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Control of a Native Fire Ant, *Solenopsis geminata*, with Mirex Bait¹

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During October 1962, 2 large plots approximately 1000 acres each in Calhoun County, Florida, were treated with mirex bait (Lofgren et al. 1963), for the control of the imported fire ant, *Solenopsis saevissima richteri* Forel. The bait formulation consisted of corncob grits (85%), soybean oil (14.85%), and mirex (0.15%). It was applied at the rate of 5 lb/acre by airplane. Prior to treatment, six 1-acre subplots or count areas were established in each plot for making observations on the control obtained.

At the time the pretreatment data of ant colonies were recorded, it was noticed that in some of the subplots there was a mixed population of the imported fire ant and the native fire ant, *Solenopsis geminata* (F.). Collections were made of specimens from each of the active mounds found in the subplots during the pretreatment and posttreatment observations. The specimens were identified and tabulated according to species. Seven of the 12 subplots contained *S. geminata* and 29% of all the ant colonies found prior to treatment were this species.

Posttreatment observations were made after 4, 8, 26, and 36 weeks. The results of the bait treatment on the *S. geminata* population are summarized in Table 1. Complete control was obtained on all the subplots except B-6; 92% control was obtained on this subplot. A slower and lesser degree of control was noted also in the imported fire ant populations on this subplot. The exact reason is not known; however, it could have been the result of erratic or incomplete distribution of the bait, heavy rainfall immediately after treatment, or an excess of natural food for the ants. If any of these situations occurred, the amount of bait

Table 1.—The effectiveness of mirex bait against *Solenopsis geminata*.

Plot	Subplot	Pretreatment count of active mounds	Percent reduction in active mounds after following weeks:			
			4	8	26	36
A	1	3	100	100	100	100
	3	20	95	100	100	100
	5	17	100	100	100	100
	6	7	57	100	100	100
B	3	12	100	100	100	100
	4	1	100	100	100	100
	6	12	33	67	42	92 ^a

^a One active mound remaining on subplot.

available to or taken by the ants would have been below normal and slow kill would have resulted. Apparently when only a small quantity of bait is available, it is fed preferentially to the queen or queens, which are killed in 1–2 months' time. The remaining workers survive for many months and die from other causes. From this result it may appear that the bait is providing residual control, but other tests have shown this not to be the case as the bait becomes unattractive after a few weeks when aged outdoors.

REFERENCE CITED

Lofgren, C. S., F. J. Bartlett, and C. E. Stringer. 1963. Imported fire ant toxic bait studies: Evaluation of carriers for oil baits. *J. Econ. Entomol.* 56(1): 62–66.

¹ Received October 17, 1963; accepted for publication March 10, 1964.

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