Evaluation of Fire Ant Insecticide Products

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The imported fire ant, *Solenopsis invicta* Buren, has established itself as an important economic pest in Texas. The ant affects recreational activities as well as agricultural operations. This trial evaluated an experimental bait formulation compared to a commercially available product. Neither product provided adequate control compared to the untreated check plot. This trial was initiated July 1,1998 when temperatures were high and fire ant activity was minimal. Results demonstrate that even with effective materials, homeowners must still apply baits at the proper time.

Problem

The imported fire ant, *Solenopsis invicta* Buren, has established itself as an important economic pest in Texas. The ant is not only a people problem but has economic impacts on agricultural enterprises. The ant limits outdoor activities and homeowners and producers incur added costs in managing the ant.

Objectives

This trial was established to evaluate one insecticide labeled for fire ant control and an experimental product around a recreational area. The trial is designed to measure the effectiveness of the materials as well as the length of control.

Materials and Methods

This trial was established in a recreational area near Brady in McCulloch County. The site was near a lake shore and heavily infested with imported fire ants. Amdro® contains 0.73% by weight hydramethylnon. The insecticide acts on the metabolism of the ant making it difficult for the ant to produce energy. Amdro® usually provides control within six weeks of application. Amdro® was applied at the rate of 1.5 lbs of product per acre and the experimental acephate bait formulation was applied at the rate of 42 lbs per acre. Due to secrecy agreements, the percentage of acephate in the bait is unknown. Acephate, is a quick acting contact insecticide that when directly applied to the mound provides relatively quick control.

The site was divided into 12 approximately equal sections. Each section was 65 feet long and 50 feet wide. The treatments were replicated four times and evaluated on a weekly basis for four weeks.

Results

The results show the effectiveness of the materials during the evaluation period. Both products appeared to give quick initial knockdown but after the evaluation period, the treated plots were not statistically different from the untreated plot.

The test shows a couple of interesting aspects of fire ant control in West Texas. First, the dry conditions can have a devastating impact on fire ant populations. This ants had easy access to water so drought is not the whole explanation for the decline. However, the untreated check plot still suffered 40 percent mortality during the 4 weeks of the trial. Second, the baits are highly efficacious when used properly but performance can be limited when applied at the wrong time. The baits are best used as a broadcast treatment and not on an individual mound treatment. The cost of the baits and the slow results with the baits do not make them the ideal choice for individual mound treatments. The baits should also be used when the ants are actively foraging. This can be determined by placing a small amount of bait next to an active mound. If ants are actively foraging, the ants will find the bait in a short amount of time (less than 10 minutes).

Table 1. Results of control of fire ants after treatment of different insecticide control. McCulloch Co., TX. 1998.

Treatment	Rate (lbs product per acre)	Percent Active Mounds				
		Pretreatment[1]	8 DAT	15 DAT	22 DAT	29 DAT
Amdro®	1.5	100	60	95	75	50
Experimental Bait	0	100	55	70	45	40
Untreated	1.5	100	95	100	65	60

1. Plots treated on July 1, 1998. Data were transformed to reduce variation and then transformed back for this report.