

Comparison of Organic Products Against Individual Red Imported Fire Ant Mounds

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Summary: Four products produced by the Global Organic Resources Company were compared with Ortho® Ant Stop Orthene® Fire Ant Killer and Gardenville's Orange Oil Fire Ant Killer against individual Red Imported Fire Ant mounds in a non-replicated test. All gave excellent control of mounds within 48 hrs after treatment. At one and three weeks after treatment, all treatments had reduced the number of active treated mounds by 100 percent. The costs per mound ranged from ~\$0.19 for Orthene® dust to ~\$2.40 for Gardenville's Fire Ant product.

Problem and Objective

Red imported fire ants, *Solenopsis invicta* Buren, cause an estimated \$16 million per year in various costs in Bexar County. There are many methods and products available to the average homeowner for managing fire ant problems in the landscape. However, there is a growing demand from homeowners for more "organic" strategies to allow them to battle fire ants in their lawns and gardens. This demonstration was designed to compare some new organic-type fire ant products against those available at the present time (Orthene® dust, Gardenville Orange Oil Fire Ant Killer, Organic Solutions Multipurpose Fire Ant Killer).

Materials and Methods

Groups of 10 red imported fire ant mounds were flagged and assigned to one of 7 treatments (**Table 1**) including an untreated control group. The test site was located in west Bexar County at the Brannen homestead. Mounds were treated on July 19 in the late afternoon with a temperature of 90°F and dry conditions. Mounds were located in black soil with a caliche base. All mounds were active prior to treatment. Mounds treated with Orthene® dust received 2 teaspoons of material without water, the Gardenville group received 6 oz of product per gallon of water, the 4 Organic Resources products were prepared at 4 TB of product per gallon of water, and the untreated mounds received 1 gallon of fresh water each.

Mound evaluations were made at 24 and 48 hours, and 1 and 4 weeks after treatment. In addition to mound evaluations, mounds were inspected for evidence of new, "satellite" mound formation within 12-18" of the original treated mound. Gardenville and untreated mounds received one gallon of water or solution from a watering can. Mounds treated with Organic Resources products were treated with 1 gallon of solution pumped from either a gasoline or battery powered sprayer attached to a tank on a small trailer. Treatments were not replicated.

Results and Discussion

Results for all evaluations are given in **Table 2**. All of the materials tested gave 100 percent control of fire ant mounds within 1 week of treatment. “Satellite” mounds were seen forming at 24 and 48 hours post treatment (PT) in all groups except untreated and Orthene® dust. One “satellite” mound in the Gardenville group remained active throughout the duration of the demonstration. The remaining “satellite” mounds appeared to be inactive after the 1 week evaluation. During treatment of the Diatect Results group, the application pump malfunctioned consequently reducing the amount of material applied to one large fire ant mound.

These results present a relatively inexpensive and effective means for the average homeowner to manage fire ant problems in their lawns and gardens. These results provide efficacy data for additional weapons in the vast arsenal available to homeowners to battle fire ants.

Acknowledgments

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Table 1. Test materials, treatment doses, and allocations

| Treatment | Ingredients | Dose Level | LD₅₀ |
|--|--|-------------------|------------------------|
| Untreated | Water | 1 gallon | NA |
| Gardenville Fire Ant Killer (Note: this product is not an EPA registered insecticide) | 30% orange oil, 70% manure compost tea | 6oz/gallon | >5000 mg/kg |
| Orthene® dust (50 WP) | acephate + inert ingredients | 2 teaspoons | 980 mg/kg |
| Organic Solutions Fire Ant Killer | 0.1% pyrethrins + 1% piperonyl butoxide (PBO)+ 85% diatomaceous earth (DE) + inert ingredients | 4TB/gallon | >5000 mg/kg |
| Organic Resources Multipurpose Fire Ant Killer I | 0.2% pyrethrins + 1% PBO + 85% DE + surfactant + inert ingredients | 4TB/gallon | >5000 mg/kg |
| Organic Resources Multipurpose Fire Ant Killer II | 0.2% allethrin + 1% PBO + 85% DE + surfactant + inert ingredients | 4TB/gallon | >5000 mg/kg |
| Diatect Results | 0.2% pyrethrins + 85% DE + inert ingredients | 4TB/gallon | >5000 mg/kg |