

Green June Beetle in Texas

Frances Pontasch, Program Specialist, Texas A&M AgriLife Extension Service

The adult green June beetle (GJB), *Cotinis nitida*, is a type of June beetle known for its large size, metallic green wing covers, thick tan femurs, and voracious appetite for ripening and fermenting fruit. They feed on many thin-skinned crops including grapes, blackberries, raspberries, peaches, pears, plums, apples, and corn. They defecate as they feed, leaving behind spoiled, noxious smelling fruit.

Vineyards and orchards with ripening fruit are often GJB targets. Adult GJB land on soft, ripening fruit, and begin to open the flesh using their serrated legs and horned head. As GJB feed, they emit volatile aggregation pheromones which attract other GJB. The feeding damage to grape clusters invites combinations of yeasts to feed on the sugars as they accumulate within



the ripening berries. The damage and subsequent fermentation can often go unnoticed by humans, but the aroma is attractive to the GJB. This aroma of the fermenting fruit mixed with the aggregation pheromones is irresistible for male and female GJB. If left uncontrolled, masses of GJB will gorge on wine grape clusters for approximately 3 weeks as these grapes reach full maturity. Damage spreads as entire clusters are consumed and GJB colonize the vineyard. GJB excretions give the final wine product an objectionable flavor.

In Texas, there are three species of the genus *Cotinis*, subfamily Cetoniinae, family Scarabaeidae, and order Coleoptera. Of the three, *Cotinis nitida*, the green June beetle, is the most abundant and is the only one that is economically damaging. The South Texas Coastal *Cotinis*, *Cotinis boylei*, feeds on grapevine leaves, rather than the fruit, in numbers that have not yet proven economically problematic. The Western Green June Beetle, *Cotinis mutabilis*, has not been detected in Texas grapevines.

Green June beetle populations tend to follow a cyclical pattern, where a year or two of high population densities which are economically significant, are followed by several years with no significant presence of GJB.

Adult female GJB deposit 10 to 30 eggs in balls of soil in areas that are rich in decomposing manure and organic matter, such as pastures and hayfields. GJB eggs hatch as larvae in 2 to

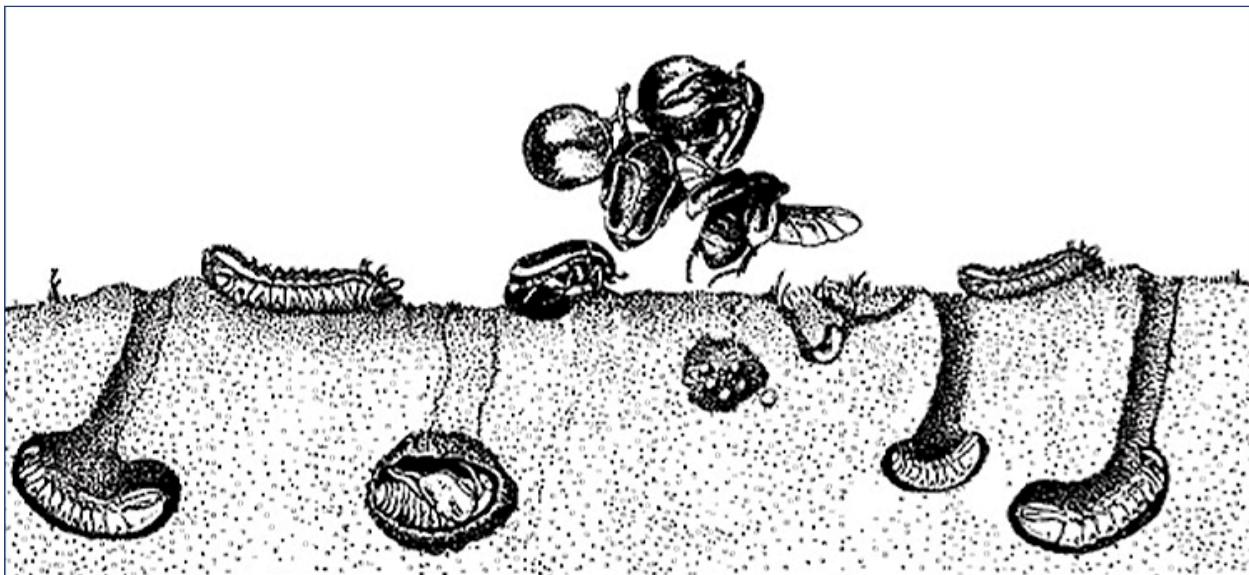
3 weeks. During the day, larvae hide in vertical tunnels in the soil. At night, they emerge from their tunnels and crawl about the soil surface, feeding on decaying organic matter. The GJB overwinters as a white grub, similar to the common June bug, but is larger and crescent shaped. In addition, the larvae crawl on their backs; their small legs are not useful for locomotion. This habit of crawling on its back is specific to a GJB larva. During the winter, larvae are inactive but may crawl out of their tunnels to feed on warm days. The larvae become active in February and continue to feed during the spring. In May, larvae are full grown (1.5 to 2 inches long) and then burrow underground once more to pupate, emerging in June and July as adults. The tunneling of GJB larvae makes them a recognized insect pest to turf grass. Adult populations peak in July and August in Texas vineyards, coinciding with grape berry maturation. Adults are daytime flyers, and most commonly fly in the morning, just after the dew dries and before the summer heat intensifies. In flight, the adult GJB is noisy and lumbering.

Green June beetle management

The key to GJB management is to prevent GJB adults from colonizing a vineyard. Green June beetle scouts fly into vineyards from surrounding areas, then secrete aggregating hormones to attract other GJB. To prevent colonization, the early GJB scouts must be detected, then carbaryl insecticide should be applied immediately to keep additional GJB from being lured into the vineyard or orchard. Growers should continue to monitor the vineyard for reinfestation by GJB and reapply the insecticide as necessary. When applied at a full label rate of 2 quarts per acre (when GJB adults are first detected in a vineyard), tests in Arkansas have shown carbaryl to be highly effective for GJB control.¹ Consult the label for any current restrictions.

Managing GJB with carbaryl as part of a mass “attract and kill” control method was evaluated in Texas by the Texas AgriLife Extension Service and in Arkansas.^{2,1} Traps are noninvasive and effective in detecting early and peak presence of GJB in a vineyard. However, since

JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC



Life cycle of the green June beetle.

Flanders, K., P. Cobb. 2000. Alabama Cooperative Extension.



densities of GJB populations in areas surrounding individual vineyards are unknown, there is concern that a large number of traps may attract more pests into a crop than might otherwise occur. Further research is needed to establish whether traps placed around a vineyard attract or help reduce GJB infestation.

References

1. Johnson, D. T., et al. 2009. Green June Beetle Mass Trapping and Efficacy Studies. <http://entomology.uark.edu/3928.htm>
2. Knutson, A., F. Pontasch, and D. Johnson. 2009. Evaluation of mass trapping adults as a control for green June beetle attacking winegrapes in North Texas. Texas AgriLife Extension Service report. 7 pp.

Texas A&M AgriLife Extension Service

AgriLifeExtension.tamu.edu

More Extension publications can be found at *AgriLifeBookstore.org*

Texas A&M AgriLife Extension provides equal opportunities in its programs and employment to all persons, regardless of race, color, sex, religion, national origin, disability, age, genetic information, veteran status, sexual orientation, or gender identity.

The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Courts of Texas Cooperating.