

The feeding of a big-eyed bug, Geocoris punctipes, on first instar lygus bug nymphs was evaluated in the laboratory. First, second, and third instar Geocoris nymphs ate an average of 1.5, 2.6, and 7.4 first instar lygus bug nymphs per 24 hours, respectively. Female Geocoris consumed 25.6, 6.2 and 2.6 first, second, and third instar lygus bugs per 24 hours, and males about half as many.

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PESTICIDE APPLICATION EQUIPMENT IN RELATION TO DRIFT OF PESTICIDE

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Two pesticide-drift tests were run during 1966 (May and September) on alfalfa fields south of Coolidge, Arizona. The first test was using blower-type sprayers vs. row-crop Hiboy, and the second with blower type vs. airplane.

The former was run in the afternoon of May 25 with a west wind at 2 to 5 mph, and a temperature of 90 to 100°F. Lapse rate of -1.0 to 0.0°F applying 1-1/2 lb./A of methoxychlor at rate of 7 acres in 22 minutes. The residue was measured in alfalfa and taken at intervals downwind. The drift at 165 ft. was 0.25 p.p.m. and 0.02 p.p.m. at 1320 ft. for the Hiboy with 1.57 p.p.m. and 0.28 p.p.m. respectively for the blower type or about 10 times more for the latter near the sprayer and 15 times more for samples 1/4 mile downwind.

The test with airplane vs. blower type was run on the afternoon of September 23, 1966, with west wind at 4 mph, air temperature from 75° to 85°F, and a lapse rate of 0.0 to -5.0 applying 1-1/2 lb./A of methoxychlor. The airplane completed 14 acres in 15 minutes and ground applicator 14 acres in 50 minutes.

The residue measured on alfalfa at 165 ft. was 2.10 p.p.m. and at 1320 ft. was 0.27 p.p.m. for air application. For the blower type the residue downwind was 7.04 p.p.m. and 0.65 p.p.m., respectively.

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REARING INVESTIGATIONS

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Objective:

To improve rearing and mass production techniques for cotton insects for sterile insect release and to serve as hosts in the production of parasites and predators for field release.

Summary of Progress

Cultures of bollworms, beet armyworms, salt-marsh caterpillars, cabbage loopers, boll weevils, and Lygus spp. are maintained at the USDA Cotton Insects Laboratory in Tucson. The lepidoptera are utilized in parasite and predator studies oriented toward biological control. The Lygus are maintained for biological and predation studies and the boll weevils are cultured for ecological, biological, and physiological research.

Artificial diets are constantly being improved and technique for mass rearing are being tested for use in mass production of parasites for release for biological control. Rearing techniques are now available for mass production of tachinid parasites for experimental release in 1967.

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