Community Wide Management of Red Imported Fire Ants at WoodGlen, Round Rock ,TX

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Fire ants are a serious problem in urban neighborhoods, causing danger to humans and companion animals that share the habitat with the fire ants. In Austin, TX, annual expenditures for fire ants in 1998 was approximately $3.16 million while medical costs associated with fire ants were approximately $21.61 million (Drees, 2000). Riggs et al in 2002 showed that community wide fire ant management programs can help reduce fire ant populations and reduce pesticide costs for community residents. Treating yards, greenbelts and common areas in communities can reduce or delay reinfestation of fire ants.

WoodGlen is a community in Round Rock, TX consisting of 525 homes spread over 224 acres. In 2005, residents approached Texas Cooperative Extension to organize a community wide fire ant management program. The community wide program was demonstrated by Texas Cooperative Extension in 2005.

Materials and Methods

Sixteen areas (yards and common areas) were selected throughout the 525 home neighborhood to collect data on mound counts and ant foraging. One area outside the neighborhood was selected as an untreated control area. In each selected area, a bait cup lid containing a hotdog slice was left exposed for at least 45 minutes. After 45 minutes, the hotdog slices were inspected for foraging ants. If ants were present on the hotdog piece, the bait cup lid was capped with the bait cup and marked with the date and location. Bait cups were frozen, ants were identified and exact numbers recorded at a later time. Each location was also monitored for active fire ant mounds. Imported fire ant mounds were located and suspected nest or mound sites, disturbed with a stick and counted as active if many (50+) worker ants were observed to emerge.

Extinguish Plus (0.365% hydramethylnon, 0.25% s-methoprene; Wellmark International) was broadcast at a rate of 1.5 pounds per acre. The initial baiting took place on March 31, 2005 starting at 10:30 a.m., continuing until 3:56 p.m. Conditions were warm, 85^{o}F, and sunny. Bait was blown into front yards with a Herd GT-77 (Herd Seeder Company, P.O. Box 448 Logansport, IN) with a blower attachment mounted on a truck. Bait was spread through greenbelt and common areas using Herd GT-77 spreaders mounted on ATVs.

On April 2, 2005 from 9 a.m. until 2 p.m. a booth was set up in the common area of the neighborhood to provide information about fire ants and the community wide management efforts to anyone who chose to participate. After completing a short survey, residents were provided with premeasured bait in a hand spreader. Residents provided approximate square footage of their backyard and the appropriate amount of bait was measured out. Residents took the bait filled spreader to their backyard, baited and then

returned the spreader to the booth.

A second baiting of the neighborhood occurred on October 10, 2005 from 10 a.m. until 2 p.m. The second baiting was carried out for front yards, common and greenbelt areas via Herd GT-77 mounted on a truck and ATV. Residents baited their own backyards. The second baiting was with Extinguish Plus at a rate of 1.5 pounds per acre.

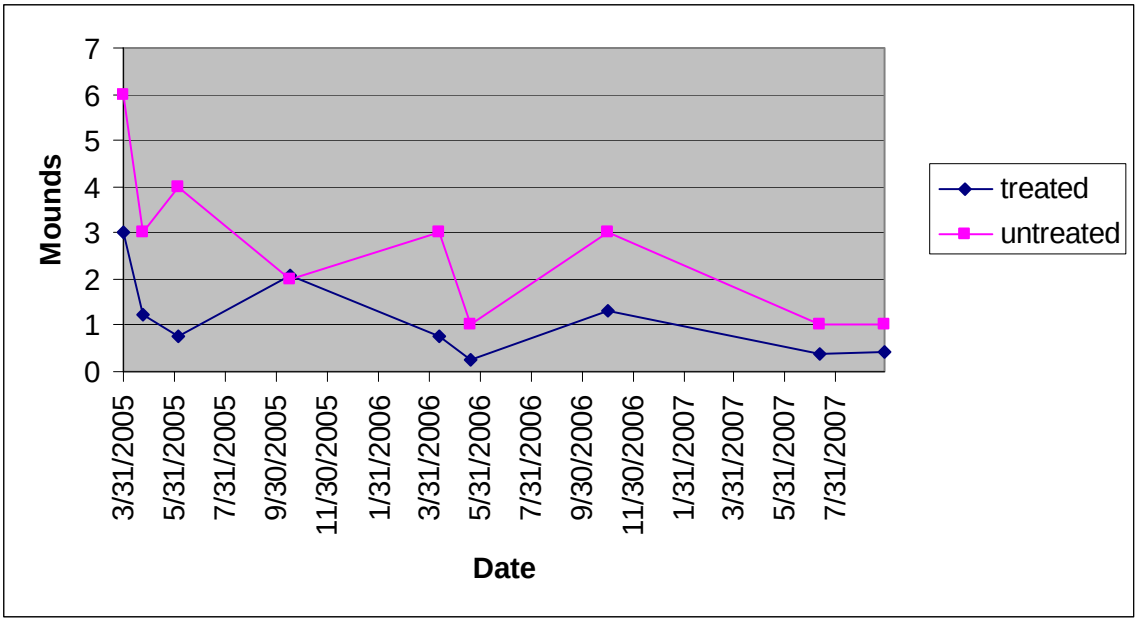
In spring, 2006, front yards were baited again using Extinguish Plus. The bait was applied on April 26, 2006, from 10 a.m. until 1 p.m. using Herd GT-77 with a blower attachment mounted on a truck. The common areas were treated with hand held spreaders by volunteers from the community. Bait was distributed to residents for baiting their backyards on April 22 from 10 a.m. – 12 p.m. and April 23 from 1:30 – 3:30 p.m.

In the fall of 2006, WoodGlen decided to continue the community wide program utilizing funds collected through homeowner's fees to hire and pest control company to bait the front yards, greenbelts and common areas within the neighborhood. Residents also volunteered to man a booth in spring and fall for residents to pick up bait for their backyards.

Results & Discussion

Since yard sizes varied, square footage of monitored areas was recorded and mound numbers were adjusted to mounds per 1000 square feet so a true comparison could be made. While both the untreated and treated areas showed differences in fire ant mound numbers over time, most likely due to seasonal changes, the treated area showed a decrease in mound numbers of around 75% (Fig 1). As the community wide program progressed through successive years, mound numbers did not reach as high as they first were when the project began in 2005, and fire ants are continuing to be suppressed at a level satisfactory to residents within the WoodGlen neighborhood. Treated areas show lower mound numbers than in the untreated area that was monitored during the community wide project.

Fig. 1. Mean number of mounds of red imported fire ants per 1000 square feet found in selected areas of WoodGlen, Round Rock, TX during 2005-2007 community wide fire ant management project.



The diversity of ants sampled in foraging cups increased as fire ants were suppressed (Fig. 2). Initially, only two genera other than red imported fire ants were collected, but this number eventually peaked at five genera with the number of locations other ant genera were collected increasing as the imported fire ant population decreased (Fig. 3).

In 1990, Porter and Savignano found that fire ants decimated native ant populations when they move into a habitat. Targeting imported fire ant populations using community wide baiting programs reduces the population of imported fire ants and allows the native ant species to better compete for resources. Native ant populations can often increase when imported fire ant populations are consistently managed, allowing for a more balanced ecosystem.

Fig 2. Number of ant genera other than red imported fire ants found in selected areas of WoodGlen, Round Rock, TX during 2005-2007 community wide fire ant management project.

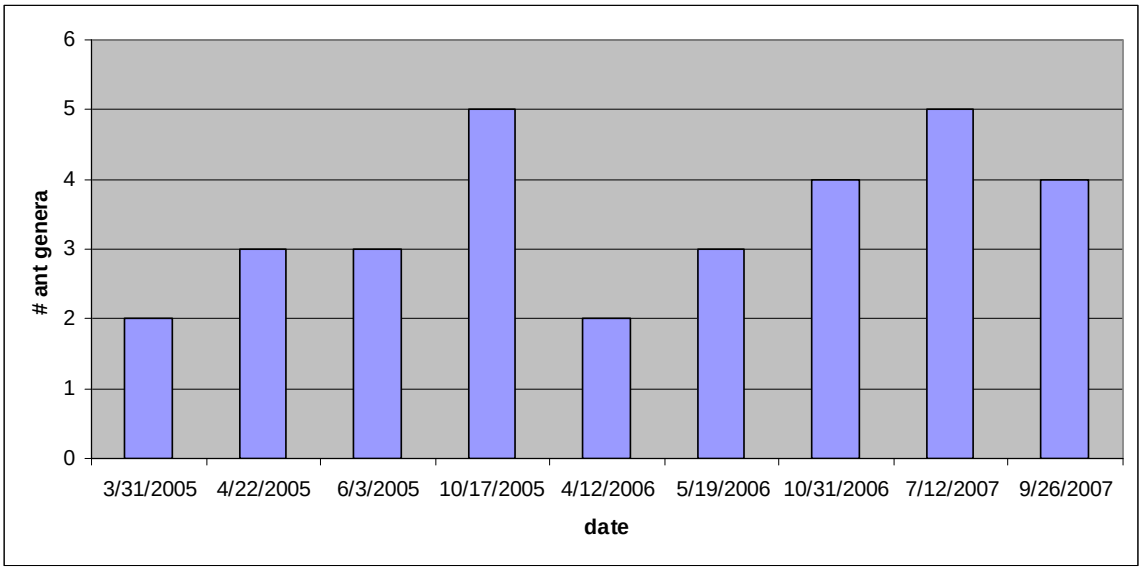
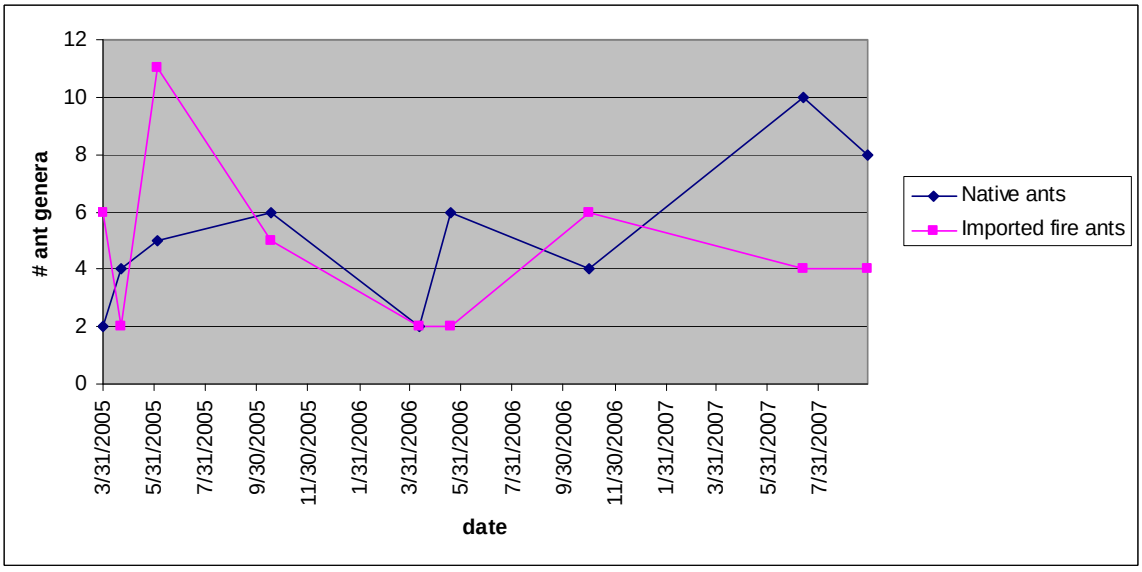


Fig 3. Number of locations where various genera of ants were found in selected areas of WoodGlen, Round Rock, TX during 2005-2007 community wide fire ant management project.



Community wide fire ant management can be an excellent way to reduce fire ant mound numbers within a neighborhood. Neighborhoods just need to form a plan and carry it through.

Acknowledgements

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