PURDUE UNIVERSITY
PURDUE EXTENSION
FACTS FOR Fancy Fruit
Issue: 20-09
July 30, 2020

In This Issue

Crop Conditions

(Bruce Bordelon, bordelon@purdue.edu, (765) 494-8212)

Grapes are at early to mid-version across most parts of the state, which is about normal timing. There are few disease and insect problems at this stage due to the relatively dry June and early July. However, if we continue to get rainfall as we have experienced lately, expect some berry cracking and potential sour rot problems. Recall from the presentation at Hort Congress by Dr. Megan Hall a couple of years ago that managing fruit flies is critical to controlling sour rot. There are several options listed in the spray guide. Addition of Oxidate or Fracture to suppress yeasts and bacteria will also help. An upcoming webinar August 11 “Biology and management of post-veraison fruit rots” will cover the latest research and recommendations. Register here: https://cornell.zoom.us/meeting/register/tJAuf–tpjgiGdQdY3QLFP1g2FHWDfxCbkkp

Apples are sizing up normally. There is a light crop on some varieties, a decent crop on a few, and almost no crop on most. Summer bearing blackberry continues and primocane fruiting varieties are sizing up quickly. I expect some red coloration on our Black Magic this week in Lafayette. It is among the earliest of the PF types for us. PF red and black raspberries are starting to ripen as well. Blueberry harvest continues.

Summer bearing “Ouachita” blackberries

Frontenac gris in early veraison

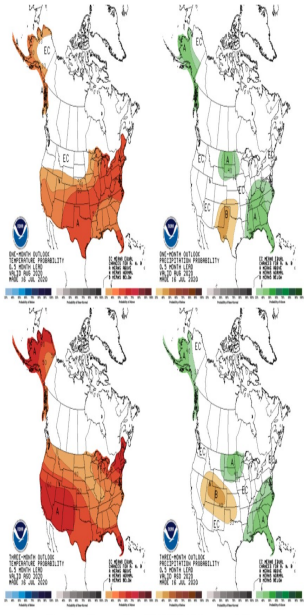
Weather and climate

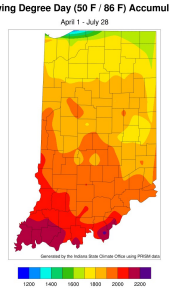
(Beth Hall, hall556@purdue.edu)

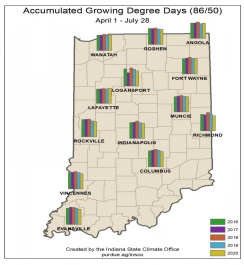
On July 16th, the national Climate Prediction Center released the climate outlooks for August (Figure 1) and the August-September-

October (Figure 2) period. Both outlooks are indicating significant probability for above-normal temperatures. Precipitation is likely to be above normal for the southern two-thirds of Indiana in August, but there is little-to-no guidance for the 3-month, August-September-October period.

Abnormally dry conditions are starting to ease across the state, due to recent rainfall. However, evapotranspiration has still be relatively high due to the warm temperatures, so dry conditions remain spotty across the state. Fortunately, temperatures are likely to be below normal through August 7th (Figure 3), which may help lower evapotranspiration rates. Modified growing degree-day accumulations are very comparable to recent years in the northern part of the state, but are still lagging in the southern half (Figures 4 and 5).







Apple collapse

(Janna L Beckerman, jbeckerm@purdue.edu, (765) 494-4628)

Even in the most successful and best run orchards, trees die. A small percent is considered the norm, and is unavoidable (accepting this is a different story). However, in some years, more trees have succumb than usual. Growers need to determine what caused tree death–or at least rule out some potential pests or pathogens that could spread throughout the orchard—in order to manage and mitigate damage. Fortunately or unfortunately, many tree problems are abiotic (not caused by insects or pathogens) and are due to a complex interaction of environmental conditions. Plant pathogens and pests may contribute to many of these problems, but may not be the root cause (pun intended).

Since the beginning of this season, multiple problems were reported from orchards across the state. There are several ways in which the environment can adversely affect trees, almost all of which can occur within Indiana (and even in the same day). This is important to keep in mind because many of these problems are being attributed to winter injury, fire blight, and/or Phytophthora. Winter injury may have certainly played a role in what we are observing (and was discussed in previous issues of FFF), but there are other factors at play. Symptoms of winter injury include **inconsistent, slow, and clumpy budbreak, which was reported throughout the state.** This spring, trees were slow to leaf out, and when they did so, it was erratic (which was good because it protected trees from subsequent freezes and total crop loss). Emerging shoots were clustered, and leaves didn't elongate well, giving trees a tufted appearance (Fig. 1).

At the same time, many parts of the state were really dry, with below average precipitation. This lack of water prevented good foliar development and trees maintained that tufted, 'unthrifty' appearance. Not obtaining sufficient water prevents proper photosynthesis, resulting in plants that thirsty AND hungry—and not developing appropriately. However, in half the orchards examined here, irrigation was provided earlier in the 2020 season, which should have mitigated some of the drought impacts.

When we add the sudden, extreme heat that began in late May to this mix, trees displayed drought symptoms, even when moisture was available after any significant rainfall. For trees, water is used not only to photosynthesize and create food, but it is essential for cooling leaf surfaces via evapotranspiration. Any damage that occurs before rainfall will not be corrected by subsequent rainfall—the damage has been done. Some leaves will remain small and/or scorched. **Remember:** Trees do not heal. Problems may be outgrown, but once any of these symptoms (leaf scorch, discoloration, dieback or death) occur, changes in environment may stop their progression but they can't turn back the clock. Plants may recover by growing new leaves and shoots, but they won't 'heal.'

If all that wasn't enough, many of us throughout the state and region experienced some significant flooding. Flooding damages trees in a multitude of ways, some of which are acute (severe, but only for a short period) (Fig. 2) while others may create chronic (long lasting) problems. Flooding that keeps trees submerged for days at a time create acute damage, that consists of dying,

leaking roots. These leaky roots are high susceptible to root rots, especially Phytophthora spp. What is often not considered is the long-term stress and problems that result in consistent, above average rainfall. Trees continue to grow in the presence of water, sunlight, and soil nutrients. When water is plentiful, root development does not have to be as extensive as average to dry years to obtain the water necessary to support canopy growth. When conditions change to normal or to drier conditions, trees fail to have the roots to transport water to the crowns. Crowns fail to have the water to photosynthesize and feed roots. This can create a feedback loop of failure: Droughty, dying crowns fail to provide photosynthate to roots, which in turn, are unable to provide sufficient water to maintain canopy. Dieback continues until a balance is reached. If it isn't reached, the tree may continue its decline feedback loop to death.

If all this wasn't enough, many of the tree affected are presenting incompatible grafts (Fig 3). This cultivar-rootstock incompatibility is described as resulting in breaks or malformations at the graft union, leaf chlorosis, early defoliation, plant wilt, and premature death. This is different from other reports of problems affecting G.935, in that trees aren't experiencing a decline, but fairly rapid death. In the orchards examined with G.41 rootstock, incompatibility presented as snappage (Fig. 4), with or without decline of the tree prior to complete breakage.

What it isn't

There has been a lot of conjecture and discussion regarding all sorts of problems given a variety of acronyms (Rapid Apple Death (RAD), Sudden Apple Death(SAD), Fake apple death(FAD—I jest). Naming something is very different than understanding it, and in fact, naming something early often cements incorrect assessments, assumptions, and diagnoses. What we are seeing seems to be quite different than what was reported on the East coast.

Table 1. Compare and contrast of apple maladies, Midwest versus East Coast

Symptoms	Indiana	East Coast
Cultivar affected	Gala, Honeycrisp	Fuji, Gala, and Golden Delicious
Scion	Cankers by graft union, with dieback and decline	Death extends from graft
Rootstocks Involved	M.9, Nic29, G935, G41 Rootstock is alive and appears healthy	Rootstock is healthy(?); M9 and others
Age of trees	Under 5 years	unknown
Foliage	Unthrifty, yellowing, poorly developed, tufting. May begin to recover, only to turn brown and die (Fig 1)	Pale yellow turning red and soon dying
Graft Union	Appears healthy in some blocks; snappage in others (Fig. 4)	Cankers, bark slough
Irrigated Block	Yes 3 of 4 blocks	Unknown
Herbicides	Drift issues may be involved 2 of 4 orchards (Fig 5).	Unknown
Weather	Drought (April-June 30/2020) Winter injury Flooding history(2019)	Drought (2019) Winter injury ?
Patterns	Clustering	dead, declining and healthy trees evenly dispersed in blocks
Borer/Ambrosia beetle	Not observed	detected
Cankers	Black rot, white rot (Fig. 6)	White rot
Root rot	1 of 4 orchards	Not detected
Virus	Unknown	In healthy and symptomatic trees
Fire blight	Not detected in 2020; previously reported in 2 of 4 orchards	Not detected
Nematodes	Not tested, healthy suckers	Inconsistent, but mostly healthy suckers
History of overcropping	A problem with Honeycrisp; inconsistent	Unknown
Rodent and rabbit damage	Present but at low levels	Unknown

Managing Young Plantings of Declining Trees

As there are a lot of factors at play, growers need to recognize which ones may be occurring in their own orchard. Here are some of the more common stressors observed this year, and suggested management option.

Crop Management

Most of the orchards examined lost the majority of the crop with the multiple spring freezes that occurred in April and May. This may be a blessing in disguise and prevented even greater losses than what has been observed to date. However, for next year, trees will need to be thinned to prevent overcropping and additional physiological stress, particularly on trees with grafting issues like are seen with G.41 and G.935, or trees in sites that were very wet in 2019. Crop thinning will reduce the likelihood of snappage or topple. See the Midwest Fruit Pest Management Guide for more information on thinning: https://ag.purdue.edu/hla/hort/documents/id-465.pdf

Fertilize

It is particularly important that winter injured stands have adequate fertility, however, half of the orchards reporting problems may have applied more N fertilizer than is recommended. A fruit tree that is overfertilized will produce an excess of succulent new growth. This succulent growth is more susceptible to not only fire blight, but root rots like Phytophthora, too. If fertilizer is applied too late in the season, trees may not harden off properly, predisposing them to winter injury.

Fertilizer requirements vary due to differences in soil profiles, rootstock/tree size choices, and other cultural and pest management practices. However, after year one, a general rule of thumb is to apply 0.02 pound of actual nitrogen per year/age of the planting/orchard up until 0.2 pound (year 10). As different fertilizers have different percentages of nitrogen, use Table 1 to assist in obtaining the appropriate N levels. After (approximately) year ten, leaf analysis results and corresponding shoot growth assessment should be taken before adding any nitrogen fertilizer. Nutrient concentrations in plant tissues are the most accurate indicator of the nutritional health of fruit tree crops.

Table 1. Sources of nitrogen, percent nitrogen content and application rates.

Nitrogen source	Nitrogen content	Actual amount of material to apply per tree
Ammonium nitrate	33%	0.06 lb or 0.97 oz or 28 g
Ammonium sulfate	21%	0.09 lb or 1.5 oz or 43 g
Mono-ammonium phosphate(MAP)	11%	0.18 lb or 2.9 oz or 83 g
Di-ammonium phosphate (DAP)	18%	0.11 lb or 1.8 oz or 50 g
Calcium nitrate	15.50%	0.13 lb or 2.1 oz or 59 g
Sodium nitrate	16%	0.125 lb or 2.0 oz or 57 g
Urea	46%	0.04 lb or 0.7 oz or 20 g
19-19-19	19%	0.10 lb or 1.7 oz or 48 g
10/10/10	10%	0.20 lb or 3.2 oz or 91 g

Weed control

Herbicide applications help control weeds if applied to the weeds and not the trees or rootstocks. Many growers have moved away from RoundUp and other glyphosate based products due to the systemic nature of the herbicide. Instead growers have relied heavily on the contact herbicides glufosinate and paraquat. The label of these glufosinate herbicides state "Avoid direct spray or drift to desirable vegetation" and the "solution, spray, drift or mist with green bark, stems, or foliage, as injury may occur to trees, vines, and berries. Only trunks with callused, mature brown bark should be sprayed unless protected from spray contact by nonporous wraps, grow tubes, or waxed containers. Contact …

with parts of trees, vines, or berries other than mature brown bark can result in serious damage." (underlines mine) (Fig. 5). Half the growers had both weed control issues that necessitated higher rates of herbicide, which in turn, may have made any drift to rootstock or scion that much more damaging. This holds true for paraquat based herbicides as well, with the label stating "Do not allow spray to contact green stems (except suckers), fruit or foliage."

When using glufosinate or paraquat to control weeds in an orchard, apply herbicides with a low pressure (20-30 psi) to create larger droplets with less likelihood of drift and/or include a drift-control agent (e.g., Chemtrol, Strikezone or Windcheck) to minimize the risk of small droplets drifting to rootstocks and graft union. If possible, apply herbicides with a hooded boom sprayer. If grasses are a problem, use grass-specific herbicides instead, and begin incorporating a pre-emergent to reduce the risk of herbicide injury by reducing the need to treat blocks.

Sucker Punch…er…Pruning

Some cultivars are more prone to suckering than others, with M.7, M.9 more prone to suckering than B.9, or EMLA 26. The pruning of suckers by either chemical or mechanical means may be contributing to the problems we are observing (Fig. 5). Suckering is an indication that scion portion of the tree is not functioning as well as it can. Suckers provide rootstock with photosynthates (food), redirecting the root stock to deliver water and nutrients to the sucker and not the scion depriving the scion of water and nutrients. Removing those large suckers creates an wound that is more susceptible to herbicide injury and frost cracking, and can become infected with *Phytophthora, Erwinia* (the fire blight pathogen), and the bot cankers (Fig. 6). If that wasn't bad enough the rootstock is no longer obtain the photosynthesis it once received, just adding to the stress situation.

Another option would be to chemically control root suckers via NAA (naphthaleneacetic acid; e.g., Tre-Hold® Sprout Inhibitor A112c with a brush, small hand held sprayer or back pack sprayer. For large projects, power operated low-pressure spray equipment with attached hand gun or trunk directed nozzle can be used. Maintain low spray pressure (not to exceed 25psi) to avoid spray drift of fine spray particles. NAA works to restore apical dominance of the scion, suppressing root suckering. Be aware that NAA is also a fruit-thinning agent: To minimize the risk of possible thinning by NAA from spray drift, apply ~4 weeks after petal fall or when fruit are larger than 10mm or when regrowth is 6–12 inches tall.

Strengthening the Union

Lastly, recent work has found that one to two applications of Maxcell (benzyl adenine, BA) at a concentration of 2.5 g/l in latex paint applied to the graft union increased the strength and flexibility of the graft union relative to scion cross sectional area (SCSA) in one study, but further research is needs to identify more efficient methods of application(Adams 2016).

The NC-140 group that oversees the rootstock evaluation found that Apogee also increased strength but reduced scion growth. Do not apply any PGR if using NAA for sucker control.

Final thoughts

It is important to remember that no one factor caused these problems, and that multiple, integrated approaches are needed to correct some of the issues at play that can be corrected. There isn't much we can do about the weather, beyond tiling and irrigating. We can research rootstocks to make the best decision for our scion, site and pest issues (more on that soon). Mindful herbicide use, particularly with young trees and thinned bark scions like Honeycrisp, Gala, and Blondee, will minimize the risk of injury to scion, graft and rootstock, while controlling weeds, and preventing habitat for rabbits and rodents.

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

Figure 6

Literature Cited

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Monitoring spotted wing Drosophila (SWD) in small fruits

(Elizabeth Yim Long, long132@purdue.edu)

If you have small fruits, including cherries, blackberries, raspberries, blueberries, and grapes that are setting fruit and ripening, be on the look out for Spotted Wing Drosophila (SWD) (Figure 1), a small vinegar fly that attacks all the delicious berries mentioned above!

If you are a small fruit grower, you've likely already heard of SWD, because it has wreaked havoc on the small fruit industry throughout the world. It's ability to (1) use many different wild and cultivated host plants (moving from one to the next throughout the growing season), and (2) complete multiple generations each year, make this insect a major challenge to manage. To add insult to injury, these flies differ from the native fruit and vinegar flies in North America in a key way: *rather than laying eggs in damaged or decaying fruit, they lay eggs in healthy, ripening fruits while they are still developing on the plant.* **This means that fruit may be destroyed or 'wormy' before you're ready to harvest and enjoy it, and we don't want that (Figure 2)!**

SWD is an invasive vinegar fly that was first detected in the United States in 2008 and in Indiana in 2012. Among several diagnostic characters for identification, male SWD have spots near the tips of the wings, which may be visible to the naked eye for some people, but magnification is helpful (Figure 3A). Unlike the males, female SWD lack wing spots and can only be identified by using a magnifying glass or microscope to confirm the presence of an enlarged and hardened egg-laying organ (ovipositor) at the end of the abdomen (Figure 3B). *It is this hardened ovipositor that sets SWD apart from our native fruit and vinegar flies and enables female SWD to cut through the skin of sound fruit to lay eggs.*

The good news is that a lot has been learned about what can be done to help manage SWD in small fruit plantings and it boils down to the following key strategies (read more details about these in this factsheet from The Ohio State University Extension):

1. **Monitor the SWD population (adults and larvae) in your crops**

Monitor adults with baited traps to determine when they arrive and how abundant they are. There are several commercial lures and traps available to monitor SWD adults, or you can make your own! Ideally, these traps are placed a bit early, before fruits become vulnerable, so you know when SWD are present and how populations are changing in your crop. These traps consist of a lure/bait and a liquid drowning solution at the bottom of the trap. Taken together, these elements attract adults to the trap and then capture them when they fall into the liquid at the bottom. The drowning solution should be removed weekly and examined with a microscope or magnifying glass to confirm detection. The threshold for action is 1 adult fly per trap!

Monitor larvae in fruit using the salt water test to determine how effective your spray program is at managing the SWD population and the level of larval infestation in berries. This is a pretty simple test: Add 50-100 berries to a container and pour 8 ounces of warm water + 1 tablespoon of salt and wait 15-20 minutes. If SWD larvae are present, they will leave the fruits and float to the top where you can spot them! If you see lots of larvae float to the top, this may be a sign that you need to check your spray equipment, change products, or shorten the time interval between sprays.

2. **Keep the field clean! Sanitation is key**

Harvest fruit as soon as it is ripe and keep the field clean of any dropped or culled fruits! The flies may still lay eggs in unwanted fruit and this may contribute to growing SWD populations in your small fruit system. Destroy leftover fruits after harvest to reduce food resources available to SWD.

3. **Spray insecticides to manage SWD adults**

If the SWD population gets out of hand, apply a synthetic or organic insecticide registered for your fruit crop, making sure to follow all label instructions and rotating between insecticide classes (to reduce the development of insecticide resistance). For a list of insecticides registered for use on small fruits, see the Midwest Fruit Pest Management Guide, 2019-2020. Please remember to be mindful of pollinators and do not spray when crops are flowering, and bees are active!

Figure 1. Adult Spotted wing Drosophila (SWD) on ripening raspberries. Photo: J. Obermeyer, Purdue University

Figure 2. Spotted wing Drosophila larvae in grape pulp. Photo: J. Obermeyer, Purdue University

Figure 3. Male (A) and female (B) specimens of the spotted wing Drosophila vinegar fly. Arrows indicate diagnostic characters on male and female flies. Photo: J. Obermeyer, Purdue University

Tissue analysis for grapes and small fruit

(Bruce Bordelon, bordelon@purdue.edu, (765) 494-8212)

Plant nutritional status is important for all phases of plant growth and has a direct effect on vigor, fruitfulness, cold hardiness, and other factors. Tissue analysis is the most reliable means of determining plant nutritional status. Combined with soil testing, tissue analysis can help pinpoint the source of problems and determine what measures may be needed to ensure proper nutrition of the crop. Tissue analysis samples should be collected at the appropriate time to give the most meaningful results.

For strawberry, sample the first fully expanded leaves after renovation, usually in mid to late July. For brambles, sample leaves on non-fruiting canes (primocanes) between August 1 and 20. For blueberries, sample leaves during the first week of harvest (already past). For grapes, samples should be taken about 70 days after full bloom or at the start of veraison, usually early to mid-August. Samples should be adequate in size. Collect 30-60 leaves for strawberries, brambles, and blueberries, and 100 leaf petioles for grapes (for grapes submit only the leaf petiole, or stem, for analysis, discard the leaf blade). Collect samples to represent the entire field, not just from a few plants. Sample different varieties separately. If specific problems exist, collect separate samples from both normal and problematic areas of the planting. After collection, leaves should be rinsed gently in tap water to remove any pesticide residues and dust that might affect analysis, laid out to dry for a couple of days, then bagged in paper bags for submission to the lab. Some labs offer tissue analysis sample kits.

There are several private companies and a few universities that provide tissue analysis. A list of certified soil and plant analysis testing labs serving Indiana growers is located at https://ag.purdue.edu/agry/soilfertility/Pages/Soil-Fertility-Recommendations.aspx

The Midwest Small Fruit Pest Management Handbook has a chapter on tissue analysis and fertilizer recommendations. https://ag.purdue.edu/hla/Hort/Documents/Midwest%20Sm%20Fruit%20861%201-24-11.pdf. I suggest growers refer to that chapter when reviewing tissue analysis results and recommendations.

Arkansas blackberry “Ouachita” wins ASHS outstanding cultivar award

(Bruce Bordelon, bordelon@purdue.edu, (765) 494-8212)

FAYETTEVILLE, Ark. — Ouachita blackberry, a 2003 thornless variety from the University of Arkansas System Division of Agriculture, received the Outstanding Fruit Cultivar Award from the Fruit Breeding Professional Interest Group of the American Society of Horticultural Science.

The Outstanding Fruit Cultivar Award recognizes noteworthy achievements in fruit breeding and highlights a modern fruit introduction that has a significant impact on the industry.

The award was presented July 24 during the ASHS Fruit Breeding Professional Interest Group meeting, which was held virtually this year. The award has been presented since 1987 to noteworthy cultivars, according to information on the ASHS website.

Top seller

“Ouachita has been the most important variety from our fruit breeding program,” said John Clark, Distinguished Professor of Horticulture for the Division of Agriculture, and fruit breeder for the Arkansas Agricultural Experiment Station, the division’s research arm.

Clark said almost 5 million plants have been propagated and sold,

based on reports from licensed propagators, who sell the plants to nurseries and commercial fruit farms. An earlier award winner, Navaho, had nearly 2 million plants sold.

“Plant sales are the strongest reflection of its importance,” Clark said.

Sales are a good indicator of popularity with growers and consumers, but Ouachita made significant impacts in other ways, particularly because of its good storage and shipping qualities.

Expanding the market

“Ouachita contributed substantially to the establishment of a commercial shipping market blackberry industry in the eastern U.S., especially in the South, in the years following its release in 2003,” Clark said. “It has also been planted in other regions of the U.S., including western, midwestern and northeastern states.”

“The idea of a shipping industry based largely on southern U.S. production developed because of an increase in imported Mexican blackberries in the 1990s to early 2000s,” Clark said. “Shippers wanted to continue marketing blackberries after the Mexican production season ended in late May.”

Ouachita proved to be adapted to widely different growing conditions, allowing its use in many different states.

The first major plantings of Ouachita began in southern Georgia and central Arkansas, Clark said, and expanded to North Carolina, the Midwest and other states as the shipping industry grew. Advances in production technologies, particularly the rotating cross-arm trellis, allowed expansion of blackberry production into regions where the new technologies allowed growers to protect the plants from winter cold in the upper Midwest.

Ouachita has also been planted in western states, particularly in California, he said.

This expansion of the U.S. blackberry shipping markets was possible because of Ouachita’s potential for long-distance shipping, Clark said. “The specific traits of importance were retention of berry firmness, low leakage of berries, and reduced reversion (reddening of drupelets after harvest) compared to other cultivar choices at the time,” he said.

“Ouachita has also been very popular with local-market growers,” Clark said. “This is a substantial use for this variety, especially in Arkansas.”

Another part of Ouachita’s appeal to growers is its proven resistance to double blossom/rosette, a devastating disease that once made commercial blackberry production virtually prohibitive in the South, Clark said.

In its 17th year of production, Ouachita continues to be popular with growers, Clark said. Its third-strongest year for sales was the 2018-2019 planting season.

Ouachita has also been licensed for sale in Japan, several South American countries, Australia, South Africa and Europe, bolstering the Division of Agriculture’s boast that its blackberries are grown on every continent but Antarctica.

Fruitful program

The Division of Agriculture fruit breeding program has released 15 floricane-fruiting blackberry varieties and five primocane-fruiting varieties since the program’s inception in 1964. Clark said he and colleague Margaret Worthington, assistant professor and fruit breeder, continue to breed for improvements in sweetness, flavor and storage and shipping qualities.

Worthington is leading genetic research to develop innovations in plant form, shape and size that may offer advantages to growers, Clark said.

The latest variety from the blackberry breeding program was Ponca, released late last year and just entering the markets now, Clark said. “Ponca has superior flavor traits and good storage and shipping qualities,” Clark said.

He describes Ponca’s unique qualities in a video: https://youtu.be/DJKLtYYBpIs

Ouachita is the second blackberry and third fruit from the Arkansas fruit breeding program to receive the award, Clark said. The first Arkansas blackberry to receive the award was Navaho, released in 1989. Cardinal strawberry, released by the division in 1974, also received the ASHS award.

To learn more about Division of Agriculture research, visit the Arkansas Agricultural Experiment Station website: https://aaes.uark.edu. Follow us on Twitter at @ArkAgResearchand Instagram at ArkAgResearch.

About the Division of Agriculture

The University of Arkansas System Division of Agriculture’s mission is to strengthen agriculture, communities, and families by connecting trusted research to the adoption of best practices. Through the Agricultural Experiment Station and the Cooperative Extension Service, the Division of Agriculture conducts research and extension work within the nation’s historic land grant education system.

The Division of Agriculture is one of 20 entities within the University of Arkansas System. It has offices in all 75 counties in Arkansas and faculty on five system campuses.

The University of Arkansas System Division of Agriculture offers all its Extension and Research programs and services without regard to race, color, sex, gender identity, sexual orientation, national origin, religion, age, disability, marital or veteran status, genetic information, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.

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Coronavirus Food Assistance Program (CFAP)

(Peter M Hirst, hirst@purdue.edu, (765) 494-1323)

This just in from Steven Brown, State Executive Director for USDA’s Farm Service Agency in Indiana

CFAP provides direct relief to agricultural producers who faced

price declines and additional marketing costs due to COVID-19. In Indiana, we have already approved 15,034 applications and disbursed $164,250.055 as of July 27, 2020. I know many of our farmers and ranchers have applied for CFAP already, but the numbers indicate that some who are eligible have not.

A range of commodities are eligible for CFAP, including specialty crops. You can access the full list of eligible non-specialty, specialty, livestock, dairy, and wool commodities by visiting farmers.gov/cfap.

Additional resources are available on farmers.gov/cfap, and we're here any time to answer questions about the program.

Events

(Bruce Bordelon, bordelon@purdue.edu, (765) 494-8212)

Due to the COVID crisis, most Purdue Extension meetings will be held virtually. Most Purdue Extension staff are working from home and are available to answer your questions by email, phone or through social media. Our contact information is at the end of the newsletter.

July 30, 2020 Small Farm Education Field Day and Webinar Series hosted by Purdue Extension and the Purdue Student Farm.
August 3rd 12-1pm
August 5th 12-1pm
August 7th 12-1pm
August 10th 12-1pm
August 12th 12-1pm
August 14th 12-1pm

Register and see the schedule of topics at https://tinyurl.com/y5ahtrow

Contact Lori Jolly-Brown, ljollybr@purdue.edu

September 10-12, 2020 Purdue Extension Master Gardener State Conference
Sponsored by the Hamilton and Howard County Master Gardener Associations
Hamilton County Fairgrounds, Noblesville, IN (September 10 and 11)
Tours of Howard County gardens, Kokomo, IN (September 12)
https://hcmga.org/2020sc
(Registration open to Purdue Extension Master Gardener volunteers and Extension staff only)

September 10, 2020 Hydroponics Workshop
Hosted virtually
Contact Lori Jolly-Brown, ljollybr@purdue.edu

January 19-21, 2021 Indiana Green Expo
Indiana Convention Center, Indianapolis, IN
Contact Brooke Ponder, bponder@purdue.edu

January 20 & 21, 2021 Indiana Horticultural Conference & Expo
Indianapolis Marriott East
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