

## **Evaluation of Greene Countrie “Ant Hayter” for Management of Red Imported Fire Ants**

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Red imported fire ants, *Solenopsis invicta* Buren, are a major problem in the southeastern United States. There are a variety of fire ant control options with common choices being the application of individual mound treatments (granulars, dusts, liquid drenches, aerosol injections, baits), broadcast baits, broadcast granular products, or a combination of aforementioned treatments. Individual mound treatments are often used when there are a small number of fire ants mounds located within a particular area or when mounds appear between broadcast baiting periods. In the “Texas Two Step” approach, individual mound treatment use is reserved for treating only ant colonies that are a nuisance or remain following application of a broadcast-applied bait product. This trial was to test a new individual mound treatment formulation for management of red imported fire ants.

### **Materials & Methods**

This trial was established October 2, 2007, at Riverside Campus of Texas A&M University (Bryan, TX). The day was sunny with a slight breeze and temperatures were around 78°F. Twelve plots, each containing 6 active red imported fire ant mounds but varying in size, were established with 10 foot buffers between plots to reduce ant colonies migrating between plots. Plot width remained constant, but length varied to obtain 6 active red imported fire ant mounds within the plot. Plots were measured and arrayed from smallest to largest and divided into four replicates (blocks) each containing three treatment plots. Treatments were assigned randomly within each block.

Treatments included:

1. Untreated control or check - no treatment
2. Ortho® Orthene® Fire Ant Killer (standard Orthene® treatment) - 50% acephate; 1 tablespoon sprinkled over each mound
3. Greene Countrie Enterprises “Ant Hayter” - 4% acephate formulation; 4 tablespoons sprinkled over each mound

Prior to treatment, each mound was marked with a field flag for treatment and examined for red imported fire ant activity using the minimal disturbance method whereby a mound is considered to contain an active colony if a dozen or more worker ants emerge en masse following mild disturbance. Plots were evaluated at 3, 7, 14, and 30 days after treatment by checking marked mound ant activity using the method just described. On the last evaluation date, all imported fire ant mounds were counted within each plot to determine if ant colonies had migrated into or out of plots or "shattered" as a result of treatment.

Data were analyzed using Analysis of Variance (ANOVA) and means separated using Duncan's Multiple Range test at  $p \leq 0.05$  (SPSS, Windows 14.0).

## Results and Discussion

Weather during this trial period was warm and rather dry (**Table 1**). These conditions apparently resulted in a 30 percent reduction in ant activity in six untreated control mound plots during the 30 day monitoring period (**Table 2**). However, comparisons between the three treatments in this trial were still possible by comparing insecticide treatments to the untreated control plot mean ant mound numbers.

During all days following treatment, the average (mean) number of active flagged mounds in the Greene Countrie "Ant Hayter" and the Ortho® Orthene® plots were significantly lower than the number of active flagged mounds in the untreated control plots (**Table 2**). At 30 days after treatment, mean active mounds in the Greene Countrie plots were significantly different than the check plots, but not significantly less than the number of active ant mounds in the Ortho® Orthene® plots (**Table 3**).

The dilute acephate formulation in Greene Countrie "Ant Hayter" used less active ingredient to treat each ant mound than Ortho® Orthene® (1 tablespoons of Ortho® Orthene® containing 50% acephate used 0.5 tablespoons of acephate per mound, whereas 4 tablespoons of "Ant Hayter" containing 4% acephate used 0.16 tablespoons acephate per mound). Therefore, use of this product would result in lower amounts of active ingredient applied to the environment than use of the 50% acephate formulation - while achieving similar levels of control. Inert ingredients in the Greene Countrie formulation were undisclosed and retail cost of this formulation has not been determined. Thus, product cost comparisons cannot be made at this time.

**Table 1.** Weather data for October 2007 near the Texas A&M University Riverside Campus from Weather Underground (Easterwood Airport), Brazos Co., TX.

<b>Date</b>	<b>Total Rainfall (inches)</b>	<b>Mean Temperature (F)</b>
Oct 07	2.68 (4.22 is normal)	72

**Table 2.** Mean number of active marked imported fire ant mounds or 6 mounds treated, October 2, 2007, Brazos County, TX.

<b>Treatment</b>	<b>Mean no. Active Ant Mounds/6*</b>			
	<b>3 days</b>	<b>7 days</b>	<b>14 days</b>	<b>30days</b>
Greene Countrie “Ant Hayter:	0.33 <sup>b</sup>	0.00 <sup>b</sup>	0.33 <sup>b</sup>	0.00 <sup>b</sup>
Ortho® Orthene®	0.67 <sup>b</sup>	0.00 <sup>b</sup>	0.33 <sup>b</sup>	0.33 <sup>b</sup>
Untreated control	5.67 <sup>a</sup>	4.67 <sup>a</sup>	4.00 <sup>a</sup>	4.33 <sup>a</sup>

\*Means followed by the same letter within the same column were not significantly different using Analysis of Variance (ANOVA) and means separated using Duncan’s Multiple Range test at  $p \leq 0.05$  (SPSS, Windows 14.0).

**Table 3.** Mean number of imported fire ant mounds per average (mean) treatment plot area, treated October 2, 2007, Brazos County, TX.

<b>Treatment</b>	<b>Mean no. Active ant mounds/plot* 30 days</b>
Greene Countrie “Ant Hayter”	1.67 <sup>b</sup>
Ortho® Orthene®	4.33 <sup>ab</sup>
Untreated control	9.33 <sup>a</sup>

\*Means followed by the same letter within the same column were not significantly different using Analysis of Variance (ANOVA) and means separated using Duncan’s Multiple Range test at  $p \leq 0.05$  (SPSS, Windows 14.0).