

# **Evaluation of Certain Fire Ant Insecticide Products and Tactics in a Landscape Situation**

Cooperator: Schleicher County

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The imported fire ant, *Solenopsis invicta* Buren, has established itself as an important economic pest in Texas. The ant affects haying operations by reducing efficiency of machinery, increasing labor costs and impacting final yields. The imported fire ant also affects the use of landscape and park areas. This report discusses the impact of three different insecticides on fire ant populations. Both Amdro® (hydramethylnon) and Logic® (fenoxycarb) give good fire ant control six weeks after treatment. This trial also evaluated the Texas Two-Step method under drought conditions. The check plot also had few existing mounds which indicates that fire ants have difficulty maintaining large populations even under limited water conditions.

## **Problem**

The imported fire ant, *Solenopsis invicta* Buren, has established itself as an important economic pest in Texas. The ant disrupts the use of rural and urban landscapes with their constant foraging and defensive behavior. The ant affects landscape operations by reducing efficiency of labor and thus increasing labor costs. Plant material is difficult to maintain and the ants can affect drip irrigation lines.

## **Objectives**

This trial was established to evaluate the Texas Two-Step method and two insecticides labeled for fire ant control in the landscape. 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 landscape site in Schleicher County. The site evaluated was the courthouse flower beds in Eldorado. The flower beds are part of a beautification project on the courthouse square. Four mounds from each treatment were sampled to determine if the ants were imported fire ants or native ants.

The materials evaluated were Amdro® and Logic®. 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. Logic® contains 1.0% by weight fenoxycarb, a carbamate which acts as an insect growth regulator that mimics the juvenile hormones in insects. Insect growth regulators are usually slower to act but

provide a longer period of control in other fire ant trials. The baits were applied on June 3, 1999.

In addition to these two products, the Texas Two-Step method was evaluated. This method relies on bait applications followed by the application of a standard insecticide to kill nuisance mounds. The standard in this case was Orthene® Fire Ant Killer which contains the active ingredient, acephate. This “second step” was applied as a dust one week after the baits to control the nuisance mounds.

## **Results**

All the mounds sampled were imported fire ants (**Table 1**). The results show the effectiveness of the materials at six weeks after treatment. The data also shows the impact of dry weather on imported fire ants in the West Texas region. Even though this site had some supplemental irrigation to keep the plants alive, rainfall was insignificant after the first week in June of 1999 was characterized by dry conditions.

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 site had some supplemental irrigation and so the ants were not totally deprived of water. However, the untreated check plot still suffered 96 percent mortality during the 6 weeks of the trial. Second, the baits are highly efficacious when used properly. The baits should only be 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).

The combination treatments are not currently labeled. This treatment was evaluated because many homeowners are dissatisfied with the slower acting growth regulators and want the faster knockdown that Amdro® can provide. The advantage of the growth regulators is that they usually provide longer control (less rebuilding of mounds). When conducted properly, fire ant control is possible for the homeowner. Many baits are now available that effectively control fire ants in an urban setting.

## **Economic Analysis**

Since the introduction of fire ants to the United States, there has existed the misnomer that the treatment of fire ants was too costly for a homeowner to justify treatment. Although in a pasture or range situation this may be true, the homeowner can treat for a minimal amount. The cost figures for each product used is listed in **Table 2** with an estimated cost to treat a 2000 square foot lawn. As the data shows, this is not as costly as many would presume.

## **Acknowledgments**

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**Table 1.** Results of control at six weeks after treatment of different insecticide control. Schleicher Co., TX. 1999.

Treatment	Rate (lbs product per acre)	Number of Active Mounds (Percent Control)	
		Pretreatment <sup>1</sup>	6 Weeks after Treatment
Amdro®+Orthene®	1.5	12	0 (100%)
Untreated	0	15	1 (94%)
Logic®+Orthene®	1.5	10	0 (100%)
Amdro® + Logic®	0.75 + 0.75	12	0 (100%)

1. Plots treated on June 3, 1999. Final evaluation on December 1, 1999.

**Table 2.** Estimated Cost Figures For Treating A 2000 Foot Square Lawn For Fire Ants.

PRODUCT	COST/LB	APPLICATION RATE	COST/SQUARE FT
LOGIC	\$13	1#/AC	\$.40
AMDRO	\$7.25	1#/AC	\$.20
ORTHENE	\$12.50	.5#/AC	\$.20