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Good Times, Bad Times

We sure have had our share. Last year was good. This year? Not so good. But persevere we will. In this issue we cover some problems that growers have had recently — namely Cherry Fruitworm and Phytophthora root rot. Another possible pest on the horizon is spotted lanternfly. Don't worry yet, as its arrival is not imminent, but having an idea of what is plaguing other growers is an ounce of prevention. All we can do is the best we can, but some years no matter how hard we try we end up in the same old jam. Freezes and excessive rainfall were our bane this year. But I have confidence that the future is brighter. After all, good times are followed by bad times and vice versa. It's life (and a Led Zeppelin song).

Harvest Tally for 2019

The final harvest estimate for this year is down substantially from last year. With all the information I was able to gather from growers who were willing to share their harvest numbers I came up with this total:

1.45 million pounds

Undoubtedly this is a low, low number for us. Not too long in the past we were up near 10 million pounds. Those days look to be behind us now. Most of the harvest this year went to the fresh market (estimated 90%) and the final 10% going to the process market. Certainly next year can't be as bad as this year (can it?) and we will rebound back up toward our 5 million pounds or so. While every year has its challenges, freeze damage is the most significant one we face year-to-year. Unfortunately, it got us this year, especially on the southern highbush and early rabbiteye varieties.

Spotted Lanternfly — Coming Attraction?

Eric T. Stafne

MSU-ES, Fruit Specialist, Poplarville, MS

The spotted lanternfly is actually a plant hopper and not a fly. It is an invasive pest that was only recently (2014) discovered in the U.S. So far it has been most problematic in Pennsylvania, where it was first found, but it has made its way to surrounding states as well. Does that mean it is coming to Mississippi? And if it does, will it be a problem on blueberries? The bad news is that the spotted lanternfly feeds on many different hosts, at least 70 identified so far. It prefers hardwood trees species, but has been found on many fruit species, including (gulp) *Vaccinium* species. The indicator host species are tree-of-heaven (*Ailanthus altissima*), black walnut (*Juglans nigra*), and grape species (*Vitis* spp.).

Right now we have nothing to worry about. The pest is not here and is not close to here, but it is highly mobile (it flies) and with interstate travel and commerce it may arrive in the future. This bears watching in a way that the spread of spotted wing drosophila occurred in a short period of time.

Other states like California, Georgia, and South Carolina are gearing up to educate their growers about the possibility of this pest in the near future. We need to remain vigilante and keep our eyes peeled for its arrival.

As I have never seen this pest in person, I don't have any photos of it, but below are some recent publications that go into far greater detail than I have done here. If you suspect that you have seen this pest on your blueberries (or any other plant) please contact me as soon as possible!

References for further reading:

Spotted Lanternfly Management in Nurseries, Orchards, Vineyards, and Natural Areas in South Carolina and Georgia <https://www.clemson.edu/extension/publications/files/forestry-wildlife/fnr-spotted-lanternfly-mgmt.pdf>

Keep Calm and Carry On – Spotted Lanternfly <https://site.extension.uga.edu/viticulture/2019/07/keep-calm-and-carry-on-spotted-lanternfly/>

Cherry Fruitworm, A Sporadic but Potentially Serious Pest

Dr. Blake Layton, MSU Extension Entomology Specialist

During the 2019 production season some producers had multiple truckloads of berries rejected due to low levels of contamination by cherry fruitworm, *Grapholita packardii*. This was a situation these growers had never experienced and was likely due to unusually heavy populations of this sporadic pest, combined with inability to maintain adequate spray coverage due to unusually rainy weather conditions. Although cherry fruitworm is a sporadic pest and similar outbreaks may not reoccur for many years, it is wise to learn more about this pest to help avoid future problems. Cranberry fruitworm is a similar pest that must also be controlled, but this article focuses specifically on cherry fruitworm because this caterpillar is more often associated with rejected berries due to caterpillar contamination.

First let's consider some factors that cause cherry fruitworm to pose unique risks for shipment rejection due to "caterpillar contamination" and points that should be considered when planning control efforts.

- Based on the US Standards for Grades of Berries for Processing, the tolerance for worms in fruit is zero. Specific wording is "no part of any tolerance shall be allowed for berries with worms."
- Berries infested with cherry fruitworms often remain firm (much more so than berries infested with spotted wing fruit fly) and are difficult to detect by hand pickers or mechanical sorters.
- Natural behavior of mature cherry fruitworm caterpillars, which are pink-colored and about 3/8 inches long, is to exit berries and crawl to an overwintering site. When infested berries are being held in cold storage this behavior results in some caterpillars exiting berries and crawling about on pallets, where they are easily observed.
- Cherry fruitworms usually confine their feeding to only two or three unripe berries, usually moving directly into adjacent berries at the point where they are touching. Consequently, once newly hatched caterpillars bore into a berry they are "safe" from exposure to insecticide sprays until they exit the last berry to move to an overwintering site.
- This means that to provide effective control, insecticide residues must be present at the time of egg hatch so newly hatched caterpillars will be controlled before they bore into berries.

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Cherry Fruitworm, cont.

- Cherry fruitworm moth flight activity usually precedes that of cranberry fruitworm and often begins during the latter half of the bloom period. This is a time when insecticide sprays are usually avoided to avoid harming bees, but it is often the time to apply the first spray for cherry fruitworms.
- Fortunately, there are insecticide options that are effective against fruitworms but have low impact on pollinators and there are cherry fruitworm-specific pheromone traps that can be used to monitor moth flight activity and help time first sprays.
- The flight period/egg laying period of cherry fruitworm spans several weeks, usually beginning before final petal fall.
- Potential for at-harvest berry contamination is greatest for caterpillars that hatch later in the flight period. Consequently, it is especially important to control cherry fruitworms during the approximately four week window after petal-fall.

Pheromone traps that are specific for cherry fruitworm are available and can be used to track moth flight activity and refine spray timing. In the absence of pheromone trap information, a spray schedule for cherry fruitworm should begin during the latter half of the bloom period and extend into the first month of the berry development period at spray intervals of two weeks or less. As the crop continues to develop and sprays are added to target other pests, be sure to choose or include insecticides that will also control fruitworms. Do not rely on malathion to control fruitworms and other caterpillar pests.

When applying insecticide sprays during bloom, be sure to choose insecticides that have minimal impact on pollinators. Best options for this spray are the insect growth regulator products, Intrepid 2F (methoxyfenozide) or Confirm 2F (Tebufenozide), both of which are considered “relatively safe” to bees.

Altacor (chlorantraniliprole) is a good choice for early post-bloom sprays. Altacor is somewhat costly but provides excellent, relatively long-lasting control of caterpillar pests and is also considered “relatively safe” for bees. Avaunt (indoxacarb) is another good choice for caterpillar pests, but do not use until all blooms have dropped as indoxacarb is highly toxic to bees.

Pyrethroid insecticides, such as Mustang Max (zeta-cypermethrin) or Brigade (bifenthrin), are popular choices for late season cover sprays because of their short pre-harvest intervals (1 day PHI for either of these) and their efficacy against other pests, such as blueberry maggot and spotted wing drosophila. These pyrethroids are also effective against fruitworms, but if pheromone traps are indicating heavy fruitworm activity, consider including an effective caterpillar product as a tank-mix partner. Always be sure to check, and double-check, preharvest intervals of any pesticides you plan to spray on crops that are approaching maturity. See the [Southeast Regional Blueberry Integrated Management Guide](#) for more details on insecticide options and rates, as well as information on control of other pests.

Phytophthora Root Rot

Eric T. Stafne, — MSU Extension

Recently, we (me and USDA-ARS lab in Poplarville) took some samples from a blueberry field and tested it for a disease called Phytophthora root rot (*Phytophthora cinnamomi*). Some of the tests came back positive. Below are some facts about the disease (obtained from eXtension <https://articles.extension.org/pages/29670/phytophthora-root-rot>):

Symptoms include:

Early above-ground symptoms include:

- Leaves turn yellow.
- Leaf margins burn.
- No new leaf growth

As disease progresses:

- Terminal leaves become small
- Excessive defoliation occurs because of severely damaged roots.
- Stunted and wilt-prone leaves.
- Restricted root system that allows plants to be easily rocked back and forth, or pulled up.
- Dead or prematurely defoliating bushes.
- Defoliation and poor growth follow the contours of the low areas where excessive moisture is present.

Disease Cycle includes:

- Zoospores (swimming spores) produced by the fungus infect blueberry roots.
- Roots collapse and decay.
- Defoliation and poor growth follow the contours of the low areas where excessive soil moisture is present.
- Abundant soil moisture and temperatures between 68 F and 90 F (20 C to 32 C) promote disease development.

Control Measures include:

- Having adequate ditches.
- Planting on raised single-bedded rows.
- Taper-disking or sweep-blading.
- Using "sock pipe" and other types of pipe normally used for residential septic fields for draining small areas.
- Incorporating peat or bark mulch and, then, planting shallow and using additional mulch to form beds if planting on wet clay or clay loam soils.
- Spray infected plants with phosphorous acid products
- Apply Mefenoxam to the affected soil (if appropriate)

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Blueberry Field Day Recap

Eric Stafne, MSU-ES

On May 9, 2019 the annual blueberry field day was held at the USDA-ARS Thad Cochran Southern Horticultural Laboratory. It was co-hosted by MSU Extension and the Gulf South Blueberry Growers Association. We had a good sized crowd even with the threat of rain. The primary focus was to bring attention to the new blueberry germplasm that USDA-ARS breeders are working on. Below are a couple photos of that day. Be sure to join us next year.

