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Oklahoma State University
127 Noble Research Center
Stillwater, OK 74078



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Green June Beetle Populations Currently Peaking Phil Mulder, Extension Entomologist



Extremely high populations of adult green June beetles are being observed now in many fruit and nut crops. Reports have surfaced from Porter, Stratford, Perkins and throughout the state where ripened fruit are found. These large June beetles have a strong preference for overripe fruit and other sugary foods. Injury from these insects on fruit trees is rather obvious, with adult beetles feeding in masses directly on the fruits surface. When disturbed, beetles will frequently fly off in a rather noisy fashion, often alarming anyone nearby. They are strong flyers but are easily captured and handled for positive identification.

The green June beetle exhibits one generation per year and generally adults peak in Oklahoma during a 2-week period in mid-July. Eggs of this species are deposited around turfgrasses or other organic matter and the first two instars feed at the soil/thatch interface. By the end of August, most grubs have become third-instars, which begin tunneling into the thatch layer and constructing vertical burrows. The grub stage can remain active for a long period (into November), but overwintering occurs in the burrows 8-30 inches beneath the soils surface. The grub stage of this particular species is rather unique. It has stiff abdominal bristles; short, stubby legs; a wide parallel-sided body form; and a habit of crawling on its back. Unlike other white grub species, mature green June beetle larvae often migrate at night by undulating and by utilizing the abdominal bristles for traction. Migrations can occur over long distances (40-65 feet/night) and are detectable by trails in sand traps, loose soil or dislodged morning dew on golf course greens.



In the past, when traditional formulations of Dursban and/or Diazinon were commonly used in September for grub control, these insects were readily controlled. However, now that these formulations have fallen out of favor or may no longer be registered, alternative controls

(Imidacloprid or Thiamethoxam) are generally recommended in early June. By this time, green June beetles have pupated, providing them some protection from these chemicals. Whether this scenario is actually true or not is only speculative and probably not of any great consequence since this species is not the primary grub affecting lawns.

With the majority of our peach crop already coming off and the advent of grape ripening, growers should continue their diligence in managing this insect, particularly where fruit quality is imperative. For peach growers, applications of Sevin® insecticide seems to be about the only choice and this can only be applied up to three days before harvest. Grape growers have a few more options; however, Sevin® insecticide is still an excellent choice but can only be applied up to seven days before harvest. With grape harvest taking place a little later (late August through September) growers may want to manage early populations of green June beetles with Danitol®, which has a 21 day pre-harvest interval. From now until harvest time, grape growers should pay careful attention to managing populations of this important insect pest.

Fear No Weevil – The Continuing Saga **Phil Mulder, Extension Entomologist**



In July, significant amounts of rainfall across much of the state resulted in many pecan producers becoming concerned about pecan weevil emergence. Several things must be considered before everyone presses the panic button about early emergence. First, the pecan weevil is native to Oklahoma, just like the pecan tree; therefore, many hundreds of years of co-evolution have resulted in an insect life cycle that is in synchrony with fruit maturity of its host. Second, early treatment with conventional insecticides, under the present hot, dry conditions have often resulted in

appreciable increases in aphid populations, which are already making their presence known with honeydew secretions on leaves. Third, since adult pecan weevil longevity is somewhat short-lived (averaging around 13-19 days) much of the early emergence will not guarantee a population two years from now. Finally, feeding by adult pecan weevils is rather limited. Prior to shell hardening (July 31- August 15), male and female weevils will destroy an average of about 0.23 and 0.29 nuts per day, respectively. This amounts to about one pecan every four days for each weevil.

Pecans punctured prior to shell hardening will generally fall from the tree; however, nuts fed on after this time will often remain green and adhere to the tree past normal harvest. Nuts affected by feeding of male pecan weevils rarely exhibit any penetration of the shuck; therefore, this shallow probing only causing slight scars on the shells but no damage to the kernel. In contrast, punctures made by adult female pecan weevils after





shell hardening result in “sticktights” or blackened pits on the kernel meat. Sticktights are caused by female weevils penetrating through the cotyledonus layer during the gel stage of nut development. Blackened pits or spots form when punctures from weevils only penetrate into the cotyledonus layer. This latter form of damage can result in a loss of 10-50% of the edible kernels and some very dissatisfied customers that bite into these very bitter-tasting nutmeats.

The more important concern about early emerging pecan weevils might be related to post-emergent longevity. The current crop is certainly not ready for oviposition by female weevils. However, the question arises, how long can they live and is there a chance of increased longevity when early emergence occurs? While the longevity picture presented above is probably quite accurate it does not reveal the extremes, only the averages. Subsequent studies in Oklahoma found that weevils that emerged earlier in the season had a greater life span than those that emerged later in the season. Female and male weevils that emerged early in the season (July 21-August 8) on large seeded cultivars, lived 38.2 and 30.9 days longer than their counterparts that emerged late (September 1-17) in the season. Although this information may paint a bleak picture of what could happen, early control measures may cause an even bleaker scenario to develop. Hot, dry conditions which favor aphid buildup are quite common now and any use of broad-spectrum insecticides could result in aphid flare-ups. Aphid populations exceeded thresholds considerably last year when conditions turned hot and dry. Early applications of insecticides did not help the situation, with subsequent populations reaching or exceeding 500 blackmargined aphids per compound leaf. Early and intense pressure from aphids can result in early defoliation which can have two consequences. First, early defoliation can result in a lack of filling of the present crop, but more importantly, whenever significant leaf loss occurs before October 15, next year’s flower set can be dramatically affected.

The bottom line to this discussion on early emergent populations of pecan weevils is don’t press the panic button just yet. Although some losses may be experienced from feeding by adult populations, the real targets for control are female weevils before they begin laying eggs in pecan. In Oklahoma, the timing of this event is well linked to nut maturity and should be carefully considered when the pecan reaches the dough stage. In Oklahoma, this occurs from the third week in August to the first two weeks in September. Trapping of adult weevil populations using Circle traps and careful monitoring of nut development can help growers hone in on the specific target date.

Dr. Richard Grantham
Director, Plant Disease and Insect Diagnostic Laboratory

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