

Impact of a Broadcast Treatment of Logic® (Fenoxycarb) in Hillsboro City Park, Hill County, Texas

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Logic® and Award®, containing the ingredient, fenoxycarb, are bait-formulated products for the suppression of the red imported fire ant, Solenopsis invicta Buren. These products are synthetic analogs of insect hormones. Rather than acting on the nervous systems of animals, this ingredient is active only on the hormone/pheremone balance of arthropods. As formulated, these products are attractive to certain species of grease-feeding ants. Fenoxycarb affects the production of eggs by queen ants and redirects larval development so that no worker ants are produced in colonies where the ants have ingested this compound. Because of the mode of action, these products are often referred to as insect growth regulators. Since insect growth regulators are not toxic to adult forms, ant colonies are eliminated slowly as worker ants die from natural causes. Without worker ants, colonies are not maintained and developing brood and the queen ants are not tended. This process takes from several weeks to several months.

This demonstration was conducted to demonstrate the effect of a single application of Logic at a rate of 1.5 pounds product per acre.

Materials and Methods

This demonstration was conducted at Hillsboro City Park in Hill County, Texas. On 16 May 1991, an area approximating 2.0 acres was treated with 1.5 lbs. Logic per acre using a Cyclone® 1C1 Seeder. Prior to treatment, three 500 square foot subplot areas were established inside and adjacent to the treatment area. All fire ant active mounds were counted and recorded from these subplots. On 28 August 1991, these subplots were again inspected and active mound numbers were recorded. Data for these pre- and post-treatment evaluations were analyzed using the Student's *t* test ($P \# 0.05$).

Results and Discussion

Prior to treatment, there was an average of 16.0 (± 4.0 S.D.) fire ant active mounds in untreated subplots while areas to be treated had 14.3 (± 3.2). These means were not significantly different (d.f. = 4; $t = 0.5625$; $P = 0.3019$). By 28 August, untreated mound numbers averaged 13.0 (± 5.6) while mound numbers in Logic treated subplots had significantly decreased to 2.3 (± 2.5) ($t = 3.0237$; $P = 0.0195$). This represents an 82.3 percent reduction in mound numbers relative to untreated subplot areas. For many areas, this level of suppression of fire ant activity is sufficient. However, where complete elimination of ants is desired, additional treatments may be necessary.