



Arkansas Fruit and Nut News Volume 3, Issue 1, 22 May 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

ALERT

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, late season peaches). **As of 22 May, the first male SWD fly was captured in baited traps near Russellville, AR.** If you detect SWD flies in traps and your fruit are ripening, 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;
- [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;

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Figure 1. Spotted wing drosophila male. Photo: BC

- 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](#))

Pesticide Label Changes

Barbara Lewis - Program Associate

Danitol® 2.4EC (fenpropathrin, Valent) has issued a supplemental label which will expire on 31 December 2013. This supplemental label is for other insects besides those already listed on the regular Danitol label.

The following insects have been added under the **Berries** section: leafhoppers, lygus bugs, spotted wing drosophila, cutworms, armyworms and stink bugs (not browns). The PHI is 3 days and the REI is 24 hours. Do not exceed 2 pts (32 fl oz, 0.6 lb ai) total application of Danitol 2.4 EC per acre per season on this crop.

The following insects have been added under the **Grape** section: earwigs, spotted wing drosophila, stink bugs (not browns) and periodical cicada. The PHI is 21 days and the REI is 24 hours. Do not exceed 2-2/3 pts (42-2/3 fl oz, 0.8 lb ai) total application of Danitol 2.4 EC per acre per season on this crop.

The following insects have been added under the **Pome Fruit** section: katydids, spotted wing drosophila and stink bugs (not browns). The PHI is 14 days and the REI is 24 hours. Do not exceed 2-2/3 pts (42-2/3 fl oz, 0.8 lb ai) total application of Danitol 2.4 EC per acre per season on this crop.

The following insects have been added under the **Stone Fruit** section: green June beetle, Japanese beetle, leafhoppers, lygus bugs, plum curculio, spotted wing drosophila and stink bugs (not browns). The PHI is 3 days and the REI is 24 hours. Do not exceed 2-2/3 pts (42-2/3 fl oz, 0.8 lb ai) total application of Danitol 2.4 EC per acre per season on this crop.

The following insects have been added under the **Strawberry** section: leafhoppers, spotted wing drosophila, cutworms and stink bugs (not browns). The PHI is 2 days and the REI is 24 hours. Do not exceed 2-2/3 pts (42-2/3 fl oz, 0.8 lb ai) total application of Danitol 2.4 EC per acre on the same planting in 12 consecutive months.

The following insects have been added under the **Pecan** section: pecan weevil, stink bugs (not browns), cutworms and armyworms. The PHI is 3 days and the REI is 24 hours. Do not exceed 2-2/3 pts (42-2/3 fl oz, 0.8 lb ai) total application of Danitol 2.4 EC per acre per season on this crop.

Grandevo™ (Chromobacterium, Marrone Bio Innovations) is an OMRI approved organic compound that is available for use on bushberries, caneberries, grape, pome fruit, stone fruit and strawberry. Check the label to see what insects they have listed for these crops. The REI is 4 hours and the PHI is 0 days.

Pecan Pests

Dr. Donn T. Johnson - Fruit Research/Extension

Pecan Nut Casebearer (PNC): First-generation larvae feed on nutlets and this generation generally causes the most nut damage. We have pheromone traps set out in Lake Village, AR and six other locations in AR. So far, first PNC moth trap catch (Fig. 2) was 14 May in Lake Village. This date is called a biofix and was entered into the **Pecan Nut Casebearer Risk Map** online: <http://pecan.ipmpipe.org/map/pnc/index.cfm>

Scouting: The PNC model predicts that the Decision Window for PNC opens 24 May (Fig. 4). During the 5 days after the Decision Window opens, the growers in Lake Village area should select trees that have had heavy casebearer infestations in previous years. Then inspect a minimum of 310 clusters for casebearer eggs and flag clusters with eggs (Fig. 3). 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.



Figure 2. Pecan nut casebearer moth. Photo: W. Reid



Figure 3. Pecan nut casebearer egg on nutlet. Photo: A. Knutson

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.

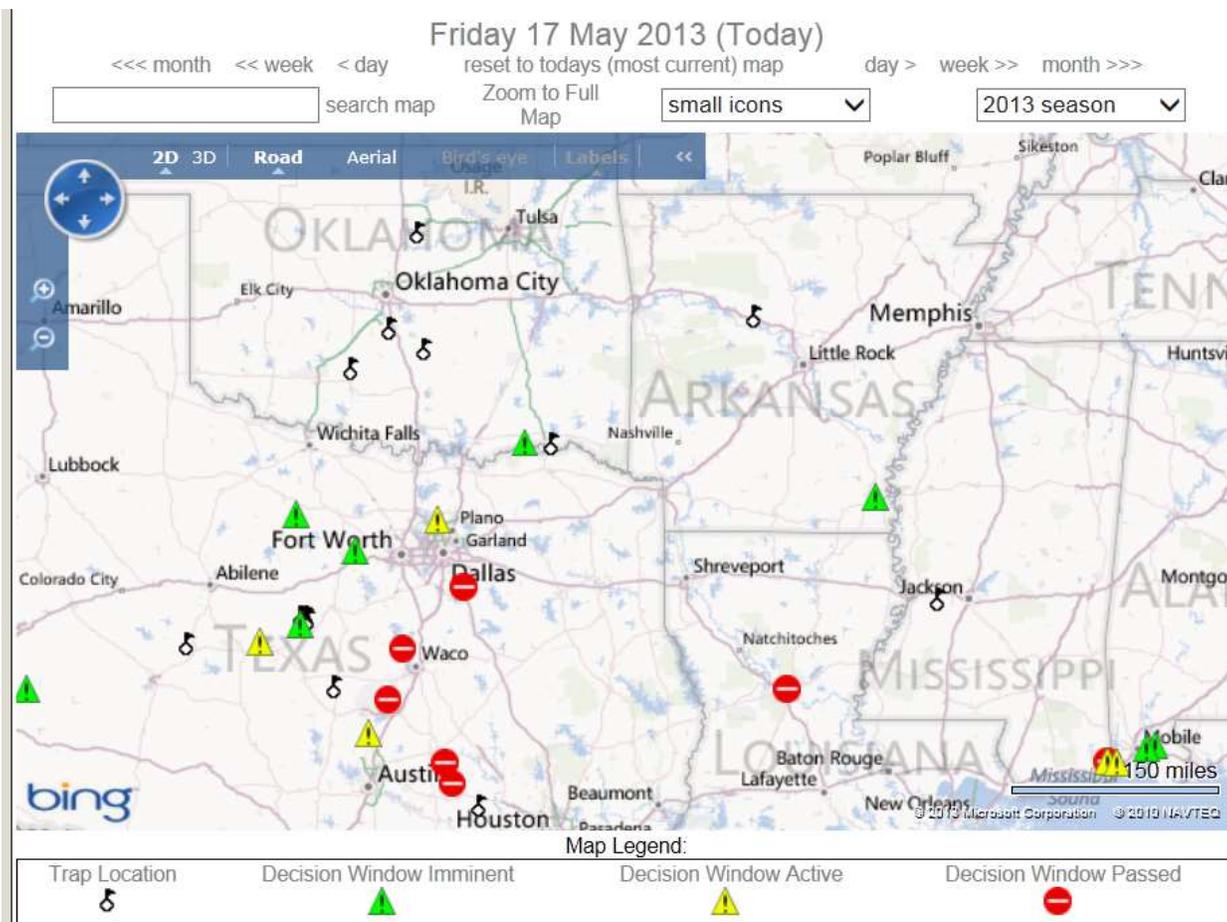


Figure 4. Pecan nut casebearer risk map showing decision window imminent for Lake Village, AR.

Fruit Pests

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First pheromone trap catches of several fruit pests are reported below for three Agricultural Experiment Stations: SWREC in Hope, Fruit Station in Clarksville and AAREC in Fayetteville.

The corresponding predicted hatch periods (spray periods) are noted in **Table 1**.

Apple, Peach

- **Plum curculio (PC)** pyramid traps have been catching adults since 9 April in both Clarksville and Fayetteville and 16 April in Hope.
 - Check fruit weekly for PC damage from May 1 until June 1 and the summer generation from late-June to mid-July. First insecticide spray is applied at apple petal fall or at peach shuck split and reapplied every 10 days to May 31.
- **Oriental fruit moths (OFM)**: The first trap catch of OFM in Hope was 16 April and in Fayetteville was 24 April. No OFM have been captured yet at Clarksville but they probably emerged between about 20 April. First insecticide sprays are applied by 12 to 17 May.
- **Lesser peachtree borer** moths have been captured in pheromone trap since 15 April. 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. 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 berry moth** 1st trap capture was 17 April in Clarksville. By mid-May and again in mid-June, start checking for presence of grape berry moth larvae in berries of 10 clusters on each of 30 vines in perimeter vines by a wooded edge. If more than 2% of the clusters are infested with berry moth larvae, then you may need to spray the whole vineyard when the second generation larvae hatch beginning about 16 June.

Bramble

- **Rednecked cane borers** (Fig. 5) began emerging in Clarksville this week and should laying eggs in blackberries primocanes. Twice a week between 10am and 4pm, look for adults flying or landing on leaves of primocanes.



Figure 5. Rednecked cane borer adult. Photo: D. Johnson

Degree Day Calculator and Pest Predictions

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If you set out pheromone traps, and have identified the pest specific **biofix** (date when baited traps began to continuously capture the pest) you can use these sites to see the number of accumulated degree days (DD) for pests in your county. These calculator will produce an output that will help growers predict the date when pest larvae or crawlers begin to emerge so you can begin to look for evidence of damage and correctly time an application of an insecticide. There are three DD calculators online at:

- 1) [Pecan PIPE Pecan Nut Casebearer Risk Map](#)
- 2) [Make Your Own Forecast - Pecan Nut Casebearer Risk Map](#)
- 3) [Degree Day \(DD\) Accumulation and Decision-making for Fruit Insect Pests](#)

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 Date | LDT (°F)* | Hatch periods | Cumulative DD** |
|----------------------|---------------------------------------|---------------------------------------|------------------|----------------------|------------------------|
| Hope (SWREC) | 1 st , Oriental fruit moth | 16 Apr. | 45 | 12 May | 400 |
| | 2 nd , Oriental fruit moth | | | 13 June | 1300 |
| | 3 rd , Oriental fruit moth | | | 9 July | 2200 |
| | 1 st , Plum curculio | 16 Apr. | 50 | 6 May.-31 May | 200-700 |
| | 2 nd , Plum curculio | | | 19 June-7 July | 1200-1700 |
| | Clarksville | 1 st , Oriental fruit moth | 20 Apr | 45 | 16 May |
| | 2 nd , Oriental fruit moth | | | 17 June | 1300 |
| | 3 rd , Oriental fruit moth | | | 14 July | 2200 |
| | 1 st , Plum curculio | 9 Apr. | 50 | 29 Apr.-29 May | 200-700 |
| | 2 nd , Plum curculio | | | 19 June-6 July | 1200-1700 |
| | 1 st , Grape berry moth | 17 Apr. | 47.3 | 16 May-2 June | 400-800 |
| | 2 nd , Grape berry moth | | | 16 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 |

* 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](#)

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