Cooperative Extension Service
University of Kentucky College of Agriculture, Food and Environment
Lexington KY 40546

Jan - March Newsletter 2014
http://www.uky.edu/hort/documents-list-fruit-facts

Kentucky Fruit Facts

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Fruit Crop News

John Strang, U.K. Extension Horticulturist
Tom Priddy and Matt Dixon, U.K. Ag. Meteorologists

Some growers were ahead on their pruning, but the extremely cold weather in January and February kept most looking for inside jobs. This might be a good year to prune apples a little lighter than normal due to our heavy 2013 crop and a possible low number of flowering spurs for 2014. Prior to pruning assess the number of flowering spurs and prune accordingly. Keep an eye out for vole population increases as these rodents flourish beneath the snow cover.

March is a good time to apply fertilizer when the ground isn't frozen. This will be a good year to apply half the nitrogen now and then make a determination as to whether to apply the second half after bloom based on flower bud survival on peaches and thornless blackberries.

Frigid conditions left much of the Commonwealth in a deep freeze through the January and February. On multiple occasions, Arctic air pushed into the state and sent temperatures well below zero and we all learned about and experienced the polar vortex . Over the course of January, low temperatures only averaged 18 degrees across the state, which is 6 degrees below normal. The National Weather Service in Louisville reported that this was the coldest January since 2003 for the cities of Lexington and Louisville. In addition, the state average temperature of 28 degrees was the 13th coldest on record going back to 1895. Saying this, it was still nowhere near the record set back in 1977 when the area

averaged a temperature of 18 degrees. Overall, this cool trend has led to 4 of the first 5 weeks of 2014 seeing below normal temperatures.

The following cold temperature extremes occurred when Kemtucky fruit crops were at their hardiest levels however we have sustained flower bud injury on some fruit crops. Several growers have indicated that they have lost their peach crops to low temperatures while others have lost a considerable number of flower buds. Flower bud survival will depend on variety hardiness, tree vigor and the low temperature extremes that were reached. Multiple drops to low temperatures compound the injury. Based on initial evaluations at our U.K. Horticulture Research Farm in Lexington, cold sensitive vinifera grape varieties such as Lemberger show serious bud damage. Chardonnay, Cabernet Franc and Cabernet Sauvignon are also damaged at varying levels. Hybrid grapes show some damage and more sensitive varieties like Chambourcin tend to have more damage. Growers will need to evaluate damage in their vineyards and prune accordingly. Thornless blackberries lose about 10 percent of their crop for every degree below 0°F and it appears that we have lost the crop in a number of areas. Since it is difficult to assess dormant cane injury, it is best to wait until plants begin growth to determine injury and adjust your pruning level. We feel that plasticulture and matted row strawberries, other tree fruit, blueberries and raspberries are all in good shape. Snow is helpful in that it insulates fruit crop roots from extreme cold.

The three month National Weather Service extended weather outlook for Kentucky is for above normal temperatures and precipitation across the state.

(FRUIT HUMOR)
Why were the little strawberries sad?
Because their parents were stuck in a jam.

Inside this Issue:

C.A. "Ottie" Pantle, Jr.

It is with great sadness that I report that the Kentucky fruit and vegetable industry lost a great grower, agricultural and community leader. C.A. "Ottie" Pantle, Jr. passed away Sunday, January 19, 2014. Ottie was born in Owensboro, graduated from the University of Kentucky and was a member of the Kentucky Vegetable Growers Association for 36 years. He untiringly worked for many years with Kentucky legislators, U.K. deans and the Agricultural Development Board to promote the interests of farmers. Ottie received many awards for his service including the KVGA C. R. Roberts Award, the U. K. Thomas Poe Cooper Award, the Kentucky Gamma Sigma Delta Award, the Kentucky Farm Bureau Distinguished Service Award and the Soil Conservation Districts of Kentucky Honor award for 50 years of service to mention a few. Ottie will truly be missed.

UpComing Meeetings

(All Meetings are Eastern time unless specified)

Mar. 13 Fruit Tree Pruning, Grafting and Spraying, Graves County Extension Office, 351 Housman St., Mayfield, KY 42066. 9:30 a.m. CT. Contact 270-247-2334.

Mar. 13 Tree Fruit Insects and Diseases, Knott County Extension Office, 149 Parks Branch Rd., Hindman, KY 41822 Contact 606-785-5329.

Mar. 17 Fruit Tree Grafting Workshop, Robinson Center for Appalachian Research Sustainability, 176 Robinson Rd., Jackson, KY 41339. 6:00 p.m. Contact Ty Back 606-666-8812.

Mar. 19 Fruit Tree Grafting Workshop, Jessamine County Extension Office, 95 Park Dr., Nicholasville, KY 3:00 p.m. Contact 859-885-4811.

Mar. 20 Fruit Production for Home Fruit Growers and Grafting, Rowan County Extension Office, 600 West Main Street, Morehead, KY 40351. 5:30 p.m. Contact 606-784-5457.

Mar. 22 Strawberry Growers Association Meeting, Wilson's Cedar Point Farm, 66 Garfield Tarter Rd., Nancy, KY 42544. Contact Joel Wilson 606-305-8762

Mar. 24 Fruit Tree Spray Class, Bullitt County Extension Office, 384 Halls Lane, Shepherdsville, KY 40165. 6:00 p.m. Contact 502-543-2257.

Mar. 26 Blackberry, Raspberry, Blueberry, Gooseberry and Currant Pruning and Fertilization, U.K. Arboretum, 5:00 p.m. $5.00 Preregistration required Contact 859-257-6955 or dmbast0@uky.edu

Mar. 27 Fruit Tree Grafting Workshop, Spencer County Extension Office, 100 Oak Tree Way, Taylorsville, KY 40071. 6:30 p.m. Contact 502-477-2217.

Apr. 1 Fruit Tree and Small Fruit Pruning Demonstration, Wildside Winery, 5500 Troy Pike, Versailles, KY 40483 859-879-3982.1:00 p.m. Contact Faye Tewksbury 859-873-4601.

Apr. 3 Fruit Tree Grafting Workshop, Mason County Extension Office, 800 U.S. 68, Maysville, KY 41056. 3:00 p.m. Contact 606-564-6808.

Apr. 8 Fruit Tree Grafting Workshop, Allen County Extension Office, 200 East Main St., Scottsville, KY 42164. 6:30 p.m. CT. Contact 270-237-3146.

Apr. 10 Fruit Grower Orchard Meeting, Evans Orchard and Cider Mill, 189 Stone Rd., Georgetown, KY 40324. 10:00 a.m. Contact John Strang. Phone: 859-257-5685; Email: jstrang@uky.edu

Apr. 19. Kentucky Nut Growers Association Spring Meeting, Hardin County Extension Office, 201 Peterson Drive, Elizabethtown, KY 42701. 9:00 -3:00 p.m. Contact Danny Ganno Phone: 270-860-8362; Email: danganno@yahoo.com

May 15. Fruit Grower Orchard Meeting, The Bramble Ridge Orchard, 2726 Osborne Rd., Mt. Sterling, KY 40353. 10:00 a.m. Contact John Strang. Phone: 859-257-5685; Email: jstrang@uky.edu

Jun. 19 UKREC Horticulture Open House, Contact Winston Dunwell 270-365-7541 Ext. 209.

Jan. 5-6, 2015 Kentucky Fruit and Vegetable Conference and Trade Show, Embassy Suites Hotel, Lexington, KY. Contact John Strang 859-257-5685; email: jstrang@uky.edu

Spotted Wing Drosophila Management in 2014

By Ric Besson, U.K. Extenstion Entomologist

The spotted wing drosophila (SWD) caused widespread problems across the Commonwealth last year in blackberries, blueberries, raspberries, and some grape varieties. In 2013, fruit infestations by the larvae in blackberries and raspberries approached 100 percent late in the season when not managed properly. While we did detect this fruit fly in SWD traps in Warren and Daviess counties in 2012, there were only a couple reports of infested fruit across the Commonwealth.

SWD populations progressed rapidly in 2013. The first detection occurred in mid-June in Bourbon County, but by mid-July traps across Kentucky were detecting the flies in increasing numbers. By early August, high levels of infestations were being reported in susceptible small fruit crops. One commercial grower even resorted to mowing the blackberries down. On a positive note, growers who trapped for SWD, and then initiated weekly sprays after SWD was first detected on their farm, were able to get satisfactory control.

Figure 1. All small fruit growers should monitor for SWD in 2014 and be prepared to spray if it is detected on their farm.

Several 'susceptible' crops escaped problems in 2013, including strawberries, black raspberries, and early maturing blueberries. We don't know if this was because the flies didn't become active in time to attack these crops (we did experience a very cool spring) or if the flies were not widely distributed in the state early in the season. We may get those answers in 2014; at this time we cannot say what the risk will be to those small fruit crops that were not attacked in 2013. Blackberries, raspberries and some grapes that were not protected from SWD were severely damaged.

Figure 2. SWD traps should be placed in the interior part of the plant canopy.

All commercial growers are encouraged to use weekly fruit sampling to monitor for larvae in the harvested fruit. To do this, select 30 to 40 apparently undamaged berries and place them in a one gallon sealable bag with two cups of sugar water (½ cup sugar in one quart of water), seal the bags, and thoroughly mash the berries. Let the pulp settle and look for the light-colored larvae floating to the surface.

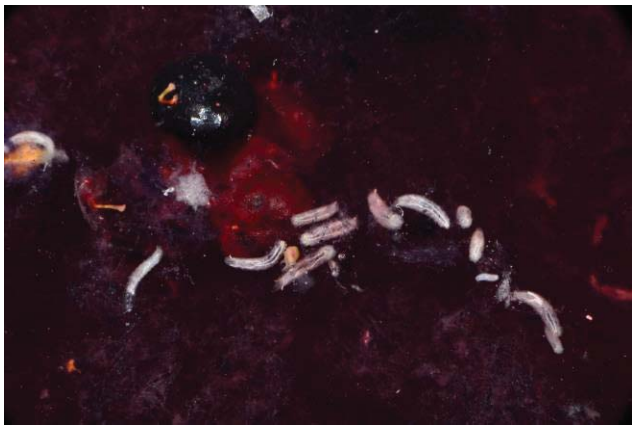

Figure 3. SWD larvae floating in mashed blackberries.

The traps we used last year were effective in detecting SWD on farms prior to detecting fruit infestations in commercial plantings. However, in southeastern states, where they have had to battle this pest for several years, growers have found the traps unable to detect flies prior to fruit infestations in raspberries and blackberries. In these late summer crops, sprays are timed based on fruit ripening rather than trap catches. Growers of these crops will begin SWD sprays one week before harvest and spray on a weekly basis through the end of harvest. What researchers have found is that by the time blackberries and raspberries ripen, SWD populations are large enough to warrant controls. Damage to strawberries and blueberries in the Southeast has been light to moderate.

We still recommend growers use traps in conjunction with the larvae sampling of fruit. Traps are placed 2 to 3 weeks before the start of harvest.

The traps are placed in a dense part of the canopy of the crop as the female SWD prefer to rest during the day in dark, dense locations. The trap is made of a one-quart deli container with about one inch of a sugar-yeast bait to which one drop of dish soap has been added (otherwise the SWD may be able to walk on the surface of the bait). The bait is made by mixing 2 tablespoons yeast, 4 tablespoons sugar, and 1 quart water. Last year we used an apple cider vinegar baited trap, but recent research has demonstrated that this trap generally begins to catch SWD adults 1 to 2 weeks after traps that use other recommended baits.

Sixteen ¼-inch holes are punched below the rim to allow the SWD to enter the traps. Alternatively, two 3½ by 1½ inch windows can be cut into the containers and 1/8 inch screen glued over the opening. Use two traps on each farm; they can be in the same crop or in different crops. It is possible to move the traps between different fields as the season progresses; for example from strawberries to blackberries to grapes. Traps need to be checked weekly and the bait is changed weekly. Be sure to dispose of the bait outside of the planting. See Entfact 229, Spotted wing Drosophila Biology, Identification, and Monitoring for more information (http://www2.ca.uky.edu/entomology/entfacts/ef229.asp). This fact sheet was updated in January of 2014.

We will be using trapping in strategic strawberry and blueberry plantings across the state in 2014; results of any SWD captures will be announced via the strawberry, blueberry, blackberry, and grape alert listservs. At this time I recommend that blackberry and raspberry growers apply SWD insecticides based on fruit ripeness rather than trap catches. With grape plantings, some producers have noted high levels of fruit flies and have begun to manage them during the harvest period, but there may be large differences in varietal susceptibility.

If no SWD is detected in traps located in blueberry/strawberry fields before or during the harvest period and no warning is issued for the area, no SWD insecticide sprays are needed. However, if SWD is captured in a trap or an alert has been issued, then weekly sprays during the harvest period should be initiated. See Entfact 230, Spotted wing Drosophila Management for a list of recommended small fruit insecticides (http://www2.ca.uky.edu/entomology/entfacts/ef230.asp). This fact sheet was updated in January of 2014.

Dr. Rufus Issacs (Michigan State University) compiled a list of risk factors that contributed to control failures in Michigan. These include 1) intervals too long between SWD sprays, 2) dense wooded borders adjacent to commercial plantings, 3) dense plant canopies which provide refuge for SWD and limit spray penetration, 4) gallonage of sprays per acre too low to provide adequate coverage, 5) not reapplying sprays after a rain, 6) using rates that were too low, 7) intervals too long between harvests, and 8) using insecticides that are ineffective against SWD. Other practices to help manage SWD include: immediate refrigeration of fruit after harvest, picking and proper disposal of damaged berries, and pruning of plants to provide an open canopy.

Using insecticides weekly during the harvest period creates some safety concerns. The first concern is with insecticide residues on fruit. Producers will need to carefully follow mandatory preharvest intervals (PHI). The PHI is the minimum amount of time between the last application and when it is safe to harvest the crop. Due to PHIs, some effective SWD insecticides with PHIs of a week or longer may not be practical. The other concern is with pollinator safety, particularly on raspberries where harvest

and bloom can be occurring at the same time. Care must be taken to avoid harming pollinators, often spraying late in the day after pollination has ceased will help to avoid harming pollinators.

Figure 4. Bloom and harvest overlap in strawberries, blackberries, and raspberries creating a potential hazard for pollinators when insecticides are used during the harvest period.

There is also a fact sheet to help home gardeners with SWD, Entfact 231 Spotted Wing Drosophila and Backyard Small Fruit Production (http://www2.ca.uky.edu/entomology/entfacts/ef231.asp).

This is a new pest and there is a lot of ongoing research in several states. As such, our monitoring and management recommendations will change as new information becomes available. Updates will be distributed through KPN, small fruit listservs, and fact sheets updated accordingly.

Brown Marmorated Stink Bug Update

By Ric Bessin, U.K. Extension Entomologist

Brown marmorated stink bug (BMSB) has been detected in 22 new counties in Kentucky since September and it is likely in a few additional counties while not yet officially detected. This brings the total to 48 counties with detections, although not necessarily with problems. In counties where it has been established longer it is just beginning to cause some problems in households and businesses as a nuisance pest, with a few problems in agricultural fields in the counties around Louisville, Lexington, and Ashland. Unfortunately, these problems will be increasing, albeit relatively slowly.

From an agricultural perspective, BMSB causes damage to fruiting structures and other succulent parts of plants similar to green and brown stink bugs. As stink bugs feed on plants with their piercing-sucking mouthparts, they also inject enzymes which can also cause damage. With crops like apples, pears, peaches, tomatoes, and peppers, the feeding causes damage underneath the skin of the fruits, often weeks before maturity. Damage appears as discolored areas (browning or paling of the flesh) in an area more or less a centimeter in size (Figure 5). With sweet corn, BMSB feeds through the husk on the developing ear as the kernels begin to blister. Individual kernels scattered throughout the ear will appear shriveled and may darken when the ear is cooked. Garden beans may have sunken lesions on the pods at the feeding sites due to the insect's digestive enzymes. On okra, the damage appears as a curling of the pods and raised areas at the feeding sites. In field crops, BMSB also damages individual corn kernels throughout the ear, while feeding on soybean pods results in discolored and shrunken seeds.

Figure 5. External evidence of feeding and internal BMSB damage to apple.

Figure 6. BMSB damage to sour cherries.

BMSB is very active in the landscape, moving between wild and cultivated hosts throughout the season as host plants change in relative attractiveness. There is often a strong edge-effect in fields and orchards with high numbers of BMSB causing damage along the outer rows. Infestations may be more likely along wooded field edges or other situations near preferred hosts. Because of this, levels will need to be evaluated along field margins as well as the interior of large fields or orchards in areas where BMSB is beginning to be a pest of crops. In some instances, where treatment is warranted, spraying the outer portion of the field along the margin may be sufficient, but reinvasion is likely after treatment and should be expected.

There are no specific economic thresholds for BMSB; however, with crops like soybeans, thresholds used for other stink bugs can be used with this new stink bug. The common sampling method with BMSB in vegetable and fruit crops are 30 or 60 second timed counts. The plants or plants are searched for any stages of BMSB (eggs, nymphs, and adults) during the interval and results recorded. BMSB has a tendency to drop from plants when approached.

Figure 7. BMSB eggs, a nymph, and adult. Eggs are found on the undersides of leaves in clusters of 21 to 35.

BMSB can be more difficult to control with insecticides, so when treatment is needed insecticides listed specifically for BMSB are preferred. Refer to Vegetable Production Guide for Commercial Growers (ID-36) for vegetable insecticides; Commercial Tree Fruit Spray Guide (ID-92) and Commercial Small Fruit and Grape Spray Guide (ID-94) for fruit insecticides. In home garden situations, row covers or fine mesh netting (1/6 inch opening or less) can be used to exclude BMSB from plantings, but gardeners also need to balance this with pollination needs for some vegetable crops.

Figure 8. BMSB damage on blueberry fruit

Tax Credits for Farmers, Help for the Hungry

By Miranda Hileman, Senior Extension Associate

A valuable tool in the fight against hunger in Kentucky, House Bill 141 was created to enable Kentucky food growers to receive tax credits for the donation of their edible agricultural products to nonprofit food programs serving Kentuckians. Kentucky taxpayers who donate these products are able to re¬ceive a credit against their state tax liability equal to 10 percent of the donated crop's value.

House Bill 141 (HB 141) was signed by Governor Beshear under Senate Bill 1. Representative Tom McKee (D-Cynthiana), member of the General Assembly and Chairman of the House Agriculture Committee, introduced HB 141 in January 2013. The bill gained a lot of momentum during the 2013 legislative session, and 28 other representatives from both parties sup¬ported it. There is tremendous bipartisan support for the fight against hunger in Kentucky! HB 141 was combined with Sen¬ate Bill 1 during the last days of the 2013 legislative session.

Tina Garland, the Kentucky Department of Agriculture's Farm to School coordinator, suggested the idea for this bill and brought Fred Nesler and Bill Wickliffe in to help. HB 141 was sponsored by the Kentucky Association of Food Banks and the Kentucky Horticulture Council, which began working on it during the summer of 2012. This tax credit provides an incentive for farmers to donate rather than disk under healthy food, and it will be a valuable tool in the fight against hunger in Kentucky.

A tax credit subtracts the value of the donated good directly from the amount of taxes owed. It is different from a tax deduction, in that a deduction allows the taxpayer to subtract the value of the donated good from their income, thereby reducing the amount of income that is taxed. A tax credit results in greater savings to the taxpayer. If the credit allowed is greater than the amount of taxes owed, the excess can be carried over to reduce taxes owed for the following year, and for the next three years if necessary, until the credit has been exhausted. This edible agricultural product donation tax credit is separate from the deduction already allowed to taxpayers for general donations to charitable organizations. Growers can claim the tax credit for donations beginning in tax year 2014.

Example: a grower donates one truckload of 14-count broccoli to the local food bank. The wholesale value for broccoli is $12 per case, and a truckload contains 1,344 cases, making the value of the total donation $16,128. The grower receives a tax credit equal to 10 percent of the donation, which equals $1,612.80 (Figure 1). This means that the total amount of state taxes the grower owes for the year that the credit is claimed will be reduced by $1,612.80.

For more information, and to find out how you can help the Kentucky Association of Food Banks fight hunger, contact Tamara Sandberg at tamara@kafb.org or 859-358-6719. Schedule FD, the Kentucky State Tax Credit for Food Donations form, is available at: http://www.kafb.org/hunger/useful-links/

14-Count Broccoli Donated to Local Food Bank

Wholesale Value	$12/case
Quantity Donated (1 truckload)	1,344 cases
Total Value	$16,128
Tax Credit Allowed	$1,612.80

Receiving Fruit Facts Electronically on the Internet

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