

IRB PERFORMANCE REVIEW

IN 9/10/81 OUT 10/29/81

FILE OR REG. NO. 59-ROL

PETITION, EXP. PERMIT, S. 18, 24c, NO. _____

DATE OF SUBMISSION 7-1-81

DATE DIVISION RECEIVED 7-1-81

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

DATA ACCESSION NO(S). 245583

PRODUCT MGR. NO. 17

PRODUCT NAME(S) Permethrin 3.2% EC

COMPANY NAME Burroughs Wellcome Co.

SUBMISSION PURPOSE Registration

CHEMICAL & FORMULATION Permethrin EC

200.0 Introduction

The submission contains data to demonstrate that Permethrin 3.2% E.C. will control fleas and ticks on dogs when applied as a dip or sponge treatment at a .05% concentration (2oz. product/gal. water). Proposed claims are for long protection against reinfestation with reapplications at 2-3 weeks.

201.0 Data Summary

Three reports are included. Report No. 1 is a study conducted by F. W. Knapp, Consulting Entomologist, in Louisville, Kentucky. Report Nos. 2 and 3 are studies conducted by Ag. Research Consultants of Greenbrier, AR.

In Report No. 1, 50 fleas and 50 brown dog ticks/animal were used to infest dogs of various breeds, sizes and hair coats. Application was by sponge dipping. Infestation was at 3 days pre-treatment and at 7, 14 and 21 days post-treatment. The .05% and .1% concentrations of Permethrin 3.2 EC were tested (6 dogs/ treatment). Results are summarized as follows.

Fleas

Treatment		Hours				Days						
		0	2	1	2	7	9	14	16	21	23	28
.05% Permethrin	Mean No.											
	Fleas	21.7	0	0	0	50	0	50	1.2	50	5.7	4
	Mean %											
.1% Permethrin	Control	--	100	100	100	--	98.9	--	83.1	--	83.3	81.3
	Mean No.											
	Fleas	29.9	0	0	0	50	0.5	50	5.5	50	5.0	35
Untreated Check	Mean %											
	Control	--	100	100	100	--	98.9	--	83.1	--	83.3	81.3
	Mean No.											
	Fleas	31.5	29	24.2	29.2	50	46	50	32.5	50	30	20.3

Ticks

Treatment			Hours				Days						
			0	2	1	2	7	9	14	16	21	23	28
.05% Permethrin	Mean No.												
	Ticks	23.5	18.5	14.2	0	0	50	0	50	1	50	3.5	3.0
	Mean %												
.1 % Permethrin	Control	--	20.3	28.3	100	--	100	--	96.2	--	84	88.1	
	Mean No.												
	Ticks	27.7	24.5	16.5	0	0	50	0.8	50	1	50	27	1.8
Untreated Check	Mean %												
	Control	--	0	27	100	--	96.5	--	96.2	--	89.7	92.9	
	Mean No.												
	Ticks	25	23.2	23	23.7	50	23.2	50	26.3	50	23.8	25.2	

In Report No. 2, 100 cat fleas and 50 brown dog ticks/animal were used to infest dogs of various breeds, sizes, and hair coats. Application was by sponging. Infestation was at 3 days pre-treatment and at 4, 11 and 18 days post-treatment. The .05% concentration of Permethrin 3.2 EC was tested, along with a formulation of Malathion and Lindane (.24% and .03% concentration). There were five dogs/treatment. Results are summarized as follows.

Fleas

Treatment		-1 Day	4 Hr.	7 Days	14 Days	21 Days
.05% Permethrin	Total No. Fleas	97	0	4	23	93
	% Control		100	98	88	70
.24% Malathion + 0.3% Lindane	Total No. Fleas	77	0	0	0	3
	% Control		100	100	100	99
Untreated	Total No. Fleas	137	152	220	185	312

Ticks

Treatment		-1 Day	4 Hr.	7 Days	14 Days	21 Days
.05% Permethrin	Total No. Ticks	59	5	7	14	9
	% Control		97	95	87	91
.24% Malathion + 0.3% Lindane	Total No. Ticks	90	0	5	16	59
	% Control		100	97	85	40
Untreated	Total No. Ticks	122	198	154	109	99

In Report No. 3, 100 cat fleas as well as 50 American dog ticks and 50 brown dog ticks were used to infest dogs of various breeds, sizes and hair coats. Infestation for fleas was at 3 days pre-treatment and 3, 11 and 18 days post-treatment. Infestation for ticks was at 3 days pre-treatment and 2, 11, and 18 days post-treatment. The .05% concentration of Permethrin 3.2 EC was tested with 8 dogs. A pyrethrins shampoo was included as a standard and was tested with 6 dogs. Results are summarized as follows.

Fleas

Treatment		-3	Days			
			1	5	14	21
.05% Permethrin	Total No. Fleas	170	2	33	184	346
	% Control		98.5	91.7	53.5	20.3
.05% Pyrethrins Shampoo	Total No. Fleas	138	2	224	199	264
	% Control		97.9	24.6	33	19
Untreated	Total No. Fleas	112	97	297	297	326

Brown Dog Tick

Treatment		Days				
		-3	1	5	14	21
.05% Permethrin	Total No. Ticks	139	22	2	19	53
	% Control		91.9	99.1	92.2	77.7
.05% Pyrethrins Shampoo	Total No. Ticks	42	38	25	43	
	% Control		62.7	69.9	53	
Untreated	Total No. Ticks	115	204	166	183	178

American Dog Tick

Treatment		Days				
		-3	1	5	14	21
.05% Permethrin	Total No. Ticks	165	35	9	74	113
	% Control		83.2	96.2	57.6	59.1
.05% Pyrethrins Shampoo	Total No. Ticks	57	78	57	70	
	% Control		0	36	0	
Untreated	Total No. Ticks	121	156	178	131	207

202.0 Conclusions

In Report No. 1, results for the .05% concentration of Permethrin indicated 94.8% flea control through 9 days with 83.1%, 83.3%, and 81.3% control at 16, 23, and 28 days. For ticks there was low control at 2 hrs. (20.3%) and 1 day (28.3%) with 100% control at 2 and 7 days, 96.2% control at 16 days, 84% control at 23 days and 88.1% control at 28 days.

In Report No. 2, results for the .05% concentration of Permethrin indicated good flea control (98% at 7 days and 88% at 14 days) through 14 days with 70% control at 21 days. For ticks, control was high through 21 days (91% at 21 days).

In Report No. 3, results for the .05% concentration of Permethrin indicated flea control of 98.5% and 91.7% at 1 and 5 days with 53.5% and 20.3% control at 14 and 21 days. For brown dog ticks, control was high through 14 days (92.2% at 14 days) with 77.7% control at 21 days. For American dog ticks, control was 83.2% and 96.2% at 1 and 5 days with 57.6% and 59.1% control at 14 and 21 days.

The data support claims for flea and tick control. The label should indicate that residual activity may be from 1-3 weeks for fleas, 2-3 weeks for brown dog ticks and maybe less than one week for American dog ticks.

B. J. Van Oenburgh 10-29-81

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Report No. 1 is a study conducted by F.W. Knapp, Consulting Entomologist, in Louisville, Ky. Report Nos 2+3 are studies conducted by Ag Research Consultants of Greenbrier, Ark.

In Report No. 1, 50 fleas and 50 brown dog ticks / animal were used to infest dogs of various breeds, sizes and hair coats. Application was by sponge dipping. Infestation was at 3 days pre-treatment and at 7, 14 and 21 days post-treatment. The .05% and .1% concentrations of Permethrin 3.2 EC were tested (6 dogs / treatment). Results are summarized as follows.

Fleas

Treatment		Hours		Days									
		0	2	1	2	7	9	14	16	21	23	25	27
.05% Permethrin	Mean No. Fleas	21.7	0	0	0	50	0	80	1.2	50	5.7	4	4
	Mean % Control	100	100	100	100	98.9	—	83.1	—	83.3	81	81	81
.1% Permethrin	Mean No. Fleas	29.9	0	0	0	50	0.5	50	5.5	50	5.0	33	33
	Mean % Control	—	100	100	100	98.9	—	83.1	—	83.3	81	81	81
Untreated & Check	Mean No. Fleas	31.5	29	24.2	29.2	50	46	50	32.5	50	30	20	20

Ticks

Treatment		Hours		Days									
		0	2	1	2	7	9	14	16	21	23	25	27
.05% Permethrin	Mean No. Ticks	23.5	18.5	14.2	0	50	0	50	1	50	3.5	3.0	3.0
	Mean % Control	—	20.3	28.3	100	—	100	96.2	—	84	88.1	88.1	88.1
.1% Permethrin	Mean No. Ticks	27.7	24.5	16.5	0	50	.8	50	1	50	2.7	1.8	1.8
	Mean % Control	—	0	27	100	—	96.5	96.2	—	87.7	92.9	92.9	92.9
Untreated & Check	Mean No. Ticks	25	23.2	23	23.7	50	23.2	50	26.3	50	23.8	25.7	25.7

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In Report No. 3, 100 cat fleas as well as 50 American dog ticks and 50 brown dog ticks were used to infest dogs of various breeds, sizes and hair coats. Infestation for fleas was at 3 days pre-treatment and 3, 11 and 18 days post-treatment. Infestation for ticks was at 3 days pre-treatment and 2, 11, and 18 days post treatment. The .05% concentration of Permethrin 3.2 EC was tested ^{with 8 dogs}. A pyrethrins Shampoo was included as a standard and was tested with 6 dogs. Results are summarized as follows.

		Fleas					
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	% Control		22	2	19	53	
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In Report No. 2 results for the .05% concentration of Permethrin indicated good flea control (98% at 7 days and 88% at 14 days) thru 14 days with 70% control at 21 days. For ticks, control was high thru 21 days (91% at 21 days).

In Report No. 3, results for the .05% ~~permethrin~~ ^{concentration} of Permethrin indicated flea control of 98.5% and 91.7% at 1 and 5 days with 53.5% and 20.3% control at 14 and 21 days. For brown dog ticks control was high thru 14 days (92.2% at 14 days) with 77.7% control at 21 days. For American dog ticks control was 83.2% and 96.2% at 1 and 5 days with 57.6% and 59.1% control at 14 and 21 days.

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TS-767:VAN DENBURGH:DCR-22427;WANG-0026B:hjc:Raven:479-2013:11/2/81