercial Apple IPM Meeting, Princeton Research and Education Center, Princeton, KY. Contact Joe Masabni 270/365-7541 ext. 247.

Jul. 17 Small Fruit (Blackberries and Blueberries) Workshop, Robinson Station, Jackson, KY. 10:00 a.m. - 3:00 p.m. Contact Terry Jones 606/666-2438 ext. 234 to preregister. Program will be printed in the May Fruit Facts issue.

Jan. 5-6, 2004 Kentucky Annual Fruit and Vegetable Conference and Trade Show, Holiday Inn North, Lexington, KY. Contact John Strang 859/257-5685.

Kentucky Vineyard Society Grapevine Integrated Pest Management and Pruning Workshop - Mar. 22

Old Crow Inn /Chateau Vieux du Corbeau Vineyard
471 Stanford Ave., Danville, KY
Owners, Andre and Linda Brousseau
Phone 859-236-1808
Contact John Strang 859/257-5685

This program has been set up to allow grape growers to obtain a private pesticide applicators license. This will allow growers to apply restricted use pesticides to their own vineyards. If you already have this license, come for the luncheon or show up at 1:00 p.m. for the Grape IPM and Pruning session.

Directions

Follow one of the many roads that lead to Danville, US 127, US 34, US 150. In Danville take Main Street (US 150) to the East. Follow Main Street to the intersection of US 150/ KY 52 (at the Shell Station) and bare right KY 52 (at the Shell Station) and bare right where it remains US 150 and becomes KY-52/Stanford Ave. Look for Old Crow Inn and Chateau Vieux du Corbeau Vineyard on your left at the second stop light, 471 Stanford Ave. (approx. 1.1 miles after the turn).

Program (All times EST)

- 9:30 am Pesticide Certification Training For A Private Applicators License (Category 1) - Jerry Little
- Noon A box lunch will be provided at a cost of \$10.00 for all those that preregister. (Sandwich, pasta or potato salad, chips, dessert and drink, also vegetarian option)

Preregister for lunch by calling Andre or Linda Brousseau at Old Crow Inn 859/236-1808 by March 20.

- 1:00 pm Vineyard Disease Management
- John Hartman
- 1:30 Vineyard Insect Management
- John Strang
- 2:00 Herbicide Sprayer Calibration
- Joe Masabni
- 2:30 pm Pruning French Hybrid and American Grapes - John Strang and Chris Smigell

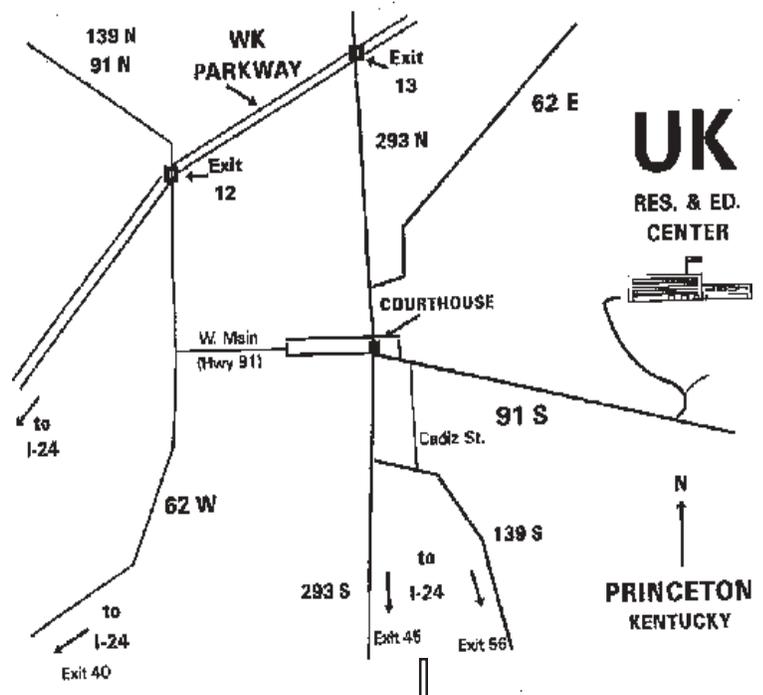
Kentucky Vineyard Society Grapevine Pruning Demonstration - March 29

Princeton Research and Education Center
Princeton, KY
10:00 a.m. CST - Noon

We will meet at the Research and Education Center and then proceed to the vineyard as a group.

This demonstration will cover the pruning of American, French American hybrid and European grapes

Contact Joe Masabni 370-365-7541 ext. 247.



New Apple Varieties are Disease Resistant

By John Hartman, U.K. Extension Plant Pathologist

Kentucky apple growers will have some additional choices of disease-resistant varieties to raise in their orchards. Moser Fruit Tree Sales and Vanguard Nurseries have recently announced the new Rezista® line of fruit varieties that are unique for their resistance and tolerances for many of the most common apple diseases, including apple scab, powdery mildew, fire blight, and bacterial canker. Some varieties offer resistance to red spider mite. Some of the Rezista® varieties provide apple scab resistance by use of multiple genes, which offer more durable resistance. Most current scab-resistant apple varieties rely on a single gene for resistance. Research in Europe has shown that scab resistance provided by a single gene can be overcome by mutations in the strains of the apple scab fungus present in an orchard. These varieties have not been evaluated under Kentucky growing conditions and thus are suggested for trial.

The four new disease-resistant apple varieties on offer now include:

- Rezista® Early Jonathan is a dark red apple developed with resistance to apple scab and bacterial canker and tolerance to fire blight and powdery mildew. It is not a true Jonathan, but similar in appearance.
- Rezista® Gold Granny is a yellow-green apple developed with resistance to apple scab and tolerance to powdery mildew. It is not a true Golden Delicious or granny, but similar in appearance.
- Rezista® Gala is a dark red apple with subdued stripes developed with resistance to apple scab, red spider mite, bacterial canker, fire blight and tolerance to powdery mildew. It is not a true Gala, but similar in appearance.
- Rezista® Rome is a red and yellow bi-colored apple developed with resistance to apple scab and tolerance to powdery mildew. It is not a true Rome, but similar in appearance.

Commercial Apple IPM Meeting - April 16

The Bramble Ridge Orchard
2726 Osborne Rd., Mt. Sterling, KY 40353
Terry and Cindy Peake, Owners
859/498-0502

Directions:

Take I-64 towards Mt. Sterling and get off at exit 113 proceeding west on US 60 towards Mt. Sterling.

At the first traffic light (approx. 1.5 miles) turn left on the bypass.

Proceed 1/4 mile to the blinking yellow caution light and turn left on Old Owingsville Rd.

Turn right (150 yards) on Osborne Rd.

Proceed 1.5 miles to The Bramble Ridge Orchard (2726 Osborne Rd.), which will be on your right. Look for the barn and sign.

Program

All times EST

- | | |
|------------|---|
| 10:00 a.m. | Registration |
| 10:15 | Apple Grower Round Table Discussion |
| 11:00 | Insurance Options for Apples and Peaches - Jeremy Hinton |
| 11:30 | Managing Early Season Apple insects - Ric Bessin |
| 12:00 | Lunch
Lunch will be available at cost (\$6.00) for those that preregister. |

Preregister for lunch by calling Mary Ann Kelley at 270/365-7541 Ext. 216 between 8:00 a.m. and 4:30 p.m. CST weekdays by April 14 and give her a count for the Apple IPM meeting at The Bramble Ridge Orchard.

- | | |
|-----------|---|
| 1:00 p.m. | Tour of The Bramble Ridge Orchard - Terry and Cindy Peake |
| 1:30 | Managing Apple Scab and Fireblight - John Hartman |
| 2:00 | Early Season Weed Control in Apples - Joe Masabni |
| 2:30 | Frost Control and Thinning - John Strang |

Will Fire Blight be a Problem in High Density Apple Orchards?

by John Hartman, U.K. Extension Plant Pathologist

Fire blight has been a destructive disease the past two seasons in Kentucky. This bacterial disease, caused by *Erwinia amylovora*, attacks apples and pears and kills blossoms, shoots, limbs, and, sometimes, entire trees. Although common and wide-spread here the past two years, disease out-breaks are typically very erratic, causing severe losses in some orchards in some years and little or no significant damage in others. Fire blight occurrence is erratic due to differences in the availability of overwintering inoculum, variations in local weather conditions, and the stage of development of the cultivars when inoculum and weather are favorable. Thus, this disease is difficult and costly to control. During recent years, many Kentucky growers have been using knowledge of the biology of the disease, weather monitoring instruments, and computer-based forecasts, to improve disease prediction and better manage fire blight than in years past.

High density apple plantings, common in Europe, are becoming more popular in Kentucky. Growers trying high density methods find that apples in high density plantings come into bearing sooner, require less pruning, and are more easily sprayed and harvested. However, high density plantings could increase the risk of fire blight. There are several reasons for this.

- More trees per acre means potentially more disease. Instead of planting 100 to 200 trees per acre, we now routinely set between 250 and 600 trees per acre.
- High tree densities are accomplished by use of size-controlling rootstocks such as Mark, M-9 and M-26 which are widely used and very susceptible to fire blight. We know that rootstock fire blight can kill trees and that bacteria infecting shoots and blooms may enter the rootstock internally through the apparently healthy limbs and trunk of the scion as well as through rootstock suckers and bark cracks and injuries. Trees with rootstock blight may die or they may survive, but with less vigor. Rootstocks such as M-7A and M-111 appear to be more tolerant.

- Fresh fruit market demands have encouraged widespread plantings of many new varieties such as Gala, Fuji, Braeburn, Granny Smith, Empire, Gingergold, and Jonagold which, along with older favorites like Rome, Ida Red and Jonathan are all very susceptible to fire blight.
- It is possible that the tree training systems needed to make high density plantings more productive earlier, are reducing some of the natural physiological mechanisms that resist the progress of infections.
- When fire blight is active and thin strands of bacteria are being blown about in a rainstorm, it would seem that these infective bacterial strands would reach more nearby trees in a high density planting than in a conventional one.

Managing Fire Blight. With changes in how apples are grown, reminders of fire blight disease management may be in order. Most growers will need to take a more aggressive approach to managing fire blight in high density plantings. Many of these strategies were developed by the late Dr. Paul Steiner, and are based on his tree fruit research at the University of Maryland.

- Use less susceptible rootstocks, if possible.
- Remove and destroy all visibly infected spurs, shoots and limbs during the dormant pruning period. This is essential. Remove pruned material from the orchard.
- Apply a complete coverage of copper spray at green tip using a spray volume that ensures thorough wetting of all bark and bud surfaces on all trees in a given orchard block, not just on susceptible varieties. This retards primary colonization of these surfaces during the pre-bloom period. Copper is not effective in killing the bacteria harbored within cankers or in preventing that inoculum from being extruded onto the bark surface. One benefit of the high density planting

- scheme is that improved spray coverage is likely.
- Use the MARYBLYT forecasting program, which has worked very well in Kentucky for identifying periods of high risk for infections and in identifying specific infection events when they occur.
- Apply the antibiotic streptomycin as needed based on the MARYBLYT forecast. This results in better timing and more efficient fire blight control. Be aware that excessive use of streptomycin can result in fire blight bacteria that are resistant to the antibiotic.
- Use the MARYBLYT program to help in monitoring for new infections. Blossom blight, shoot blight, and canker blight timing is revealed by this information.
- Keep in mind that, because fire blight bacteria multiply very rapidly and new inoculum is repeatedly dispersed throughout an orchard by wind, splashing rain and insects, a little bit of early infection can go a long way. An aggressive fire blight management program requires that all infections, regardless of their apparent insignificance in location on a tree or time of year, be removed quickly as soon as symptoms develop.
- Where the number and distribution of strikes is great, it may be best to leave most strikes and cut out only those that threaten the main stem. Dr. Steiner suggests that if you can remove all of the blight showing within two days after it begins to appear (assuming that you are looking for fire blight every day), do it, otherwise, let nature take its course. Although often recommended, tool sterilization between cuts is generally not needed. He found that the bacteria exist in the internal bark tissues of limbs 3 to 9 feet ahead of any visible symptom and that even where pruning tools and the bark surfaces where cuts are to be made are both thoroughly sterilized, small cankers still develop around the cutting wound in a large number of cases.
- Cutting to remove fire blight should be done following the “ugly stub” procedure. Here, blighted shoots and limbs are cut 8 to 12 inches or more below any visible symptoms (same as in traditional recommendations), but leaving a naked stub in wood that is at least 2 years old and approximately 4 to 5 inches short of the next branch union or spur. The inevitable cankers that will form on many of these cuts are then in a position so that they can be easily removed during the dormant period when it is too cold for the bacteria to produce a new canker. Finding such “ugly stubs” in the winter is made easier if, at the time of cutting, the stubs are spray painted with bright orange paint. This two-step cutting procedure is designed to reduce inoculum by eliminating cankers from the orchard and to reduce early orchard colonization the following season. Where removal cuts are made in the traditional fashion of pruning back to the next healthy branch union, many small cankers will be missed during the dormant pruning effort and will provide inoculum for the next year’s epidemic. Remember that, in years when fire blight is not severe and only a few trees are involved, one can afford more severe cutting operations.
- Do not combine the practices of fire blight removal with pruning and training of young, high-density trees.
- Although biological control agents are being developed, more effective biological agents are required if their use is to become widespread.
- Manage insects such as leafhoppers, plant bugs, and psyllids to reduce possible disease transmission.
- Use less nitrogen fertilizer to reduce orchard vigor; integrate use of the growth regulator Apogee to retard shoot growth.
- Long range plans for establishing new orchards with fire blight susceptible cultivars should include contingency plans for controlling the disease without streptomycin.

Pesticide Groups for Berries

From Fruit Times Vol 22, No.1, Jan. 7, 2003,
Pennsylvania State University

The following article summarizes the groups that berry fungicides fall into for resistance management purposes. Insecticides, miticides, and herbicides will be covered in future issues.

You will see, on some of the newer pesticide packaging, words such as "Group 11 Fungicide", as with Cabrio, for instance. Growers often ask with what other pesticide they should alternate a particular material, and this labeling should help to answer their questions. However, the labeling is voluntary, so only time will tell how many packages bear this information. The "activity groups" into which pesticides fall are based on the mode or target site(s) of action that each pesticide has. To delay the buildup of resistance to a particular chemical, it should be alternated or combined with a material with a different mode of action (one that falls in a different activity group). With fungicides labeled for berry production in PA, the activity group, and fungicides currently in each category are listed below.

This information was obtained from "Pesticide Registration (PR) Notice 2001-5, Guidelines for Pesticide Registrants on Pesticide Resistance Management Labeling" on EPA's Web site <http://www.epa.gov>.

Fungicides:

- Group 1 - Inhibition of tubulin formation:
benomyl (Benlate) and
thiophanate- methyl (Topsin M)
- Group 2 - Affect cell division, DNA and RNA
synthesis, and metabolism
(dicarboximides): iprodione (Rovral)
and vinclozolin (Ronilan)
- Group 3 - Demethylation inhibitor: myclobutanil
(Nova)
- Group 4 - Phenylamides - affect RNA synthesis:
metalaxyl (Ridomil)
- Group 9 - Anilinopyrimidine: cyprodinil (one of
the active ingredients in Switch)
- Group 11 - Quinone outside inhibitors:
azoxystrobin (Quadris and Abound)
and pyraclostrobin (Cabrio)

Group 12 - Phenylpyrroles: fludioxinil (the other
active ingredient in Switch)

Group 17 - Hydroxylanilide: fenhexamid (Elevate)

Group M - multisite activity: fosetyl-AI (Aliette),
fungicides containing copper or sulfur
as the active ingredient, thiram
(Thiram), ziram (Ziram), captan
(Captan or Captec), and dodine (Syllit)

You'll notice that Group M fungicides are the ones about which we generally (but not always) worry less about resistance buildup, and often recommend for combination or alternating with other fungicides that have a more specific activity. Fungicides that fall into the same activity

Entrust Labeled for Use in Organic Production

By Rick Weinzierl, Extension Entomologist,
University of Illinois, Illinois Fruit and Vegetable
News, Vol. 8, No 20, February, 2003.

Dow Agro-Sciences recently announced that Entrust, an insecticide product containing the active ingredient spinosad (same as in SpinTor) recently passed all the regulatory "hoops" to be certified for organic production systems. Spinosad is a microbial insecticide that is produced through the fermentation by the soil organism *Saccharopolyspora spinosa*. Limited quantities of this product will be made available in 2003. A rate of 1.25 oz Entrust is the equivalent active spinosad in 2 fl oz of Tracer 2SC or 4 fl oz of SpinTor 2SC. Entrust will be sold in a one pound re-sealable foil pack. There will be 12 packs per case, and 1 oz and .25 oz scoops will be placed in each case. Entrust is OMRI-certified and has met the NOP (National Organic Program) requirements.

Spinosad will be a huge addition to the organic insecticide market, because it is far more effective than many of the other compounds allowed in organic production. Among the uses that likely will be especially popular are apple maggot and codling moth control in apples, Oriental fruit moth control in peaches, and corn earworm control in sweet corn. In SpinTor, the active ingredient spinosad has not been as effective as the best of the

synthetic insecticides (such as Warrior and Capture in sweet corn) against these pests, but in comparison with choices such as pyrethrin, Surround, or horticultural oil, spinosad is clearly more effective.

Organic growers should check out the Entrust label, see where it might help them against troublesome insect pests, and be prepared to pencil out the economics....Entrust is not inexpensive.

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Subject: Fruit Facts

Message: subscribe ky-fruitfacts,
followed by a blank line

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John G. Strang,
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