

# Evaluation of Aspartame as a Mound Treatment for Red Imported Fire Ant Management

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## Introduction

Home remedies for managing red imported fire ants, *Solenopsis invicta* Buren, are often a popular choice for a portion of the population. Home remedies allow for use of products that are often readily available in the cupboard and often give peace of mind that “harsh chemicals” are not being used. While these products may not be harsh chemicals, they may not actually kill fire ants as expected, so they should be evaluated along side of regulated pesticides to see their efficacy.

For many years, word that aspartame was developed as an ant poison has been circulating through emails and on the internet (<http://www.snopes.com/humor/iftrue/antpoison.asp>). Even though this has been debunked (Snopes.com), aspartame still shows up on gardening websites as a method for fire ant control ([http://www.dirtdoctor.com/view\\_question.php?id=123](http://www.dirtdoctor.com/view_question.php?id=123)). In June 2006, the Idaho Observer had an article by Jan Jensen of WELLthy Choices that states “We got our first fire ant hill about 2 weeks ago. Poison did not work. We tried aspartame and the ants ignored it until we got a light rain. It was just a sprinkle, enough to moisten the Nutrasweet and ground, but not enough to wash it away. They went crazy, hundreds of them grabbing it and taking it back into the mound. When I checked the mound 2 days later, there was no sign of the fire ants. I even dug the mound up some, and still saw none of them.”

This trial was established to determine if aspartame is a feasible control for red imported fire ants.

## Materials and Methods

The trial was established, October 3, 2007 (12:30 p.m. – 4:30 p.m.) at the Williamson County Extension Office (3151 Inner Loop Georgetown, TX 78626). Fifteen plots containing 5 red imported fire ant mounds with the same width but varying in length, were established. Plot lengths were measured and arrayed from shortest to longest and divided into three replicates (blocks) each containing five plots. Treatments were assigned randomly within each replicate.

### Treatments:

1. Untreated control (check) – no treatment
2. Ortho® Orthene® Fire Ant Killer (standard Orthene® treatment) - 50% acephate; 1 tablespoon sprinkled over each mound
3. Equal (aspartame) - 1 tablespoon sprinkled over each mound

Prior to treatment, each mound marked with field paint was examined for 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. This assessment method was used to evaluate plots 3, 7, 14, and 30 days following treatment.

## Results and Discussion

Due to rainfall being low during the trial period and locating new mounds within the plots at the end of the trial was very difficult. Conditions during the trial were fairly dry with 1.13 inches of rainfall where 3.97 inches is normal for the month of October.

At 3, 7, 14 and 30 days after the mounds were treated, the acephate (Ortho® Orthene®) plots were significantly different than both the control and the aspartame (Equal®) treated plots (Table 1). The aspartame (Equal®) treated plots showed no significant difference from the untreated control plots during the trial.

At 30 days, all mounds within the plots were counted, and mound numbers in the plots treated with acephate (Ortho® Orthene®) were significantly lower than those in the control and aspartame (Equal®) treated plots (Table 2).

This trial failed to document any effect from treating fire ant mounds with 1 tablespoon aspartame (Equal®) compared to not treating ant mounds in untreated control plots. Rainfall received during the course of the trial dissolved the granules, but they were not washed into the mound as a mound drench treatment.

**Table 1.** Mean number of active marked imported fire ant mounds or 5 mounds treated, October 3, 2007, Williamson County, TX.

Treatment	Mean no. Active Ant Mounds/5*			
	3 days	7 days	14 days	30days
Untreated Control	4.80a	4.80a	4.80a	4.60a
Acephate (Ortho® Orthene®)	0.00b	0.00b	0.00b	0.00b
Aspartame (Equal®)	4.80a	5.00a	4.80a	4.40a

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

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<b>Treatment</b>	<b>Mean no. Active ant mounds/plot* 30 days</b>
Untreated Control	5.00a
Acephate (Ortho® Orthene®)	0.20b
Aspartame (Equal®)	4.80a

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\*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).

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