

PRODUCT PERFORMANCE / EFFICACY REVIEW
Mark Suarez, Entomologist - IB

Mark E. S.
2 Nov 2006

DATE: 2 November 2006

EPA REG. NUMBER: 63823-LU

PRODUCT NAME: TC 253

REGISTRANT: Management Contract Services, Inc.

PM: George LaRocca, PM 13
REVIEWER: Bonaventure Akinlosotu

DECISION #: 367048
DP BARCODE: 330163

ACTION: R31

ACTIVE INGREDIENT(S): 128897, lambda-Cyhalothrin.....9.7%

TYPE: Spray

OPPTS GUIDELINE(S): 810.1000
810.3000
810.3

MRID: 46831608

GLP ?: No

SITES: Indoors and Outdoors

PESTS: Honeybee; Earwig; Cat flea; mealybug;
Millipede; Southern House Mosquito;
Clothes moth; Meal moth; Pillbug; Scale;
Cellar Spider; Paper wasp; Whitefly

STUDY APPLICATION RATE: 0.9 mL direct contact aerosolized spray;
0.02853 lb AI/ft² applied to particle board
0.02853 lb AI/ft² applied to ceramic tile

LABEL APPLICATION RATE: 0.0001 lb AI/ft² to 0.0004 lb AI/ft²

STUDY SUMMARY:

MRID 46831608. Uchima, ST. 2005. Laboratory Evaluation of the Experimental Product TC-253 Lambda Cyhalothrin CS V.2A in the Control of Common Pesticiferous Arthropods. Unpublished. 49 pp.

The registrant submitted a series of data testing a 9.7% lambda cyhalothrin formulation against a variety of arthropod taxa. The laboratory studies tested the efficacy (i.e., mortality and mortality plus knockdown) of the undiluted formulation. The direct spray assays (application rate of 0.9 mL undiluted product) were conducted against a variety of arthropod pests (i.e., honeybee, earwig, cat flea, mealybug, millipede, southern house mosquito, clothes moth, meal moth, pillbug; scale, cellar spider; paper wasp, and whitefly). Residual efficacy studies were conducted by applying product (application rate of 0.02853 lb AI/ft²) to glazed ceramic tile and particle board and exposing either Indian meal moth larvae or adults to for 1 to 24 hours to surfaces aged for up to 90 days.

The results reported for the contact kill studies are summarized below in Table 1. Generally, these data are not supportive of the desired claims for two reasons: the product performed poorly and the label application rate is not specified (see Appendix I).

The residual study was also deemed insufficient to support the desired claims. The product was tested against only Indian meal moth adults and larvae. The mortality observed was inconsistent and the information provided about the weathering of tile and particle board squares insufficient for complete analyses of the results.

ENTOMOLOGIST'S COMMENTS AND RECOMMENDATIONS:

The data submitted do not support any claims against arthropods of public health or economic importance. Data demonstrating that the product is efficacious at the label application rate may be submitted at a later date. Data may also be cited in support of the desired label claims.

Remove all claims against the pests listed below from the label:

1. Carpenter Ants
2. Fire Ants
3. Harvester Ants
4. Pharaoh Ants
5. Bed Bugs
6. Bees
7. Carpenter Bees
8. Centipedes
9. Chiggers
10. Cluster Flies
11. Cockroaches
12. Fleas
13. Flies
14. Hornets
15. House Flies
16. Mosquitoes

17. Scorpions
18. Spiders
19. Stable Flies
20. Termites
21. Ticks
22. Yellowjackets
23. Wasps
24. Wood-infesting Borers and Beetles
25. Black Widow Spiders
26. Brown Recluse Spiders
27. Wood Destroying Insects

Claims against the other pests listed, which are not of public health or economic concern, may be retained on the label. This includes “ants (except Carpenter, Fire, Harvester, or Pharaoh ants)” and “Spiders (except Black Widow or Brown Recluse spiders).”

Common Name	Species	Mortality (>90%)		Control Mortality		Mortality + Knockdown (>90%)		Control Mortality + Knockdown	
		Time	%	Time	%	Time	%	Time	%
European honeybee	<i>Apis mellifera</i>	4 HAT	100	24 HAT	0	5 MAT	100	24 HAT	0
European earwig	<i>Forficula auricularia</i>					20 MAT	100	24 HAT	0
Cat flea	<i>Ctenocephalides felis</i>					5 MAT	95	6 HAT	12.5
Longtailed mealybug	<i>Pseudococcus longispinus</i>					10 MAT	96	20 HAT	22.5
Millipede	<i>Julus hesperus</i>	20 HAT	100	20 HAT	30	1 HAT	95	10 HAT	25
Southern house mosquito	<i>Culex quinquefasciatus</i>					20 MAT	100	20 MAT	13
Webbing clothes moth	<i>Tineola bisselliella</i>					30 MAT	98	20 HAT	30
Indian meal moth	<i>Plodia interpunctella</i>					4 HAT	92	6 HAT	19
Pillbug	<i>Armadillium vulgare</i>	10 HAT	98	10 HAT	48	30 MAT	100	6 HAT	40
Brown soft scale	<i>Coccu hesperidum</i>								
Cellar spider	<i>Pholcus phalangoides</i>					20 Mat	90	24 HAT	0
European paper wasp	<i>Polistes dominulus</i>					10 MAT	95	24 HAT	0
Silverleaf whitefly	<i>Bemisia agentifolii</i>	20 HAT	100	20 HAT	100	6 HAT	100	6 HAT	20

Table 1. The effectiveness of the test formulation against the listed species. The time at which the specified mortality or knockdown plus mortality is indicated in MAT (minutes after treatment), HAT (hours after treatment), or DAT (days after treatment). Grayed blocks indicate that the reported metric never reached or exceeded 90%.

APPENDIX I.

Calculations

Contact Spray

Not specified.

Study Application Rate:

0.9 mL of 9.7% lambda Cyhalothrin formulation applied from a distance of 12''

Residual

Label Application Rate:

$$\frac{1\text{gallon}}{1200\text{feet}^2} \times \frac{8\text{lb}}{1\text{gallon}_{\text{water}}} \times 0.015\% \cong \frac{0.0001\text{lbAI}}{\text{gallon}}$$

Study Application Rate:

$$\frac{0.9\text{mL}}{9.6\text{in}^2} \times \frac{144\text{in}^2}{1\text{ft}^2} \times \frac{1\text{fl.oz.}}{29.57\text{mL}} \times \frac{1\text{gallon}}{128\text{fl.oz.}} \times \frac{8\text{lb}}{1\text{gallon}_{\text{water}}} \cong \frac{0.02853\text{lbAI}}{\text{ft}^2}$$

Enclosure

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