U.S. Department
of Agriculture

G-95

Agrisearch Notes

Cotton's Own Bollworm Defenses

Natural resistance to pink bollworm infestation in some varieties of cotton, although not enough to allow cotton growers to stop using pesticides, still offers some benefits.

F. Douglas Wilson, ARS plant geneticist, compared resistant and nonresistant cotton varieties sprayed with an insecticide with the same varieties unsprayed.

The pink bollworm reduced seedcotton, lint, and seed weight 10 to 17 percent more per boll on unsprayed plants than on sprayed plants of a susceptible upland cotton variety and a susceptible pima (long staple) variety.

In an upland cotton variety having some natural pink bollworm resistance, the same yield components were reduced only 1 to 7 percent between the unsprayed and sprayed plants.

Seeds per boll were reduced 7 to 10 percent in the susceptible variety and 4 percent in the resistant one. Bolls per plant were also reduced 8 to 20 percent in the susceptible variety but not at all in the resistant variety.

F. Douglas Wilson is located at the Western Cotton Research Laboratory, 4207 E. Broadway Rd., Phoenix, AZ 85040.—(By Paul Dean, Oakland, Calif.) ■

Date Palm Disease Vector Found

Two ARS entomologists have collected and positively confirmed the presence of *Myndus crudus* Van Duzee, a planthopper suspected of being the insect vector of the lethal yellowing disease of ornamental date palms in the Lower Rio Grande Valley of Texas. It is the same vector that spread the disease through the coconut groves of Jamaica, where it killed trees at a rate of 200,000 per year, and in Florida, where it has killed about one-third of the coconut palms.

The disease itself is a mycoplasma-like organism that has no cell wall, no nucleus, and no internal structures other than DNA and ribosomes. It attacks the phloem tissue of the tree, and death comes when the bud is killed by a soft rot associated with a large number of bacteria that produces a very foul-smelling, putrid odor.

Yellowing of date palms in South Texas was first seen in Brownsville in 1975. Lethal yellowing disease was identified in January of 1980, and entomologist Dale E. Meyerdirk collected the suspected planthopper vector in April of that same year. This was the first report of the insect's occurring in Texas.

To collect the insect, Meyerdirk hung yellow sticky traps in the date palm canopy approximately 15 to 20 feet above the ground. The scientist monitored 74 traps every 2 weeks at 18 different locations throughout the eastern half of the Lower Rio Grande Valley. Meyerdirk also took samples of the insect from small date palms and grasses where the planthopper reproduces. The collected insects were sent to entomologist James P. Kramer, who positively identified them as *Myndus crudus* Van Duzee.

Since the ornamental date palm is found extensively throughout the valley—along highways, roads, and in residential as well as business districts—the esthetic value of this tree is great and its loss would be considerable should the disease not be successfully controlled. Positive identification of the insect vector is a major step leading to the development of control measures.

Dale E. Meyerdirk is located at the Specialty Crops Insects Laboratory, University of California, P.O. Box 112, Riverside, CA 92521. James P. Kramer is with the Systematic Entomology Laboratory, U.S. National Museum of Natural History, NHB 168, Washington, D.C. 20560.—(By Bennett Carriere, New Orleans, La.) ■