Project Title:
Evaluation of 3 Formulations of [Product] when applied to Stainless Steel Panels and Exposed to [Species].

Sample Report Only - NOT INTENDED FOR USE

Project Code:
[Code]

Test Date(s):
October 5, 2006 – October 7, 2006

Report Date:
March 2007

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COMPLIANCE STATEMENT

This study was NOT conducted in compliance with Good Laboratory Practice Standards as described by EPA (40 CFR Parts 160 and 792), and was never intended for that purpose.

Submitter: _____ Date: _____

Sponsor: _____ Date: _____

Study Director: _____ Date: _____

Objectives:

1. To determine the efficacy of 3 formulations of [Product] when applied as a residual pesticide to Stainless Steel Panels and Exposed to [Species].

Treatments:

1. Control-Water
2. [Product]

Materials and Methods:

The following is the Snell Scientifics Standardized Testing Method for evaluating the efficacy of residual applications applied to panels and surfaces and exposed to insects. Further details related to this specific test are described following the test method summary. Select action items and illustrations have been removed from this standardized test method in an effort to make the report more precise and accurate to the test conducted. Any details removed from this test method were deemed irrelevant to the test conducted in this report.

310.1 Materials:

310.1.1 Flat panels – can consist of stainless steel, vinyl tile, glass, ceramic, terracotta, filter paper, wood, or other common surfaces. Most panels are either 4 inches square or 4" diameter – depending on the material type and availability of cutting methods. Surfaces for dusts may be filter papers placed inside the base of a glass 100 mm Petri dish.
310.1.2 Petri Dishes – 100 mm diameter to fit over top of the 4" panels
310.1.3 Pipettors – appropriate range for the amount being applied per panel
310.1.4 Disposable pipettor tips – replaced whenever changing chemicals
310.1.5 Digital Scales –appropriate range for measuring dust/powder formulations
310.1.6 CO2 and regulator – standard 20 pound cylinders and gas regulator is used for anesthetizing insects (as necessary, depending on species)
310.1.7 Chill Table – used for some insects to keep them asleep while sorting onto treated panels.
310.1.8 Intermediate transfer/holding chambers – used for housing insects after they have been removed from their primary breeding housing. Intermediate chambers are used to anesthetize insects and sort them to the treatment panels
310.1.9 For some flying insects such as mosquitoes, the Petri dish may be replaced with 800-1,000 ml containers wherein an approximately ¾ inch hole in the side for cotton ball with sugar water.

310.2 Methods:

310.2.1 Panels are positioned on a cleaned counter into sets of 4. Each panel is labeled with a treatment code and a replicate number. Each set of 4 panels are positioned in a group and the counter or trays are clearly labeled with quadrants for each treatment type (as a duplicate means of ensuring accurate data collection)

310.2.2 Pesticides are mixed per label directions using pipettors to measure liquid concentrates and using scales to measure dry, mixable powders.

310.2.3 Each container housing mixed chemical is clearly labeled with the chemical, rate, and date mixed.

310.2.4 The label rate for each chemical is calculated to determine the amount needed for the size of the panel to be treated.

310.2.5 The proper Pipettor is selected based on the amount of liquid needed per panel

310.2.6 Disposable pipette tips are used for each new chemical and rate

310.2.7 The amount of chemical needed per panel is applied using the appropriate pipettor with a tapping process to ensure a uniform coverage

310.2.8 The treated panels are placed either under a Petri dish (illustration 310.3.1), inside of a Petri dish (illustration 310.3.2), or on top of a container (illustration 310.3.3)

310.2.9 Dust formulations are used by lightly applying the dust over the panel surface

310.2.10 For some flying insects such as mosquitoes, 800-1,000 ml containers are modified with approximately ¾ inch hole filled with a cotton ball soaked with sugar water. The pesticide treated panel is positioned on top of the container, facing down. Alternatively, for species preferring to land on vertical sources (such as Aedes mosquitoes), a panel (of any material) can be placed vertically in the center of the container and covered with an untreated panel on top (illustration 310.3.4). For processes involving diverse surfaces and species that prefer to land on vertical surfaces, configurations as presented in illustration 310.3.5 can apply.

310.2.11 For species such as Bedbugs, proper air exposure can be important to ensure maximum survivorship in control replicates through 24 hours and longer. In such situations, illustrations 310.3.6 can help by confining the insects to the treated panel with a mesh screen above instead of sealed chambers. For ants, it may also be necessary to provide sugar water by adding floral foam soaked in sucrose solution into the side of the center spacer panel.

310.2.12 Control replicates will be untreated panels

310.2.13 Insects are immobilized by the appropriate means and all insects are confirmed alive and mobile to ensure no dead insects are placed on treated panels.

310.2.14 Ten (10) insects are transferred to each treatment panel

310.2.15 The insects are then covered with a 100 mm Petri dish

310.2.16 The process is repeated for 4 panels per chemical rate

310.2.17 The number of Dead, Knocked Down (KD) and Alive per panel are recorded at 15 minutes, 30 minutes, 60 minutes, 2 hours, 4 hours, and 24 hours.

310.2.18 Additional Testing Details Not Fully Described in Standard Protocols:

Test Set-Up: The evaluations in this test followed Illustration 310.3.6

Replicates: Insect Stage Tested: mid to late stage larvae .
# of Reps: 4 .
# of Insects/Rep: 10 .

Source of Test Specimens: Specimens taken from lab-reared colony originally purchased from [Company].

Exposure of Test Specimens: Test specimens were exposed to materials for entire duration of test.

Conditions in Test Room: Temperature: 78 deg F Humidity: 55 % .

Panel details: size of panel: 12.56 sq in
panel material: Stainless Steel
type of cover (mesh, Petri dish, etc.): mesh
Food/water: none provided

Mixture Rate Calculations:

Product/Code	[Product]	[Product]	[Product]
% Active in Concentrate	100%	100%	100%
Amt of Concentrate added	1ml	1.5ml	2.0ml
Amt of Carrier	99ml	98.5ml	98.0ml
Final % Mixture	1.0%	1.5%	2.00%

Applicator Type: Calibrated pipettor with disposable tips

Application Rate Calc:
Labeled Application Rate: 1ga/1000 sq ft
Amt Needed per panel size: .34ml

Confirming Pest Condition:

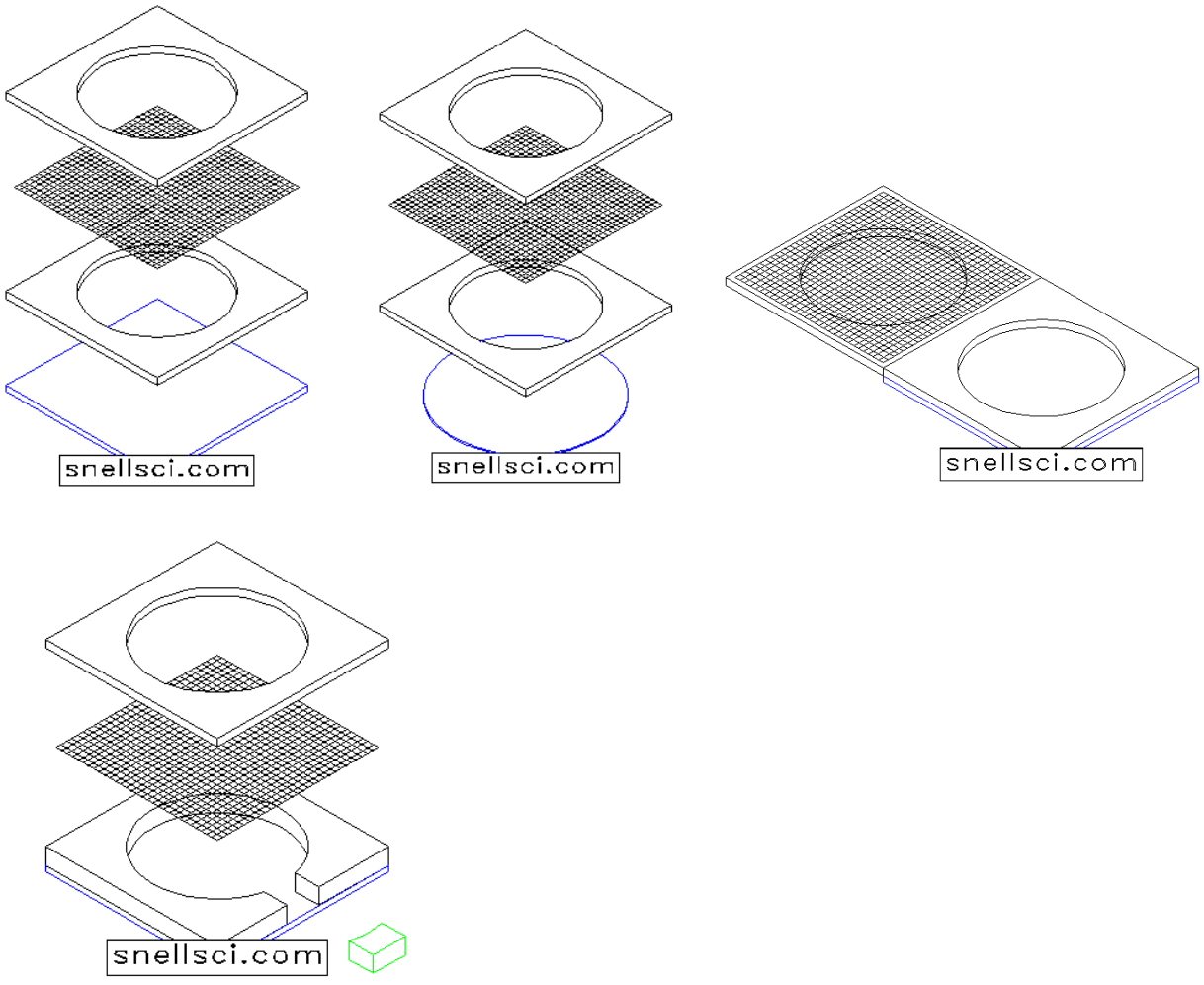
All were confirmed 'alive' 2 times prior to treatment:
1) the larvae were removed from the breeding container by transferring only live larvae to transfer container,
2) after all insects were transferred to the cartridges, they were confirmed to be moving before any applications were made.

Definition of Alive/Dead/Knockdown:

Alive: Insect exhibits forward motion or ability to fly
KD: Insect exhibits some movement but cannot fly or crawl
Dead: Insect exhibits no movement even when stimulated
Method Used to Evaluate Condition: Cartridge is raised and insects are blown on or prodded gently to agitate into movement.

310.3 Illustrations:

310.3.6 Treated Panel with Mesh Screen Confinement Means



Results / Discussion:

This section will reflect the results of the tests and address any significant factors that might affect the outcome or interpretation of the results

The results of this study are tabulated in Tables 1-5. Table 1 illustrates the average mortality at each observation interval for each treatment. Tables 2-5 illustrate the number alive, dead and knockdown for each rep in each treatment, with the average over the 4 reps illustrated on the last line of the table.

Mortality rates for the chemicals and time frames were statistically compared with a t test for independent samples. All tests were conducted using a two-tailed distribution and probability value of $p<.05$.

Tables:

Table 1.

Ave % Mortality of [Species] in All Treatments When Exposed to Materials Applied to 4" Stainless Steel Panels 4 Replicates 10 Specimens per Replicate						
Treatment	**30 min**	**1 Hr**	**2 Hr**	**4 Hr**	**1 DAT**	**2 DAT**
Water as control	0%	0%	0%	0%	0%	0%
[Product] 1% 1gal/1000 sq ft	0%	0%	0%	0%	95%	100%
[Product] 1.5% 1gal/1000 sq ft	0%	0%	0%	0%	95%	100%
[Product] 2.0% 1gal/1000 sq ft	0%	0%	0%	0%	95%	100%

Table 2.

Efficacy of Water as Control When Applied to Stainless Steel Panel and Exposed to [Species] 4 Replicates 10 Specimens per Replicate							
Treatment	**Condition**	**30 min**	**1 Hr**	**2 Hr**	**4 Hr**	**1 DAT**	**2 DAT**
A	Alive	100%	100%	100%	100%	100%	100%
	KD	0%	0%	0%	0%	0%	0%
	Dead	0%	0%	0%	0%	0%	0%
B	Alive	100%	100%	100%	100%	100%	100%
	KD	0%	0%	0%	0%	0%	0%
	Dead	0%	0%	0%	0%	0%	0%
C	Alive	100%	100%	100%	100%	100%	100%
	KD	0%	0%	0%	0%	0%	0%
	Dead	0%	0%	0%	0%	0%	0%
D	Alive	100%	100%	100%	100%	100%	100%
	KD	0%	0%	0%	0%	0%	0%
	Dead	0%	0%	0%	0%	0%	0%
Ave Dead		**0%**	**0%**	**0%**	**0%**	**0%**	**0%**

Table 3.

Efficacy of [Product] 1% (1gal\1000sq ft) When Applied To Stainless Steel Panel and Exposed to [Species] 4 Replicates 10 Specimens per Replicate							
Treatment	**Condition**	**30 min**	**1 Hr**	**2 Hr**	**4 Hr**	**1 DAT**	**2 DAT**
A	Alive	100%	30%	30%	0%	0%	0%
	KD	0%	70%	70%	100%	0%	0%
	Dead	0%	0%	0%	0%	100%	100%
B	Alive	100%	20%	10%	0%	0%	0%
	KD	0%	80%	90%	100%	10%	0%
	Dead	0%	0%	0%	0%	90%	100%
C	Alive	100%	60%	0%	0%	0%	0%
	KD	0%	40%	100%	100%	20%	0%
	Dead	0%	0%	0%	0%	80%	100%
D	Alive	100%	80%	0%	0%	0%	0%
	KD	0%	20%	100%	100%	10%	0%
	Dead	0%	0%	0%	0%	90%	100%
Ave Dead		**0%**	**0%**	**0%**	**0%**	**95%**	**100%**

Table 4.

Efficacy of [Product] 1.5% (1gal\1000sq ft) When Applied To Stainless Steel Panel and Exposed to [Species] 4 Replicates 10 Specimens per Replicate							
Treatment	**Condition**	**30 min**	**1 Hr**	**2 Hr**	**4 Hr**	**1 DAT**	**2 DAT**
A	Alive	100%	20%	0%	0%	0%	0%
	KD	0%	80%	100%	100%	0%	0%
	Dead	0%	0%	0%	0%	100%	100%
B	Alive	100%	0%	0%	0%	0%	0%
	KD	0%	100%	100%	100%	10%	0%
	Dead	0%	0%	0%	0%	90%	100%
C	Alive	100%	0%	0%	0%	0%	0%
	KD	0%	100%	100%	100%	20%	0%
	Dead	0%	0%	0%	0%	80%	100%
D	Alive	100%	0%	0%	0%	0%	0%
	KD	0%	100%	100%	100%	10%	0%
	Dead	0%	0%	0%	0%	90%	100%
Ave Dead		**0%**	**0%**	**0%**	**0%**	**95%**	**100%**

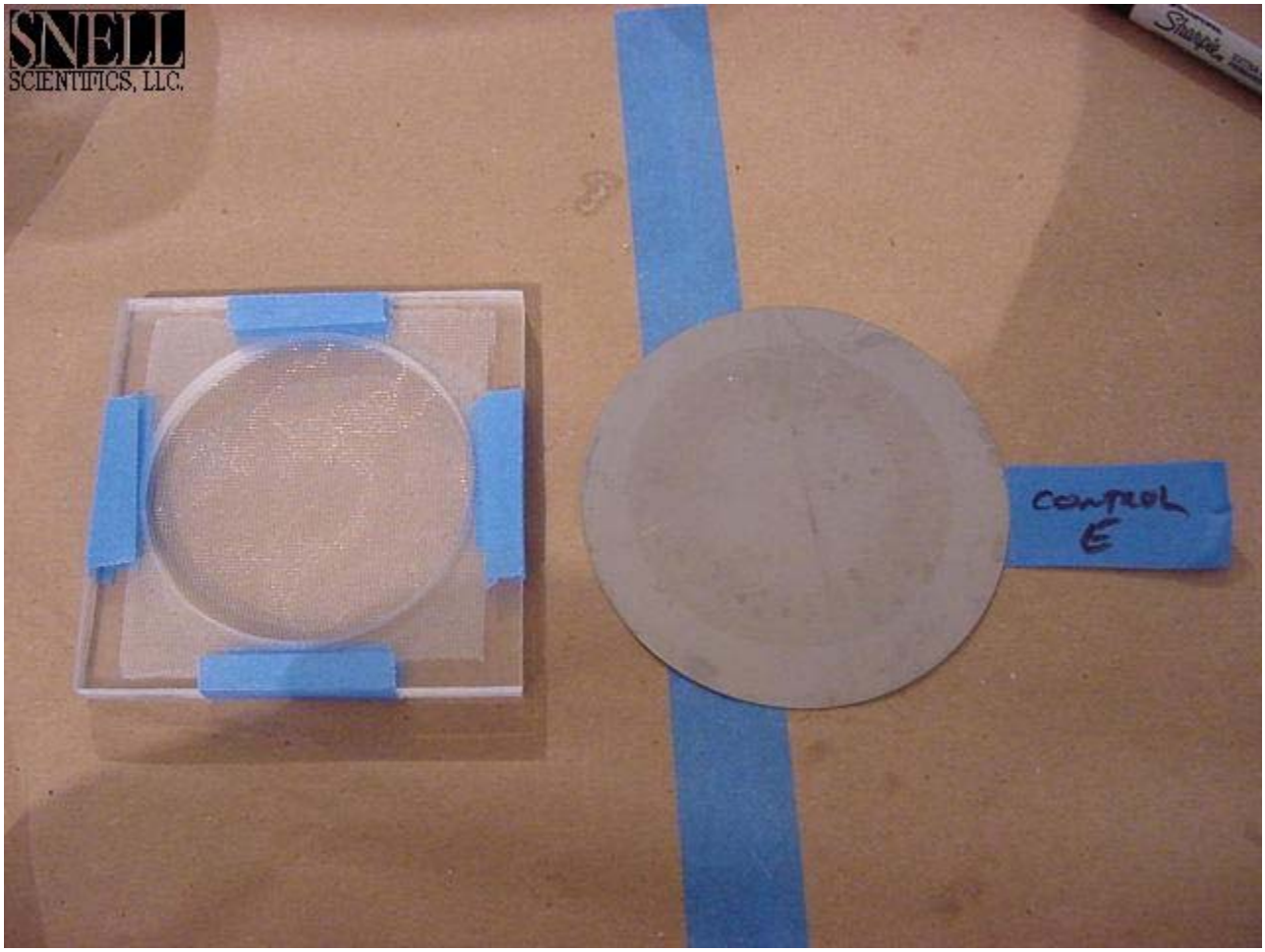
Table 5.

Efficacy of [Product] 2.0% (1gal\1000sq ft) When Applied To Stainless Steel Panel and Exposed to [Species] 4 Replicates 10 Specimens per Replicate							
Treatment	**Condition**	**30 min**	**1 Hr**	**2 Hr**	**4 Hr**	**1 DAT**	**2 DAT**
A	Alive	100%	80%	0%	0%	0%	0%
	KD	0%	20%	100%	100%	0%	0%
	Dead	0%	0%	0%	0%	100%	100%
B	Alive	100%	40%	0%	0%	0%	0%
	KD	0%	60%	100%	100%	10%	0%
	Dead	0%	0%	0%	0%	90%	100%
C	Alive	100%	60%	0%	0%	0%	0%
	KD	0%	40%	100%	100%	20%	0%
	Dead	0%	0%	0%	0%	80%	100%
D	Alive	100%	0%	0%	0%	0%	0%
	KD	0%	100%	100%	100%	10%	0%
	Dead	0%	0%	0%	0%	90%	100%
Ave Dead		**0%**	**0%**	**0%**	**0%**	**95%**	**100%**

Photographs:

Photograph 1.

Photograph 2.



Photograph 3.

Raw Data:

Test Title: [redacted] Panel TM #: _____ Species: Argentine Ants Date: 1/31/2007
Week #4
Panel Treatment Time 10:00 Insect Exposure Time (start time): 11:45

Temp: 77 Humidity: 24 Log Location: #7-6

Researcher Wally Sexton Test Intervals
Store panels (Y/N)
Date Broken down

Test Descripti Arena set up: SS panel w/mesh tops

Applicator Type & Flow Rate: Preval @ 0.77ml/sec Applied @ 2 seconds over a 2 foot distance or 1.54ml/24 in =~0.064ml/in.=~0.256ml/4in.

Product & Mixture Rate: Water

Test:

Treatment	Condition	30 min	1 hr	2 hr	4 hr	24 hr	2 DAT	3 DAT	4 DAT
A	Alive	10	10	8	4	6	6		
Pre wt. 16.	KD	6	6	6	2	6	6		
Post wt. 16	Dead	6	4	6	4	10	10		
B	Alive	10	10	8	1	6	6		
Pre wt. 16.	KD	6	6	2	3	2	6		
Post wt. 16	Dead	6	6	6	6	8	10		
Ave Dead									
Tech Daily Initials									

Test Descripti Arena set up: SS panel w/mesh tops

Applicator Type & Flow Rate: Supplied Aerosol @ 1.9ml/sec. Applied @ 2 seconds over a 2 foot distance or 3.8ml/24 in =~0.158ml/in.=~0.632ml/4in.

Product & Mixture Rate: [redacted]

Test:

Treatment	Condition	30 min	1 hr	2 hr	4 hr	24 hr	2 DAT	3 DAT	4 DAT
A	Alive	10	10	9	4	7	6		
Pre wt. 16.	KD	6	6	6	8	6	6		
Post wt. 16	Dead	6	4	4	6	9	10		
B	Alive	8	6	4	2	5	6		
Pre wt. 16.	KD	2	3	4	0	6	6		
Post wt. 16	Dead	0	1	6	8	10	10		
C	Alive	10	9	7	2	6	6		
Pre wt. 16.	KD	6	6	4	0	6	6		
Post wt. 16	Dead	6	4	3	8	10	10		
D	Alive	6	7	6	3	6	6		
Pre wt. 16.	KD	2	3	2	1	6	6		
Post wt. 16	Dead	0	6	3	1	10	10		
Ave Dead									
Daily Initials									

Researcher Signature: [signature] Date: 2-2-07

Test Substance Receiving Log:

Snell Scientifics Chemical Tracking Log

Date of arrival	Shipper (UPS FedEX)	Company	Snell Sci Project Code	Chemical name Code	Lot/Lab	Formulation (EC, dust .etc)	AI%	Amount rec'd	Container type (glass, plastic)	Condition of packaging	Storage location of product	Photo taken	Label/MSDS copied & filed	Initial by
2-2-07	UPS	Company X	Code	Test Prod.1	Liquid RTU	5	8oz.	Plastic Bottle	Good	New Chem. Storage	✓	✓	SS	
				Test Prod 2	Liquid RTU	2.5	8oz.	Plastic Bottle	Good	New Chem. Storage	✓	✓	SS	

Test Substance Storage Log:

Storage Log for Test Substances
Snell Scientifics LLC
Barnesville GA

Location: Lockable cabinet in mixing lab

Recording Mechanism: Digital thermometer/hygrometer. Data recorded daily.

Date	Temp	Humidity	Comments
2-2-07	65	48	
2-3-07	66	51	
2-4-07	64	50	
2-5-07	64	51	
2-6-07	65	50	