

Kentucky Fruit Facts

January/February 2021

<http://www.uky.edu/hort/documents-list-fruit-facts>

Daniel Becker, Editor
Denise Stephens, Newsletter Designer

Inside this Issue:

Fruit Crop News	1
Upcoming Meetings.....	2
Midwest Fruit Pest Management Guide 2021-21 ...	3
Colonization of Western Kentucky by Brown Marmorated Stink Bug.....	3
Pesticide Training and Certification in Kentucky and Covid-19.....	4
KY Hort Council extends Small Fruits Initiative.....	6
Fruit and Vegetable 2020 Research Report now available from University of KY	6
Expect warmer, wetter February.....	6
Receiving Fruit Facts on the Internet.....	7

Note: We have ceased publishing Fruit Facts as a hard copy or mailed newsletter. If you would like to continue receiving Fruit Facts, please sign up for email delivery as described at the end of this newsletter or contact your County Extension Office to have them print a copy for you.

Fruit Crop News

Daniel Becker, U.K. Extension Associate

It has been a relatively mild winter so far. The only exception was a brief period of cold around December 25 and 26 which saw a few days in the teens and 20's and some nights in the single digits in the eastern part of the State. Dry weather and a few warm days during early January were good opportunities for some larger commercial orchards to begin pruning apple trees. Damage to peach and thornless erect blackberry flower buds is unlikely as temperatures have not dropped below zero.

Despite the mild weather, plenty of chilling units have accumulated, enough to satisfy the



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

Cooperative Extension Service
University of Kentucky
Horticulture Department
N-318 Ag. Science Ctr. No.
Lexington KY 40546-0091

internal dormancy requirement for most fruit crops. Chilling units are calculated based on the number of hours below 45°F in the simplest model. Between November 1 and December 31 a total of 799 units were accumulated in Hopkinsville (Western), 917 in Lexington (Central), and 757 in Jackson (Eastern). Most fruit crops have a chilling requirement between 500 and 1,500 units or hours depending on species and cultivar. Satisfying the chilling requirement of even the highest chill varieties is almost never a problem in Kentucky and happens mid.-late January most years. After the chilling requirement is fulfilled cold weather keeps plants from growing. This is why I always hope for a chilly February and gradual warming March through April.

Remember to monitor for vole populations and refill bait stations if activity is noted. The masthead photo is an example of tunneling in a raised blueberry bed that got away from us here at the station. Voles are plant feeders and prefer mulch or snow cover, especially if either are deeper than one inch. Populations can build rapidly. Apples and blueberries are most susceptible, but voles will feed on other fruit crops if populations are high. Plasticulture strawberry producers should check under floating row covers as voles can cause severe damage when the field is covered and they are protected from predators.

Continue pruning apples, pears, and blueberries if not already begun. Wait until March, closer to bloom, to prune stone fruits and blackberries as they are less hardy. Pruning will cause a localized de-hardening where cuts are made, and injury may occur if very cold temperatures immediately follow pruning of tender crops.

When pruning, watch for signs of San Jose Scale (<https://entomology.ca.uky.edu/ef204>) on your

Cooperative Extension Service
Agriculture and Natural Resources
Family and Consumer Sciences
4-H Youth Development
Community and Economic Development

Educational programs of Kentucky Cooperative Extension serve all people regardless of race, color, age, sex, religion, disability, or national origin. University of Kentucky, Kentucky State University, U.S. Department of Agriculture, and Kentucky Counties, Cooperating.

LEXINGTON, KY 40546



Disabilities
accommodated
with prior notification.

trees. A dormant oil spray can be applied up to half-inch green on apples, green tip on pears, and the pink stage on peaches when the temperature is above 45°F for control of scale adults, mite and aphid eggs. Mixing a copper material into this spray can reduce early season inoculum of fire blight on apples and pears, and bacterial canker and bacterial spot on peaches. However, timing is important, copper should not be applied once buds begin to swell on peaches or past early bud swell on apples and pears as it may cause injury. Copper will also control peach leaf curl and it's not too late to make an application, but it is always better to make this spray in the fall to be assured of control.

Days when it is too cold or wet outside to work offer a good opportunity to look over your pesticide inventory, begin planning, and make purchases. Be sure to take time to familiarize yourself with the 2021-2022 Midwest Fruit Pest Management Guide. It has been updated and undergone major format and table changes, including to pesticide registrations, formulations, and application restrictions. Also greatly expanded is the listing of generic pesticides. Registrants to the 2021 Fruit and Vegetable conference can review the virtual presentations given by Shawn Wright and Ric Bessin on this subject at <https://kyhortcouncil.org/2021-ky-fruit-vegetable-conference/>. Hard copies should be available shortly in County Extension Offices. There is a link to a downloadable copy in the post below upcoming meetings.



Upcoming Meetings

All times EDT unless noted.

Feb. 10, 2021, Southern Illinois Fruit and Vegetable School. This will be a virtual conference that will be combining the Southern Illinois Tree Fruit School, the Southwestern Illinois Tree Fruit School and the Southern Illinois Small Fruit & Vegetable School. Register at <https://web.extension.illinois.edu/registration/?RegistrationID=22920>

Feb. 10-13, National Farm Machinery Show. Kentucky Exposition Center, Louisville, Ky. <https://farmmachineryshow.org/>

Feb. 16-18, 2021, Kentucky Agriculture Virtual Direct Marketing Summit. 7:00 p.m. EST/6:00 p.m. CST. This 3-evening event is for ANY agriculture producer selling directly to consumers. Sessions will cover social media strategies, maximizing your marketing resources, creating value added products, and customer retention. The last evening is a producer panel featuring several farms discussing their personal marketing experiences and strategies. <https://kyhortcouncil.org/direct-ag-marketing-summit/>.

Feb. 22-25, 2021 North American Raspberry & Blackberry Conference. The conference will feature 18-plus hours of informative educational presentations, panel discussions, and live Q&A - plus virtual exhibitors, poster presentations, discussion groups, and lots of opportunity for networking with caneberry folks from all over. It's all from your own home, and you'll be able to view recordings of the sessions if you miss them at the scheduled time. A pre-conference, seven-session short course for novice raspberry and blackberry producers is also being planned. See the conference web page here. <https://www.raspberryblackberry.com/2021-conference/>

Feb. 18 and 25, 25th Annual Stateline Fruit and Vegetable Growers Conference. 1:00-3:30 p.m. CT. The fruit webinar track of the conference on Feb. 18 will be delivered live via Zoom. The core of the program is disease and insect updates from Drs. Mohammad Babadoost and Kacie Athey, Extension Specialists with University of Illinois Extension

Mar. 18, Fruit Grower Orchard Meeting. Schedule TBD. Jackson's Orchard, Bill Jackson & Jonathan Price, 1280 Slim Island Rd., Bowling Green, KY 42101, Phone: 270-781-5303

Mar. 23, Fruit pruning demonstration. Laurel Co. Schedule TBD.

Mar. 30, Home Blackberry Production. 6:00 p.m. CT. Lyon County Extension Office, 231 Main St., Eddyville, KY 42038. Contact: 270-388-2341.

May 4, Fruit Grower Orchard Meeting. Schedule TBD. Evans Orchard and Cider Mill, Kevan Evans, 198 Stone Rd., Georgetown, KY 40324, Phone: 502-863-2255

Jan. 2-4, 2022 Kentucky Fruit and Vegetable Conference. Schedule TBD. Sloan Convention Center, 1021 Wilkinson Trace, Bowling Green, KY 42103. Contact Kentucky Horticulture Council at 859-490-0889; Email: info@kyhortcouncil.org

Midwest Fruit Pest Management Guide 2021-21 (ID-232)

By Cheryl Kaiser, Plant Pathology Extension Support and Nicole Gauthier, Plant Pathology Extension Specialist



Figure 1. The Midwest Fruit Pest Management Guide 2021-2022 (ID-232) is available online.

The *Midwest Fruit Pest Management Guide 2021-2022* was developed by the Midwest Fruit Workers Group, which includes University of Kentucky Extension specialists from Plant Pathology, Entomology, and Horticulture, as well as specialists from twelve other universities. This publication was recently revised to keep up with the latest management and pesticide recommendations for tree fruit and small fruit.

For additional publications on fruit diseases, visit the UK Plant Pathology Extension Publications webpage. <https://plantpathology.ca.uky.edu/>



Colonization of Western Kentucky by Brown Marmorated Stink Bug

By Raul T. Villanueva, Entomology Extension Specialist and Zenaida Vilorio, Entomology Research Analyst

Status of the Brown Marmorated Stink Bug in Kentucky

Halymorpha halys (Hemiptera: Pentatomidae) known as brown marmorated stink bug (BMSB), is a polyphagous invasive species of Asian origin that feeds on more than 100 plant species in the U.S. Initially, BMSB was found in Pennsylvania around the mid-90s; nowadays it has established populations in many areas of the mid-Atlantic states of the U.S. However, BMSB overwinters in large population aggregations inside human dwellings and

are “skilled” hitchhikers; these two conditions make their dispersal easily achievable (i.e. using vehicles for dispersal), thus, they have now been reported in most states in the U.S.

In Kentucky, BMSB were first reported in 2010, and since then, it has established population affecting vegetables or fruit in most central and eastern counties. Although BMSB has been reported in many western counties (likely hitchhikers), overwintering BMSB populations and tallies in soybean fields resulted in nil counts in most western counties (west of Hardin County) since 2016 up until 2018. After that, a graduate student (Yaziri Gonzalez) found one specimen in a pheromone trap in the Research and Education Center (REC) at Princeton; and several specimens in McLean, Henderson, and Daviess counties in 2019.

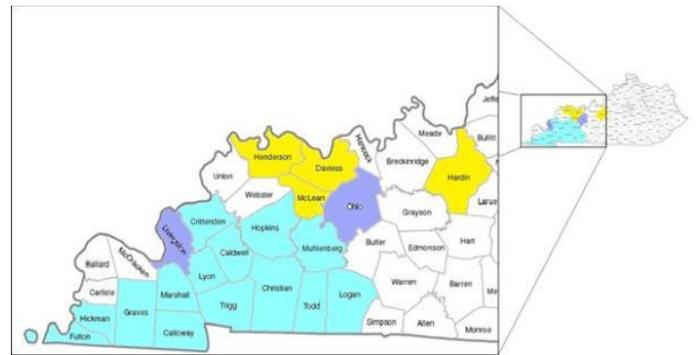


Figure 2. Counties where brown marmorated stink bugs were found in commercial soybean fields of western Kentucky in 2019 and 2020. Yellow: BMSB found in 2019 and 2020; purple: BMSB not found in 2020, light-blue: BMSB found in 2020 and absent in 2019, and white: counties not scouted.

Scouting Results in 2020

In 2020, tallies completed in western Kentucky during the last week of August and first 3 weeks of September resulted in the capture of BMSB in 17 out of 19 counties (Figure 2). Tallies were conducted in 29 commercial soybean fields and three research sites at the REC using sweep nets. This outcome may show a geographical expansion of BMSB colonization of western Kentucky. BMSB might have been in this area but in undetectable population levels, and its absence can be demonstrated by the lack of reports of BMSB aggregation in human dwellings in these counties. The presence of BMSB may be temporary (although this possibility is minimal); however, in 2020 BMSB populations are exploding for unknown reasons. This may make 2020 a “good year” for a complex of stink bugs (Figure 3), or perhaps the colonization

took all this time as it occurred in eastern Kentucky. In a previous report published in KPN, data were presented in the surpassing of economic thresholds by the complex of stink bugs in soybeans. All of these hypotheses and phenomena may need to be re-evaluated during the coming months. Studies will be conducted regarding their aggregation in houses or storage areas, and their presence on diverse crop systems.



Figure 3. Adult stink bug species detected in commercial soybean fields of Kentucky. (a) Brown stink bug, (b) Green stink bug, (c) Spined soldier stink bug, and (d) Brown marmorated stink bug. (Photo: Raul T. Villanueva, UK)

From a total of 904 specimens tallied during the scouting described above, the green stink bug *Chinavia hilaris* was the most abundant (65.5%), followed by the brown stink bug *Euschistus* spp. (17.7%), BMSB (13.9%), southern green stink bug *Nezara viridula* (2.1%), redshouldered stink bug (0.8%) and the predacious spined soldier stink bug *Podisus maculeventris* (0.4%) (Figure 4). These results on BMSB populations may be inflated; if data from the three most central counties (Henderson, McLean, and Daviess) are removed, the number of stink bug specimens are reduced to 775 and the percentages of BMSB are only 6.2%, and from all the 126 BMSB specimens collected, only a handful were adults while the rest were nymphs. These conditions may be a signal that BMSB is expanding in western Kentucky.

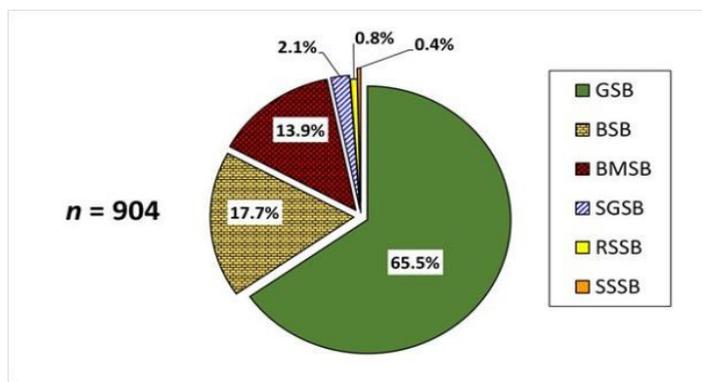


Figure 4. Percentages of six stink bug species (GSB=green stink bug, BSB, brown stink bug, BMSB=brown marmorated stink bug, SGSB=southern green stink bug, RSSB=red shouldered stink bug, and SSSB=spined soldier stink bug) tallied in 29 commercial fields in 19 counties, and 3 sites at the Research and Education Center-Princeton. Tallies were completed using sweep nets during the last week of August and first 3 weeks of September. with their plans to attend and contact information in case a session has to be cancelled for any reason.

Management

Two main recommendations for the management of BMSB have resulted from these findings:

- BMSB can start to become an unwelcome host in western Kentucky homes during the winter. As the Asian ladybug *Harmonia axyridis*, BMSB will enter poorly sealed structures and aggregate in sheltered areas. This causes staining on walls, a foul smell, and can cause allergies. Repair to screens and sealing holes in structures is needed to avoid aggregations.
- In agriculture, insecticides can be used to reduce stink bug populations, however, it is known that BMSB is more resistant to insecticides than other endemic species (green stink bug or brown stink bug); therefore insecticides should be used to target immature stages that are more susceptible, rather than adult stages.



Pesticide Training and Certification in Kentucky and Covid-19

By Ric Bessin, PSEP Coordinator and Entomology Extension Specialist, and Travis Legleiter, Extension Weed Scientist

Applying pesticides safely and effectively takes training and experience. Applying pesticides improperly can result in risks to one's health, to food safety, and to the environment. From a regulatory perspective, pesticides are classified as either General Use Pesticides (GUP) or Restricted Use Pesticides (RUP). General Use Pesticides can be purchased and used by the general public without training or certification; Restricted Use Pesticides can only be purchased and used by pesticide applicators that have completed training and are certified by the State of

Kentucky. Some herbicides, such as dicamba and paraquat, require additional training and certifications.



Figure 5. Face-to-face training opportunities for applicators will be limited for the near future. (Photo: Ric Bessin, UK)

Types of Certifications

There are two types of pesticide certifications in Kentucky: (1), private applicator certification and (2) commercial and non-commercial applicator certification.

Private applicator certification is for persons using Restricted Use Pesticides for purposes of producing any agricultural commodity on property owned or rented by him/her or an employer, or to the lands of a farmer-neighbor, if applied without compensation other than trading of personal services between producers of agricultural commodities.

Certified commercial applicators may use or supervise the use of any pesticide that is classified Restricted Use for any purpose or on any property other than as provided under the definition of private applicator. Noncommercial applicator means any individual employed by golf courses, municipal corporations, public utilities, or other governmental agencies making applications of pesticides to lands owned, occupied, or managed by his or her employer. There are 21 categories of commercial applicators in Kentucky.

The Kentucky Department of Agriculture (KDA) also clarified that an individual making any pesticide application to an agricultural commodity must be a certified pesticide applicator. This is where there is some confusion—producers often think certification applies only to restricted-use products, when it applies to any and all pesticide applications to

agricultural commodities. Certification can be through private applicator or commercial certification.

Training

Commercial/Noncommercial

Persons needing to become commercial and noncommercial pesticide applicators should review general core and category-specific study materials available on the UK Pesticide Safety Education Program (PSEP) website, <https://entomology.ca.uky.edu/uk-pesticide-safety-education-program-psep>. When ready, they need to schedule a time that they can be tested through the KDA website, <https://www.kyagr-apps.com/AgExternal/Security/Account/Registration>. With Covid-19 restrictions, applicators must preregister for testing. These certifications last for 3 years and applicators must complete 12 hours of approved continuing education to be eligible to renew their certification.

Private Applicators

Private applicators are trained and certified through their county Cooperative Extension Service office. Unlike commercial applicators, there is no mandatory test. Instead, they attend training classes every 3 years. This spring, because of covid-19 restrictions, private applicator certifications will be offered using several methods:

- Online-training classes through their county Extension office
- Small classes using social distancing, if permitted by local health departments
- An alternative private applicator test
- Online training for first-time private applicators

Link: <https://entomology.ca.uky.edu/content/psep-covid-19-private-applicator-training-plan>

Dicamba-Specific Training

Herbicides containing dicamba that are labeled for use in dicamba-tolerant soybean also require dicamba-specific training before these products can be used (Xtendimax; Engenia; and Tavium). These products can only be applied by certified applicators that have completed dicamba-specific training. In Kentucky, the approved trainings are offered through the manufacturers of these products via online modules, webinars, and meetings. Dicamba-specific training must be done each year. Online modules,

webinar schedules, and meeting schedules are available at the following manufacture websites:

- Bayer - <https://www.roundupreadyxtend.com/stewardship/Pages/default.aspx>
- BASF - <https://www.engeniaherbicide.com/training.html>
- Syngenta - <https://www.syngenta-us.com/herbicides/tavium-application-stewardship>

Applicators who have received their annual dicamba training can apply all three labeled products, regardless of which specific registrant training they participated in.

Paraquat-Specific Training

Persons purchasing or using pesticides containing paraquat must have paraquat-specific training and certification in addition to being a certified private or commercial applicator. This is a new requirement and the labeling has changed. However, pesticide applicators may continue to use existing stocks according to the directions on the label of the product in their possession. Paraquat-specific training is available online through the Environmental Protection Agency (EPA) and is valid for 3 years.

KY Hort Council extends Small Fruits Initiative

By Cindy Finneseth, Executive Director, Kentucky Horticulture Council

The Kentucky Horticulture Council is again partnering with the University of Kentucky Department of Horticulture to sponsor a producer initiative that will provide educational opportunities and resources to small fruit crop growers across rural Kentucky.

Current and prospective growers must farm in a designated rural area, as the USDA Rural Development grant supporting this program is specific to developing entrepreneurs in rural areas of Kentucky. Growers in Fayette and Jefferson counties are not eligible for the reimbursement component of the program, but any grower in these counties interested in commercial production of small fruit can contact their county extension office for technical assistance.

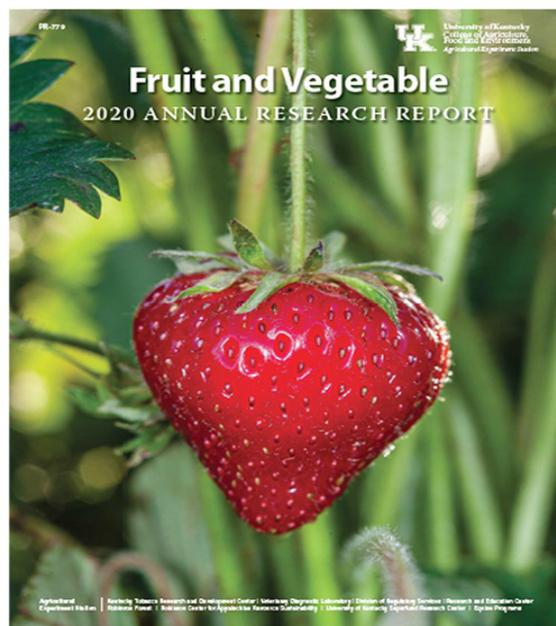
Supplies/services up to \$1,250 per grower/farm may be eligible for purchase under the program. Eligible crops include blackberries, blueberries,

strawberries, elderberries, jujube, table grapes, gooseberries and June-bearing raspberries (red and black). Newly enrolled growers will receive priority over previously funded grower projects. For more information, go to <https://kyhortcouncil.org/kentucky-small-fruits-initiative/>

Fruit and Vegetable 2020 Research Report now available from University of KY

From the Kentucky Horticulture Council

The Fruit and Vegetable 2020 Annual Research Report (PR-779 - <https://plantpathology.ca.uky.edu/files/id-232.pdf>) is now available online. The report includes results from 12 projects. Research was conducted by UK faculty and staff from the departments of Horticulture, Plant Pathology, and Dietetics and Human Nutrition, as well as by faculty and staff from Kentucky State University.

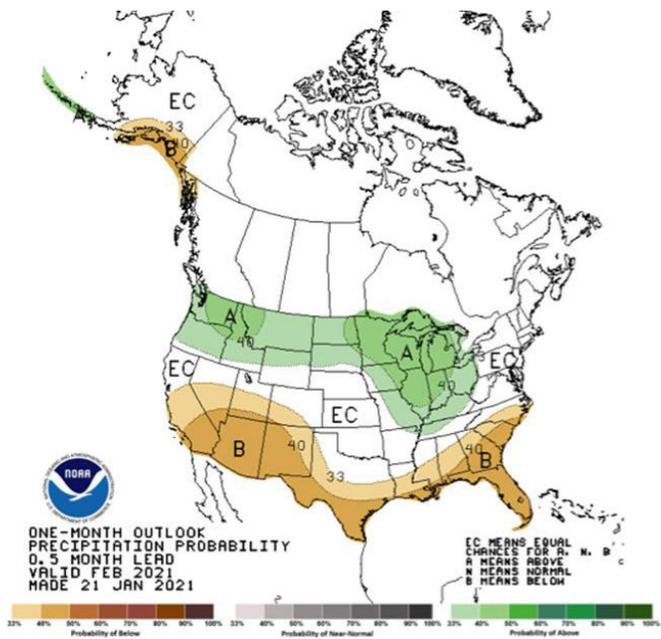


Expect warmer, wetter February

By Joshua Knight, Senior Extension Associate, Horticulture

The NOAA's Climate Prediction Center is forecasting a high probability for warmer and wetter than average conditions throughout February for Kentucky. Warmer than average temperatures are predicted for the entire eastern half and most of

the southern half of the United States, while wetter conditions are probable for the upper Midwest and northern plains, generally. As Kentucky is within the transition zone between these two systems, we should see conditions reflecting both warmer and wetter weather over the next month. Projecting toward spring, this may well be a general pattern that will continue further into the months ahead.



Receiving Fruit Facts on the Internet

By subscribing to the email notification service you will receive an email announcement when each new issue is posted on the web with a link.

To subscribe, send an email message:

TO: listserv@lsv.uky.edu
 SUBJECT: Fruit Facts
 MESSAGE: subscribe KY-FRUITFACTS
 Followed by a blank line

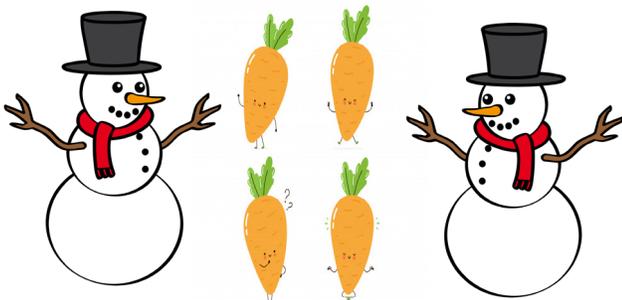
OR to unsubscribe, the lines:
 signoff KY-FRUITFACTS

Followed by a blank line You should receive confirmation by return email. If you have a problem, or if you wish to communicate with a person about “fruitfacts”, the owner’s address (the TO: line of the message) is: owner-ky-fruit-facts@lsv.uky.edu

FRUIT & VEGETABLE HUMOR

**What did one snowman say
to the other snowman?**

Do you smell carrots?



College of Agriculture,
 Food and Environment
 Cooperative Extension Service