

Comparison of Fire Ant Bait Products in Fort Bend County

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Problem

The red imported fire ant, *Solenopsis invicta* Buren, has been documented to cost Texas cattle production systems about \$67 million per year in losses to hay production, equipment damage, livestock injury and death (Barr and Drees 1996). Current treatments are perceived to be too expensive to use in a sustainable manner by many producers. By providing producers the option of using a hopper blend treatment to obtain a quick *and* longer period of control for the same price, the acceptability of control should improve.

Products

Hydramethylnon (Amdro[®] or Siege[®] Pro) produces a quick reduction within 2 to 6 weeks of treatment, but re-infestation may begin thereafter resulting in the need for perhaps two to four treatments per year to maintain control. Methoprene (Extinguish[™]) bait produces a slow reduction characteristic of an Insect Growth Regulator (IGR) bait product, requiring 2 to 6 months to achieve maximum suppression. However, the suppression achieved with the use of methoprene bait can last for a full year. The application of the 50:50 “hopper blend” of 0.75 lb. hydramethylnon fire ant bait (Amdro[®] or Siege[®] Pro Fire Ant Bait) blended with 0.75 lb. s-methoprene (Extinguish[™] Professional Fire Ant Bait) or other “juvenoid” Insect Growth Regulator (IGR) fire ant bait product, applied 1.5 pounds of the blended products per acre has repeatedly resulted in a relatively quick and long-lasting suppression of fire ant mound numbers in replicated tests (see <http://fireant.tamu.edu> under “research” and “applied research”). None of these products applied alone produces this effect.

This combination offered the quick action of metabolic inhibitor (hydramethylnon) to make sure fire ants were contained before the June events, and the extended activity of an IGA (s-methoprene), for continued containment into the August event. Also, the Texas Department of Agriculture (November 30, 2001 memorandum from Phil Tham, Deputy Assistant Director for the Pesticide Programs Division) had issued a 24(c) (Special Local Needs) registration for the “hopper blend” application of Amdro[®] or Siege[®] Pro plus Extinguish Professional Ant Bait (SLN TX - 010016). We wanted to demonstrate that this combination would work well in an urban setting.

Objectives

During the past 5 years the Texas Imported Fire Ant Research and Management Project has championed the development of several “products/processes” that can be used in addressing the goal of eliminating the fire ant as a pest of major economic and health significance (Drees and Frisbie 2002). Bait combinations and new “safer” bait active ingredients have been highlighted (see Fire Ant Trails 3(6), 5(2) and 6(2) and publication B-6099). The mounting of bait spreaders to ATV's and other multiple use vehicles common to urban communities have been demonstrated and mounts for these various spreaders can be purchased through various dealers. This method demonstration was conducted to demonstrate to the landowner the 1) ease of

application of fire ant bait products with the ATV mounted seeder and 2) the effectiveness of “hopper-blend” and “skip-swath” (full rate of bait applied in alternating 30 ft swaths) applications of fire ant bait products.

Materials and Methods

An 80 acre pasture close to Missouri City, TX, in Fort Bend County, TX, was divided into approximately 20 acre sections. Three of these received one of the fire ant bait treatments listed in **Table 1**. Before the application of the fire ant bait products, fire ant activity was determined by counting the active fire ant mounds in 0.25 acre circles in 2 locations within each soon-to-be treated area of the pasture (**Table 1**). A mound was considered active, if after disturbed with a prodding rod, fire ants emerged within a 15 second waiting period. Due to the length of time needed for fire ant mound reduction from the IGR treatment, efficacy evaluations were not taken until 12 weeks after treatment (WAT). A GT-77 model Herd Spreader mounted to an ATV was used to spread the fire ant bait products on May 8, 2002.. The opening on the spreader was set at 1/8" and speed calibrated to spread 1.5 pounds fire ant bait product/acre. The swath width was determined to be 25 ft.

Results and Discussion

Counts taken at time of application from 1/4 acre circles in the pasture (**Table 1**) indicated a fire ant mound density to be over 200 mounds/acre. The bait treatments were applied easily with the ATV mounted spreader with the exception that most of the mounds were several feet in diameter, and 18 or more inches tall. In most cases these mounds had to be avoided, by driving around them. Activity evaluations made 12 WAT indicated that all baits reduced mound activity greater than 70% (**Table 1**). With only small numerical differences separating the three treatments. The total average reduction in mound activity was 74% across all treatments. It was also observed that the remaining mounds were not as large and robust as those observed before treatment. With mounds of the size mentioned it is not known how many fire ants were present, and with large numbers the effect of the bait may be diluted, resulting in diminished activity, and the need to bait a second time usually within 6 months. From the results of this study a fall bait application had been planned, unfortunately, due to foul weather and flooded conditions in the pasture, this application was delayed until spring 2003.

Literature cited

Drees, B. M. And R. E. Frisbie. 2002. Overview of the Texas Imported Fire Ant Research and Management Project (B. M. Drees, ed.). Southwestern Entomologist Supplement No. 25:1-6.

Acknowledgments

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Table 1: Number of active red imported fire ant mounds in two, 0.25 acre circles. Counts taken immediately before spreading of fire ant bait products and 12 weeks after treatment (WAT).

Treatment* (method)	Rate lb/a	Pre-treatment May 8, 2002	Post-Treatment (12 WAT) July 18, 2002	% Change
hydramethylnon (broadcast)	1.5	76	18	76
<i>s</i> -methoprene (skip-swath)	1.5	43	11	74
hydramethylnon + <i>s</i> -methoprene (broadcast)	0.75 + 0.75	46	13	72

hydramethylnon = Amdro Pro®, *s*-methoprene = Extinguish™