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INERT INGREDIENT AND PRODUCT INGREDIENT SOURCE INFORMATION ARE NOT INCLUDED

IRB PERFORMANCE REVIEW

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TYPE PRODUCT(S): (I), D, H, F, N, R, S

DATA ACCESSION NO(S). 244158, 244159

PRODUCT MGR. NO. 17

PRODUCT NAME(S) Raid Indoor Fogger II

COMPANY NAME S. C. Johnson

SUBMISSION PURPOSE Registration

CHEMICAL & FORMULATION 0.54% Tetramethrin

0.40% Sumithrin

0.05% Pyrethrins [redacted]

1.00% Piperonyl butoxide

1.67% [redacted] N-octyl bicycloheptene dicarboximide

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200.0 Introduction - The application contains data to demonstrate performance of Raid Automatic Indoor Fogger II, [redacted] formulation of .54% tetramethrin, .40% sumithrin, .05% pyrethrins, 1.00% piperonyl butoxide and 1.67% [redacted] Proposed claims for public health insects include cockroaches, fleas, ticks, spiders, flies, mosquitoes, wasps, hornets, and yellow jackets. Proposed dosage rate is one 8 ounce fogger per 6,000 cu. ft. of unobstructed space.

201.0 Data Summary - Data consist of 6,000 cu. ft. chamber tests with cat fleas and German roaches and 1,000 cu. ft. chamber tests with ticks, flies, waterbugs, mosquitoes, and wasps.

For fleas, the testing consisted of placing boxes lined with terrycloth (25 cat fleas/box) in each corner of the chamber. A total of 10 replicates was tested. After a 2-hour exposure period the insects were transferred to clean containers and held for knockdown and mortality counts. Results are summarized as follows.

Formulation	Dosage gms/6,000 cu.ft.	Percent Knockdown 24 hrs.	Percent Dead and Moribund 24 hrs.	48 hrs.
Raid Automatic Indoor Fogger II	226.06	100	98	97
Raid Automatic Indoor Fogger	225.22	89	79	81
Untreated Control	---	0	0	0

For German roaches, tests of exposed and sheltered roaches were conducted. For exposed roaches, containers (25 adult male roaches/container) were placed in each corner of the 6,000 cu. ft. chamber. After a 2-hour exposure period, the insects were transferred to clean containers and held for knockdown and mortality counts. A total of 10 replicates were tested. Results are summarized as follows.

Formulation	Dosage gms/6,000 cu.ft.	Percent Knockdown 24 hrs.	Percent Dead and Moribund 24 hrs.	48 hrs.
Raid Automatic Indoor Fogger II	226.06	100	98	97
Raid Automatic Indoor Fogger	225.22	89	79	81
Untreated Control	---	0	0	0

For concealed roaches, the containers (25 adult male roaches/container) were placed in trays in each corner of the chamber. Covers were placed on the containers. The covers were elevated 1/4 inch above the containers. After the 2-hour exposure period knockdown and flushing counts were recorded and the insects were transferred to clean containers and held for knockdown and mortality counts. Results are summarized as follows.

Formulation	Dosage gms/6,000 cu. ft.	% Knockdown 2 hrs.	% Flushed 2 hrs.	% Dead and Moribund 24 hrs.	48 hrs.
Raid Automatic Indoor Fogger II	226.06	90	87	78	77
Raid Automatic Indoor Fogger	225.22	92	90	84	84
Untreated Control	---	0	0	0	0

For flies and mosquitoes, testing consisted of releasing 100 flies or mosquitoes in the 1000 cu. ft. chamber and recording knockdown at 5, 10, and 15 minutes, as well as 2 hours. Mortality at 24 hours was recorded. Results are summarized as follows.

Flies

Formulation	Dosage gms/1,000 cu.ft.	% Knockdown 5 min.	10 min.	15 min.	Percent Dead 2 hrs.	24 hrs.
Raid Automatic Indoor Fogger II	37.24	84	92	95	100	100
Raid Automatic Indoor Fogger	37.76	79	90	95	99.3	98.8
Untreated Control	---				0	0

Mosquitoes

Formulation	Dosage gms/1,000 cu.ft.	% Knockdown 5 min.	10 min.	15 min.	Percent Dead 2 hrs.	24 hrs.	Percent Dead 24 hrs.
Raid Automatic Indoor Fogger II	37.24	100	100	100	100		100
Raid Automatic Indoor Fogger	37.76	99.5	100	100	100		100
Untreated Control	---			0	0		0

For ticks, testing consisted of exposing containers (25 adult ticks/container) in each corner of the 1000 cu. ft chamber. After the 2-hour exposure period, knockdown was recorded and the ticks were transferred to clean containers and held for 24-hour and 48-hour counts. Five replicates were tested. Results are summarized as follows.

Formulation	Dosage gms/1,000 cm.ft.	% Knockdown 2 hrs.	% Dead and Moribund 24 hrs.	48 hrs.
Raid Automatic Indoor Fogger II	37.61	100	100	99.8
Raid Automatic Indoor Fogger	37.36	100	100	100
Untreated Control	---		0	0

For spiders, testing consisted of exposing containers in each corner of the 1000 cu. ft. chamber (1 adult spider/container). Five replicates were tested. Procedure was the same as for ticks. Results are summarized as follows.

Formulation	Dosage gms/1,000 cm.ft.	% Knockdown 2 hrs.	% Dead and Moribund 24 hrs.	48 hrs.
Raid Automatic Indoor Fogger II	37.42	100	95	95
Raid Automatic Indoor Fogger	37.55	100	100	100
Untreated Control	---	0	0	0

For waterbugs (American roaches), testing consisted of exposing containers in each corner of the 1000 cu. ft. chamber (5 adult roaches/container). Five replicates were tested. Procedure was the same as for ticks. Results are summarized as follows.

Formulation	Dosage gms/1,000 cm.ft.	% Knockdown 2 hrs.	% Dead and Moribund 24 hrs.	48 hrs.
Raid Automatic Indoor Fogger II	37.42	100	100	100
Raid Automatic Indoor Fogger	37.55	100	100	100
Untreated Control	---	0	0	0

For wasps, testing consisted of releasing 20 wasps in the 1000 cu. ft. chamber and recording knockdown at 5, 10, and 15 minutes, as well as 2 hours. Mortality at 24 hours was recorded. Five replicates were tested. Results are summarized as follows.

Formulation	Dosage gms/1,000 cu.ft.	% Knockdown 5 min.	10 min.	15 min.	2 hrs.	Percent Dead 24 hrs.	48 hrs.
Raid Automatic Indoor Fogger II	37.71	70	90	94	100	100	100
Raid Automatic Indoor Fogger	37.74	78	93	98	100	97	100
Untreated Control	---				0	0	0

202.0 - Conclusions - The 6000 cu. ft. chamber data indicate that the subject formulation was comparable to the standard relative to activity against fleas and exposed roaches. For sheltered roaches, 2-hour knockdown and flushing for the subject formulation was comparable to the standard. Morbidity and mortality counts for the subject formulation at 24 and 48 hours was 78 and 77%, respectively, while these counts for the standard was 84% for both 24 and 48 hours. The flea and cockroach data support the proposed claims for flea and roach control.

The 1000 cu. ft. chamber data indicate that the subject formulation was comparable to the standard for activity against flies, mosquitoes, ticks, spiders, waterbugs, and wasps. Although testing was in a 1000 cu. ft. chamber these data are adequate to support the proposed claims for ticks, spiders and waterbugs because the 6000 cu. ft. chamber data indicate that the 8 ounce fogger will adequately cover 6000 cu. ft. relative to control of crawling insects.

The data do not support the proposed claims for control of flies, mosquitoes, wasps, hormets, and yellow jackets with 8 ounce of formulation per 6,000 cu ft. The data show that the formulation is active against flies, mosquitoes and wasps. The activity against wasps establishes that the formulation would be active against hornets and yellow jackets. However, there are no data to demonstrate that an 8 ounce container of the formulation would fill 6000 cu. ft. adequately enough to control flying insects. Testing in a 6000 cu ft. chamber should be conducted with one type of flying insect (preferably houseflies of the F58WTII strain) to establish that the 8 ounce size of the formulation will be adequate in this size room. Without this testing, the 1000 cu. ft. chamber data cannot be extrapolated to a dosage for 6000 cu. ft. for control of flying insects.

R. D. Van Denburgh 3-12-81

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