

**EVALUATION OF A NEW INSECT GROWTH REGULATOR,
PYRIPROXYFEN (V-71639), AND OTHER BROADCAST-APPLIED BAIT
PRODUCTS AND PRODUCT MIXTURES
FOR SUPPRESSION OF THE RED IMPORTED FIRE ANT**

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Previous work has shown that the combination of bait formulations containing a "juvenoid"-type insect growth regulator (*e.g.*, fenoxycarb) plus a metabolic inhibitor (*e.g.* hydramethylnon) suppressed active red imported fire ant mound numbers more quickly than the insect growth regulator (IGR) and for longer than the metabolic inhibitor alone (Drees *et al.* 1993, 1995). This trial was conducted to determine if a similar effect could be achieved. A potential new insect growth regulator formulation containing 0.5 % pyriproxyfen, V-71639, from Valent U.S.A. was also evaluated.

Materials and Methods

Thirty two 1 acre rectangular plots were established on land behind the earthen dam behind Granger Lake in Williamson County, Texas. Prior to treatment, the number of active red imported fire ant mounds in each 1/3 acre subplot sampling area was counted. Plots were arrayed in order from highest to lowest active fire ant mound numbers and divided in to four blocks (replicates) of eight plots each. The following treatments were assigned at random to each of the blocks:

<u>Treatments</u>	<u>Rate(s)</u>	<u>Plots</u>
1. Exp.*	--	--
2. Exp.*	--	--
3. Exp.*	--	--
4. Amdro® ¹ /Award® ²	0.75 + 0.75 lb/acre	1,2,21,22,32
5. Nylar™ ³	1.5 lb/acre)	12,15,27,30
6. untreated control	--	2,8,9,24
7. Award®	1.5 lb/acre	3,13,23,29
8. Exp.*	--	--

*Information regarding these treatments can not be released until the interval of the Proprietary Agreement between the private organization and the Texas Agricultural Extension Service has elapsed.

¹ Amdro® Granular Insecticide 24567-41 12/92 (Unopened jugs); American Cyanamid

² Award® Brand of Logic Fire Ant Bait; CGA119L2A 032; Ciba-Geigy Corp.

³ V-71639 0.5% BA 3.624 kg. Batch VS-1813-97; 5/10/95; GLP#NA; SR#:V01996 (2481); Lot #:V050495 JNF Ext. 5/4/0; Valent U.S.A.

Treatments were applied, 11 July 1995 on a clear, hot day (Treated 10:00 am - 1:09 pm & 4:01 - 7:30 pm. Max temp, 4:50 = 102.4 degrees F.) using a tractor mounted Herd® Model GT-77 seeder using 10 swaths/plot (7-9 paces apart; 10 min./plot).

Results and Discussion

No significant differences in mean number of red imported fire ant mounds occurred prior to treatment (Table 1). Metabolic inhibitors or mixtures with these compounds (Amdro® + Award®) produced significant reductions of active ant mounds within 3 weeks after application. "Juvenoid" insect growth regulators or IGRs (pyriproxyfen, fenoxycarb) did not produce significant reductions in mound numbers relative to untreated check plots until 8 weeks (pyriproxyfen) or 12 weeks (fenoxycarb) after treatment. The mixture of metabolic inhibitor plus "juvenoid" IGR treatments suppressed them for the 6 month duration of this trial. These results confirm earlier studies of an enhanced product performance "profile" realized with the application of these product mixtures. This trial was terminated after only 6 months of treatment because of poor weather conditions. No rain was received in this test location from May through late August, reducing ant mounding activity to almost undetectable levels.

Drees, B. M., C. L. Barr, M. E. Heimer and R. Leps. 1995. Reducing treatment costs for fire ant suppression in Texas cattle production systems. *in* Proceedings of the Fifth International Pest Ant Symposia and the 1995 Annual Imported Fire Ant Conference (ed. S. B. Vinson and B. M. Drees), San Antonio, Texas. pp.146-154.

Drees, B. M., C. L. Barr and M. E. Heimer. 1993. Skip-swath application of Amdro® and Logic® broadcast baits for the suppression of the red imported fire ant *in* Proceedings of the 1993 Imported Fire Ant Conference (ed. J. P. Ellis) Charleston, South Carolina.

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Table 1. Number of active red imported fire ant mounds before and following application of bait-formulated insecticides, Granger Lake, Williamson County, Texas, treated 11 July 1995.

<u>Treatments</u>	Mean number of active mounds*				
	<u>Precount</u>	<u>3 weeks</u>	<u>8 - week</u>	<u>12 - week</u>	<u>6 month</u>
untreated control	29.5	25.0a	9.75 a	12.75 a	43.50a
Metabolic inhibitors:					
Exp.	--	--	--	--	--
"Juvenoid" IGRs:					
Exp.					
pyriproxyfen (V-71639)	27.5	15.5abc	1.25 bc	2.00 c	4.00 b
fenoxycarb (Award®)					
1.5 lb/acre	29.3	17.3abc	7.25 a	1.50 c	3.25 b
Mixtures:					
Exp.	--	--	--	--	--
hydramethylnon					
(Amdro®/Award®)	28.3	4.8bc	0.00 c	1.75 c	4.50 b
0.75 + 0.75 lb/acre					
<i>F</i> =	NS	5.44	8.31	4.16	6.76
<i>P</i> =	NS	0.0005	0.0001	0.0029	0.0001
MSD =	NS	14.747	5.7202	9.009	26.956
d.f. = 21					
Critical value. = 4.743					

* Means followed by the same letter(s) are not significantly different using analysis of variance (PC SAS PROC ANOVA) and the Tukey's Studentized Range Test ($P \leq 0.05$).