

# **Use of Broadcast Bait Treatments to Reduce Infestations of Red Imported Fire Ants at the Kendall County 4H Horse Arena**

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**Summary:** Amdro® (hydamethylnon) and Spectracide® (pyriproxyfen) fire ant baits broadcasted at the recommended rates of 1 pound per acre and 1 pound per 0.1 acre respectively reduced the number of active mounds in a small demonstration, by 80 and 100 percent, ten weeks after treatment. Broadcasting baits saved an estimated \$1.16 and \$0.19 per mound when compared to hypothetical individual mound treatments of the same area.

## **Problem**

The red imported fire ant, *Solenopsis invicta* Buren, is an aggressive protector of its mounds, stinging any and all sources of disturbance near the nest. At the Kendall County 4-H Horse Arena, fire ant mounds are numerous along the arena edges, in the grassy areas outside of the arena, around the concession stands and the grandstands. With such high concentrations of fire ant mounds in these well-traveled areas, it is difficult for spectators to stand around and enjoy horse shows, rodeos, and other similar events.

## **Objective**

To demonstrate how an inexpensive broadcast application of a fire ant bait insecticide can reduce the number of fire ant mounds in an area without expending more valuable time and money treating individual fire ant mounds.

## **Materials and Methods**

The Kendall County 4-H Horse Arena is located approximately 2 miles east of Boerne on Texas Highway 46. The area is laid out with a central rectangular dirt arena bordered by a twenty foot wide grassy area on the south, a 45 ft wide grassy area on the west including the concession stand, grandstands on the north, and approximately 1.4 acres of grass on the east. Grasses around the arena are predominantly common Bermuda with a sparse representation of weeds and other native grasses. These areas are not irrigated and receive rainfall as their only water source. Fire ant mound concentrations were not high enough to do a statistically analyzable replicated test, but there were more than enough ant mounds to perform a method demonstration.

Amdro® Fire Ant Bait (hydamethylnon, American Cyanamid Co.) and Spectracide® Fire Ant Bait (pyriproxyfen, United Industries Corp.) were selected as the treatment products for this method demonstration. The area (8,400 ft<sup>2</sup>) along the south side of the arena was treated with

approximately 3 ounces of Amdro® fire ant bait using a EZ Handspreader by Republic. Amdro was applied at the recommended rate of 1 pound per acre. A 4,400 ft<sup>2</sup> area adjacent to the concession stand was chosen as the treatment area for the Spectracide® Fire Ant Bait. The recommended rate of 1 pound of bait was applied to the 4,400 ft<sup>2</sup> area using a Scotts® Easy™ Hand-Held spreader. The 1.4 acre area east of the arena was left untreated for comparison. Evaluations of mound activity were made at 1 and 2 month intervals after treatment. Ten mounds were marked with red flags in each group. These 10 mounds were evaluated each time.

## Results

Areas along the south side of the horse arena and around the concession stand were treated in the late morning on April 27, 1998. Air temperature at the time of treatment was 85°F. Ten mounds within each of the treated areas and the untreated area were evaluated for activity. **Table 1** outlines the results of these evaluations. Biological surveys were not conducted prior to, or after treatment.

## Economic Analysis

At the retail level, the costs (without tax) for these products are as follows:

Amdro®	\$8.50 per pound
Spectracide®	\$7.49 per pound

As formulated, these baits require a broadcast rate of 1 pound per acre and 1 pound per 4,400 ft<sup>2</sup> respectively. **Table 2** outlines the costs of product and treatment for this test as well as cost estimates had the mounds been individually treated with these same products. The cost of a hand-held spreader averages \$5.00 to \$10.00 per unit at the retail level, adding a one-time cost to the treatment program. Including labor at \$6.00 per hour would have added an additional \$1.50 to the Amdro® broadcast treatment for 15 minutes of labor and \$0.50 to the Spectracide® broadcast treatment for 5 minutes of labor. Because no mounds were actually treated individually, no cost estimates for individual mound treatment labor were made. However, because treating fire ant mounds individually requires time to search for the mounds, it can be assumed that this method would require a higher labor cost.

## Conclusion

When considering options for treating fire ant problems, one must consider the following factors: 1) amount of time available to perform the application; 2) funds available to purchase fire ant control products; 3) the area to be treated; and, 4) presence of desirable ant species.

Today's modern society has become very time-expensive for the average homeowner. There is not a vast quantity of time available to treat areas with fire ant problems. This small test has shown that choosing a broadcast method over an individual mound treatment method for heavy fire ant infestations can possibly save valuable time.

Broadcast bait treatments for fire ants can also save money. Amdro® and Spectracide®

treatments in this small test saved \$1.16 and \$0.19 per mound, respectively, when broadcasted versus individual mound treatment estimates. The most important factor that ties costs and method together is the size of the area to be treated. Large areas can be more effectively covered with a broadcast of fire ant bait rather than finding all of the fire ant mounds in the area. On the other hand, smaller areas with few fire ant mounds may be better served with individual mound applications because of convenience.

In conclusion, both of the baits selected performed well and reduced the numbers of active mounds in treated areas. More importantly, broadcasting fire ant baits is a cost effective and time efficient strategy to control fire ants in large, heavily infested areas.

### Acknowledgments

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**Table 1.** Results of broadcast fire ant bait applications around the Kendall County 4H Horse Arena, Boerne, Texas 1999.

TREATMENT	NUMBER OF ACTIVE MOUNDS & % OF CONTROL ON		
	<i>Pre Treatment on 4/27</i>	<i>6/1 - 5 Weeks</i>	<i>7/8 - 10 Weeks</i>
Spectracide®	10*	3 (70%)	0 (100%)
Amdro®	10	3 (70%)	2 (80%)
Untreated	10	10	10

\*Number of active mounds out of 10 evaluated

**Table 2.** Comparison of estimated costs of treating fire ant mounds individually or with a broadcast bait application- Kendall County 4H Horse Arena, Boerne, Texas 1999.

BROADCAST METHOD				INDIVIDUAL MOUND TREATMENT	
<i>Product</i>	<i>Cost/ Lb</i>	<i>Total Amt Used / Cost</i>	<i>Cost Per Mound*</i>	<i>Amt Per Mound/Total</i>	<i>Total Product Cost/ Per Mound Cost</i>
Amdro®	\$8.50	3 oz / \$1.70	\$ 0.17	2 ½ oz / 1.56 lb	\$13.30 / \$1.33
Spectracide®	\$7.49	1 lb / \$7.49	\$ 0.75	2 oz / 1.25 lb	\$ 9.40 / \$0.94

\*Per mound cost for the broadcast method is calculated by dividing the cost for the total product amount used by 10 mounds.