



# Arkansas Fruit and Nut News

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### Recommended Pesticides for Fruit and Nut Insects:

- MP144 AR Insecticide Recommendation for Arkansas (2014) ([pdf](#))
- MP467 Arkansas Small Fruit Management (2014) ([pdf](#))
- Midwest Small Fruit and Grape Guide (2014) ([pdf](#))
- Midwest Tree Fruit Guide (2014) ([pdf](#))

- Search for Insecticides Labeled for Use on Pecan ([link](#))
- Search for Fungicides Labeled for Use on Pecan ([link](#))
- Search for Herbicides Labeled for Use on Pecan ([link](#))

### Upcoming Events:

**Texas Pecan Growers Annual Conference** from July 13-16, 2014  
 in San Marcos, TX  
 (979) 846-3285; email: [pecans@tpga.org](mailto:pecans@tpga.org)

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### Foliar Sampling for Fruit Crops

*JUNE 25, 2014 by Susan Frey and Dr. Elena Garcia, Horticulture Fruit & Nut Specialist*

It is the time for fruit growers to collect foliar samples for nutrient analysis. Attached is a file with information on how and when to collect for specific fruit crops and the address for where to send the samples.

#### Fruit Foliar Sampling ([pdf](#)):

[https://uofacescommfruit.files.wordpress.com/2014/06/fruit\\_foliarsampling\\_all\\_2013.pdf](https://uofacescommfruit.files.wordpress.com/2014/06/fruit_foliarsampling_all_2013.pdf)

There is additional information online at ([pdf](#)): <http://www.uaex.edu/publications/PDF/FSA-6132.pdf>

### Fruit Pests

*Dr. Donn T. Johnson - Fruit Research/Extension*

- **Spotted wing drosophila (SWD)** is a new invasive pest of ripening, soft skinned fruits (caneberries, blueberries, cherries, strawberries). **On 29 May, we confirmed the first SWD flies (Fig. 1) collected in baited traps in White county. On 31 June, we dissected a sample of 30 ripe raspberries from Benton County that had 7 out of 30 berries infested with SWD larvae.** So far we have not detected any SWD larvae in strawberries or blueberries.

**Control:** It is recommended to begin spraying insecticides and continue sprays at 7 day interval through harvest, and re-apply insecticide after a rain. Remember to rotate insecticides from different classes (modes of action) and do not exceed the number of sprays allowed per season of an insecticide formulation:

- Entrust (class: spinosyn) allows 3 sprays per season (29 fl oz per acre per season), 3 days PHI for blueberry and 1 day PHI bramble (*only effective compound for organic production*);
- Delegate (class: spinosyn) allows 6 sprays per season (19.5 oz per acre per season), 3 days PHI for blueberry and 1 day PHI bramble;
- Malathion (class: organophosphate) allows 2 sprays per season, 1 day PHI for blueberry and bramble;
- Mustang Max (class: pyrethroid) is a **restricted use pesticide** – *requires pesticide license*, allows 6 sprays per season (24 oz per acre per season), 1 day PHI for blueberry and bramble, this insecticide may cause spider mite outbreak on brambles.

See online information about spotted wing drosophila at:

- ❖ Spotted Wing Drosophila Fact Sheet ([pdf](#))
- ❖ Picture Sheet of Spotted Wing Drosophila: ID, Trap, Bait, Management ([pdf](#))
- ❖ Workshop Talk on Detecting and Managing Spotted Wing Drosophila ([pdf](#))



Figure 1. Spotted wing drosophila male (Photo: BC) and larvae in raspberry on 3 June (Photo: D. Johnson)

### Japanese beetles

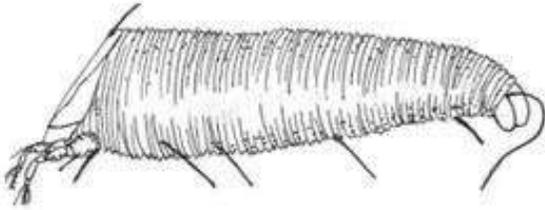
Adult emergence normally begins around 1 June with significant damage by early-July. In Fayetteville, our traps began capturing a few Japanese beetle adults last week but the numbers appear to mean we will have minimal plant damage in NW Arkansas. However, this week we got a report from Harrison, AR (Boone County) of Japanese beetle adults damaging susceptible plants (apple, brambles, blueberry, grape, crepe myrtle, roses, etc.). Boone Co. appears to be on the front edge of Japanese beetle dispersal out from Washington and Benton Counties that started in the late 1990's.

### Blackberry



Figure 2. A) Blackberries with red berry disease (Photo: kenmuir.co.uk), apparent red berry disease on blackberries from Arkansas: B) Clarkville; and C) White Co. (Photo: M. Ahumada), versus D) blackberries with only a few red drupelets – *not red berry disease* (Photo: D. Johnson)

**Red Berry Disease:** It is reported that this disease causes some drupelets to not ripen fully (usually those at the base of the fruit) remain red, or greenish red and are hard (Fig. 2 A). The damage increases as the picking season progresses, with late fruit being the most seriously affected. Red berry disease has caused damage and losses in commercial blackberry plantings in Oregon, California, Michigan and United Kingdom. In late June 2014, a few Arkansas growers and staff at the Fruit Station in Clarksville expressed concern about presence of many reddish drupelets on blackberry fruit (Fig. 2 B, C).



**Figure 3. Eriophyid mite (Drawing: <http://www.ipm.ucdavis.edu>)**

**Cause:** Red berry disease is reported to be caused by a small, carrot-shaped eriophyid mite (Fig. 3), *Acalitus essigi*, which feeds on the flowers (and foliage) injecting toxic saliva into the developing drupelets. Mites overwinter beneath bud scales and invade the new growth, living and increasing in numbers on the flower buds, petioles and leaves (Davies et al., 2001). At blossom time they enter the flowers and feed on the developing drupelets, especially those sheltered by the calyx. As fruits mature they become less suitable for mite feeding and at harvest it is often difficult to find mites in the damaged fruits. For this

reason it is often difficult to diagnose blackberry mite as the cause of the problem, as uneven ripening may also be caused by poor pollination. Cross (2012) said, "There is more than one cause of red berry disease." His evidence was when he noticed that 33% of a planting of 'Loch Ness' blackberries still had red berry disease symptoms after being sprayed for red berry mite (no red berry mites were detected in that planting)."

Source: [http://www.hdc.org.uk/sites/default/files/research\\_papers/SF%20116%20Final%20Report%202012.pdf](http://www.hdc.org.uk/sites/default/files/research_papers/SF%20116%20Final%20Report%202012.pdf)

**Sampling:** We will collect 100 outer scales of overwintering buds from the tops of canes at several blackberry plantings showing red berry disease. These buds will be dissected under a stereomicroscope to assess absence or presence of these eriophyid mites. If we find mites in Arkansas, we will inform growers of how to prevent red berry disease from these mites. In the meantime, you can read a fact sheet on this mite at:

<http://www.ipm.ucdavis.edu/PMG/GARDEN/FRUIT/PESTS/redbermite.html>

### Apple or Peach

- **Plum curculio (PC), Oriental Fruit Moth and Codling Moth:** Continue weekly checking of 30 fruit on each of 10 trees along perimeter of orchard fruit for damage (Fig. 4). You may need to cut open fruit with new damage wounds to confirm larvae had started to emerge.



**Figure 4. A) New plum curculio feeding or egg laying wound - white disturbed fuzz on peach, B) red ring around new entry by codling moth, and C) red dots caused by feeding San Jose scale (Photos: D. Johnson)**

- **San Jose scale (SJS):** Be sure to flag trees where you see fruit with signs of SJS scale - red dots on fruit (Fig. 4 C) or live scale on limbs. Next spring, you will apply delayed dormant oil sprays to those flagged SJS-infested trees.

- **Stink bugs.** Be checking weekly for stink bugs in apples, peaches and brambles (Fig. 5).



Figure 5. Brown stink bug, nymph, adult green stink bug and ooze from puncture wound on peach (Photos: D. Johnson)

## Grape

- **Grape berry moth** 1<sup>st</sup> trap capture was 17 April in Clarksville. Weekly, check 10 clusters on each of 30 vines in perimeter vines by a wooded edge for presence of new grape berry moth damage and/or very small larvae in berries (Fig. 6). The second generation of larvae should be ending by 10 July with third generation hatch beginning by 17 July in Johnson Co. or from 20 to 23 July in Madison, Benton and Washington Co. If more than 2% of the clusters are infested with larvae, then you may need to spray the whole vineyard. Check berries 10 to 14 days after spray to determine presence of more new grape berry moth damage indicating a second spray may be required.



Figure 6. New grape berry moth larval entry, B) new larva inside berry and C) more mature larva (Photos: D. Johnson or S. Kim)

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](mailto:dtjohnso@uark.edu) and M. Elena Garcia, UACES- Department of Horticulture, E-mail: [megarcia@uark.edu](mailto:megarcia@uark.edu)

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