

Evaluation of club soda as a mound treatment for red imported fire ant management

Wizzie Brown, Extension Program Specialist- IPM
Texas Agrilife Extension, Austin, TX

Home remedies can be in ones mind a safe and seemingly inexpensive way to manage fire ants. Many people discuss their personal favourite with their gardening friends or share with others online through gardening websites and forums. Unfortunately, many of these home remedies have no scientific testing behind them to show that they truly work.

Club soda began circulating as a home remedy for fire ant management in 2007. The theory behind the club soda method stated that the carbon dioxide in the water is heavier than air so it displaces the oxygen causing the ants to suffocate and die. This method gained momentum when someone said that a popular gardening show host, Walter Reeves, was recommending it as a sound method to control fire ants. Walter Reeves has clarified that he only asked people who had used the method to contact him with their results and has never endorsed club soda as a method to control fire ants.

Materials and Methods

The trial was established on April 20, 2009 at a field adjacent to the Williamson County Extension Office (3151 Inner Loop Georgetown, TX 78626). Nine plots containing 5 red imported fire ant mounds with the same width but varying in length were established. Treatments were assigned randomly within each replicate.

Treatments:

1. Untreated control (check) – no treatment
2. Sevin® Liquid Concentrate - 50% carbaryl; 0.75 fluid ounces per gallon of water & 2 gallons per mound
3. Club Soda- 2 cups per mound

Prior to treatment, each mound marked with field paint was examined for ant activity using the minimal disturbance method whereby a mound was considered active if a dozen or more worker ants emerge en masse following mild disturbance. This assessment method was also used to evaluate plots at 3, 9, 14, and 30 days post treatment.

Results and Discussion

At 3, 9 and 30 days post treatment, the carbaryl (Sevin® Liquid Concentrate) plots were significantly different than both the control and the club soda treated plots (Table 1). The club soda treated plots showed no significant difference from the untreated control plots during the trial. At 14 days all plots showed no significant difference, but had a numerical difference in the carbaryl (Sevin® Liquid Concentrate) plots from the club soda treated plots and the untreated control plots.

At 30 days, the trial was concluded and all mounds that could be located within the plots were counted. County maintenance had driven through some of the plots to access piles of stone that were adjacent to the trial. Mound numbers in all plots were not significantly different (Table 2).

This trial failed to document any effect on red imported fire ant mounds by treating with 2 cups of club soda poured directly onto the fire ant mound.

Table 1. Mean number of active marked red imported fire ant mounds that was initiated on April 20, 2009, Williamson County, TX.

Treatment	Mean no. Active Ant Mounds/5*			
	3 days	9 days	14 days	30 days
Untreated Control	3.67a	2.67a	2.67a	2.33a
Carbaryl (Sevin®)	0.00b	0.00b	0.33a	0.00b
Club Soda	4.00a	2.67a	2.67a	2.00a

*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 red imported fire ant mounds per average (mean) treatment plot area, treated on April 20, 2009, Williamson County, TX.

Treatment	Mean no. Active ant mounds/plot* 30 days
Untreated Control	3.67a
Carbaryl (Sevin®)	1.33a
Club Soda	3.33a

*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).

Acknowledgements

The author would like to thank Bob Whitney and Jared Ripple for allowing use of the Williamson County Extension Office grounds to carry out this field trial also help to locate and mark fire ant mounds during the trial set up.