



Arkansas Fruit and Nut News Volume 2, Issue 7, 4 Sept. 2012

Pecan

Insecticides Labeled for Use on Pecan, click [here](#)

At this online site, a grower can type in a pest name and display all insecticide products labeled to treat that pest. This site also allows grower to view the list of insecticides that are suitable for treatment on pecan. This list contains trade names, chemical active ingredient, manufacturer, and IRAC class/mode of action. Growers can also click on a trade name to read product details or view the label or MSDS sheet. The IRAC Class or Mode of Action (MoA) is a guide to the selection and rotation of insecticides and acaricides with different modes of action for use in an effective and sustainable insecticide or acaricide resistance management strategy.

Pecan Insect Monitoring Project (Elena Garcia, Donn Johnson, David Dickey, Brian Cowell, University of Arkansas; Funded by the USDA-Arkansas Agriculture Department Specialty Crop Block Grant Program)

Since mid-June 2012, we have been monitoring weekly or biweekly for stink bugs in 7 pecan groves in Arkansas. A total of 15 yellow pyramid traps (**Fig. 1 A, B**) baited with a brown stink bug (*Euschistus* spp.) aggregation lure called methyl (E,Z)-2,4-decadienoate were set around the perimeter and the center of each grove. In August, we began assessing pecan nut damage in these sites for stink bugs, pecan weevils and other insects.

Stink Bug

Baited, yellow pyramid traps captured several species of stink bugs (**Fig. 1 C**). By late August, we observed stink bug feeding punctures on numerous pecan nuts (**Fig. 2 A**). After slicing the shuck below this puncture, we observed a discolored spot on the kernel (**Fig. 2 B**). Stink bugs can feed on and damage pecan nuts from water stage to harvest.

Control: Growers should be monitoring for presence of stink bugs feeding on the nuts and causing feeding punctures. When you see stink bugs present and new damage, it may be justified to apply a recommended insecticide to prevent further stink bug damage.



Figure 1. A) Yellow stink bug trap in a pecan orchard perimeter, B) screen cage on the top of the stink bug trap with an aggregation lure attached inside above the funnel opening, and an C) adult brown stink bug (Photos: D. Johnson).

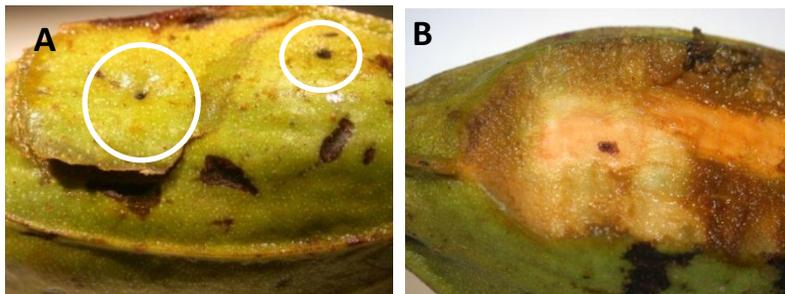


Figure 2. Pecan nuts past water stage with A) two types of stink bug damage on the shuck: circular depressions or dimples (left circle) or circular holes (right circle). When the shuck is sliced beneath the puncture to expose the kernel, you see a B) discolored spot where the stink bug fed on the kernel (Photos: D. Johnson).

Pecan Weevils

(Sources: Oklahoma State University EPP-7079, click [here](#); Pecan Weevil Alert, click [here](#)):

Identify: The pecan weevil adult is 3/8" long. The female snout is longer than its body whereas the male snout is half its body length and curves at the tip (**Fig. 3 A, B**). The mature larva is legless, has a creamy white body, reddish-brown head capsule and measures 3/4" long.

Biology: The pecan weevil lays eggs after nuts reach the dough stage or later. Using her chewing mouthparts (at the end of the long proboscis or snout), the female weevil chews a hole through the pecan shuck. After penetrating the shuck, she withdraws her snout, turns around and probes through the hole with her ovipositor until she reaches the shell (pericarp) and lays one or more eggs. A great deal of effort is involved in chewing through the shuck then penetrating the hard shell, so the female weevil must grip tightly onto the shuck and rotate around the initial penetration site. This process creates a circle of tracking marks on the shuck (**Fig. 4**). After slicing off the punctured shuck, you may see the frass on the kernel pushed out by the larvae feeding inside (**Fig. 4 B**).

The larvae feed inside the kernel on the pecan embryo or endocarp for several weeks and then the mature larvae begin to exit the nut by late September. Larvae drop to the ground and burrow into the soil to a depth of 4 to 12 inches where they create a cell. A year later, about 90 percent of these larvae pupate during a 3-week period. After pupation, the adult pecan weevil remains in the soil for another year. These adults emerge the next year, resulting in a 2-year life

cycle. The remaining 10 percent delay pupation until the second year. These adults remain in the soil for another year, which results in a 3-year life cycle (Source: Controlling the Pecan Weevil, [click here](#)).

Typically, adult weevil emergence increases three to four days after a 1 to 2 inch rainfall. Another important cue that stimulates weevil emergence from the soil is nut maturity or reaching dough stage. While the pecan weevil cannot sense nut maturity from beneath the soils surface, this timing has been fixed through years of selection. After emergence from the soil, pecan weevils enter the tree by either crawling up the bole (tree trunk) or flying directly to the canopy or trunk. Pecan weevils will begin ovipositing eggs sooner on earlier maturing nuts.

Monitoring: In late August, pecan weevils (**Fig. 3 A, B**) were captured in in pecan groves in Arkansas, Conway and Faulkner counties. From late gel stage on, growers should be monitoring emergence of pecan weevils by placing several screen Circle traps on pecan tree trunks (**Fig. 3 C**) in parts of the grove with a history of weevil damage and also check for egg laying damage (**Fig. 4**). It appears that the majority of the emerging adult weevil population orients to the pecan trunk (perhaps as much as 85 percent of the emerging population). This explains why Circle traps on pecan trunks are efficient at capturing greater numbers of weevils than other trap types.

Damage Assessment: We randomly collected and inspected two pecan nuts from each of five trees at each perimeter and in the grove center. On 30 August, we saw only one pecan weevil egg laying wound (**Fig. 4 A**).

Control: Growers should be checking for presence of pecan weevils (**Fig. 3**) and the start of egg laying damage (**Fig. 4**). Presence of weevils may justify making the decision to apply a recommended insecticide, such as carbaryl (wettable powder with no spreader sticker added), to provide 8-12 days of control following application. If stink bugs are also a problem, a tank mix may be considered as carbaryl does not appear as effective against stink bugs.

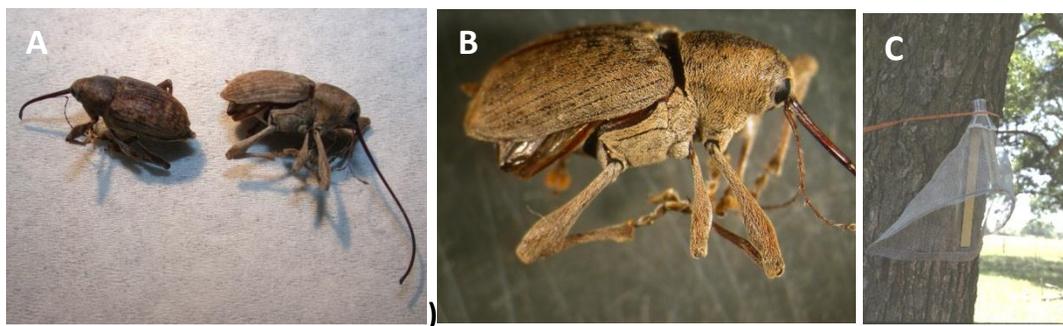


Figure 3. A) Pecan weevil male (left) and female (right), B) close up of a female pecan weevil (Photos: D. Johnson), and C) pecan weevil Circle trap on pecan trunk (Photo: Oklahoma State University EPP-7079)



Figure 4. Pecan weevil damage consists of an A) egg laying hole with a circle of tracking marks or scratches on the shuck and B) a hole in the kernel often filled with frass from the larva feeding inside on the endocarp or pecan embryo (Photos: D. Johnson)

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Much of the information obtained for this newsletter was gathered from several cited online sites that distribute updates on Spotted Wing Drosophila management information. 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.