The pecan weevil, Curculio caryae (Horn), is perhaps the most damaging insect in the majority of pecan-producing states in the U.S. If not managed, this weevil can cause severe economic damage to your pecan operation that could last for multiple years. The arid Southwest (West Texas, New Mexico, Arizona, and California) has not yet had an established population of weevil develop.

Adult pecan weevils are brownish in color and approximately 3/8 of an inch long. Female adult weevils have extremely long snouts that can equal or exceed the length of the body. It is important to be able to identify both the adult weevil and its larval stage. Weevils in the larval stage are grubs that can be found in the nut during harvest time. They are approximately 3/5 of an inch long and are white with reddish heads.

Weevils are the only pest in the pecan orchard or grove to develop inside the kernel. After the pecan kernels have been harvested and removed from the orchard, however, other insects can infest the kernels in storage.

**UNDERSTAND THE WEEVIL LIFE CYCLE**

Understanding the life cycle of the pecan weevil is important to help you manage them in your integrated pest management plan.

Adult weevils winter underground in the orchard floor, emerging in August through October. Mated females lay eggs inside the shell of developing pecans. The larvae progress through several stages and feed off the kernel while inside the shell from the late summertime into fall. At the end of fall into early winter, primarily during October and November, the grown larvae chew their way out of the pecan and fall to the ground.

How You Can Control the Pecan Weevil

by Will Chaney, senior research associate | jwchaney@noble.org

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To properly manage a successful pecan orchard, a well-developed plan should be implemented. Planning will help growers and managers be prepared for tasks that will need to be addressed throughout the year. Go to www.noble.org/pecan-management-calendar to view our pecan management calendar for the month of June and July.

**WEEVILS CAN DAMAGE PECANS IN TWO WAYS**

Weevils can cause two types of damage to a pecan crop, occurring at two stages of pecan development.

1. **In the first wave, adult weevils puncture the developing immature pecans (water stage), causing the nuts to drop.**

    The time from when the eggs are laid in the pecan to when the larvae emerge is approximately 42 days. Once the larvae are on the ground, they burrow into the soil and construct an almost impenetrable earthen cell underground. This cell can be located between 4 to 12 inches below the surface, depending on the condition of the soil. Once they reach this stage, the larvae can remain dormant for the next eight to 10 months, only to emerge next year and start the cycle all over again. Approximately 10% of larvae do not emerge at that time and can remain dormant an additional year. Therefore, their life cycle can take two or three years to complete one generation.

2. **The second wave happens later in the season, after the pecan kernel starts to develop (dough stage). Adult weevils deposit eggs inside the pecan. After the larvae hatch, they feed on the kernel, then the fully developed larvae chew through the shell and shuck to exit the nut and drop to the ground.**

**HOW TO MONITOR AND CONTROL**

The most effective control for pecan weevil is the use of insecticides to prevent adult weevils from feeding and adult females from laying eggs. Adults typically emerge over a two-month period (August to September); however, depending on weather, emergence can occur even up to harvest. Multiple applications of insecticide are generally recommended, based on the timing and levels of infestation.

To determine the level of infestation and to best time spray applications, set up wire cone traps, pyramid traps and circle traps in the orchard to monitor weevil emergence. Note that female weevils usually take four to five days to begin laying eggs. The traps should be set out in late July and checked regularly — daily is preferred — until October to detect the onset of emergence, peak emergence and fluctuations in emergence.

Place the traps throughout your orchard, focusing on the trees that have a history of weevil damage. These trees can serve as your best indicator of increasing infestation. When using traps, select about 10 trees in the orchard. If trees are large, it may take two or more traps to encircle the tree. The economic threshold to spray for pecan weevils in Oklahoma is 0.3 weevils per trap per day. For example, if you had 10 traps set in your orchard, 3 weevils caught in total would meet the threshold of 0.3, which would indicate you need an insecticide spray.

Pecan weevil management is a crucial management technique. Weevils can be controlled with surveillance of traps throughout late nut development through harvest. This will greatly diminish the damage to your crop. If controlled year after year, you can significantly reduce the population in your orchard.

For more details on pecan weevil control and the use of traps, see Oklahoma State University factsheets Biology and Control of Pecan Weevil in Oklahoma (bit.ly/pecan-weevil-control) and Monitoring Adult Weevil Populations in Pecan and Fruit Trees in Oklahoma (bit.ly/weevil-population).

**INTERESTED IN GROWING PECANS?**

Check out our So You Want to Grow Pecans event on Sept. 3. There is a growing demand for pecans as more people are discovering the many health benefits associated with this native nut.

**LOCATION**
Kruse Auditorium, Entry 5

**TIME**
6:30 - 8:30 p.m.