

# ANALYSIS of BAITING CYCLES for the SENTRICON TERMITE COLONY ELIMINATION SYSTEM for CONTROL of *RETICULITERMES* SPP. in FLORIDA

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## INTRODUCTION

The purpose of the survey was to characterize the baiting cycles for Sentricon\* *Termite Colony Elimination* System (Dow AgroSciences, Indianapolis, Indiana) for sites in Florida. A baiting cycle was defined as Recruit\* II being applied for at least two months followed by at least two months without termite activity in any station.

## MATERIALS and METHODS

All station listings and site graphs from the Prolinx\* Information Management System were reviewed for three Authorized Operators (AOs) located in Pinellas Park, St. Petersburg, and Orlando. These AOs were selected because they had excellent records and service history, and their sites represented typical *Reticulitermes* spp. foraging activity in Florida. Sites selected for data analysis had to complete two baiting cycles with all bait application occurring after May 1996 (when Recruit II was registered for use in Florida). Data collection was completed on 9/19/01. Data were statistically analyzed using Minitab (Version 12.21, 1998, College Park, Pennsylvania).

## RESULTS

Data from 100 of ca. 900 (11%) active accounts examined for the three AOs had two or more bait application intervals. Five sites were commercial/multi-unit buildings, and 95 sites were single-family homes. The median time from installation to the last inspection was 3.6 yr (range: 1.2–5.4 yr). Forty-five sites had three or more bait cycles completed (Table 1). Prolinx records indicated good compliance with guidelines for installing and monitoring the Sentricon System. The median distance between stations was 2.96 m (range: 2.01–4.48 m) upon installation. All sites had auxiliary stations installed adjacent to baited stations (median 8 auxiliary stations/site).

A total of 1691 Baitube\* devices were applied in 1409 stations at the 100 sites. The mean days between baiting cycles consistently decreased from the 1<sup>st</sup> to the 5<sup>th</sup> baiting cycles, but were not significantly different (Table 1). The mean days to elimination decreased, with the exception of the 4<sup>th</sup> cycle, from the 1<sup>st</sup> to the 5<sup>th</sup> baiting cycles and were significantly different between the 1<sup>st</sup> and 3<sup>rd</sup> bait cycles. The mean number of Baitube devices installed during the 1<sup>st</sup> bait cycle were significantly greater than the number installed during the 2<sup>nd</sup> and 3<sup>rd</sup> bait cycles. These results indicate that subsequent colonies infesting the Sentricon stations tended to be smaller and eliminated more rapidly than the previously baited colony. This trend is not absolute, because 41% of the sites had an equal or greater number of Baitube devices installed for the 2<sup>nd</sup>–5<sup>th</sup> bait cycles compared to the 1<sup>st</sup> cycle.

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Table 1. Mean  $\pm$  SD (range) bait application statistics per bait cycle, 100 sites, Florida

Bait Cycle <sup>1</sup>	N	Days From Last Bait Application <sup>2</sup>	Days to Elimination <sup>4</sup>	No. Baitube devices <sup>5</sup>
1 <sup>st</sup>	100	NA <sup>3</sup>	178a $\pm$ 136 (29-1073)	9.1a $\pm$ 8.3 (1-47)
2 <sup>nd</sup>	100	361a $\pm$ 235 (80-1050)	165ab $\pm$ 115 (29-606)	5.3b $\pm$ 4.8 (1-28)
3 <sup>rd</sup>	45	309a $\pm$ 247 (55-952)	119b $\pm$ 84 (28-366)	4.3b $\pm$ 4.6 (1-20)
4 <sup>th</sup>	13	245 $\pm$ 124 (91-523)	131 $\pm$ 62 (28-220)	3.1 $\pm$ 3.1 (1-12)
5 <sup>th</sup>	2	137 $\pm$ 66 (90-184)	62	2.5 $\pm$ 2.1 (1-4)

<sup>1</sup> Data from 4<sup>th</sup> and 5<sup>th</sup> bait cycles not included in statistical analyses due to small sample size.

<sup>2</sup> Means followed by the same letter are not significantly different (ANOVA,  $p = 0.23$ ).

<sup>3</sup> Days from installation to first bait application:  $80 \pm 119$  (13-811, median = 34).

<sup>4</sup> Means followed by a different letter are significantly different (Tukey, ANOVA,  $p = 0.026$ ).

<sup>5</sup> Means followed by a different letter are significantly different (Tukey, ANOVA of log-transformed data,  $p = 0.000$ ).

Bait cycles 1-5 showed a similar pattern of bait application. Nearly 2/3 (70-72%) of all bait applied during any bait cycle was applied during the first three months of baiting, of which 28-35% was installed in auxiliary stations. During any bait cycle, ca. 25% of Baitube devices were installed in primary stations during the initial bait application. During 1<sup>st</sup> bait cycle and subsequent cycles, 42% and 51%, respectively, of the Baitube devices were installed in auxiliary stations. Auxiliary stations represented 22.4% of the total number of stations installed. Therefore, auxiliary stations were 2.5 and 3.6 times more likely to be baited than primary stations during the 1<sup>st</sup> and subsequent bait cycles, respectively.

The percentage of bait applied in stations infested by termites in previous bait cycles increased consistently from the 2<sup>nd</sup> through 4<sup>th</sup> bait cycles (Figure 1). These results indicate that the likelihood of termites reinfesting previously active stations increased through time.

### ACKNOWLEDGMENTS

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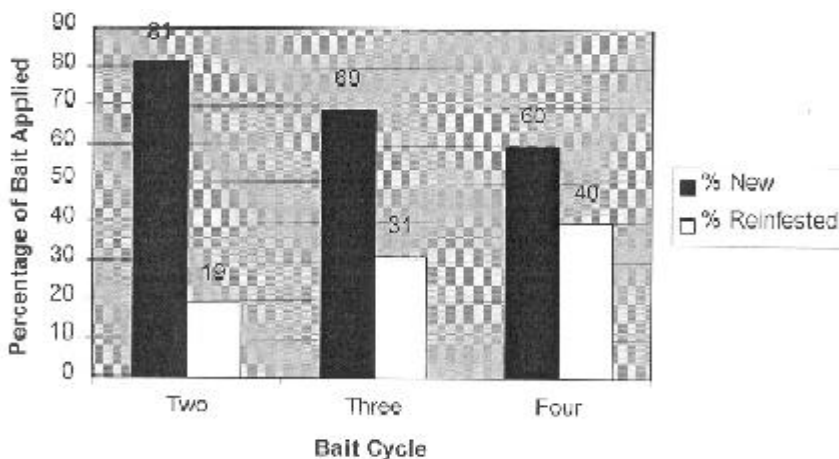


Figure 1. Percentage of Baitube devices installed in new vs. reinfested stations by bait cycle, 100 sites, Florida.