

**EVALUATION OF FENOXYCARB (AWARD™) FORMULATIONS
AND FERTILIZER BLENDS FOR SUPPRESSION OF
THE RED IMPORTED FIRE ANT**

Bastiaan M. Drees, Professor and Extension Entomologist, and
Charles L. Barr, Extension Associate

Development of a fire ant bait product that can be applied as a formulation with fertilizer could result in a labor savings in applying these inputs to maintain ornamental turfgrass in areas such as golf courses. Conventionally formulated fire ant bait loses attractiveness to foraging ants when blended with fertilizers. Blending formulations Award™ (fenoxycarb) Brand of Logic® Fire Ant Bait with encapsulated fertilizer has shown some promise in successfully suppressing fire ants. This trial was conducted to further evaluate a new formulation of Award and several Award-fertilizer blends.

Materials and Methods

The trial was located on the B. H. Look Ranch in Waller County, Texas. Plots consist of 1 acre squares, with a 30 foot buffer between plots. The sampling area consisted of a circle, 105 feet in radius for a total area of 0.795 acres. The circle was divided into quadrants, each with an approximate area of 0.20 acres, for sub-plot analysis.

Prior to treatment, the number of active fire ant mounds within each subplot quadrant was documented. Treatments were applied on 9 August 1995 using a tractor-mounted Herd GT-77 seeder for the bait-only plots and a tractor-mounted broadcast-type fertilizer spreader for the fertilizer blends:

<u>Treatment</u>	<u>Rate</u>
1. untreated control	---
2. Award™	1.5 lbs per acre
3. CGA 114597 IGR-A	1.5 lbs. per acre
4. "Product 1" - Orange fertilizer; 35-0-0 Tri-Kote + CGA	100 lbs. per acre
5. "Product 2" - Orange fertilizer; 35-0-0 Tri-Kote + Award	100 lbs. per acre
6. "Product 3" - Green fertilizer; 35-0-11 Polyon + Award	100 lbs. per acre
7. "Product 4" - Green fertilizer; 35-0-11 Polyon + CGA	100 lbs. per acre

The first evaluation was conducted on 13 October 1995 by digging each mound with a shovel, giving it a rating of 1-5 and indicating the presence of brood according to the USDA rating system (Harlan, *et al.* 1981; Lofgren and Williams 1982). Two months after treatment, a post-treatment evaluation was conducted using the same method. Results were analyzed using PC SAS Analysis of Variance (ANOVA, $P \leq 0.05$) and Tukey's Studentized Range test for mean separation.

Results and Discussion

Two months following application of fenoxycarb baits and bait plus fertilizer blend treatments, no significant differences in number of fire ant mounds per sub-plot area were found between treatments (**Table 1**). However, there were significant differences between mound ratings, with CGA 114597 IGR-A and "Product 1" (Tri-Kote) treatments differing from those in untreated control subplots. AwardTM performed numerically better than "Products 2, 3 and 4" but did not perform significantly different other treatments. Due to the plot design of this trial, with subplots occurring within larger treatment plots, there were numerical pre-treatment differences resulting in a higher variability (shown by raw data provided in Table 1) which influenced our ability to separate, statistically, means in this two-month post-treatment evaluation.

This trial was scheduled to receive a second application of baits in the spring. However, due to dry weather this was used for grazing cattle. Thus, the trial was abandoned in the spring.

Harlan, D. P., W. A. Banks, H. L. Collins and C. E. Stringer. 1981. Large area tests of AC-217,300 bait for control of imported fire ants in Alabama, Louisiana, and Texas. *Southwest Entomol.* 6:150-157.

Lofgren, C. S. and D. F. Williams. 1982. Avermectin B_{1a}: A highly potent inhibitor of reproduction by queens of the red imported fire ant. *J. Econ. Entomol.* 75: 798-803.

Table 1. Number of active red imported fire ant mounds and mean mound rating (Harlan, *et al.* 1981; Lofgren and Williams 1982) per 0.20 acre sub-plot and treatment mean before and two months after broadcast application of fenoxycarb bait-formulations and bait plus encapsulated fertilizer blends, B. H. Look Ranch, Waller Co., Texas, applied Oct. 9, 1995.

Number of active mounds per 0.20 acre sub-plot / treatment mean*		
<u>Treatment</u>	<u>Pre-count</u>	<u>Two months</u>
Untreated control	34,20,18,12 / 24.0	12,10,11,7 / 10.00
Award TM	45,33,32,29 / 31.3	21,11,14,11 / 14.25
CGA 114597 IGR-A	33,32,29,28 / 31.3	13,16,4,12 / 11.25
"Product 1"***	35,18,18,10 / 23.7	11,10,6,2 / 7.25
"Product 2"***	28,25,21,13 / 24.7	9,11,10,10 / 10.00
"Product 3"***	25,21,14,13 / 20.0	25,11,4,6 / 11.50
"Product 4"***	24,20,20,11 / 21.7	16,13,11,7 / 11.75

Mound ratings after two months		
<u>Treatment</u>	<u>Rating total per plot</u>	<u>Mean***</u>
Untreated control	134,132,176,142	146.0 a
Award TM	62,39,35,37	43.25 ab
CGA 114597 IGR-A	50,45,10,36	35.25 b
"Product 1"***	45,14,68,6	33.25 b
"Product 2"***	94,135,60,171	115.0 ab
"Product 3"***	238,106,39,16	99.75 ab
"Product 4"***	125,106,86,37	88.50 ab

<i>F</i>	3.50
<i>P</i>	0.0147
d.f. = 21; MSD = 107.93	

* No statistically significant ($P \leq 0.05$) differences were found.

** "Product 1" - Orange fertilizer, 35-0-0 Tri-Kote + CGA, 100 lbs. per acre; "Product 2" - Orange fertilizer, 35-0-0 Tri-Kote + Award, 100 lbs. per acre; "Product 3" - Green fertilizer, 35-0-11 Polyon + Award, 100 lbs. per acre; "Product 4" - Green fertilizer, 35-0-11 Polyon + CGA, 100 lbs. per acre.

*** Means followed by the same letter are not significantly different ($P \leq 0.05$) using PC SAS ANOVA and Tukey's Studentized Range test for mean separation.