Evaluation of Gardenville Soil Conditioner as a Drench Treatment
for the Control of Individual Red Imported Fire Ant Mounds
Coulter Field, Brazos County, Texas - 2000

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Numerous products have been marketed for the "organic" control of red imported fire ants (*Solenopsis invicta* Buren). At one time, the Gardenville Fertilizer Co. (7561 E. Evans Rd. San Antonio, Tx. 78266 (210) 651-6115) marketed such a product. However, the product was not a registered insecticide and was subsequently reformulated and marketed as a "soil conditioner containing: 70% liquid compost and 30% orange oil. This trial was conducted to evaluate whether the new formulation still had insecticidal activity.

Objective: Test the effectiveness of Gardenville Soil Conditioner as a drench for the control of individual fire ant colonies.

Materials and methods

The test was located at Coulter Field, the municipal airport of Bryan, Texas. Plots were established by marking a swath of land 30 feet wide and of indeterminate length. Groups of 10 active fire ant mounds were used as plots using the "railroad track" method outlined in Barr et. al (2002) to reduce variability. The test was treated on March 31, 2000 and included the following treatments: Gardenville® Soil Conditioner, 6 oz./gallon water/mound; Organic Plus®, (0.2% pyrethrins, 90% diatomaceous earth, 1.1% piperonyl butoxide at 4 Tablespoons/gallon water/mound; Amdro®, (0.73% hydramethylnon) 5 Tablespoons/mound and; untreated control.

Evaluations were made using the minimal disturbance technique in which mounds were disturbed with a pointed tool handle. A mound was considered active if a sufficient number of ants were observed compared to untreated mounds under the prevailing weather and soil conditions. Evaluations of treated mounds were conducted on April 3, 7, 14 and 28. Plots were surveyed for "new" mounds (satellite and/or re-invading colonies) on April 7, 14 and 28. To better use valuable space, this test was combined with "Effectiveness of ExxAnt for the Control of Individual Red Imported Fire Ant Colonies" (p.75). Appropriate data were extracted and analyzed separately using PC SAS analysis of variance procedures with means separated using Tukey's studentized range (HSD) test, $P < 0.05$.

Results and Discussion

As shown in **Table 1** Gardenville Soil Conditioner resulted in significantly ($P < 0.05$) fewer treated mounds than the untreated controls throughout the test. At the seven day evaluation, however, it had significantly ($P < 0.05$) more "new" mounds than any of the other treatments or the untreated control, but this number declined to a level similar to the other treatments by day 14 and over the remainder of the test. This high number of unmarked mounds early in the test is an indication that the Gardenville product relocated treated colonies, but that they subsequently died off. When the total number of mounds in a plot are taken into account, the Gardenville product resulted in significant control ($P < 0.05$) at 14 days. At that point, control was similar to that of the two standard treatments.

Results of this test indicate that Gardenville Soil Conditioner has substantial insecticidal properties against fire ants, but that the action is relatively slow and it may cause initial colony relocation.

Table 1. Mean number of active red imported fire ant mounds, 10 treated, 4 replications. Bryan, TX. Treated March 21, 2000.

Treat.	Day 3 trtd.	Day 7 trtd.	new	tot	Day14 trtd	new	tot	month trtd	new	tot
Untrtd.	8.75 a	8.50 a	3.00 b	11.50 a	8.75 a	2.25 a	11.00 a	8.25 a	3.00 a	11.25 a
G'ville	0.50 b	0.00 c	8.25 a	8.25 a	0.00 c	3.00 a	3.00 b	1.00 b	5.50 a	6.50 ab
Org. Plus	0.75 b	0.25 c	2.75 b	3.00 b	0.25 c	2.25 a	2.50 b	0.75 b	5.75 a	6.50 ab
Amdro	7.50 b	6.00 b	2.00 b	8.00 a	3.00 b	1.00 a	4.00 b	2.00 b	1.75 a	3.75 b
F	40.97	45.96	7.30	6.74	23.42	1.65	7.67	22.80	2.85	4.64
P	0.0001	0.0001	0.0046	0.0061	0.0001	0.2388	0.0039	0.0001	0.0766	0.0202
R^2	0.9647	0.9684	0.8295	0.8180	0.9398	0.5243	0.8363	0.9382	0.6556	0.7556
MSD	2.1766	1.9555	3.4903	4.388	2.653	2.5754	4.5508	2.3269	4.0969	4.8809

Means in the same column followed by different letters are significantly different ($P < 0.05$). Data analyzed using PC SAS analysis of variance procedures. Means separated using Tukey's Studentized Range (HSD) Test. df = 9.