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MEDICAL AND VETERINARY

NON-AGRICULTURAL LAND

Imported fire ant: Solenopsis invicta Buren

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EFFECTIVENESS OF AC-217,300 FOR CONTROL OF IMPORTED FIRE ANTS, 1979: Field tests were initiated in Florida with the bait toxicant AC-217,300 to evaluate the effect of toxicant concentration, percent soybean oil on the carrier (pre-gel defatted corn grits), and the rate of application of baits on control of natural infestations of the red imported fire ant (RIFA). Twenty-four plots were established on improved pasture land. Each plot was 1 acre in size and contained a 0.25 acre evaluation area. Three of the plots were used as untreated checks. The baits were applied at various rates with a tractor-mounted auger system. The test was evaluated at 6 and 12 wk post-treatment. The population index method of determining control was used in which we evaluated the colonies according to the number of worker ants and the presence or absence of worker brood (larvae and pupae) and assigned each colony to a class from 1-10. Colonies in classes 1-5 did not contain worker brood while those in classes 6-10 contained worker brood. The differences within classes 1-5 and 6-10 were related to the size of the colony. The interaction of population density and colony classes was then used to establish a population index.

The results showed that control of RIFA was directly related to toxicant and soybean oil concentration, thus the best results (96% control) were obtained with the formulation containing 0.75% toxicant and 30% soybean oil. There was no significant effect on percent control when the application rate was increased more than 2-fold from 0.75 lb/acre to 1.74 lb/acre.

Bait composition (%)		Application rate		Pre-treatment		% control	
Toxicant	Soybean oil	lb/acre	ai/acre	Total # active mounds	Population index	6	12
0.1875	30	0.75	0.6	13	126	21	56
0.375	30	0.75	1.4	15	134	82	78
0.75	30	0.75	2.7	13	116	82	96
0.75	20	0.75	2.7	12	108	58	85
	25	0.75	2.7	21	127	74	87
	30	0.75	2.7	13	116	82	96
0.75	30	0.75	2.7	13	116	82	96
		1.24	4.2	14	128	87	97
		1.74	5.9	14	130	88	98
(Check)						0	2

PASTURE:

Common bermudagrass; Cynodon dactylon (L.)  
Dallisgrass: Paspalum dilatatum  
Red imported fire ant: Solenopsis invicta Buren

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RED IMPORTED FIRE ANT CONTROL WITH AMDRO INSECTICIDE BAIT (FORMULATION A), 1980: Study was conducted at the LSU Agric. Exp. Sta. at St. Gabriel in an improved pasture consisting primarily of a mixture of common bermudagrass and dallisgrass on sharkey clay soil. Eight circular (130 ft dia) plots were established for test purposes, 4 of which (randomly selected) were treated with Amdro bait and 4 of which served as checks. An inner circle (80 ft dia) in each plot served as a data-taking site. Pre-treatment counts of active mounds (minimum of 6 ants appearing on a disturbed mound) were taken Jun 24. Bait (1 lb formulated bait/acre) subsequently was applied the same day with a Cycleed Spreader. Active mound counts were taken 24, 48 and 72 hr and at 8, 14, 21, 48, 63, 98 and 125 days post-treatment. Means of treated and untreated plots were corrected for % control by Abbott's formula.

Maximum control was obtained at 21 days post-treatment. Thereafter, mound numbers in the treated plots erratically, but progressively increased until 125 days post-treatment when, essentially, pre-treatment numbers were present. Droughty conditions that existed during the study may have caused some of the variation in mound counts during the latter part of the test.

Days post-treatment	# active mounds										% Control
	Treated plots					Untreated plots					
Pre-treatment	1	2	3	4	$\bar{X}$	1	2	3	4	$\bar{X}$	
Pre-treatment	19	10	17	12	14.50	10	13	8	6	9.25	
1	7	8	13	5	8.25	9	11	9	11	10.00	17.5
2	8	6	9	5	7.00	10	12	8	11	10.25	31.7
3	5	3	3	3	3.50	9	12	8	9	9.50	63.1
8	5	1	1	0	1.75	6	12	7	9	8.50	79.4
14	1	0	0	0	0.25	9	6	4	8	6.75	96.3
21	0	0	0	0	0.00	3	7	8	6	6.00	100.0
28	3	3	1	1	2.00	5	10	13	11	9.75	79.4
48	0	0	1	0	0.25	4	6	8	7	6.25	96.0
63	2	0	2	0	1.00	6	7	3	7	5.75	82.6
98	5	4	5	6	5.00	13	13	12	11	12.25	59.1
125	13	11	16	12	13.00	12	13	15	15	13.75	5.4