

Evaluation of Extinguish®, Distance®, Combination of Distance and Amdro® and the Two-Step Method for Suppression of Red Imported Fire Ants in Turf

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Summary: This trial evaluated the performance of 2 new IGR baits, Extinguish® (s-methoprene) and Distance® (pyriproxyfen) at 1 lb./ac and a combination of Distance at 0.5 lb./ac plus Amdro® (hydramethylnon) at 0.5 lb./ac and the Two-Step method employing Extinguish at 1 lb./ac followed by individual mound treatments of Orthene® 75S (acephate) at 2 tsp./mound for suppression of red imported fire ants in turf. These treatments were applied in the spring of 1999 and compared to an untreated check.

The Two-Step Method and the combination treatment of Distance® and Amdro® afforded a significantly higher reduction in mound numbers at 2 weeks after treatment. At six weeks after treatment, there was not observed to be a significant difference in the reduction of mound numbers between Distance, the combination treatment of Distance and Amdro and the Two-Step Method. Results were the same at 12 weeks after treatment, with these treatments being significantly different than Extinguish® and the untreated check. A fall inspection made at 22 weeks after treatment revealed that Extinguish, Distance, the combination treatment of Distance plus Amdro and the Two-Step Method were all equally efficacious and significantly better than the untreated check.

Problem

The red imported fire ant, *Solenopsis invicta*, is prevalent throughout the North Central Texas area where they are a nuisance, interfering with man's activities and sometimes their sting is cause for medical concerns. Although management of fire ants around urban areas is highly desirable, some treatment options are costly. Additionally, registration of new IGR baits, Extinguish® and Distance® warrant testing to determine short term and long term efficacy.

Objective

The primary objective was to evaluate the performance of the new IGR baits, Extinguish® (s-methoprene) and Distance® (pyriproxyfen), as well as a combination treatment of Distance and Amdro® (hydramethylnon) and the Two-Step Method employing Extinguish followed by individual mound treatments of Orthene® 75S (acephate) in comparison to an untreated check. Equally important, was to compare the cost of treatments.

Materials and Methods

On April 20, 1999, broadcast applications of Extinguish® at 1 lb./ac, Distance® at 1 lb./ac, and a combination treatment of Distance at 0.5 lb./ac plus Amdro® at 0.5 lb./ac, were made to 1/4 acre plots on the Heritage Baptist Church grounds near Waxahachie, Texas. Additionally, Extinguish at 1 lb./ac was broadcast over same size plots as the initial phase of the Two-Step Method. To complete the Two-Step treatment, individual mound treatments were made to active mounds by applying 2 tsp's of Orthene® 75S directly to mounds. Application of baits were made with a hand-held scatter box calibrated to deliver 1 lb of bait material per acre. Treatments were replicated three times in a randomized fashion.

Plots measuring 1/4 acre each, were created by staking one end of a string measuring 58 ft in length in the center of individual plots to be designated and with the string stretched walking in a circular pattern around the plot. Pre-treatment mound densities were recorded for each plot prior to treatment. Post-treatment inspections were made by recording the number of active mounds per 1/4 acre plots at 2, 4, 6, 8, 12 and 22 weeks after treatment. Data was submitted to Dr. Charles Barr, Extension Program Specialist - Fire Ant Project, for analysis.

Results

Only the Two-Step Method employing Extinguish® at 1 lb./ac followed by individual mound treatments of Orthene® 75S at 2 tsp. and the combination of Distance® at 0.5 lb./ac and Amdro® at 0.5 lb./ac provided a significantly higher reduction in active mound numbers at 2 weeks after treatment (**Table 1**). During the sixth through twelve week period after treatment, there was not observed to be a significant difference in the reduction of mound numbers between Distance, the combination treatment of Distance and Amdro and the Two-Step Method. All three were equally efficacious being significantly different than Extinguish® and the untreated check. A fall inspection made at 22 weeks after treatment revealed that Extinguish, Distance, the combination treatment of Distance plus Amdro and the Two-Step Method were all equally efficacious and significantly better than the untreated check. Percent reduction in mound numbers at 2, 6, 12, and 22 weeks after treatment and the cost per acre for treatments are illustrated in **Table 2**. Reduction in mound numbers in the untreated check was largely the result of hot and dry conditions during July, August and September.

Economic Analysis

The per acre cost for a broadcast application of Extinguish®, Distance®, and the combination treatment of Distance plus Amdro® varied only slightly ranging from \$11.78/ac to \$11.88/ac. While the Two-Step Method provided the most immediate reduction in mound numbers, it was the most expensive with Extinguish at \$11.88/per acre plus Orthene® 75S costing \$0.19 per mound.

Conclusion

The new IGR baits, Extinguish and Distance, was observed to be highly efficacious as fire

ant control agents. Although Extinguish did not provide a significant reduction in mound numbers until after 12 weeks, it ultimately provided long term control equal to that of Distance, the Two-Step Method employing Extinguish plus Orthene 75S and the combination treatment of Distance plus Amdro.

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