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Kentucky Fruit Facts

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Fruit Crop News

by John Strang, Extension Horticulturist

Apple thinning is again a challenge this year. Some growers have had frost injury, some have had poor pollination due to rainy cool weather during pollination, while others have set an excessively heavy crop and are dealing with rainy weather during thinning. In the first two cases the apples may not need to be chemically thinned and can be quickly hand thinned where fruit set may be a little heavier on the trees. If chemical thinning is required in these cases the apples will thin very easily and high rates of thinners should not be used.

Those of you that are on our apple alert and grape alert list serves know that this has been a season favorable for disease development on apples and grapes. We have had numerous scab, fire blight, and cedar apple rust infections on apples and numerous black rot and downy mildew infections on grapes.

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Most strawberry growers should be harvesting right now. Several growers have indicated that they have a heavy crop, although some have lost fruit to frost injury.

In the past blackberry growers have noted an occasional ripe berry with several white drupelets scattered among the black ones, while others have had serious problems with this. I have always heard that this is a result of sunburn and in many cases this is true. However, recently I have found this can be the result of thrip damage and that this is becoming more of a problem in the midwest. If berries with white drupelets have been a serious problem for you in the past, try tapping flower clusters vigorously several times over a white piece of paper. Thrips are very small, slim, straw colored insects that are about 1/16 inch long. If 12 to 24 thrips are found in one flower cluster, you might want to spray with Capture 2 EC. One application may be made after bloom and should be applied between bloom and harvest of the first ripe fruit This might be a little difficult, since some blackberries can have flowers and ripe fruit on the plants at the same time. Capture is toxic to honeybees so bloom numbers on the plants should be minimal and sprays should be applied

in the evening. The preharvest interval for Capture is 3 days and it has a 12 hour Restricted-Entry Interval (REI). Capture is a Restricted Use Pesticide and should be applied in a minimum of 50 gal of water per acre.

Blackberry and black raspberry growers should be examining their plants for orange rust development. Orange rust infected plants will have leaves that are smaller than normal with a slight chlorosis (yellowing) around the leaf margins. Infected plants should be rogued out and burned, roots and all. As the disease progresses, the leaves will turn bright orange on their undersides. This disease is systemic and can not be removed from the plant once it is infected. We want to eliminate these plants from the planting before they get to the stage where orange spores are visible on the undersides of the leaves and they are releasing spores to infect other plants. If you find orange rust in your planting, please contact John Strang at 859/257-5685 or e-mail, jstrang@uky.edu We are developing a map to determine where orange rust is more of a problem in the state.

Please note that John Hartman has moved to a new office. His e-mail remains the same, jhartman@uky.edu , but his phone number has changed to 859/257-7445.

Upcoming Meetings

Jun. 7 Kentucky Vineyard Society Grape IPM and Summer Meeting, Smith Berry Winery, Chuck and Mary Smith owners, New Castle, KY 502/845-7091. See program below. www.smithberrywinery.net Preregister for the luncheon by calling Smith Berry Winery.

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

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.

Jul. 22 Fruit and Vegetable Twilight Tour, Horticultural Research Farm, Lexington, KY. Tour fruit, vegetable and ornamental research plots. 6:00 p.m. until dark. Contact John Strang 859-257-5685.

Oct. 25 Kentucky Nut Growers Association Fall Meeting, Scott County Extension Office, Georgetown, KY. 9:30 a.m.-3:00 p.m. Contact Hugh Ligon 270/827-9044.

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

Apple Insect Update

by Ric Bessin

We are beginning to see the first codling moth activity in traps in Kentucky (May 28). Many orchards may have already reached the biofix, that's the fifth moth captured per trap. This means that you need to be watching trap catches very closely, at least twice a week. When the fifth moth is captured, called the biofix date, you will need to begin accumulating degree days. A degree day is when the average temperature for a 24-hour period is one degree over 50F. For example, if the high yesterday was 65F and the low 45F, then the average would have been 55F. We would have measured 5 degree days yesterday (55F - 50F = 5 degree days). Once you have reached the biofix date (fifth moth), you begin accumulating the degree days and use this to time the codling moth sprays.

With the newer materials for codling moth control, some products need to be applied earlier, others later. The newer products are very sensitive to proper timing, they may not work if applied at the same time that Guthion or Imidan

was applied in the past. The following table lists some of the recommended target timings for these sprays.

Guthion/Imidan ————250 degree days
Assail 70 WP ————- 150 degree days
Danitol ————————250 degree days
Confirm/Intrepid ————150 degree days
Esteem————————100 degree days
SpinTor ————————200 degree days

San Jose Scale

Damage by San Jose scale is evident in some orchards. In some areas, levels have reached the point where portions of the commercial orchards have been killed. San Jose scale injects a toxin as it feeds, and large numbers can kill trees in just a couple of years if not managed properly. The recent loss of two insecticides has put our San Jose scale management program in jeopardy, but the recent registration of Esteem 35WP provides us with a new tool to manage scale problems.

If you haven't done so already, you need to survey you orchard for SJS, and if it is a problem, then use Esteem when the crawlers are active. Electrical tape wrapped sticky-side out on scaffold limbs can be used to monitor for the crawlers. **Based on heat unit calculations from pheromone traps, SJS crawlers will be moving and sprays will need to go on about the last week of May**. Watch for the yellow crawler accumulations on the electrical tape to determine the exact time to spray in your orchard.

Kentucky Vineyard Society Grape IPM and Summer Meeting - June 7

Smith Berry Winery / New Castle, KY
Chuck and Mary Smith owners; 502/845-7091

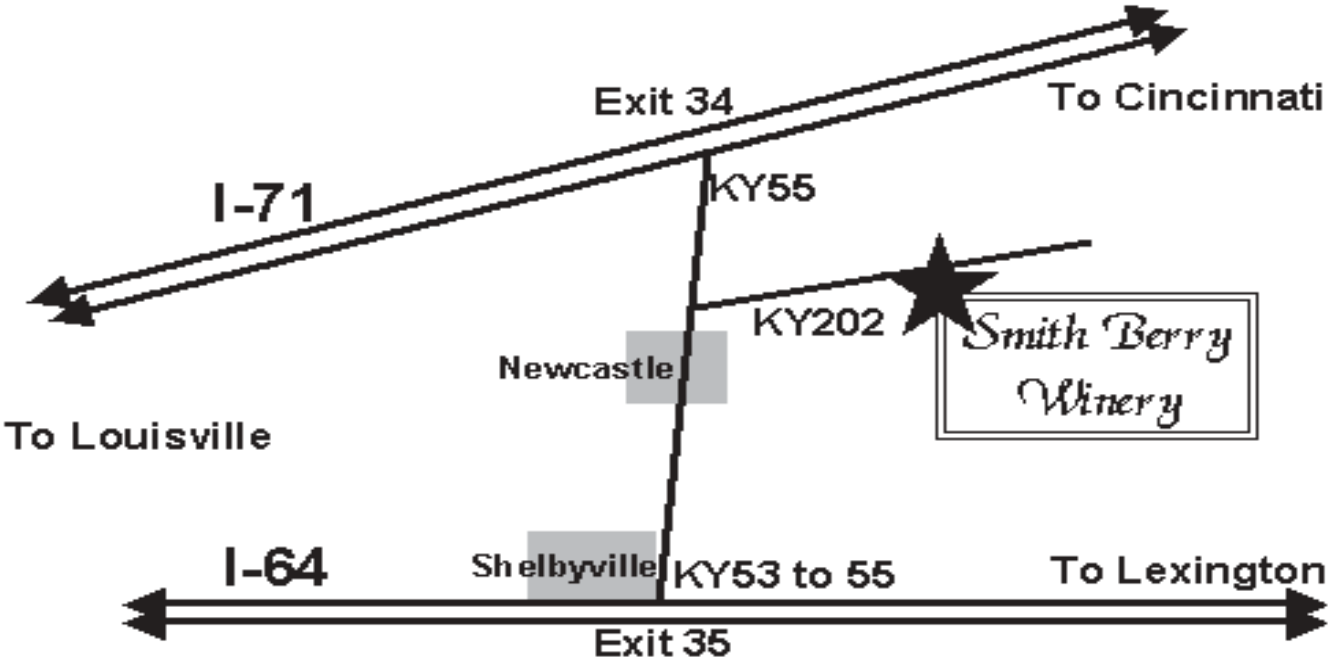
Directions:

From Louisville or Cincinnati:
Take Interstate 71 to exit 34, Campbellsburg. Turn onto Hwy 421 S. Drive about 8 miles. Turn left onto Hwy 202, Drennon Rd. We are the second farm on the right. Watch for signs!

From Lexington or Louisville:
Take Interstate 64 to exit 35, Shelbyville. Turn onto KY 53 N, continue straight onto Hwy 55. Drive through New Castle and take the first right outside of town, Hwy 202, Drennon Rd. Watch for signs. We are located on the right.

Program: All times CDST

9:30 am Registration
9:45 Welcome to Smith Berry Winery - Chuck and Mary Smith
9:55 Opening Remarks - Dave Loney, President, KVS
10:00 Vineyard Insect Management - Dr. Ric Bessin, UK Extension Entomologist
10:30 Controlling Vineyard Diseases - Chris Smigell, UK Small Fruit Extension Associate



11:00	Wine Grapes and What has Worked in Missouri - Dr. Jim Moore, Director, Missouri State Fruit Experiment Station, SMSU Mountain Grove, Missouri
11:45	Edible Grape Flower Products - Dr.Sandra Bastin, UK Foods and Nutrition Specialist
Noon	**Lunch** (*Lunch will be available for $20 for those that preregister.)*

Preregister for lunch by calling Smith Berry Winery, 502/845-7091 by June 5th.

1:00 pm	Yeast Options (Speaker to be announced.)
2:00	Mid-summer Weeds - Dr. Joe Masabni, UK Fruit & Vegetable Specialist
2:30	Canopy Management - Dr. John Strang, UK Fruit & Vegetable Specialist
3:00	Short KVS Board of Directors Meeting

Commercial Apple IPM Meeting - June 10

Reid's Orchard
Owensboro, KY
Billy Reid, Owner
270-685-2444

Directions:
Upon entering Owensboro, take the US 60 By Pass to the right (east). The By Pass ends at US 60 East; turn right. After approximately two or three miles, KY 144 Y's off to the right. Take KY 144 for one half mile; Reid's Orchard is on the right.

Program:
All times CDST

10:00 a.m.	Welcome Billy Reid
10:10	Apple Grower Round Table Discussion - Coleman Mathis
11:00	Managing Mid-season Apple Insects - Ric Bessin
11:30	Managing Mid-season Apple Diseases - John Hartman
Noon	Lunch Lunch will be available at cost (in the $6.00 range) 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 June 9 and give her a count for the Apple IPM meeting at Reid's Orchard.

1:00 p.m.	Sprayer Calibration - Joe Masabni
1:15	High Density Apple Training and Pruning Workshop - Billy Reid and John Strang
2:30	Adjourn

Cedar Rust Diseases Have Been Active This Spring

by John Hartman

Cedar-apple rust, cedar-quince rust, and cedar-hawthorn rust have been visible and active on cedars and Junipers during the past week. The bright orange gelatinous telial horns (fungal fruiting structures) have been highly visible whenever there has been rain or moist conditions.

Cedar- apple rust. Spores from the cedar-apple rust fungus, which forms the large golf-ball-sized galls which expand to the size of an orange colored baseball when wet, will be infecting leaves and sometimes flowers and fruits of apple and crabapple now.

Cedar-hawthorn rust. Similarly, spores of the cedar-hawthorn rust fungus, which forms the pea-sized galls which expand to orange gelatinous structures up to an inch in diameter are infecting hawthorn leaves now.

Cedar- quince rust. Cedar quince rust does not form galls on cedars and junipers, but instead causes twig and branch cankers. These twig and branch segments can be observed during wet weather as an orange, gelatinous coating on these cankers. Cedar quince rust will infect fruits of hawthorns, apples, and crabapples and will infect small twigs and branches of these trees as well.

Expect additional infections of hawthorns, apples, and crabapples by these rust fungi for the next week or two. Symptoms on these hosts will appear in a month or two.

Management of Grape Frost Injury

by Tony Wolf and John Strang

Unfortunately a frost the morning of April 23 caused substantial damage to some grape vineyards, mostly in the central and northern Kentucky areas. Many growers are concerned about what should be done in this situation.

New growers with young vines, which are closer to the ground where it is colder are liable to see the new growth completely killed. This is hard on the vines, because they are growing on reserves stored from last season. In this case, let the new buds develop below the ground and train up new trunks as was done the first season.

The following is an excerpt from an article by Tony Wolf, Virginia Tech. Viticulturist, published on last seasons Viticultural Notes.

What can be expected with frost-injured vines? Frost will produce variable levels of injury to vines, depending upon the degree and extent of injury, as well as the variety. Longer shoots might only be affected near their distal ends, and regrowth by lateral shoots can, in time, compensate for the loss of the primary shoot tip. There is no guarantee, however, that the flower clusters on such shoots are undamaged, or that they will set a normal complement of berries. But if the clusters remain turgid and are well below the point of apparent shoot damage, there's cause for optimism that some of this crop will ripen. In other cases, some shoots are damaged while others escape. Secondary buds will develop from frosted canes or cordons, but the net effect is two or more populations of shoots, each ripening their crop at different rates. Much of the variability in cluster development that is apparent now will translate into variability in fruit maturation. Unfortunately, the solution to this problem is to sequentially harvest the grapes as they ripen, meaning two or more harvest dates in the affected blocks, with pickers who are trained to visually recognize the differences in stage of fruit maturity.

(After this message was sent out on our Kentucky Grape Alert list serve, Dr. Jerry Brown sent me an e-mail and pointed out that in this situation commercial growers in Arkansas and Missouri evaluate the amount of frost damage to the primary bud clusters. If a large portion of these are damaged they remove all the primary bud shoots to derive their entire crop from secondary buds. This promotes uniform ripening, simplifies pesticide applications and allows for once over harvest.)

Even when all shoots are completely frosted, vines will normally produce a second canopy from latent buds (this includes vines that were planted this spring). Depending upon variety, the secondary shoots may bear a partial crop, but rarely more than 25% of what the primary crop would have been. Varieties with extremely fruitful secondary buds, such as Seyval, may do a bit better.

Management of the vines during the course of the growing season may need to be adjusted in response to frost injury. The loss of crop is demoralizing of course and one might be disinclined to exercise the same level of pest management and canopy management that he/she would expend with fruitful vines. Remember though that the light environment and carbohydrate status of this year's shoots will determine bud fruitfulness in the following year. Shoot thinning and shoot positioning may still be necessary. The pest management schedule can be modified, depending upon the presence or absence of crop. Lacking crop, one could justifiable cut back on black rot and botrytis fungicides, as well as the grape berry moth sprays. It would still be important, however, to keep foliage free of the mildews and to avoid excessive japanese beetle feeding. Unfortunately, a partial crop, if you wish to harvest it, will still require a full pest management program. New growers, experiencing their first episode of frost, may be concerned about the long-term welfare of the frosted vine. There is no point in attempting to remove frost-damaged tissues from vines; the affected tissues will be shed in time. And, unless the temperatures were very cold, it is unlikely that damage to the canes or cordons will have occurred. Be patient.

Strawberry Insect Pests

by Ric Bessin

Spittlebug are annoying pests of strawberries that can stunt plants and reduce berry size. More important to some producers, particularly u-pick growers, is the annoyance that spittle masses cause pickers. Although the spittle is harmless, pickers object to being wetted by the insect excretion. Initially the nymphs feed at the base of the plants, but later move up to the tender foliage. Feeding may cause leaves to become wrinkled and dark-green. While fruit may be stunted, significant yield loss seldom occurs. High spittlebug populations are often associated with weedy fields, so proper weed control along with other practices encouraging healthy plants are important. Fortunately, there is only one generation per year.

Prebloom sprays are rarely necessary for spittlebugs, but u-pick growers should keep populations less than one spittle mass per square foot through prebloom to appease customers. Begin estimating spittlebug density at 10% bloom by inspecting five to ten 1-square-foot areas per acre of strawberries at two week intervals. It will be necessary to spread plants and inspect the crowns as well as leaves and stems. Control is considered at one spittlebug per square foot (u-pick) up to four to five per square foot.

Another serious preharvest pest of strawberry is tarnished plant bug. It can cause considerable damage to strawberries by puncturing young fruits before receptacles expand. These damaged areas do not develop along with the rest of the berry, resulting in misshapen "catfaced" fruit. The damage may range from slight deformation to complete loss of market value of the crop.

Most damage takes place just after petal fall. Early June bearing varieties can escape most tarnished plant bug injury because pest populations are small and consist of less damaging early instars. Late maturing cultivars are more susceptible to damage. Plantings near alfalfa fields, woods, or weedy areas are more prone to damage. Alternative hosts, especially weeds and seed-producing plants should be eliminated around the planting. Regular mowing or weeding may help, but should be avoided during the blossom period. From pre-blossom until harvest, shake blossom or fruit clusters from ten to fifteen plants per acre over a light colored pan. Treatment is suggested when levels reach an average of 0.5 nymphs per cluster.

Apple IPM Meeting Summary, Peake's Orchard, Mt. Sterling, KY

By Joe Masabni, Extension Fruit and Vegetable Specialist

The meeting was held on Wednesday 4/16/03. The Peake's, Bramble Ridge Orchard was started in June of 2002. Terry and Cindy and their son Steve were our hosts. There were 22 growers attending the meeting. The Peake's have a beautiful high density trellised orchard, which is all trickle irrigated. They have about 2,600 apple trees on 5 acres with 13 different varieties, all on Bud. 9 rootstock.

The meeting started with a roundtable discussion where various subjects of interest were brought up. Some of the questions asked were related to the new products, particularly Esteem which controls San Jose Scale. Esteem is a new insecticide and was praised highly by Billy Reid who used it last year and will use it again. Although Esteem costs about $30/ acre, which is relatively costly when compared to other insecticides, Billy Reid pointed out that this is cheap compared to the cost of losing the whole tree to scale.

Jeremy Hinton, an apple grower from Buffalo, KY, discussed multi-peril crop insurance. He described the program, its costs and returns. The point that was most discussed by growers was the fact that growers have to submit 4 to 5 years of their most recent yields as a reference base for insurance coverage. In the case that a disaster wipes out the yield completely, the program is generous in its refund to the grower. However, the new yield or lack of it, then is incorporated in the next year's estimates of the average production for the orchard. For example, let's say you have 500 bu/A on average in the last 5 years. This year, your yield is 0 bu/A. You get a refund for 500 bu/ A, but next year, the average yield of your orchard is now (500+500+500+500+0)/5 = 400 bu/A.

After lunch, Ric Bessin described the benefits of regular scouting and locating pheromone traps in the field, all parts of a good IPM program. Ric also answered many questions related to early-season insect control.

The Peake's invited the attendees to take a brief tour of the orchard. In general, experienced fruit growers were very pleased in the health and vigor of the 1 year old orchard, and many commented that Terry Peake has done a wonderful job considering that he is an engineer by training with no previous fruit growing experience to speak off. Billy Reid gave some pointers on training and pruning the young apple trees. Terry Peake showed us a dead tree that failed to leaf out this spring, even though its size indicated that the tree was alive as of last fall when it went dormant. After digging up the root, John Hartman determined that the most probable cause of death was Phytophthora root rot. Final determination depends on growing a culture in the lab, so the dead root was taken to the UK Plant Diagnostic Lab. Terry also mentioned that southern blight took a toll on many young trees last season. A brief discussion was conducted in the field regarding weed control. Experienced growers observed that although the field looked weedy, the weeds were mostly spring annuals such as common chickweed and are of little concern to them in their operation. Terry uses a 15 gallon ATV mounted sprayer with an electric pump. Terry sprays Roundup manually by spot application of Roundup in the rows avoiding spraying the tree bases. As a weed control specialist, I talked a little on the need of applying preemergence herbicides. The spring annuals are of little concern since they will soon die, with or without herbicides. It is the weeds that you don't see that growers should be concerned about. The summer grasses and broadleaves that will soon start to germinate will keep a grower busy with repetitive sprays if not controlled with a preemergence herbicide. Enclosed are some photos of the orchard taken during the tour.

After the field tour, John Hartman discussed the most common early season diseases of concern in apple production, fireblight, apple scab, and cedar apple rust. He brought samples of diseased leaves and twigs which helped everyone understand what he was talking about. John Hartman also talked about the benefit of using a disease-predicting weather station. Even though the initial cost of the system may be $800, the unit will pay for itself in saved sprays that otherwise would have to be applied if a grower follows the spray schedule to the letter.

Following John Hartman, I continued the discussion that was started in the field on weed control and stressed 2 points:

A. Preemergence weed control is more important than postemergence weed control. Half the battle is won with a single application of a preemergence herbicide. There are at least a dozen choices of preemergence herbicides to choose from, and growers should not limit their use to postemergence non-selective herbicides.

B. Although weed control is not a grower priority when compared to disease or insect control, I tried to impress on the audience that a healthy and vigorous orchard will not be achieved with weeds growing under the trees.

I also read the description of a couple of herbicide spray recommendations to explain key words and their real meaning so that a new grower will not be intimated by such information. Finally, using numbers provided by Terry Peake on how much water and herbicide were used, and how much time he spent spraying, I calculated that Terry will benefit from buying a better herbicide sprayer that will drastically reduce his spray time and the amount of water and herbicide applied.

John Strang talked next on the role of flower and fruit thinning with respect to the health of the tree in general, and the crop yields in specific. He discussed the currently available thinners, NAA, NAD, Accel, and Sevin. John noted that many orchards are of medium bloom vigor and will benefit from a moderate chemical thinning program.

I believe that everyone benefited from this meeting. We all enjoyed the excellent weather and most importantly, the cordial hospitality of Terry and Cindy Peake.

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