SCIENTIFIC NOTES

NOTES ON SMOKYBROWN COCKROACH—(*Note*). For many years I have been interested in the larger species of cockroaches of the genus *Periplaneta*. The local species (for Gainesville, FL) are the American cockroach, *P. americana* (Linnaeus), the Australian cockroach, *P. australasiae* (Fabricius), the brown cockroach, *P. brunnea* Burmeister, and the smokybrown cockroach, *P. fuliginosa* (Serville). All of these species are present locally under woodland conditions. They also are most adaptable to becoming household pests.

In the late 1940's and early 1950's there was about an equal population mix of these 4 species. In the ensuing 30 or more years, the smokybrown cockroach has become the most prominent species and has become a troublesome household species in the southern United States. The other species are still present but in minor numbers.

Wright in North Carolina (J. Georgia Ent. Soc. 1979 14(1): 69-75) has reported on the life history of the smokybrown cockroach and its prominence in the southern United States. His studies indicate a mean number of eggs per ootheca at 22.7 (range 14-30). In my examination of 108 egg cases obtained locally, 11 contained 22 eggs; 22 contained 24 eggs; 41 contained 26 eggs; 25 contained 28 eggs; and 9 contained 30 eggs. (a mean of 26.4 eggs).—L. A. HETRICK, Emeritus Professor of Entomology, University of Florida, Gainesville FL 32611 USA.

EFFECT OF BAY SIR 8514 IN *DIAPREPES ABBREVIATUS* ON CITRUS IN FLORIDA[1]—(*Note*). Diflubenzuron (*N*-[[(4-chlorophenyl) amino]carbonyl]-2,6-difluorobenzamide) was found to have an ovicidal effect on *Diaprepes abbreviatus* (L.) on citrus when weevils were exposed to treated foliage (Schroeder et al. 1976. J. Econ. Ent. 69: 780-2). In 1978, we evaluated a compound of similar structure, BAY SIR 8514 (2-chloro-*N*-[[[4-(trifluoromethoxy) phenyl]amino]carbonyl]benzamide), for biological activity against *D. abbreviatus*. In test 1, water suspensions of 2 formulations (25 WP and 65 g AI/liter EC) or BAY SIR 8514 were each sprayed to runoff on 5 tree plots at rates of 0.15 and 0.30 g AI/liter. Five ♀ and 2 ♂ were confined on the treated foliage in cloth-sleeve cages (one cage/tree) after the foliage had dried. Eggs were collected at 5-day intervals for 20 days by removing leaves containing egg masses. Eggs were held in the laboratory for 10 days at ca. 27°C to determine eclosion. Residual activity was evaluated by caging weevils on each tree 15 days post-treatment. In test 2, a citrus grove was treated aerially with BAY SIR 8514 EC formulation in 47 liter/ha of water at rates of 350 g and 700 g AI/ha. The aircraft sprayboom was fitted with 60 D8-45 nozzles; the system was pressurized at 5.27 kg/cm². Weevils (5 ♀ + 2 ♂/cage) were placed on 10 trees (1 cage/tree) treated at each rate. Eggs were collected as previously described to determine eclosion.

[1]This paper reports the results of research only. Mention of a pesticide in this paper does not constitute a recommendation for use by the USDA nor does it imply registration under FIFRA as amended. Also mention of a commercial (or "proprietary" if applicable) product in this paper does not constitute an endorsement of this product by the USDA.

Residual effect also was determined by caging fresh weevils on the trees 15 days post-treatment. Control weevils were caged on untreated trees for both tests.

In test 1, all 4 treatments significantly reduced egg hatch. Hatch of eggs from weevils exposed to the WP formulation at rates of 0.15 and 0.30 g AI/liter of water was 1 and 2%, respectively, while hatch of eggs confined at 15 days post-treatment was 1 and 23%, respectively. Hatch of eggs exposed to the EC formulation was <1% for each rate, while hatch of eggs confined at 15 days post-treatment was 14 and 0% for the low and high dosages, respectively. Control weevils had 84% egg hatch.

In test 2 both rates of BAY SIR 8514 EC applied by air significantly reduced *D. abbreviatus* egg hatch, with no difference between hatch in the 2 treatments (P = 0.9061) in weevils continuously exposed for 30 days post-treatment. Egg hatch in weevils treated at 350 g AI/ha was 20.8% and at 700 g AI/ha was 24.9%. Control hatch was 68.9%. There was no significant interaction between egg collection date and treatment (P = 0.2470) in this test. In weevils introduced at 15 days post-treatment, egg hatch was significantly reduced and differences between treatments were not significant (P = 0.2408). Egg hatch in weevils treated at 350 g AI/ha was 25.2% and at 700 g AI/ha was 30.9%. Control hatch was 73.9%.

Lack of adequate field populations of adult weevils prevented further testing in 1979. Test results to date have shown BAY SIR 8514 to have good field activity as a female sterilant with *D. abbreviatus* exposed on treated foliage.—J. B. Beavers and W. J. Schroeder, U.S. Horticultural Research Laboratory, USDA, SEA, AR, Orlando, FL 32803 USA.