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Report Date:

March 24, 2014

Study Title:

FIELD EVALUTION OF Proprietary New 25 (b) Formula to Evaluate the Residual Efficacy on German
Cockroaches, *Blattella germanica*

Project Number:

ASL-42290-3

Performed For:

Dr Greengood
PO Box 2416
McKinney, TX 75070

Study Coordinator:

Jeffrey K. Brown, Ph.D., R.P.E., B.C.E.

Test Site:

(1) A 200 room daily, weekly, and monthly two story motel and hospitality facility located horizontal to a major interstate highway in Mississippi.

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SUMMARY

The study consisted of a monthly treatment at a 200 room hospitality and motel which rented rooms daily, weekly, and monthly where Applied Science Labs' new Soy Bean Oil formulated product, designated 422903-3, was applied according to label directions. Prior to application to the treated rooms sampling with Silvanderson pre-baited cockroach traps was carried out for 4 weeks pre-treatment and for 6 weeks post-treatment. Monitoring and examination of traps confirmed a slight infestation in the control rooms to moderate to significant infestation as observed each week for the treated rooms.

After the first treatment cockroach counts in the treated rooms stayed the same and continued to remain the same after the second treatment which was observed to be a "flat lining" of the populations in the traps. Traps in two rooms did have egg hatches but were caught on the adhesive traps; however, changes in population dynamics in all rooms treated were unchanged after treatments. The population of German cockroaches did not increase after treatments with 422903-3.

Jeffrey K. Brown

_____ for the Academy
Jeffrey K. Brown, Ph.D., R.P.E., B.C.E.

Study Supervisor

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OBJECTIVE

To evaluate the efficacy of an EPA section 25(B) residual spray formulation for the residual, prevention and mortality of German cockroaches *Blattella germanica*.

This is not a GLP (Good Laboratory Practices) study or protocol.

MATERIALS AND METHODS

As to the "200 room motel" - Applied Science Labs, Inc. supplied eight (8) packets of item listed as 422903-3 preventive formula, in super concentrate of six (6) ounces each. Each packet was received by USPS in thermal shield containers with temperature markers. Upon opening, each packet's thermal marker was examined to confirm that no temperature gradient, below freezing or above 140° F, had been breached during shipment so as to maintain product integrity. Each packet was mixed according to label directions to make eight (8) gallons of finished ready to use product.

Per label directions each packet of super concentrate labeled 422903-3 was combined in clean one gallon hand pump spray canisters with distilled water to make one (1) gallon of finished ready to use product. The spray canister was equipped with an adjustable spray nozzle that permitted fan spray and without filters.

The Academy researcher had the field site owner choose eighteen (18) rooms at random, nine (9) control and nine (9) to be treated. Each room number was recorded and into each room we placed two Silvanderson pre-baited cockroach traps listed as Art. No. 6471-010, beginning on December 14, 2013. Trap (A) was placed in back of the small refrigerator and trap (B) was placed under the sink. This procedure was completed in all eighteen (18) rooms. Each week we recorded the cockroaches in all 36 traps. The first treatment with the product 422903-3 was completed and recorded on January 25, 2014, the second on February 22, 2014.

At the time of the field testing eighty-eight (88) percent occupancy was stated by the owner. Each of the eighteen (18) rooms was approximately 300 square feet with either two double beds or one queen size bed. Each room carpeted, had a television, small refrigerator, desk, chair, and wall air conditioner.

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The field site owner stated that until recently he had employed a professional pest control company. The company sprayed once each month for several months but could not obtain control. Providing no control over the cockroach infestation they terminated the spraying six (6) months prior to the Academy's involvement.

The owners placed informational sheets taped to each mirror in all eighteen (18) rooms explaining to occupants that a research project would be taking place for approximately 10-12 weeks. Once the notification was accomplished treatment with the product was applied with a fan spray to all baseboards in the nine (9) treated rooms. There was no visible evidence of application without the use of black light.

Rooms are serviced by daily housekeeping. Housekeeping employs standard hospitality style wheeled service carts that are pushed from room to room. Carpets are vacuumed with a common machine that is used from room to room.

Soiled bed clothing, towels, and wash clothes are gathered daily from each room, placed in common service carts and moved from room to room until filled. Filled service carts are then moved to an onsite laundry facility where they are unloaded from the service carts and placed into washing machines and dryers.

Service staff has been trained to not remove or move the two traps in each of the eighteen (18) rooms. There was no evidence that traps were disturbed during the term of the field test.

The Academy has confirmed that 422903-3 was composed only of elements wholly in conformity to FIFRA 25 (b) regulations therefore; no occupants had to leave any of the rooms that were being treated.

Results

No odor was present, no stains or damage to any materials was observed. No adverse reports from any residents as to any odor or negative reaction from the introduction of the 422903-3 into their living space was reported. After completion of application, several rooms were darkened and black lights (Ultra violet light) were introduced of approximately 350 nm. "Sparkle or glow" was visible at a distance of approximately six (6) to eight (8) inches where product had been applied on baseboards.

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Table 1 shows the catch count in the control rooms. Pay special attention to the designations in the parentheses which are the population dynamics in cockroach numbers i.e., Increase, decrease, or neutral (remains the same)

Table 2 shows the catch counts for the treated rooms. Pay special attention to the designation in the parentheses which are the population dynamics in cockroach numbers i.e., increase, decrease, or neutral (remains the same).

Table 1 (Hospitality Facility) Control Rooms. Pay special attention to the designation in the parentheses which are the population dynamics in cockroach numbers, i.e. increase, decrease, or neutral (remains the same).

Numbers of Cockroaches (Plus Change in population +, -, or 0) In Control Rooms

Rooms

126	0 (0)	1 (+)	1 (0)	1 (0)	1 (0)	1(0)	1(0)	1(0)	1(0)	1(0)
128	0(0)	0(0)	0(0)	0(0)	2(+)	2(0)	2(0)	2(0)	2(0)	2(0)
140	1(+)	1(0)	3(+)	3(0)	3(0)	3(0)	3(0)	3(0)	3(0)	3(0)
146	0(0)	1(+)	3(+)	3(0)	3(0)	3(0)	3(0)	3(0)	3(0)	3(0)
148	0(0)	0(0)	0(0)	1(+)	1(0)	1(0)	1(0)	1(0)	1(0)	1(0)
162	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
164	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
166	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	1(+)	1(+)
168	0(0)	0(0)	0(0)	1(+)	1(0)	1(0)	1(0)	1(0)	1(0)	1(0)

12/14 1/4 1/11 1/18 1/25 2/1 2/8 2/15 2/22 3/1

Dates Recording From Traps

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Dates of Recording From Traps

Table 2 shows the catch counts for the treated rooms. *Pay special attention to the designation in the parentheses which are the population dynamics in cockroach numbers i.e., increase, decrease, or neutral (remains the same).*

Number of Cockroaches (Plus change in population +, -, or 0) In Treated Rooms

Rooms	TR									
120	2(0)	2(0)	3(+)	9(+)	15(+)	15(0)	15(+)	15(+)	15(+)	15(+)
133	4(0)	4(0)	6(+)	8(+)	8(0)	8(0)	8(0)	8(0)	8(0)	8(0)
143	3(0)	3(0)	4(+)	42(+)	53(+)	53(0)	54(+)	54(0)	54(0)	54(0)
159	0(0)	0(0)	0(0)	0(0)	3(+)	4(+)	4(0)	4(0)	4(0)	4(0)
165	7(0)	7(0)	7(0)	7(0)	7(0)	8(+)	9(+)	9(0)	9(+)	9(+)
213	35(0)	43(+)	43(0)	43(0)	90(+)	94(+)	94(0)	94(0)	94(0)	94(0)
215	0(0)	TM	0(0)	0(0)	4(+)	4(0)	4(0)	4(0)	4(0)	4(0)
240	3(0)	7(+)	7(0)	7(0)	21(+)	22(+)	22(0)	22(0)	22(0)	22(0)
214	0(0)	MR	0(0)	0(0)	0(0)	0(0)	(0)	0(0)	0(0)	0(0)
	12/14	1/4	1/11	1/18	1/25	2/1	2/8	2/15	2/22	3/1

Dates Recording From Traps

TR = Treated

MR=Missing Replaced Trap

(+) Egg hatch

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Conclusions

The noticeable increase in population in rooms 143 and 213 were produced by gravid females being caught and the egg case hatching with first instar nymphs being trapped and counted on the Silvandersson pre-baited adhesive boards. These occurred in weeks four (4) and five (5) and makes the population seem to be growing. However, these catch numbers are cumulative. In actuality you will observe a zero growth in population caught in the traps after treatments TR in the parentheses. As the cumulative numbers “flat line” population growth is zero. In fact you observe zero growth in populations caught in each trap demonstrating this “flat lining” effect.

This product is composed only of elements wholly in conformity to FIFRA 25 (b) regulations.

The product produced no noticeable odor and did not stain any treated surfaces.

Application made according to label directions provided control where current German cockroaches *Blatella germanica* were present.