



EFFECTS OF INSECTICIDES ON MOLE CRICKETS: (ORTHOPTERA: GRYLLOTALPIDAE: *SCAPTERISCUS*)^{1,2}—

(Note). Many insecticides have been screened for mole cricket control during the last 3 decades (D. E. Short, and D. P. Driggers. 1973. Fla. Ent. 56:19-23), but it is difficult to evaluate the efficacy of insecticides for these subterranean crickets. After the insecticidal application, the dead or moribund mole crickets on the surface of the soil have been counted to evaluate the insecticides. Such counting procedure may be misleading. This report describes observations on the effect of chemical baits on mole crickets, and that the mortality occurs not only on the surface of the soil, but also under the soil.

Three chemical baits³ were tested in a pasture for mole cricket control. These treatments and control (no baits) were randomized and replicated 3 times. The baits were applied on 17 September 1972 after 3 days of irrigation. The dead or moribund mole crickets on the surface of the soil were counted before 7 AM for the next 4 days. The surviving population of mole crickets (*Scapteriscus acletus* Rehn and Hebard, and *S. vicinus* Scudder) inside the soil were assayed by drenching an area of 1 m² in each plot (9 m²) with 1% pyrethrum. The mole crickets that emerged from the soil within 15 min were counted.

The effects of the 3 baits on mole crickets were not significantly different. Each treatment had 2-3 dead mole crickets on the surface of the soil (i.e., 0.7 to 1.0/plot), but the control had none. Furthermore, there were 2-3 live mole crickets (per 3 m²) in all the treatments and the control (i.e., 6-9/plot). The question of whether some of the mole crickets killed by chemical baits die under the soil was answered by pot experiments. Five percent chloropyrifos was applied to 4 outdoor pots (0.3 m diam) with wheat kernels as food. Each pot had 2 large nymphs of *S. vicinus*. The bait (2.3 kg AI/h) was applied on the surface of the pots and the 4th pot was the control. I found dead nymphs not only on the surface (n=3), but also underground (n=3) and no mortality in the control.

These data suggest that merely counting dead mole crickets on the surface does not reveal the true efficacy of a bait. Sampling live mole crickets after the experiments and measuring the surface burrows or mole cricket activity (D. H. Habeck and L. C. Kuitert. 1964. Sunshine St. Agr. Rep. 9:11-12) are some additional methods that could be used for evaluating chemicals for mole crickets.—S. M. Ulagaraj, University of Florida, Entomology Department, Gainesville, Florida 32611.

¹Florida Agricultural Experimental Station Journal Series No. 5596.

²I thank Dr. T. J. Walker for help and for criticizing the manuscript. Appreciation is expressed to Dr. J. Strayer for the supply of chemicals.

³Five percent Diazinon, trichorofon, and chloropyrifos baits were formulated by Southern Mill Creek Co., at Tampa and applied at 1.7 kg active ingredient/hectare (AI/h).