

Biology/Phenology

Tenlined June Beetle Impacts California Almond Production

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Abstract: The grubs of the tenlined June beetle, *Polyphylla decemlineata* (Say) (Coleoptera: Scarabaeidae), have re-emerged as a problem in almond orchards in the sandy regions of the San Joaquin Valley. The 2nd and 3rd instar grubs are commonly found attacking almond roots. Thousands of almond trees have been removed because of root injury, which leads to reduced shoot growth, decreased foliage, and ultimately losses in almond production. Research is currently underway to: develop grower-usable sampling methods; identify effective soil insecticides and ways to facilitate penetration into the soil; discover and identify entomopathogenic nematodes that attack the grubs; determine the impacts of the scoliid parasitoid *Campsomeris pilipes* on the grub population; and examine the susceptibility of various rootstocks to grub feeding. Most effort to date has been on monitoring and sampling for grubs and adults. Light traps appear effective in monitoring flights of adult males. A “raisin shaker” has been modified to facilitate sifting of soil to locate beetle grubs and pupal cocoons and adults of the scoliid *C. pilipes*. Initial results indicate that the entomopathogenic nematode *Steinernema riobrave* will infect grubs and kill them.