



Arkansas Fruit and Nut News Volume 3, Issue 2, 7 June 2013

Online Fruit Information

Dr. Donn T. Johnson - Fruit Research/Extension

Click any [blue underlined](#) link below and bookmark if useful to you

- [Fruit and Pecan Pest Management](#) - Home page with menu linking to all web pages listed below:
- [Fruit Blogs](#)
 - [Commercial Fruit and Nuts](#)
 - [Arkansas Sustainable Agriculture Research and Education Program](#)
- [Scouting Supplies](#)
- [Management and Spray Guidelines](#)
- [Fruit Spray Efficacy Tables](#)
- [IRAC \(Insecticide Resistance Action Committee\) Mode of Action](#)
- [Fruit and Pecan Degree Day Accumulation Data and Information](#) – you can use your own site specific biofix dates for pests of fruit (codling moth; grape berry moth; grape phylloxera; grape scale, Oriental fruit moth; plum curculio; San Jose scale) and the pecan nut casebearer, calculate cumulative degree days and predict hatch periods of fruit and pecan pests.

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UPDATE

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- **Spotted wing drosophila (SWD)** is a new invasive pest of ripening, soft skinned fruits (caneberries, blueberries, cherries, strawberries, late season peaches). **We had reports of SWD larvae in blueberry fruit in central Arkansas. Soon, SWD flies may start laying eggs in ripening fruits of blackberries and raspberries.**

Scouting: Twice weekly, check fly traps by sieving liquid bait for SWD flies and replace bait weekly (discard old bait in garbage).

For SWD fly confirmation, work with your Extension County Agent to put flies in a vial of alcohol and mail vial to: Ms. Barbara Lewis, AGRI 319 Department of Entomology, University of Arkansas, Fayetteville, AR 72701



Figure 1. Spotted wing drosophila male. Photo: BC

How to make a SWD trap? (Fig. 2) Use a 1 quart beverage cup, punch five 3/16" diameter holes in side 1 inch below lip, and pour in 2 inches of liquid bait (see recipe below). Three weeks before ripening, set out traps on poles or trellis wire inside planted row at height of fruit.

Trap bait recipe: 12 oz water, 4 Tbsp sugar, 1 Tbsp yeast, 1 Tbsp whole wheat flour, 1 Tbsp apple cider vinegar, 2 drops unscented dish soap to break surface so flies sink in bait.

Control: If your fruit are ripening and you detect SWD flies in baited traps, it is recommended to begin spraying insecticides and continue sprays at 7 day interval through harvest. 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;
- 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 (see note below)*, 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.



Figure 2. SWD baited trap

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](#))

Note: Federal law requires that a person who purchases or applies a restricted use pesticide such as Mustang Max must have a current pesticide applicator license and receive periodic pesticide safety training.

If you have questions, about **obtaining a pesticide license**, please call the Director of the Pesticide Division or the Assistant Director in charge of Certification and Training at the State Plant Board (501-225-1598). *Restricted use pesticides are not labeled for home gardens. Therefore, a pesticide license is not required, nor available, for home gardeners.*

Pecan Pests

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Pecan Nut Casebearer (PNC): In Arkansas, the first adult moths (Fig. 3) were captured in pheromone baited traps in Lake Village (14 May), Blackwell (about 23 May) and Fayetteville (4 June). First-generation larvae feed on nutlets and this generation generally causes the most nut damage. The spray application



Figure 3. Pecan nut casebearer moth. Photo: W. Reid

period in the region around Lake Village, AR ended on 30 May. **Pecan growers around Blackwell /**



Figure 4. Pecan nut casebearer egg on nutlet. Photo: A. Knutson

Morrilton region should be looking for PNC eggs on nutlets (Fig. 3) because the Decision Window (scouting and spray application period) is opened from June 6 to 11 (Fig. 5).

See the **Pecan Nut Casebearer Risk Map** online at: <http://pecan.ipmPIPE.org/map/pnc/index.cfm>

Scouting: The Decision Window for PNC indicates a grower has a 5 day period to inspect a minimum of 310 nut clusters for casebearer eggs (Fig. 4) and flag clusters with eggs. If >1% of clusters are infested and you are at or before the Decision Window, economic damage is expected to result. Eggs hatch in 4 to 5 days, so check flagged eggs every three days for first larval hatch.

Control: During the **yellow** Decision Window, one well timed insecticide treatment at first larval hatch achieves maximum control. Be sure to use an insecticide that conserves these natural enemies, e.g., Intrepid, Bt compounds like Deliver (note Bt may have a shorter residual). Pyrethroid and carbaryl insecticide use at this time of year is not recommended because each will kill natural enemies that aid in control of aphids, mites and leafminers that come later in the season.

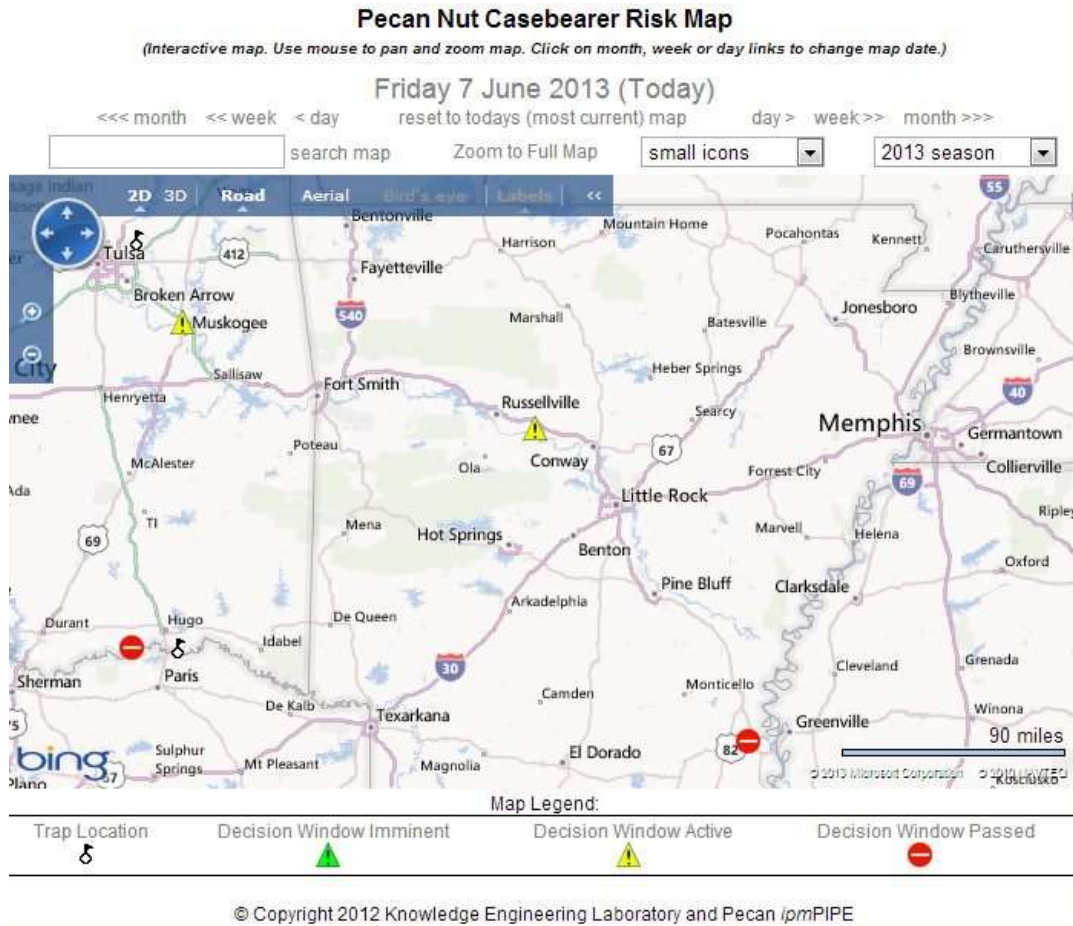


Figure 5. Pecan nut casebearer risk map showing decision window imminent for Lake Village, AR.

Fruit Pests

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We monitor pheromone trap catches of several fruit pests at three Agricultural Experiment Stations: SWREC in Hope, Fruit Research Station in Clarksville and AAREC in Fayetteville. The corresponding predicted hatch periods (spray periods) are noted in **Table 1**.

Table 1. First trap catches (biofix dates), predicted hatch periods for each generation of several fruit pests using cumulative degree days (DD) for three locations in Arkansas in 2013.

Location (AR)	Generation, Pest	Biofix		Hatch periods	Cumulative DD**
		Date	LDT (°F)*		
Hope (SWREC)	1 st , Oriental fruit moth	16 Apr.	45	12 May	400
	2 nd , Oriental fruit moth			12 June	1300
	3 rd , Oriental fruit moth			8 July	2200
	1 st , Plum curculio	16 Apr.	50	6 May-31 May	200-700
	2 nd , Plum curculio			18 June-5 July	1200-1700
	Clarksville	1 st , Oriental fruit moth	20 Apr	45	16 May
	2 nd , Oriental fruit moth			16 June	1300
	3 rd , Oriental fruit moth			13 July	2200
	1 st , Plum curculio	9 Apr.	50	29 Apr.-29 May	200-700
	2 nd , Plum curculio			18 June-5 July	1200-1700
	1 st , Grape berry moth	17 Apr.	47.3	16 May-31 May	400-800
	2 nd , Grape berry moth			19 June-5 July	1300-1800
Fayetteville	1 st , Oriental fruit moth	24 Apr	45	17 May	400
	2 nd , Oriental fruit moth			20 June	1300
	3 rd , Oriental fruit moth			18 July	2200
	1 st , Plum curculio	9 Apr.	50	29 Apr.-30 May	200-700
	2 nd , Plum curculio			21 June-10 July	1200-1700
		1 st , Grape berry moth	27 Apr.	47.3	19 May-7 June
	2 nd , Grape berry moth	(no traps, guess)		25 June-11 July	1300-1800

* LDT = lower developmental temperature used to calculate degree days accumulated after the biofix date

** Cumulative degree-days calculated using the online degree-day calculator, click [here](#)

Most Fruits:

- **Stink bugs:** puncture and damage blackberries, raspberries and peaches. Stink bugs often leave a bad taste or smell of released defense odor on damaged berries.

Scouting: Begin looking for stink bugs from mid-May to harvest (Fig. 6).



Figure 6. Green and brown stink bug adults and nymphs. (Photos: M. Rice)



Figure 7. New plum curculio damage on peach and apple.

Apple, Peach

- **Plum curculio (PC)** summer generation adults will begin to emerge soon.
Scouting: Weekly until harvest, you should be checking 300 fruit along the orchard perimeter for new plum curculio damage (Fig. 7).
- **Oriental fruit moths (OFM):** The second generation of larvae should begin hatching (time to apply insecticide sprays) by 12 June (Hope) or 16 June (Clarksville) or 20 June (Fayetteville).
- **Lesser peachtree borer** moths have been captured in pheromone trap since 15 April.
Control: This pest is usually killed from insecticide sprays applied to control plum curculio and oriental fruit moth in peach and plum in May.
- **Peachtree borer** moths have begun to emerge.
Control: Late May and June are the usual times to drench the lower peach and plum trunks with Lorsban to control the hatching larvae before they tunnel into the trunk below the soil line.

Grape

- **Grape leafhopper:** We are detecting white stippling of leaves and counts exceeding 5 nymphs per leaf which justify sprays (Fig. 8).
- **Grape berry moth**
Scouting: Once berries exceed 3/8 inch diameter (pea size), start checking 10 clusters on each of 30 vines in perimeter vines by a wooded edge for presence of discolored berries grape berry moth larvae damaged (Fig. 8). If more than 2% of the clusters have one or more damaged berries, then you may need to spray the whole vineyard when the second generation larvae hatch begins.



Figure 8. Grape leafhopper nymph. (Photo: MSU)



Figure 9. Grape berry moth damage.



Figure 10. Rednecked cane borer adult.

Bramble

- **Rednecked cane borers** (Fig. 9) will lay eggs on primocanes most of June.
Scouting: Twice a week between 10am and 4pm, look for adults flying or landing on leaves of primocanes.

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