



Arkansas Fruit and Nut News Volume 5, Issue 6, 13 July 2015

Upcoming Events

Texas Pecan Growers Association Annual Conference
online registration ([Link](#)): [July 12-15, 2015](#), Frisco, TX;
 Contact (979) 846-3285 or by email: pecans@tpga.org

2015 Peach Production Workshop (July 16)

WHEN: 2:15 pm to 6:30pm Thursday, July 16th
WHERE: University of Arkansas Fruit Research Station,
 1749 State Hwy 818, Clarksville, AR
REGISTER by 13 July: \$20.00 charge to attend this
 workshop to cover dinner and hand-out materials.
 Registration fee will be charged on the day of the
 workshop. To register contact: Katie Hanshaw at 479-
 754-2406 or khanshaw@uark.edu
 Registration is required by Monday July 13.

Grape:

Vinews (6 July) by The Grape & Wine Institute at the University of Missouri includes information about: fruit rot; grape cultivar phenology; cumulative growing degree-days for seven regions in Missouri; grape berry moth update. ([link](#))

Grape Berry Moth

Biology: On 6 July, the second generation began hatching after 1,500 DD (base 47°F) since first trap catch on 4 May (**Fig. 3**).

Scouting: Weekly, check 300 clusters for signs of new grape berry moth larvae entering berries (**Fig. 1**) (check 10 clusters on each of 30 vines in vineyard perimeter nearest woods).

Control: If you see new larval entry into berries, begin full vineyard application of insecticide.

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Figure 1. Grape berry moth infested cluster (purple berry) (Photo: Donn Johnson)

All Fruit

Japanese Beetle

Biology: During most of July into August, adult Japanese beetles feed on foliage starting in the upper canopy and feed on fruit (**Fig. 2 and 3**).

Control: If greater than 15% of the canopy is skeletonized, apply an insecticide to the upper third of the canopy to minimize further damage. If Japanese beetles continue to disperse into and feed on fruit plant, you may have to apply a second spray.



Figure 2. Japanese beetle foliar damage to upper part of canopy. (Photo: Donn Johnson)

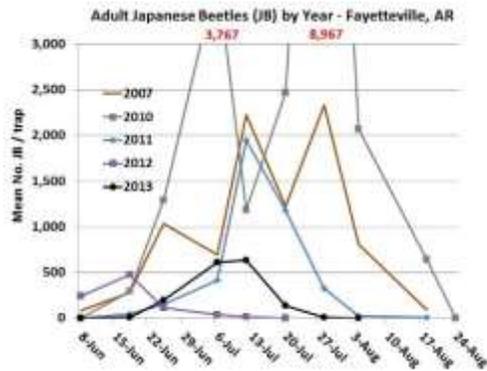


Figure 3. Seasonal trap capture of adult Japanese beetles in Fayetteville, AR.

Apple/Peach

Plum curculio

Biology: Summer adult weevils have been emerging from soil since early-June (1,200 DD base 50°F). This group of adults will feed on fruit surface and lay eggs in fruit through late-July.

Scouting: Weekly, check 30 fruit in each of 10 perimeter fruit trees (300 fruit sample) for new egg laying damage, cut fruit open to see if larvae are still near surface = new egg laying.

Control: As soon as you see new egg laying damage after mid-June, begin insecticide spray program to protect fruit. Keep checking for new egg laying damage on fruit to determine need to continue insecticide spraying every 10 to 14 days.

Codling Moth

Biology: There are three to four generations of this pest per season. In 2015, codling moths were first captured in pheromone traps in Fayetteville on 22 April. The second generation of adult moths should start emerging by 20 June followed by egg hatch period from 28 June to 25 July (equates to 1250 to 2000 DD; base 50°F) in Benton and Washington Co. (**Table 1**).



Figure 4. New codling moth larval damage.

Scouting: Pheromone traps are usually set out by pink stage and monitored weekly for moths. Weekly, check three hundred apples (30 fruit on each of 10 trees) looking for signs of newly hatched larvae that cause a red ringed hole with frass (**Fig. 4**). Slice under the hole to check for presence of a new larva < 1/8" long.

Control: By 30 June, the second generation began hatching at 1,250 DD (base 50°F) (**Fig. 5**). If you see the first signs of hatch and wounds on fruit, begin to apply insecticide every 10 to 14 days.

Table 1. Codling moth model (base 50°F; Brunner and Hoyt 1987) of cumulative degree-days related to percentage egg hatch by generation:

250 DDs after biofix: 1ST GENERATION, 3% EGG HATCH
360 DDs after biofix: 1ST GENERATION, 20% EGG HATCH
484 DDs after biofix: 1ST GENERATION, 50% EGG HATCH
610 DDs after biofix: 1ST GENERATION, 75% EGG HATCH
800 DDs after biofix: 1ST GENERATION, 95% EGG HATCH
1000 DDs after biofix: 2ND GENERATION, 5% ADULT EMERGENCE
1260 DDs after biofix: 2ND GENERATION, 7% EGG HATCH
1460 DDs after biofix: 2ND GENERATION, 30% EGG HATCH
1580 DDs after biofix: 2ND GENERATION, 50% EGG HATCH
1750 DDs after biofix: 2ND GENERATION, 75% EGG HATCH
2100 DDs after biofix: 2ND GENERATION, 99% EGG HATCH
2220 DDs after biofix: 3RD GENERATION, 3% EGG HATCH
2430 DDs after biofix: 3RD GENERATION, 20% EGG HATCH
2620 DDs after biofix: 3RD GENERATION, 50% EGG HATCH

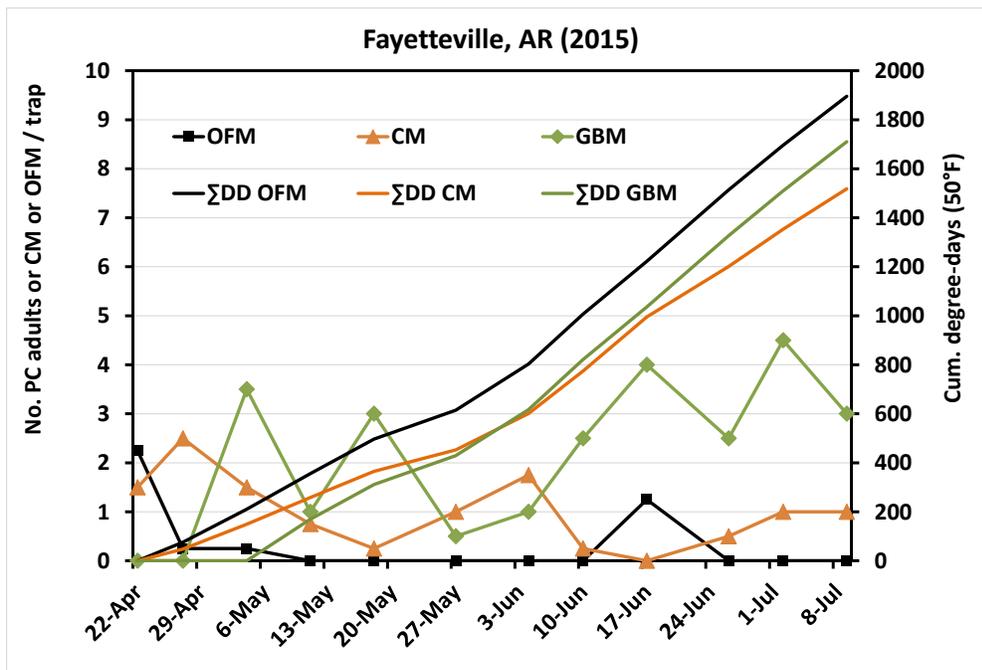


Figure 5. Pheromone trap catch and cumulative degree days (Σ DD) for Oriental fruit moth (OFM), codling moth (CM) and grape berry moth (GBM) in Fayetteville, AR.

Oriental Fruit Moth

Biology: There are five or more generations of this pest per season.

Scouting: Pheromone traps are usually set out by mid-March near peach bloom and monitored weekly for moths.

Control: From mid-June (993 DD; base 45°F) to harvest, apply insecticide every 10 to 14 days to prevent entry of second and later overlapping generations of larvae (**Fig. 5; Table 2**).

Table 2. Oriental fruit moth model (base 45°F) of cumulative degree-days related to percentage egg hatch by generation:

- 28 DD after biofix first egg-laying
- 200 DD after biofix first egg-hatch
- 395 DD after biofix peak larvae
- 587 DD after biofix first pupae
- 965 DD after biofix first moth catch 1st generation
- 993 DD after biofix first egg-laying 2nd gen
- 1165 DD after biofix first egg-hatch 2nd gen
- 1360 DD after biofix peak larvae 2nd gen
- Hatch of second overlaps with third generation

Greater Peachtree Borer

Biology: Adults lay eggs on lower peach trunk and larvae tunnel into trunk below the soil line.

Scouting: At the Fruit Station in Clarksville, AR, pheromone traps caught the first moths by 27 May.

Control: A trunk drench application of insecticide is applied to the lower foot of the trunk starting a couple weeks after first trap catch of adult males which is usually completed by late-June. The drench requires about 1 gallon of insecticide spray mixture per tree applied to drench the lower foot of trunk and the soil around each fruit tree trunk.

Blackberry

Broad mite

Biology: We are surveying for broad mites that cause foliar damage to blackberry plants.

Damage: The symptoms are stunted, upward or downward curled and dying leaves and aborted flower clusters usually on terminals (**Fig. 6**). If you see these symptoms, email Dr. Donn Johnson: dtjohnso@uark.edu or have your County Agent mail some damaged leaves to me at: AGRI 321, Department of entomology, University of Arkansas, Fayetteville, AR 72701

Control: We are beginning to evaluate different tactics that prevent these mites from damaging blackberry plants. Currently, no miticides are registered against this mite species on blackberry.



Figure 6. Broad mite damage: (A) cupped and (B) dying terminal leaves on Prime-Ark®45 blackberry foliage on 1 July. (Photo: Donn Johnson)

Pecan

Be looking for two caterpillar species that defoliate terminals of pecan and apples branches.

Fall webworm.

Biology: Caterpillars defoliate branches as a group inside a silk nest covering a branch (**Fig. 6**).



They feed on pecan, apple, walnut, persimmon, birch and other trees.

Control: If you can reach the silken nest, it is best to prune off the nest and larvae and destroy them while they are still small. You can apply insecticide such as a formulation of Bt (*Bacillus thuringiensis*) if the nests are too high in canopy. Do not burn or torch the nests as this may do additional damage to the trees. See MP144 for recommendations for other insecticide control.

Figure 6. Fall webworm silken nest of caterpillars (Photo: D. Johnson)



Figure 7. White egg mass and young walnut caterpillar larvae on pecan leaves (left) and red and black forms of older walnut caterpillars on a pecan leaf (right) (Photos: D. Johnson)

Walnut caterpillars

Biology: At night, you can shine a flashlight on the undersides of leaves to detect the presence of the white egg masses (**Fig. 7**). Smaller caterpillars are red with white lines along body and a black head whereas larger caterpillars are black with white lines along body with fuzzy white hair and a black head (**Fig. 7**). These caterpillars feed as a group and defoliate branches on pecan, black walnut, butternut, hickory, oak, willow, birch, honey locust and apple.

Control: You can apply insecticide such as a formulation of Bt (*Bacillus thuringiensis*) to infested trees. See MP144 for recommendations for other insecticide control.

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. Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Arkansas Division of Agriculture, University of Arkansas, Agriculture, Director, Cooperative Extension Service, University of Fayetteville. The Arkansas Cooperative Extension Service offers its programs to all eligible persons regardless of race,