

Kentucky Fruit Facts

March-April 2022

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

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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

February was a wild month. It started off with an ice storm and ended exceptionally warm. I measured 3/8 to 1/2 of an inch of ice accumulation when venturing out on the 4th (Figure 1). Some peach and apple trees were damaged in the 2009 and 2010 blocks, while all came through unscathed in the 2015 peach and nectarine variety trial and the 2019 NC-140 apple rootstock trial. The pecans suffered more limb damage, some sizeable. Pecans have brittle wood, making wind and ice damage more likely. Most trees are not a complete loss, we will just have to get a little creative with pruning.



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Figure 1. Ice covering a peach shoot. Photo by Daniel Becker, U.K. Extension Associate.

As of writing (March 19), 133 growing degree days (GDD base 50°F) have been accumulated in Princeton (Caldwell Co.), 81 in Lexington (Fayette Co.), and 73 in Jackson (Breathitt Co.) at the eastern end of the state. Figures 2 and 3 show the accumulation of GDD since the start of 2022 in Paducah and Lexington in comparison to previous years. We are running close to where we were in 2020 and depending on the location slightly behind 2019 or 2018. For reference, 2018 and 2019 turned out to be fairly typical with respect to fruit harvest dates. Spring 2020 was turning out to be fairly normal until late freezes on the mornings of April 15, 16 and May 9 which injured fruit crops.

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Disabilities
accommodated
with prior notification.

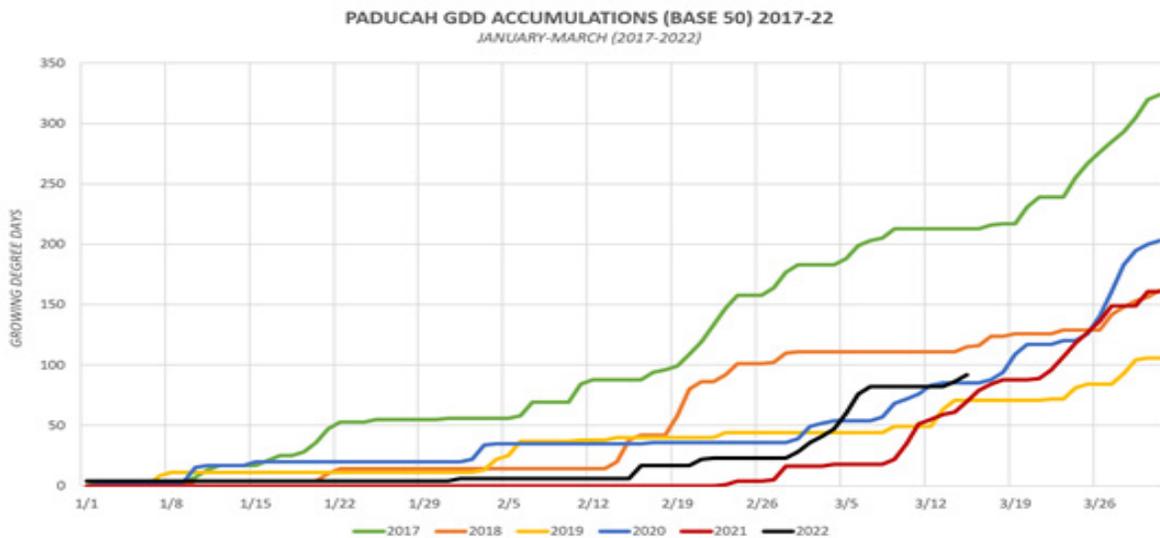


Figure 2. Paducah growing degree day accumulation (base 50°F) for 2021 and past years. Matt Dixon, U.K. Ag Meteorologist.

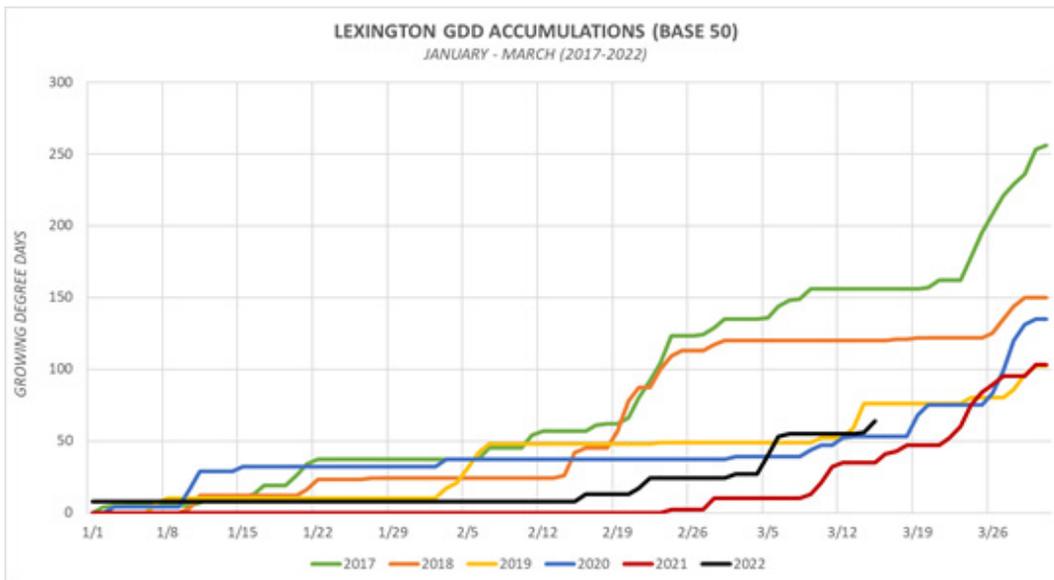


Figure 3. Lexington growing degree day accumulation (base 50°F) for 2021 and past years. Matt Dixon, U.K. Ag Meteorologist.

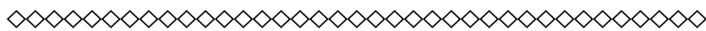
What is a normal season and how does it compare historical averages? Matt Dixon, U.K. Ag Meteorologist, wrote an excellent article in last year's March edition of Fruit Facts on this topic, <https://www.uky.edu/hort/sites/www.uky.edu/hort/files/documents/FFMar21.pdf>. I have reread it periodically when difficult weather events occur for perspective.

Looking ahead, the NOAA's Climate Prediction Center is forecasting that near-normal seasonal temperatures will give way to warmer and wetter than average conditions for the rest of March. The above average temperature trend will hold going into April. The models do not account for periodic cold weather events that bring with them the possibility of crop damage.

Shawn Wright, extension specialist, based over at the Robinson Center in Jackson reports that the earliest blueberries are at bud swell and that he noticed first bloom on 'Saturn' peach on March 6. The masthead shows a 'YumYum' nectarine bud at pink stage. One of his plasticulture strawberry growers already had bloom on 'Ruby June'. With the upcoming return to more normal temperatures, any strawberry growers with advanced bud development will have to work hard to repeatedly pull covers over plants. Some may even need to double cover several times to protect blooms. The critical temperature for closed buds is 22-27°F and is 30°F for open flowers of strawberries and a 1-1.25 oz./sq. yd. can only be relied on to provide up to 4-5°F of protection.

We are not as far along over at the UKREC in Princeton. Apples are at silver tip and ‘Redhaven’ peaches will have the earliest blooms open the week of March 20-27. The few sweet cherries that we have are also showing green tip. A bud mortality sample on March 16 from two shoots under 12” and two shoots over 24” collected each from five ‘Redhaven’ trees on Lovell rootstock had a 35% survival rate. This is a surprisingly low overall survival rate but still enough for a potential full crop.

On a sad note, the Department of Horticulture will be losing Chris Smigell at the beginning of May. Chris has decided to retire after many years as the Extension Associate for fruit crops. Many fruit growers in central and northern Kentucky know Chris from site visits and speaking at the Annual F&V Conference and Fruit Grower Orchard Meetings. His expertise and opinions will be missed.



Upcoming Meetings

All times EDT unless noted.

May 17, Fruit Grower Orchard Meeting. Haney’s Appledale Farm

Don, Mike, Mark, and David Haney
Haney’s Appledale Farm
8350 Hwy. 80
Nancy, KY 42544
Phone: 606-636-6148 (Market)
Website: <https://haneyappledalefarm.com/>

This will be an IN-PERSON meeting.

Directions:

From Highway 27 – In Somerset, take light number 4 west onto Kentucky Highway 80 and drive eight miles. Haney’s is on the right.

From Interstate 75 – Take exit number 62 (KY-461/Renfro Valley/Mt. Vernon). From exit, take Highway 461 to Highway 80. Follow to 80-27 Intersection. Take Highway 80 West to Nancy (8 miles)

From the West – Take the Louie B. Nunn Parkway (Cumberland Parkway) to exit 78 and proceed south on old 80. Haney’s Appledale Farm will be on the left on the far side of Nancy, KY.

Program:

All times EST

10:00 a.m. Registration & Tour of Appledale Farm & Market - *Don, Mike, Mark, and David Haney*

11:00 Pests and Insecticide Programs - *Ric Bessin*

11:30 Peach Thinning and Split Pits - *John Strang*

Noon **Lunch will be available at cost for those that preregister.**

Please preregister as we are very unsure about our lunch estimate due to the COVID situation.

Preregister for lunch by emailing or calling John Strang, jstrang@uky.edu, 859-396-9311 by Friday, May 13 and provide a count for the Fruit Grower Meeting at Haney’s Orchard

12:45p.m. Tree Wounds and Opportunistic Fungi - *Nicole Ward Gauthier*

1:15 Signage - *Brett Wolff*

1:40 Grower Round Table Discussion - *Jonathan Price, moderator*

Mar. 30. Calibrating Backyard Sprayers. Darrell Simpson, UK ANR Agent for Muhlenburg County, presenter. This is part of the Horticulture Webinar Wednesday’s series. A registration link and links to past presentations from seasons one through three are available at <https://kentuckyhortnews.com/>.

Apr. 5. Apple Grafting Workshop. Henderson County Extension Office, 3342 KY-351, Henderson, KY 42420. Schedule TBD. Contact Andrew Rideout, Henderson County Extension Agent for Horticulture for details: pandrewrideout@uky.edu or (270) 826-8387.

Jan. 3-4, 2023. Kentucky Fruit and Vegetable Conference. Schedule TBD. Sloan Convention Center, 1021 Wilkinson Trace, Bowling Green, KY 42103. Contact Kentucky Horticulture Council, (859) 490-0889, info@kyhortcouncil.org.

A Note on Notching

By Dwight Wolfe, Research Specialist

Notching (scoring the bark just above a bud) is one of a number of tools that can be used to initiate branch development along the tree trunk in areas lacking suitable branching. In the spring of 2020, a mixture of white latex paint and 7500 pm of 6-Bensyladenine as MaxCel® Plant Growth Regulator (Valent U.S.A. LLC Agricultural Products) was applied to wounds from notching various buds along the trunk about 4 to 6 feet from ground level of trees in our 2019 NC-140 Regional Apple Rootstock Trial (Figure 1). The trial was planted in the UKREC orchard on April 11, 2019, on a 3 x 13.5-ft. spacing using feathered trees from Gold Crown Nursery, Quincy, WA. Kentucky was allocated seven of the 13 rootstocks in this trial: One Budagovsky stock (B.10), two Malling stocks (M.9 NAKBT337) M.26 EMLA), three Geneva stocks (G.41, G.814, and G.969), and one New Zealand stock (NZ.2). Yield and growth measurements are reported annually in Kentucky’s fruit and vegetable annual research report <http://www2.ca.uky.edu/agcomm/pubs/PR/PR779/PR779.pdf>, but results from notching these trees last spring is shown in Table 1 below.

Table 1. Results from notching trees in the 2019 NC-140 ‘Buckeye Gala’ rootstock trial.						
Rootstock ¹	Trunk Cross-Sectional Area (sq. in.)	Number of trees notched ³ / number in trial	Percent of the trees needing some notching	Average number of notches/trees	% of notches resulting in a new shoot growth	Average shoot length (cm)
G.41	1.38	15/15	100 a	3.20	52.1 b	41.7
M.9 NAKBT337	1.39	14/15	93 ab	3.43	50.7 b	41.2
B.10	1.39	15/15	100 a	3.33	56.6 b	23.5
M.26	1.73	15/15	100 a	3.47	77.9 ab	37.4
NZ.2	1.83	15/15	100 a	3.33	78.8 ab	32.3
G.969	1.98	11/15	73 b	2.37	76.5 ab	26.8
G.814	2.02	14/15	93 ab	3.20	96.6 a	33.8
Mean	1.67	-	94.2	3.04	69.0	33.8
LSD2 (5%)		-	25.6	0.92 (ns)	31.8	34.0 (ns)
¹ Arranged in ascending order of trunk cross-sectional area for each rootstock.						
² Tukey’s significant difference P≤5%. Differences between two means within a column that are less than the Tukey’s significant difference value are not significantly different.						
³ Trees that had sufficient branching were not notched.						

One tree on M.9, one tree on G.814, and four trees on G.969 were not notched because these trees did not need more branching in the area where we were notching these trees. G.814, M.26, and G.969, produce trees about 40, 45, and 65 percent of standard size trees, respectively. The other four rootstocks produce trees that are 35 percent of standard size.

There were no significant differences in the average number of notches per tree for those trees that were notched nor were there any significant differences in average length of new shoots from the notched buds among the seven rootstocks. But the percent of the notches resulting in new shoots did vary by rootstock and appears to be somewhat correlated with trunk cross-sectional area or tree vigor, with Pearson’s correlation coefficient being equal to only 0.61419. This is not a very high value and would indicate that only about 38% of

the variation in shoot development is explained by tree vigor.

The active ingredient in MaxCel® is a cytokinin, a class of plant hormones that promote cell division. Along with auxin, another plant hormone, the cytokinin to auxin ratio appears to regulate bud growth and apical dominance by promoting secondary bud growth or branching when this ratio is relatively high. But exactly how these hormones interact to affect tree vigor and branching is not understood, let alone any interaction they may or may not have with the rootstock. More work is needed to understand these processes.



Figure 4. The painted notched bud in the foreground (1) did not break, but the painted notched bud on the opposite side of the trunk (2) did break and formed a shoot.

KHC Program Can Help Growers With Ag Water Testing

From the Kentucky Horticulture Council

The Kentucky Horticulture Council (KHC) is working with local growers using ponds, wells and other nonmunicipal water sources to irrigate produce crops. The KHC ag water testing program helps produce growers better understand the microbial quality of their surface and ground water sources used for production and post-harvest activities. KHC

launched this program in 2019 through a partnership with National Farmers Union’s Local Food Safety Collaborative (LFSC). The water requirements for FSMA (the Food Safety Modernization Act) will be in effect starting in 2022 for the largest tier of produce growers and growers should begin sampling now to develop their microbial water quality profiles or MWQPs.

“As part of our program, we will come to the farm, take the samples, and deliver those to the laboratory for analysis,” says Cindy Finneseth, KHC executive director. “We will also help you manage the test results – organizing the data and calculating the statistical thresholds. If there is a high risk associated with the water source, we can talk through options and help you determine the best management strategy for your operation.” KHC has space for a few more growers interested in participating in the 2021/2022 program.

Growers who participate in the program receive one-on-one sampling training, sample analysis, and individualized interpretation of test results. More information about the program can be found on KHC’s website: <https://kyhortcouncil.org/kentucky-ag-water-testing-pilot/>. If you would like to participate in the program or would like additional information, please send an email to Dani D’Antonio at Dani@kyhortcouncil.org or to info@kyhortcouncil.org.

KHC Small Fruits Initiative Offers Technical Assistance, Funding

From the Kentucky Horticulture Council

The Kentucky Horticulture Council (KHC) began recruiting existing and prospective small fruit crop growers on October 1st for its Small Fruits Initiative. The KHC is partnering with the University of Kentucky to sponsor the initiative, which will provide educational opportunities and resources to current and prospective small fruit crop growers across rural Kentucky. As part of the program growers will receive access to: On-farm technical assistance including:

- Production planning (open field and/or high tunnel)
- Harvest advice
- Post-harvest handling recommendations
- Marketing advice
- A specialized funding pool to finance establishing or expanding plantings

Complete and submit a grower profile online (<https://www.surveymonkey.com/r/SmallFruits2020>) or download (<https://kyhortcouncil.org/wp-content/uploads/2019/10/Grower-Profile.pdf>) to email or mail to KHC for review.

Small fruit crops with primary commercial potential in Kentucky are blackberries, blueberries, and strawberries. Other small fruit crops that may have commercial potential in Kentucky include elderberries, table grapes, gooseberries, and June-bearing raspberries (red and black). Crops not listed here should be discussed with your technical assistance provider.

Program requirements are simply that the grower:

- Farms in a designated rural area, and
- Is interested in growing and selling small fruit crops

Inputs like plants, fertilizer, mulch, and pesticides are qualified expenses in this program as well as services like terracing, bed raising/shaping and harvest labor. Some items for post-harvest handling and to ensure food safety may also be allowed. Growers are approved for up to \$1,250. For additional information about this program, go to <https://kyhortcouncil.org/kentucky-small-fruits-initiative/>.



Cultural Calendars & Effectiveness of Fungicides for Commercial Tree Fruit Production

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

Integrated pest management (IPM) includes the combination of biological, cultural, physical, and chemical tools in efforts to manage diseases and pests while minimizing risks associated with pesticides. Cultural practices are an integral part of an IPM program and should be incorporated into all commercial systems, whether large or small, conventional or organic.



Figure 5. These cultural calendars are available for apple and peach production.

These publications, which focus on commercial tree fruit production, provide recommended cultural practices at the various growth stages/production periods. Each serves as a supplement to published spray guides and scouting guides. The cultural calendars are available online: —Cultural Calendar for Commercial Apple Production (PPFS-FR-T-25): <https://plantpathology.ca.uky.edu/files/ppfs-fr-t-25.pdf> —Cultural Calendar for Commercial Peach Production (PPFS-FR-T-26): <https://plantpathology.ca.uky.edu/files/ppfs-fr-t-26.pdf>.

Efficacy tables for fungicides used to manage fruit diseases are available for stone fruit and apple. These guides provide decision-making tools to help growers select effective fungicides from different chemical classes (FRAC groups). The efficacy guides are accessible online:

—Effectiveness of Fungicides for Management of Stone Fruit Diseases (PPFS-FR-T-14): <https://plantpathology.ca.uky.edu/files/ppfs-fr-t-14.pdf> —Effectiveness of Fungicides for Management of Apple Diseases (PPFS-FR-T-15): <https://plantpathology.ca.uky.edu/files/ppfs-fr-t-15.pdf>

For additional publications on fruit diseases, including fungicide efficacy tables for commercial grape and strawberry, visit the UK Plant Pathology Extension Publications webpage, <http://plantpathology.ca.uky.edu/extension/publications>.

So, You Want to be a Pesticide Applicator: Consumer Pesticides

By Ric Bessin, Extension Entomologist

Inherently, pesticides have some risks to the environment, the plants or animals being protected, consumers, and/or the applicator. Those pesticides with higher risks have been designated Restricted Use Pesticides (RUP), which require training and certification for their users, while pesticides with less risk are General Use Pesticides and are available without specialized training and certification. Restricted Use Pesticides are clearly marked with a warning box on the front label.

This article discusses some of the safety measures for general use pesticides, those used by persons without training or certification.



Figure 6. Even general use consumer pesticides carry some risk and must be used according to the label directions.

The Label is the Law

Even though no special training is needed for persons over 18 to purchase and use General Use Pesticides, users still must follow all label instructions. The label is the law!



Figure 7. The first sentence of the 'Directions for Use' section of nearly all pesticides labels notifies users that they are required to follow all label directions.



Figure 8. Use any personal protective equipment listed in the Precautionary Statements section of the pesticide label. (Photo: Ric Bessin)

Protective Clothing

Many consumer pesticide labels clearly specify what types of protective clothing is required during application; some do not have requirements. For those that don't specify what types of protection is required, I suggest the user wears at least long pants, long-sleeved shirt, shoes plus socks, and plastic or rubber gloves.

Concentrates vs. Ready to Use

With consumer pesticides, some require dilution with water and may be designated as concentrates; others are Ready-to-Use (RTU) or Ready-to-Spray (RTS) formulations. RTU and RTS pesticides do not require dilution and are often applied to surfaces until thoroughly wet.

Concentrates, on the other hand, are diluted with water, and applications must be calibrated to deliver a fixed amount per unit area. Rates are often expressed as a fixed amount per 1000 square feet. Users will need to calculate the area intended to be treated to determine the amount of product needed.

Other Label Information

The type of area to be treated (e.g. lawn, fruit, foundation, etc.) must be listed on the label. All pesticides restrict adults, children, or pets from entering the treated area until sprays have dried. Pesticides applied to edible plants list a required 'days until harvest' waiting period for each type of edible plant to ensure pesticides residues degrade to negligible levels through exposure to wind, rain, and sunlight.

A statement on all pesticide labels includes “Keep out of reach of children.” Generally, people purchasing and using pesticides should be at least 18 years old.

Storage

When pesticides are not being used, they should be stored in a locked cabinet or room that is kept cool and dry and according to ‘Storage and Disposal’ requirements on the pesticide label. It is important to keep pesticides inaccessible to children and pets at all times.

Pesticide Exposure

When using pesticides, if some of the product gets on your skin, thoroughly wash it off with soap and water. If it gets in your eyes, flush your eyes for 15 minutes with clean water and check the label for more instructions. If swallowed, check the label for first aid instructions as these vary according to the type of pesticide ingested, and then seek medical attention. After using pesticides, wash thoroughly before eating, drinking, using tobacco, or using the toilet. Clothing used while applying pesticides should be washed separately from that of the rest of the family laundry, and the washer should be run once on rinse after the clothes are removed. Heavily contaminated clothes should be discarded.

Each pesticide label will have a section to address first aid for emergencies. There will be a phone number for the National Pesticide Information Center along with specific emergency medical treatment information. The doctors and first responders will need to know the name of the product; you should have the product container or label when calling a poison control center or speaking with a doctor.

The Answers are on the Label

When you have questions about using a pesticide, reading the label is the first place to look for the answer.

FRUIT & VEGETABLE HUMOR

**What Do You Call an Apple
That Plays the Trumpet?**

A TOOTY FRUITY!!!



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MESSAGE: subscribe KY-FRUITFACTS
Followed by a blank line

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