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Agricultural Extension Service
The University of Tennessee
W023

Cotton Insects

Whiteflies

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Classification and Description

Whiteflies (Homoptera: Aleyrodidae) are small insects that feed as nymphs and adults on plant sap with piercing-sucking mouthparts. With rare exceptions, the bandedwinged whitefly (*Trialeurodes abutilonea*) is the only species that infests cotton in Tennessee. Adult bandedwinged whiteflies are only about 1/16th inch in length, and as the name implies, have gray bands across white-colored front wings. Eggs are yellowish and very small (0.1 mm). Nymphs and pupae reach a maximum size of about 1 mm in length and ½ mm in width. They can occur at very high numbers.

Hosts and Distribution

Bandedwinged whiteflies have a very wide host range that includes weedy and cultivated plants. Besides cotton, they are pests of many ornamental, greenhouse and vegetable plants. This species is native and widely distributed throughout the United States, especially the South.

Life History

Whiteflies are not flies but actually much more closely related to aphids. They have a unique biology. Tiny yellowish eggs are generally laid on the bottoms of leaves, and all life stages are typically found in the same place. Hatching eggs produce "crawlers," which, over a period of 2-3 days, move only a few inches before settling into an immobile nymph stage. The immobile nymphs feed on phloem (sap) until they molt into pupae. Whiteflies develop rapidly from the egg to the adult stage (12-14 days at summertime temperatures), and they have many overlapping generations per year.

Whiteflies

Pest Status and Injury

Whiteflies are usually not a serious threat to cotton grown in Tennessee. Heavy infestations generally

weaken plants and cause leaves to wilt and yellow. Honeydew excretions from feeding nymphs will accumulate on plants, giving them a sticky but shiny appearance much like aphid infestations. Sooty mold growing on honeydew can cover leaves and stain the lint. This is generally not a serious problem in the Mid-South because rain will often "wash" the lint. However, the accumulation of honeydew and sooty mold is an indication of heavy infestations that may need to be treated with insecticides.

Management Considerations

Whiteflies are found on the underside of leaves, so insecticide coverage is a potential problem. Systemic insecticides generally provide the best control. Because they do not feed, eggs and pupae are relatively difficult to kill with insecticides, and two applications at about a five-day interval may be necessary. Insecticides recommended for control of bandedwinged whiteflies are listed in the Tennessee Cotton Insect Control Guide (Extension PB 387). The current treatment threshold is when 50 percent of plant terminals are infested, particularly when honeydew is accumulating.

For information about the management of the major field crops grown in Tennessee, visit www.utcrops.com

Precautionary Statement

To protect people and the environment, pesticides should be used safely. This is everyone's responsibility, especially the user. Read and follow label directions carefully before you buy, mix, apply, store, or dispose of a pesticide. According to laws regulating pesticides, they must be used only as directed by the label. Persons who do not obey the law will be subject to penalties.

Disclaimer Statement

Pesticides recommended in this publication were registered for the prescribed uses when printed. Pesticides registrations are continuously reviewed. Should registration of a recommended pesticide be canceled, it would no longer be recommended by the University of Tennessee. Use of trade or brand names in this publication is for clarity and information; it does not imply approval of the product to the exclusion of others which may be of similar, suitable composition, nor does it guarantee or warrant the standard of the product.

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Agricultural Extension Service Charles L. Norman, Dean