

GRAPE PHYLLOXERA

Hemiptera: Phylloxeridae

Daktulosphaira vitifoliae

Bug
of the
Month



Background. Grape phylloxera, also called grapevine phylloxera, is a destructive aphid-like grape pest native to eastern North America. It lives on the grape leaves and roots, and damages plants when females feed on the roots. When feeding, they inject a poisonous secretion with the saliva which induces head-like galls. Root galls disrupt nutrient absorption by the grapevine which can result in plant death.

Biology. Phylloxera adults are yellow, oval -or pear-shaped- of about 0.04 inches in length. Eggs are oval and yellow, and immature nymphs look

like smaller, wingless adults. Their life cycle includes both sexual and asexual reproductive stages. In the eastern U.S., overwintering first instar nymphs emerge from the soil and migrate from roots to the newly formed foliage to begin feeding. Proteins in their saliva elicit the formation of galls on the leaves' underside, where they take refuge. When fully mature, all nymphs became females and are capable of laying eggs without mating (this is called parthenogenesis). Each female lays from 400-600 eggs inside a gall. The eggs hatch into nymphs, which move

to neighboring leaves and generate three to four more asexual generations. Nymphs from the last generation move to the plant roots where they develop completely and produce from three to four generations. In early fall, mature adults with wings migrate to leaves and lay two kinds of eggs: large eggs which contain female embryos, and small eggs containing male embryos. When adults emerge, they mate and lay eggs on roots, giving rise to overwintering nymphs, thus completing the life cycle.

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