ACTIVITY AND DISPERAL OF FIRST INSTAR LARVAE OF THE CITRUS BLACKFLY

Robert V. Dowell, George E. Fitzpatrick and Forrest W. Howard

Abstract.—We found that a small portion (0.2–0.3%) of first instar Aleurocanthus voglumi Ashby are mobile for 2–4 h and will crawl up to 25–30 mm. When leaves overlap these highly mobile individuals can crawl from one plant to another.

The citrus blackfly (Aleurocanthus voglumi Ashby) is a major pest of citrus that was discovered in the Ft. Lauderdale area of Florida in January, 1976. It is currently the target of an eradication effort by the Division of Plant Industries (Florida Department of Agriculture) and the Animal and Plant Health Inspection Service (USDA). A quarantine on the movement of all plants that have been shown to support full A. voglumi development is included in the eradication effort. However, there are many plants upon which females will oviposit, but which will not support complete development of the immature stages (e.g. orange jasmine, Murraya paniculata (L.) Jack) (Howard, F. W., and P. L. Neel, 1977. Host plant preferences of citrus blackfly (Aleurocanthus voglumi Ashby) (Homoptera: Aleyrididae) in Florida. Proc. Int. Soc. Citriculture 1977 (in press)). This study was initiated to determine if first instar larvae of A. voglumi are capable of crawling from the leaves of one plant to those of another.

We field-infested 4 orange jasmine plants (M. paniculata) with A. voglumi. After 3–4 egg spirals were oviposited on each leaf, the plants were returned to the laboratory and uninfested citrus rootstock plants were put into contact with them. In addition, 5 uninfested citrus leaves were stapled to 5 of the infested orange jasmine leaves, harboring a total of 300 A. voglumi eggs, to provide a dispersal opportunity for first instar larvae. The length of time the first instar larvae are mobile after hatching was also observed.

After hatching, first instar larvae are mobile and seek feeding sites for up to 3–5 hours (n = 3) before becoming immobile. Although no larvae were found on the citrus plants in contact with the orange jasmine, one larva was found on the citrus leaves stapled to the orange jasmine leaves. This individual represented ½ (0.3%) of the population and it had crawled a distance of 28 mm. It was previously observed that first instar A. voglumi are mobile for 2–4 hours and that 0.2% (½) of the population are able to crawl up to 38 mm from the egg spiral (Dietz, H. F., and J. Zetek, 1920. The blackfly of citrus and other subtropical plants. USDA Agric. Bull. #885, 55 pp). The presence of these highly mobile individu-
uals in populations of A. woglumi presents the possibility that larvae may crawl from an unsuitable host to a suitable one if contact between the plants occurs.

Agricultural Research Center, 3205 SW 70th Avenue, Fort Lauderdale, Florida 33314.

Received for publication 17 July 1977.

Footnotes

1 Florida Agricultural Experiment Station Journal Series No. 520.
2 Homoptera: Aleyrodidae.