



Arkansas Fruit and Nut News Volume 6, Issue 1, 25 April 2016

2016 Fruit insecticide registration update (John Wise) ([Link](#))

- **Warrior II** replaces Warrior 1CS (beetles, leafhoppers, Lepidoptera in pome/stone fruits)
- **Magister 1.6SC** (new label for mites on cherries)
- **Sluggo** (new label for slug and snail on fruit crops)
- **Deadline** (new label for slug and snail on blueberries, caneberries and strawberries)
- **Seduce** (new ant and cutworm bait label for fruit crops)
- **Endosulfan** (EPA 2015 phaseout complete for apple and blueberries)
- **Closer** (EPA cancelled registration)

New Production Guides:

SE Regional Caneberry Production Guide ([pdf](#))
 or with links to videos ([pdf](#))

Arkansas: Sustainable blackberries & raspberries a self-assessment workbook for growers ([pdf](#))

Pesticides Guides for Fruit and Nuts (2016):

All online: <http://comp.uark.edu/~dtjohnso/Management and Spray Guides.html>

Arkansas

- MP144 AR Insecticide Recommendation for Arkansas ([pdf](#))
- MP467 Arkansas Small Fruit Management ([pdf](#))
- MP44-Recommended Chemicals: Weed & Brush Control ([pdf](#))
- MP154-Arkansas Plant Disease Control Product Guide ([pdf](#))

Midwest

Midwest Fruit Pest Management Guide ([pdf](#))

Search for Pesticides Labeled for Pecan

- [Insecticides](#) ([Link](#))
- [Fungicides](#) ([Link](#))
- [Herbicides](#) ([Link](#))

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Upcoming Events:

- **May 3, 2016: Greenhouse Production Workshop** with speakers in morning, lunch, and a tour of the greenhouses at the North Arkansas College in Harrison, AR. Address needs by Extension agents, NRCS, farmers market managers, and maybe high school agriculture teachers with topics on greenhouse management (horticulture crops), pest management, economics, and food safety.
- **May 21, 2016: Arkansas Pecan Growers Association Meeting** from 9am to 3pm - educational meeting in University of Arkansas Cooperative Extension Service Office in Little Rock, AR (Registration TBA).
- **June 16-17, 2016: TriState ArkLaMiss Pecan-ference** will be held in Alexandria, LA. at the Best Western Of Alexandria Inn & Suites & Conference Center, 2720 N MacArthur Dr, Alexandria, LA 71303 (Contact: Stephen Norman, (318) 729-3173 or by email: pecans@rosaliepecans.com)
- **Second week of June: Oklahoma Pecan Growers Conference**
- June 9th, Blackberry Workshop- 2pm Fruit research station. Clarksville AR. More details to come or contact Dr. Amanda McWhirt, amcwhirt@uaex.edu, 501-671-222
- June 16, Southwest Research and Extension Center, Horticulture Crops Field Day. Hope, Arkansas. Contact: Vic Ford vford@uaex.edu and Sherri Pote sblue@uaex.edu, 870-777-9702
- Oklahoma Pecan Growers Conference, held the second week of June.
- **July 10-13, 2016: Texas Pecan Growers Association Conference & Trade Show** is in the Embassy Suites, San Marcos, TX (Contact TPGA at 979-846-3285 for more information)

A Survey to Measure Spotted Wing Drosophila Impacts – your help is needed!

University of Arkansas researchers are assisting a recently funded project ([Link](#)), “**Sustainable Spotted Wing Drosophila (SWD) Management for United States Fruit Crops,**” to survey fruit growers with two goals:

1. Measure the impact of SWD throughout the United States.
2. Guide our project activities over the next four years.

This five-year project, coordinated by North Carolina State University, is developing national research and extension projects to minimize the impacts of SWD. They include new management tactics and programs, improved insecticide efficacy for SWD and information and training on SWD for growers, extension agents and others. In order to achieve this and ensure the research and extension efforts match the needs of growers, the project is collecting information on the impacts of SWD on fruit growers, current management practices and preferences, and your requirements for better management of SWD. Participation is voluntary and the survey does not collect personally identifying information. The data will only be analyzed and reported in aggregate form. We would like to get feedback from as many growers as possible!

So, please complete the Sustainable SWD Management *Grower Survey* ([Link](#))

Contact Donn Johnson at dtjohnso@uark.edu for additional information.

Funding for this project is provided by the National Institute of Food and Agriculture, U.S. Department of Agriculture Specialty Crops Research Initiative under Agreement No. 2015-51181-24252. This survey will help researchers identify impacts of SWD on fruit growers and look for new management tactics and programs, improved insecticide efficacy and SWD training.

Assessing Freeze Damage

(Assembled by Dr. Gary Gao, Ohio State University)

- Assessing Cold Injuries in Blackberries and Raspberries (NC State) ([pdf](#))
- Critical Temperatures in Blackberries (NC State) ([pdf](#))
- Frost Control in Blueberries (MSU) ([pdf](#))
- Critical Temperatures in Blueberries (MSU) ([Link](#)):
- Critical Temperatures in Grapes (WSU) ([Link](#)):
- Critical Temperatures in Fruit Trees (MSU) ([Link](#)):

Pecan Pests

Dr. Donn T. Johnson and Elena Garcia - Nut Research/Extension

Pecan Nut Casebearer (PNC):



Figure 1. Pecan nut casebearer moth in trap (Photo: W. Ree)



Figure 2. Pecan nut casebearer egg on nutlet (Photo: A. Knutson)

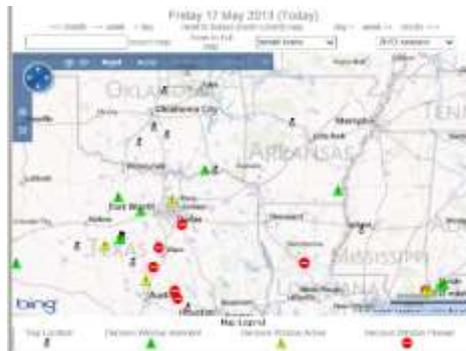


Figure 3. Pecan nut casebearer risk map: green triangles = moths were captured, yellow triangles = scout for eggs and apply insecticide when larvae hatch, and red dot (recommended spray period passed).

The first generation PNC generally causes the most nut damage. Eggs mature in 4 to 5 days and larvae feed on nutlets. We have observed that not every pecan orchard in Arkansas has this pest, so it is recommended to scout for PNC moths (**Fig. 1**), eggs (**Fig. 2**) and larvae.

Scouting: By late April, set out at least two PNC traps per grove and bait each trap with a PNC pheromone lure. You can report your weekly PNC moth trap counts and location to Dr. Donn Johnson (Email: dtjohnso@uark.edu). These data will be entered into the online **Pecan Nut Casebearer Risk Map Make Your Own Forecast** ([Link](#)). The first moth caught in a trap for a location will be called the biofix date. Growers can view twice weekly the **PNC Risk Map** (**Fig. 3**) for Arkansas or adjacent states. For a location near you, the day the risk map changes from a **green** to **yellow triangle** means that growers in that area have a 5 day decision-making period to inspect a 300 clusters for PNC eggs. If you find >1% of clusters with eggs (**Fig. 2**), tie a ribbon on egg-infested clusters and check every three days to see when hatch occurs which means time to apply insecticide. In Arkansas, PNC larvae emerge by mid- to late-May.

Control: Be sure to use an insecticide that conserves natural enemies, e.g., Intrepid, Bt compounds like Deliver (note Bt may have a shorter residual). In contrast, Pyrethroid and Carbaryl insecticides are not recommended at this time of year because each kills natural enemies that keep densities of aphids, mites and leafminers below economically damaging levels.

Fruit Pests

Dr. Donn T. Johnson - Fruit Research/Extension

Apple and Peach

- **San Jose Scale (SJS):** Did you see San Jose scale spots on your fruit last year? Those infested trees can have even more scale injury this season if not managed.
Scouting: Sometime in March after an accumulation of 130 DD (base 51°F) since 1st January, adult male SJS emerge, mate and can be captured in SJS pheromone traps. At 300 DD later, wrap pieces of double sticky Scotch tape around scale-infested limbs, weekly check for crawlers on tapes. Crawler emergence begins 400 DD after 1st SJS male which occurs about 24 April in Hempstead and Faulkner Co. or as late as 15 May in Washington Co.
Control: An oil spray is usually applied from silver tip to 1/2" green to suffocate overwintering adult scale. Be aware of the potential phytotoxicity of using oil within 14 days of using Captan. When you first see crawlers, you can apply an insecticide (see spray guide recommendations).
- **Plum curculio (PC):** We are getting reports of plum curculio fruit damage (feeding and egg hatch) in Johnson Co. Adults begin moving into orchards after a second day in March at or above 70°F (biofix date). Peaches are susceptible to egg laying as soon as shucks split and apples at and after petal fall.
Scouting: Egg laying and hatch start 200 degree days (DD) after biofix date (**Table 1**). This is the time to check fruit for PC feeding and egg laying damage – carefully dissect damage spot to see if egg is present: inspect 30 fruit per tree on at least 10 trees along the perimeter adjacent to woodlot where PC overwintered.
Control: Apply first spray when you see eggs present in fruit. Most of the adult PC will have dispersed into orchard by 400 DD (apply second spray) (see spray guide recommendations).

Table 1. By Arkansas County, 2016 biofix dates and predicted dates for start of plum curculio egg laying/hatch (1st spray) and when most overwintered adults have dispersed into orchard from woods (2nd spray).

County	Biofix date	Egg laying/hatch (200 DD after biofix)	Most adults in orchard (400 DD)
Faulkner Co.	6 March	27 March	14 April
Hempstead Co.	7 March	1 April	19 April
Cross Co.	9 March	1 April	20 April
Johnson Co.	7 March	10 April	26 April
Washington Co.	8 March	17 April	3 May

Grape

- **Grape Scale.** This pest has been more prevalent in recent years. While pruning, be checking for presence of grape scale. Signs of this pest include scale under loose bark or on canes and weaker vines (**Fig. 4**). An article on grape scale is available online (**PDF**).
Scouting: Flag each scale-infested vine and record its location on a vineyard map to target future vine removal or spot sprays. On 1st April, begin accumulating degree-days (DD) by hand or use the online DD calculator (**Link**) (select: grape scale, your county, set biofix as April 1). Once you accumulate 400 DD, twice weekly check under scale covers for presence of yellow crawlers or wrap pieces

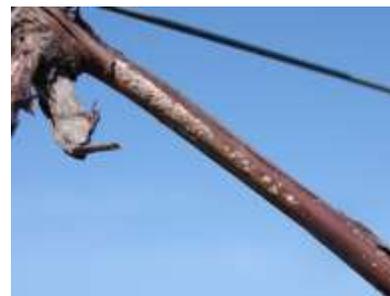


Figure 4. Grape scale on cane

of double sticky Scotch tape around scale-infested cane and check for crawlers on tape (usually begins by 500 DD).

Control: This pest is controlled by a 2% oil spray by bud break. Keep infested vines sprayed every 10 days with insecticide while crawlers are present in May (see spray guide recommendations).

Blackberries

- **Strawberry Clipper.** Adults sever the stem of flower buds and lay an egg inside the bud just before it opens. Flower buds should be appearing on floricanes throughout the state.

Scouting: Begin scouting at sighting of first open flower. In each of several sections of your planting, tap 20 flower clusters onto a paper plate, count the number of weevils that are jarred onto the plate and number of severed flower stems.

Control: Insecticide spray is recommended if you detect one or more weevils and see a significant number of severed flower stems. Apply insecticide after pollinator flight ceases in evening to minimize pollinator poisoning.

- **Spotted wing drosophila (SWD)** is a new invasive pest of ripening, soft-skinned fruits. In Arkansas, caneberries and late-season peaches have been susceptible to SWD infestations. In April 2016, there have been reports from South Carolina of SWD infesting strawberries.

Scouting: Arkansas growers should be checking SWD traps near strawberries and blueberries for SWD flies and weekly checking at least 30 ripe fruit for presence of SWD larvae.

Control: The list of effective, conventional insecticides has not changed since last year ([PDF](#)), OMRI approved organic compounds.

- **Broad mite** is a new pest that prevents terminal flower bud formation on primocane-fruiting blackberry cultivars and can kill canes (**Fig. 6**). We do see some broad mite damage on floricanes-fruiting cultivars but not as severe as on primocane-fruiting cultivars. Mature adult is cream to amber colored with a white streak on back. Adult males often hold white (spindle-shaped) immature female on back. Egg is oval, white with many white spots (**Fig. 7**).

Presentation on Broad Mites: ([PDF](#))

Scouting: Since mid-April 2016, we have been seeing a few broad mites on the first primocane expanded terminal leaflets. We collect and inspect a leaflet from first expanded terminal leaf from each of 20 randomly selected plants. A 30x hand lens is required to see this mite.



Figure 5. Strawberry clipper damage on blackberry



Figure 6. Dying primocane terminal leaves and cupped leaves below caused by broad mite

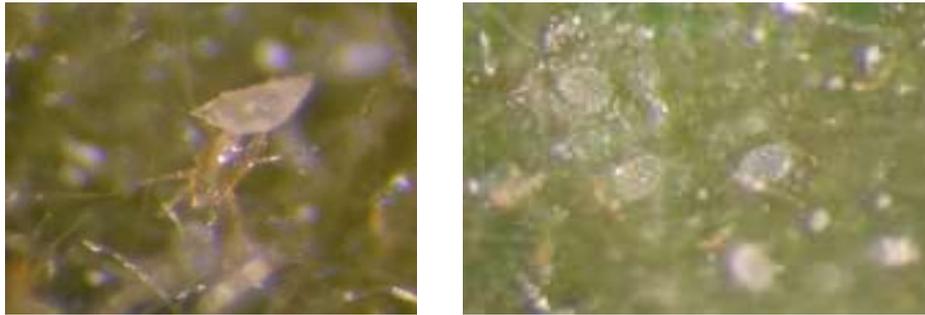


Figure 7. Broad mite immature female (spindle-shaped) held on back of adult male and white spotted egg on blackberry (Photos: D. Johnson)

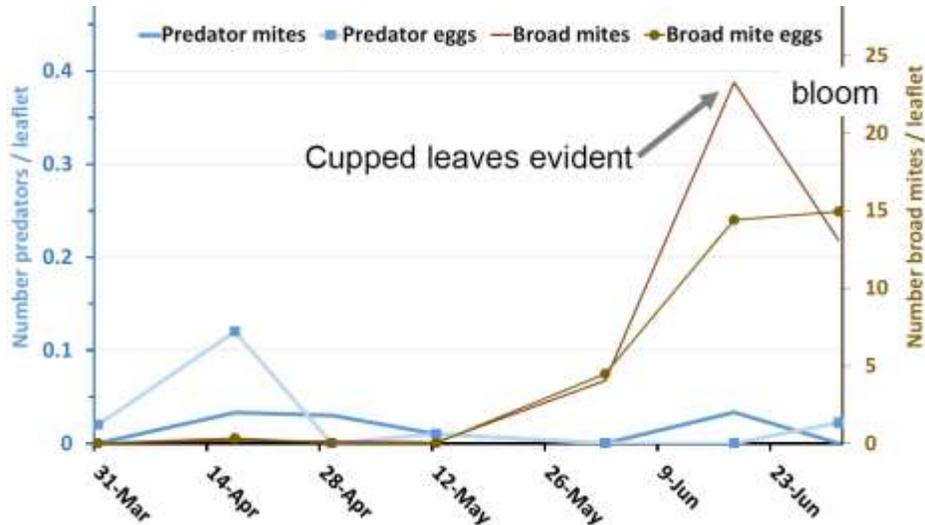


Figure 8. Counts per blackberry leaflet of active broad mites and eggs (brown lines, right Y-axis) and predatory mites (blue lines, left Y-axis) on Prime-Ark®45 in Arkansas in 2015 (D. Johnson)

Control: This season we are evaluating efficacy of predatory mites species and miticides to be applied twice (10 day interval) before broad mites reach 5 mites per leaflet (by late-May in 2015) (Fig. 8). We believe it will take two miticide applications: the 1st kills active mites present, but not the eggs, then the re-application 10 days of that same miticide kills any mites that hatched after the 1st spray before they lay eggs. Miticides reported to kill broad mite on brambles include: Agri-Mek (caneberrys on label); JMS Stylet oil; and Microthiol - micronized sulfur (caneberrys not on label). Success requires applying miticide in more than 100 gallons water solution per acre to achieve good coverage on underside of leaves, especially on terminal leaves.

To prevent phytotoxicity: 1) do not apply sulfur spray within 21 days of oil; and 2) do not apply sulfur or oil if temperatures are expected to exceed 90°F.

Much of the information obtained for this newsletter was gathered by the authors at the University of Arkansas-Fayetteville. All chemical information is given with the understanding that no endorsement of named products is intended nor is criticism implied of similar products that are not mentioned. Before purchasing or using any pesticide, always read and carefully follow the directions on the container label. Compiled by: Donn T. Johnson, University of Arkansas, Department of Entomology, E-mail: dtjohnso@uark.edu

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