



In September 2009, Snell Scientifics conducted treatment tests of Avenger Organics Bed Bug Killer. An impressive mortality rate of 98% was shown within 30 minutes after the applications and maintained a high mortality rate throughout the study. Upon completion of the study Avenger Organics Bed Bug Killer provided 100% mortality. The test formulations proved significantly different from the untreated controls at each time interval. Therefore, Avenger Organics Bed Bug Killer proved to be an effective pesticide when applied as a direct spray applications to bed bugs (*Cimex lectularius*).

Average % Mortality of Bed Bugs (<i>Cimex lectularius</i>) Following a 3 Trigger Pull Direct Spray Application of Various Test Products (4 Reps of 10 Bed Bugs per Rep)								
Treatments:	30 min	1 hr	2 hr	4 hr	24 hr	2 DAT	3 DAT	4 DAT
Control - Untreated	0%	0%	0%	0%	10%	10%	10%	23%
Natures Avenger	98%	95%	98%	98%	98%	98%	100%	100%

Average % Mortality of Bed Bugs (<i>Cimex lectularius</i>) Following a 3 Trigger Pull Direct Spray Application of Natures Avenger Organics Natural Bed Bug Killer (4 Reps of 10 Bed Bugs per Rep)									
Rep	Cond.	30 min	1 hr	2 hr	4 hr	24 hr	2 DAT	3 DAT	4 DAT
A	Alive	10%	10%	10%	10%	10%	0%	0%	0%
	KD	0%	10%	0%	0%	0%	10%	0%	0%
	Dead	90%	80%	90%	90%	90%	90%	100%	100%
B	Alive	0%	0%	0%	0%	0%	0%	0%	0%
	KD	0%	0%	0%	0%	0%	0%	0%	0%
	Dead	100%	100%	100%	100%	100%	100%	100%	100%
C	Alive	0%	0%	0%	0%	0%	0%	0%	0%
	KD	0%	0%	0%	0%	0%	0%	0%	0%
	Dead	100%	100%	100%	100%	100%	100%	100%	100%
D	Alive	0%	0%	0%	0%	0%	0%	0%	0%
	KD	0%	0%	0%	0%	0%	0%	0%	0%
	Dead	100%	100%	100%	100%	100%	100%	100%	100%
Avg. % Dead		98%	95%	98%	98%	98%	98%	100%	100%

Flow Rates: Natures Avenger Organics: 4.7ml/3 pulls = 1.6ml/pull

Confirming Pest Condition: All bed bugs were confirmed 'alive' 2 times prior to treatment:

- 1) The bed bugs were removed from the lab colonies by transferring only live specimens into the transfer containers.
- 2) After all bed bugs were transferred into the 1.75" CPVC cartridges; they were confirmed to be alive before any applications were made, or continuing with the study.

Definition of Alive/Dead/Knockdown:

- Alive: Specimen exhibits forward motion.
- KD: Specimen exhibits some movement but cannot crawl.
- Dead: Specimen exhibits no movement even when stimulated.