Canadian Pest Management Association

2014 Residential Use Survey of Actives in Pyrethroid/ Pyrethrin Cluster (REV2011-05)

1.Information About Survey Participants	
Total number of technician's use represented in survey	720

2. Information About Survey Participants	
Total number of companies represented	44

3. Information About Survey Participants	
Total number of responses to survey (some companies required individual locations respond to survey)	47

4. Information About Survey Participants	
Average number of tecnicians at each company	15.3
Standard Deviation of number of technicians per company	± 41.8

5. Information About Survey Data Provided

Method of Data Presentation: Due to the large differential in number of technician represented between the one-person operations and the larger companies, the data has been provided as a percentage of technicians, (rather than based on a percentage of companies).

Summary Statistic about Compnay Size - The data is representative of 18 one-person operations. Eighteen companies reported use for between 2 and 14 technicians. Eight companies (11 responses) represent companies with 15 or more technicians. (The survey includes responses from almost all of the largest companies in the Canadian pest management industry.)

Not every company answered every question. Thus, " # of Technicians Reporting" is reported where applicable

6. Who's use was considered when answering survey?	**Count**	**Percent**
My own. I am owner/operator. (Four of these companies had more than 1 person in the company)	22	46.8%
My technician's. (I am an owner or manager. Each question is answered keeping in mind the use of an average technician on my staff.)	25	53.2%

Residential Equipment for Pyrethroid/Formulation

The following directions were given for this section

For each type of equipment choose frequency of use for both INDOOR and OUTDOOR residential environments.
Option 1: regular use, Option 2: not regular use (less than 1X week), or Option 3: not used at all.
If necessary, please fill in the blank for other equipment not listed and check the area used.

ANSWERS ARE ONLY PROVIDED FOR PYRETHROID AND PYRETHRIN CONTAINING PRODUCTS.
ANSWER ARE FOR RESIDENTIAL USE ONLY.
If a type of equpment is not listed, it is not used for that formulation.

7. Pyrethrin Dust/Powder Formulations

	Residential INDOOR	# of Technicians Reporting	Residential OUTDOOR	# of Technicians Reporting
Bulb/Bellows, Squeeze Bottle, or Battery Powered Electric Duster - Regular Use	86.5%	695	88.9%	557
Bulb/Bellows, Squeeze Bottle, or Battery Powered Electric Duster - Not regular use (less than 1X a week)	13.4%		8.1%	
Bulb/Bellows, Squeeze Bottle, or Battery Powered Electric Duster - Never Used	0.1%		3.1%	
Plunger Duster _ Regular Use	4.6%	564	5.6%	479
Plunger Duster - Not Regular use (< 1X week)	72.5%		24.0%	
Plunger Duster - Never Used	22.8%		70.4%	
Power Duster (Electric) - Regular Use	10.0%	538	0.7%	410
Power Duster - Not regular use (< 1X week)	82.0%		10.2%	
Power Duster - Never Used	8.0%		89.0%	
Pyrethrin Dust/Powder Formulations never used	0.0%	695	0.0%	557

8. Pyrethroid Microencapsulated Liquid Formulations (Demand CS is the only product in this category)

		Residential INDOOR	# of Technicians Reporting	Residential OUTDOOR	# of Technicians Reporting
Manually Pressurized Hand Wand, (e.g. B&G sprayer) -	Regular Use	83.9%	710	80.1%	557
Manually Pressurized Hand Wand, (e.g. B&G sprayer) -	Not Regular Use (< 1X week)	15.8%		1.6%	
Manually Pressurized Hand Wand, (e.g. B&G sprayer) -	Never Used	0.3%		18.3%	
Engine pressurized spray delivery, (e.g. truck mounted sprayer) -	Regular Use	0.0%	444	16.2%	512
Engine pressurized spray delivery, (e.g. truck mounted sprayer) -	Not Regular Use (< 1X week)	0.0%		53.3%	
Engine pressurized spray delivery, (e.g. truck mounted sprayer) -	Never Used	100.0%		30.5%	
We don't use pyrethroid micorencapsulated formulations		0.0%	710	0.0%	557

9. Wettable Power Liquid Formulation (Tempo for indoor use is the only formulation registered)

		Residential INDOOR	# of Technicians Reporting	Residential OUTDOOR	# of Technicians Reporting
Manually Pressurized Hand Wand Sprayer (i.e., B&G) -	Regular Use	70.2%	717	N/A	N/A
Manually Pressurized Hand Wand Sprayer (i.e., B&G) -	Not Regular Use (< 1X week)	25.2%		N/A	N/A
No Wettable Powder Pyrethroid Products used		4.6%		N/A	N/A

10. Pyrethroid/Pyrethrin Liquid Formulations (does not include Microencapsulated (Demand CS) or Wettable Powder (Tempo) Use)

	Residential INDOOR	# of Technicians Reporting	Residential OUTDOOR	# of Technicians Reporting
Manually Pressurized Hand Wand, (e.g., B&G sprayer) - Regular Use	73.5%	710	83.8%	637
Manually Pressurized Hand Wand, (e.g., B&G sprayer) - Not Regular Use (< 1X week)	3.9%		2.5%	
Manually Pressurized Hand Wand, (e.g., B&G sprayer) - Never Used	22.5%		13.7%	
Engine pressurized spray delivery, (e.g., truck mounted sprayer) - Regular Use	5.5%†	488	19.7%	529
Engine pressurized spray delivery, (e.g., truck mounted sprayer) - Not Regular Use (< 1X Week)	0.0%		53.3%	
Engine pressurized spray delivery, (e.g., truck mounted sprayer) - Never Used	94.5%		27.0%	
ULV Machine - Regular Use	8.0%	600	0.0%	407
ULV Machine - Not Regular Use (< 1X week)	73.8%		8.4%	
ULV Machine - Never Used	18.2%		91.7%	
Mechanical Aerosol Generator, i.e., Actisol - Regular Use	58.8%	565	7.5%	452
Mechanical Aerosol Generator, i.e., Actisol - Not Regular Use (< 1X Week)	24.4%		78.8%	
Mechanical Aerosol Generator, i.e., Actisol - Never Used	16.8%		13.7%	

† We are leaving this data as entered, though, we have confirmed with the company this was not the intended answer to the quesiton. They do not treat home interiors with a truck mounted sprayer.

11. Ready-to-Use Pyrethroid and Pyrethrin Products

	Residential INDOOR	# of Technicians Reporting	Residential OUTDOOR	# of Technicians Reporting
RTU Aerosol (not including foams) - Regular Use	79.7%	708	43.3%	681
RTU Aerosol (not inluding foams) - < 1X week	11.9%		54.2%	
RTU Aerosol (not including foams) - Not Used	8.5%		2.5%	
RTU Aerosol Foams - Regular Use	24.2%	670	83.7%	608
RTU Aerosol Foams - Not Regular Use (< 1X week)	49.0%		9.4%	
RTU Aerosol Foams - Not Used	26.9%		6.9%	
RTU Foggers - Regular Use	1.2%	583	1.3%	458
RTU Foggers - Not Regular Use (< 1X week)	17.2%		4.6%	
RTU Foggers - Never Used	81.7%		94.1%	

12. Average number of days worked by a technician during a work week (from March to October)

Days	# of responses for each day	Percent
1	0	0.0%
2	0	0.0%
3	3	6.4%
4	1	2.1%
5	35	74.5%
6	6	12.8%
7	2	4.3%

Statistics

Total Responses	47
Average	5.1 days

13. The Following First Part of Postal Codes Were Reported

Please note: not every respondant provided their postal code. Plus, several companies are in multiple postal codes

Response

B3B	L0K	V4N	l8s	T5R
B4A	L3z	V7P	m5m	v9n
E1A	L4J	V8Z	n3c	
G2J	L8L	V9B	t2w	
H4T	M9W	e1a	t3l	
J1L	N0H	l2v	v1p	
K0L	N0P	l4b	v9b	

TERMITE AND TERMITICIDE USAGE QUESTIONS

14. Does your company perform termite work?

Value	Count	Percent
yes	6	12.8%
no	34	72.3%
rarely, but yes, we do termite work.	7	14.9%

Statistics	
Total Responses	47

15. If you do termite work, since there are new active ingredients available, do you intend to continue using pyrethroids to control termites?

Value	Count	Percent
yes - only pyrethroids	0	0.0%
no	0	0.0%
don't know	2	15.3%
I intend to use both pyrethroids and new active ingredients to contorl termites in the future	11	84.6%

Statistics	
Total Responses	13

16 and 17. If you do termite work, what percentage of your company's work is termite control?
Also number of days per week and per year that technicians apply termiticides.

Response Summary

Of the 13 companies that reported performing termite control applications, 5 companies reported less than 1% of their total work is termite oriented. Six companies reported between 2% and 5% of their work is termite control. In the aforementioned 11 companies, the termite technician does less than one full day of termite work a week. One company does between 30% and 40 % of their work in termite control. Their technician spend approximately 2 days a week, during the peak time of March to October, controlling termites. Finally, one company reported they are a full-time termite company. A technician that works for this company performs termite work 5 days a week, during the peak season.
It should be noted in the re-evaluation risk assessment that pyrethroid use for termite control is expected to trend downward. This trend is based on the availability of new active ingredients for the termite control use pattern. As noted in answer fifteen, 84.6% of companies intend to use pyrethroids as well as new active ingredients for termite control in the future.
It is very difficult to estimate the number of days per year spend applying termiticides. Based on the above responses, we estimate in a typical company it is less than 35 days. (And, they are applying for less than one half of that day.) There is one company (in all of Canada) whose technicians apply termiticides approximately 175 day per year.
Per an earlier question, yes, it is normal to both trench (where there is no abutting slab) and rod (where there is an abutting slab) during a termite treatment.

USE OF PYRETHROIDS AND PYRETHRINS IN RESIDENTIAL SETTINGS

DEFINITIONS USED IN THE SECTION ON PYRETHROID/ PYRETHRIN TYPES OF APPLICATION BY PEST

Typical Use - an action performed at least 3 times a week (from March to October) by someone using pyrethroids and/or pyrethrins

Please note: Types of applications for a formulation/pest combo are not mutually exclusive. In addition, data is presented only for typical and non-use of a pest/forumlation combination

Indoor Soft Surfaces - Mattresses, carpet, couches, and upholstered furniture

Indoor Hard Surfaces - Indoor surfaces not classified as indoor soft.

Outdoors - Applications made outdoors

USE OF PYRETHROIDS FOR CONTROL OF ANTS IN RESIDENTIAL SETTINGS

18. PYRETHROID AEROSOL USE for ANT CONTROL

Number of technicians on which data collected for this section = 718

Type of application	Treatment Surface: indoor soft	indoor hard	outdoors
Crack and Crevice	27.2%	66.4%	54.0%
Aerosol Foam	0.0%	51.8%	46.4%
Spot (like ant nest)	15.7%	25.5%	60.2%
Void	13.8%	51.4%	52.5%
This formulation is not use for this pest	17.5%	15.6%	15.6%

19. PYRETHROID USED IN MANUALLY PRESURIZED HANDWAND (for example, B&G) for ANT CONTROL

Number of technicians on which data collected for this section = 718

Type of application	Treatment Surface: indoor soft	indoor hard	outdoors
Broadcast (general treatment)	23.0%	18.7%	36.1%
Crack and Crevice	19.6%	78.6%	71.2%
Liquid with Foaming Agent	2.6%	6.7%	3.9%
Perimeter (continuous band)	14.1%	16.9%	83.8%
Spot	20.5%	28.6%	62.1%
Void	3.9%	53.3%	50.1%
This formulation is not use for this pest	2.2%	0.7%	0.7%

20. PYRETHROID USED AS ULV for ANT CONTROL

Number of technicians on which data collected for this section = 718

Type of application	Treatment Surface: indoor soft	indoor hard	outdoors
Space Treatment (Fog)	4.0%	6.0%	0.0%
This formulation is not use for this pest	38.0%	37.2%	38.4%

21. PYRETHROID USED IN MECHANICAL AEROSOL GENERATOR/ PRESSURIZED AIR SYSTEM (i.e., ACTISOL) FOR ANT CONTROL

Number of technicians on which data collected for this section = 718

Type of application	Treatment Surface: indoor soft	indoor hard	outdoors
Space Treatment (Fog)	2.4%	2.1%	0.3%
Void	1.4%	18.2%	11.4%
This formulation is not use for this pest	41.2%	38.4%	42.3%

22. PYRETHROID FOAM (aerosol or liquid foam application areas) for ANT CONTROL

Number of technicians on which data collected for this section = 718

Type of application	Treatment Surface: indoor soft	indoor hard	outdoors
Crack and Crevice	2.6%	22.6%	20.6%
Spot (like a hornet nest)	2.8%	16.7%	25.9%
Void	13.8%	13.0%	12.4%
This formulation is not use for this pest	28.0%	25.1%	25.9%

23. LIQUID PYRETHROID IN BACKPACK FOR ANT CONTROL

Number of technicians on which data collected for this section = 718

Type of application	Treatment Surface: indoor soft	indoor hard	outdoors
Broadcast (general treatment)	N/A	N/A	25.8%
Crack and Crevice	N/A	N/A	20.2%
Perimeter (continuous band)	N/A	N/A	27.3%
Spot	N/A	N/A	23.8%
This formulation is not use for this pest	N/A	N/A	32.2%

USE OF PYRETHRINS FOR CONTROL OF ANTS IN RESIDENTIAL SETTINGS

24. PYRETHRIN AEROSOL FOR ANT CONTROL

Number of technicians on which data collected for this section = 714	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Crack and Crevice	18.9%	56.4%	48.5%
Spot (for example, ants nests (but not limited to this use)	19.9%	27.0%	18.2%
Void	6.7%	53.1%	42.7%
This formulation is not use for this pest	17.6%	15.3%	16.2%

25. PYRETHRIN USED IN MANUALLY PRESURIZED HANDWAND (for example, B&G) FOR ANT CONTROL

Number of technicians on which data collected for this section = 714	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Broadcast (general treatment)	16.1%	7.1%	28.6%
Crack and Crevice	19.3%	25.1%	21.4%
Liquid with Foaming Agent	2.9%	3.8%	3.9%
Perimeter (continuous band)	14.3%	6.7%	23.9%
Spot (like, but not limited to an ant nest)	14.3%	20.9%	24.6%
Void	3.6%	18.6%	11.9%
This formulation is not use for this pest	25.6%	25.5%	25.5%

26. PYRETHRIN TOTAL RELEASE AEROSOL (CAN FOGGER) FOR ANT CONTROL

Number of technicians on which data collected for this section = 714	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Space Treatment (Fog)	2.1%‡	0.0%	N/A
This formulation is not use for this pest	96.5%	96.4%	N/A

‡represents one company and could be an entry error.

27. PYRETHRIN USE AS ULV FOR ANT CONTROL

Number of technicians on which data collected for this section = 714	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Space Treatment (Fog)	2.7%	7.4%	0.3%
This formulation is not use for this pest	82.2%	84.9%	84.7%

28. PYRETHRIN USE IN A MECHANICAL AEROSOL GENERATOR/ PRESSURIZED AIR SYSTEM (for example, ACTISOL) FOR ANT Control

Number of technicians on which data collected for this section = 714	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Space Treatment (Fog)	2.1%	8.8%	1.1%
Void	11.9%	52.8%	44.4%
This formulation is not use for this pest	29.0%	27.6%	31.9%

29. PYRETHRIN USE IN A POWER DUSTER (Electric) FOR ANT CONTROL

Number of technicians on which data collected for this section = 714	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Broadcast	2.7%	2.8%	2.8%
Crack and Crevice	21.7%	16.9%	14.8%
Spot	22.7%	13.2%	21.8%
Void	10.5%	18.3%	15.1%
This formulation is not use for this pest	32.4%	32.4%	31.7%

30. PYRETHRIN USE IN A Small Duster (BULB, BELLOWS, SMALL BATTERY POWERED AND SQUEEZE BOTTLE) FOR ANT CONTROL

Number of technicians on which data collected for this section = 714	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Crack and Crevice	23.2%	76.9%	71.6%
Spot	22.8%	56.7%	55.7%
Void	23.1%	76.3%	68.5%
This formulation is not use for this pest	9.5%	8.5%	9.5%

31. PYRETHRIN USE IN A PLUNGER DUSTER FOR ANT CONTROL

Number of technicians on which data collected for this section = 714	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Crack and Crevice	2.7%	8.4%	7.6%
Void	2.7%	8.8%	18.9%
This formulation is not use for this pest	77.7%	77.3%	77.7%

32. PYRETHRIN LIQUID WITH FOAMING AGENT FOR ANT CONTROL

Number of technicians on which data collected for this section = 714	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Crack and Crevice	N/A	N/A	6.4%
Spot	N/A	N/A	6.4%
Void	N/A	N/A	7.7%
This formulation is not use for this pest	N/A	N/A	52.3%

33. PYRETHRIN LIQUID USED IN A BACKPACK FOR ANT CONTROL

Number of technicians on which data collected for this section = 714	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Broadcast (general treatment)	N/A	N/A	11.1%
Crack and Crevice	N/A	N/A	15.5%
Perimeter (continuous band)	N/A	N/A	19.0%
Spot	N/A	N/A	19.7%
This formulation is not use for this pest	N/A	N/A	43.7%

USE OF PYRETHROIDS FOR CONTROL OF COCKRAOCHES IN RESIDENTIAL SETTINGS

34. PYRETHROID AEROSOL USE FOR CONTROL OF COCKROACHES

Number of technicians on which data collected for this section = 712	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Broadcast (general treatment)	11.4%	5.1%	3.5%
Crack and Crevice	21.5%	66.2%	3.5%
Foaming	11.2%	1.1%	0.0%
Perimeter (continuous band)	21.2%	14.9%	3.5%
Space Treatment (Fog)	7.0%	8.4%	0.0%
Spot	21.5%	53.9%	3.8%
Void	10.8%	66.4%	3.5%
This formulation is not use for this pest	19.7%	20.4%	18.1%

35. PYRETHROID IN MANUALLY PRESURIZED HANDWAND (for example, B&G) FOR COCKROACH CONTROL

Number of technicians on which data collected for this section = 712	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Broadcast (general treatment)	21.6%	13.8%	4.6%
Crack and Crevice	22.1%	70.2%	4.9%
Foaming	11.5%	5.2%	3.5%
Perimeter (continuous band)	22.1%	16.0%	4.6%
Spot	10.5%	57.6%	5.1%
Void	10.5%	51.7%	3.5%
This formulation is not use for this pest	13.2%	13.1%	13.8%

36. PYRETHROID USE IN ULV FOR COCKROACH CONTROL

Number of technicians on which data collected for this section = 712	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Space Treatment (Fog)	7.3%	10.7%	0.0%
This formulation is not use for this pest	86.9%	86.9%	86.8%

37. PYRETHROID USE IN A MECHANICAL AEROSOL GENERATOR FOR COCKROACH CONTROL

Number of technicians on which data collected for this section = 712	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Space Treatment (Fog)	2.1%	1.7%	0.0%
Void	2.8%	51.4%	0.0%
This formulation is not use for this pest	89.9%	42.0%	89.9%

38. PYRETHROID FOAM FOR COCKROACH CONTROL

Number of technicians on which data collected for this section = 462	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Crack and Crevice	16.0%	4.4%	0.0%
Spot	16.0%	4.4%	0.0%
Void	4.8%	5.5%	1.1%
This formulation is not use for this pest	66.0%	67.3%	66.0%

USE OF PYRETHRINS FOR CONTROL OF COCKRAOCHES IN RESIDENTIAL SETTINGS

39. PYRETHRIN AEROSOL USE FOR COCKROACH CONTROL

Number of technicians on which data collected for this section = 711	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Broadcast (general treatment)	11.3%	1.3%	0.0%
Crack and Crevice	21.4%	65.7%	0.0%
Perimeter (continuous band)	2.7%	3.9%	0.0%
Space Treatment (Fog)	7.0%	12.9%	1.1%
Spot	10.1%	18.1%	0.0%
Void	10.1%	53.9%	0.0%
This formulation is not use for this pest	30.2%	19.4%	30.2%

40. PYRETHRIN IN A MANUALLY PRESURIZED HANDWAND (for example, B&G) FOR COCKROACH CONTROL

Number of technicians on which data collected for this section = 461	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Broadcast (general treatment)	21.9%	8.2%	2.2%
Crack and Crevice	22.3%	23.6%	2.4%
Foaming	21.5%	6.1%	0.0%
Perimeter (continuous band)	22.6%	6.1%	1.7%
Spot	4.6%	22.1%	2.0%
Void	4.3%	13.2%	0.0%
This formulation is not use for this pest	54.2%	49.5%	46.2%

41. PYRETHRIN TOTAL RELEASE AEROSOL (CAN FOGGER) FOR COCKROACH CONTROL

Number of technicians on which data collected for this section = 711	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Space Treatment (Fog)	0.6%	0.4%	N/A
This formulation is not use for this pest	95.5%	94.7%	N/A

42. PYRETHRIN USED IN A ULV MACHINE FOR COCKROACHE CONTROL

Number of technicians on which data collected for this section = 680	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Space Treatment (Fog)	7.6%	11.0%	0.0%
This formulation is not use for this pest	89.4%	88.8%	89.3%

43. PYRETHRIN USED IN A MECHANICAL AEROSOL GENERATOR/ PRESSURIZED AIR SYSTEM (for example, ACTISOL) FOR COCKROACH CONTROL

Number of technicians on which data collected for this section = 697	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Space Treatment (Fog)	2.2%	1.0%	0.0%
Void	17.1%	51.9%	0.0%
This formulation is not use for this pest	44.0%	34.0%	44.5%

44. PYRETHRIN LIQUID USED WITH A FOAMING AGENT FOR COCKROACH CONTROL

Number of technicians on which data collected for this section = 441	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Crack and Crevice	4.3%	5.7%	0.0%
Spot	22.4%	5.0%	0.0%
Void	4.3%	7.5%	1.8%
This formulation is not use for this pest	73.5%	75.1%	73.0%

45. PYRETHRIN BASED DUST USED IN Small Dusters-BULB, BELLOWS, SQUEEZE BOTTLE OR SMALL BATTERY POWERED APPLICATOR FOR COCKROACHS

Number of technicians on which data collected for this section = 711	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Broadcast	2.7%	5.1%	0.0%
Crack and Crevice	23.6%	70.9%	0.1%
Spot	12.2%	15.6%	0.1%
Void	24.2%	69.6%	0.1%
This formulation is not use for this pest	25.3%	12.1%	25.7%

46. PYRETHRIN BASED DUST USED IN PLUNGER DUSTER FOR COCKROACH CONTROL

Number of technicians on which data collected for this section = 711	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Crack and Crevice	2.7%	5.5%	0.0%
Spot	2.7%	1.3%	0.0%
Void	2.7%	5.2%	0.0%
This formulation is not use for this pest	88.7%	89.5%	88.5%

47. PYRETHRIN BASED DUST USED IN A POWER DUSTER (ELECTRIC) FOR COCKROACH CONTROL

Number of technicians on which data collected for this section = 711	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Crack and Crevice	12.8%	14.5%	0.0%
Void	12.8%	15.5%	0.0%
This formulation is not use for this pest	78.5%	79.5%	78.2%

USE OF PYRETHROIDS FOR CONTROL OF BED BUGS IN RESIDENTIAL SETTINGS

48. PYRETHROID AEROSOL USE FOR BED BUG CONTROL

Number of technicians on which data collected for this section = 692	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoor**
Broadcast (general treatment)	7.9%	10.1%	N/A
Crack and Crevice	46.8%	80.2%	N/A
Foaming	8.1%	8.2%	N/A
Perimeter (continuous band)	8.7%	15.6%	N/A
Space Treatment (Fog)	10.1%	10.1%	N/A
Spot	31.4%	70.4%	N/A
Void	15.3%	54.8%	N/A
This formulation is not use for this pest	14.2%	2.2%	N/A

49. PYRETHROID LIQUID IN A MANUALLY PRESURIZED HANDWAND SPRAYER (for example, B&G) FOR BED BUG CONTROL

Number of technicians on which data collected for this section = 692	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoor**
Broadcast (general treatment)	8.7%	16.5%	N/A
Crack and Crevice	38.9%	85.7%	N/A
Foaming	2.9%	5.1%	N/A
Perimeter (continuous band)	14.7%	40.8%	N/A
Spot	26.2%	75.9%	N/A
Void	21.5%	61.7%	N/A
This formulation is not use for this pest	13.7%	0.1%	N/A

50. PYRETHROIDS USED IN AN ULV MACHINE FOR BED BUG CONTROL

Number of technicians on which data collected for this section = 692	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoor**
Space Treatment (Fog)	3.0%	3.0%	N/A
This formulation is not use for this pest	97.1%	97.1%	N/A

51. PYRETHROIDS IN A MECHANICAL AEROSOL GENERATOR/ PRESSURIZED AIR SYSTEM (e.g., ACTISOL) FOR BED BUG CONTROL

Number of technicians on which data collected for this section = 692	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoor**
Space Treatment (Fog)	2.7%	5.1%	N/A
Void	5.6%	44.7%	N/A
This formulation is not use for this pest	55.8%	55.5%	N/A

USE OF PYRETHRINS FOR CONTROL OF BED BUGS IN RESIDENTIAL SETTINGS

52. PYRETHRIN AEROSOL USE FOR CONTROL OF BED BUGS

Number of technicians on which data collected for this section = 692	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoor**
Broadcast (general treatment)	16.2%	14.6%	N/A
Crack and Crevice	43.1%	79.3%	N/A
Perimeter (continuous band)	3.9%	5.9%	N/A
Space Treatment (Fog)	3.9%	4.0%	N/A
Spot	29.9%	29.9%	N/A
Void	16.5%	55.6%	N/A
This formulation is not use for this pest	15.6%	15.5%	N/A

53. PYRETHRIN TOTAL RELEASE AEROSOL (CAN FOGGER) FOR CONTROL OF BED BUGS

Number of technicians on which data collected for this section = 692	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoor**
Space Treatment (Fog)	2.7%	2.7%	N/A
This formulation is not use for this pest	95.4%	95.2%	N/A

54. PYRETHRIN USE IN ULV MACHINE FOR BED BUG CONTROL

Number of technicians on which data collected for this section = 692	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoor**
Space Treatment (Fog)	2.9%	2.3%	N/A
This formulation is not use for this pest	95.4%	95.1%	N/A

55. PYRETHRIN USED IN MECHANICAL AEROSOL GENERATOR/ PRESSURIZED AIR SYSTEM (e.g., ACTISOL) FOR BED BUG CONTROL

Number of technicians on which data collected for this section = 692	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoor**
Space Treatment (Fog)	2.7%	5.1%	N/A
Void	3.6%	9.4%	N/A
This formulation is not use for this pest	90.9%	90.6%	N/A

56. PYRETHRIN DUST USED IN Small DUSTER -BULB, BELLOWS, SQUEEZE BOTTLE, AND SMALL BATTERY POWERED APPLICATOR/ BED BUG CONTROL

Number of technicians on which data collected for this section = 692	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoor**
Broadcast	11.3%	12.4%	N/A
Crack and Crevice	21.4%	79.3%	N/A
Spot	17.6%	25.9%	N/A
Void	15.2%	76.9%	N/A
This formulation is not use for this pest	19.9%	19.9%	N/A

57. PYRETHRIN DUST USED IN A PLUNGER DUSTER FOR BED BUG CONTROL

Number of technicians on which data collected for this section = 692	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoor
Crack and Crevice	2.7%	2.9%	N/A
Spot	2.7%	2.9%	N/A
Void	2.7%	2.9%	N/A
This formulation is not use for this pest	97.4%	90.0%	N/A

58. PYRETHRIN DUST USED IN A POWER DUSTER (electric) FOR BED BUG CONTROL

Number of technicians on which data collected for this section = 692	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoor
Crack and Crevice	10.5%	7.9%	N/A
Void	11.8%	10.1%	N/A
This formulation is not use for this pest	87.3%	87.1%	N/A

USE OF PYRETHROIDS FOR CONTROL OF FLEAS IN RESIDENTIAL SETTINGS

Throughout the answers to the flea use questions, one larger company (near 100 technicians) noted so far in 2014 they had only done 6 flea jobs. It seems, at least in some areas of Canada, fleas are not a significnat problem.

59. PYRETHROID AEROSOL USE USE FOR FLEA CONTROL

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Broadcast (general treatment)	3.0%	6.3%	0.0%
Crack and Crevice	4.8%	18.3%	0.0%
Foaming	0.0%	2.2%	0.0%
Perimeter (continuous band)	3.0%	5.2%	0.0%
Space Treatment (Fog)	3.0%	7.6%	0.0%
Spot	4.6%	19.5%	0.0%
Void	3.0%	6.1%	0.0%
This formulation is not use for this pest	41.6%	53.5%	43.1%

60. PYRETHROID USE IN A MANUALLY PRESURIZED HANDWAND FOR FLEA CONTROL

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Broadcast (general treatment)	60.5%	20.7%	50.0%
Crack and Crevice	64.1%	76.5%	4.0%
Foaming	2.7%	4.9%	0.0%
Perimeter (continuous band)	3.5%	15.0%	5.5%
Spot	58.4%	46.7%	40.1%
Void	3.3%	7.3%	0.0%
This formulation is not use for this pest	1.7%	13.4%	1.7%

61. PYRETHROID USE IN A ULV MACHINE FOR FLEA CONTROL

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Space Treatment (Fog)	3.7%	6.3%	0.0%
This formulation is not use for this pest	94.1%	94.2%	92.8%

62. PYRETHROID USE IN A MECHANICAL AEROSOL GENERATOR/ PRESSURIZED AIR SYSTEM (for example, ACTISOL) FOR FLEA CONTROL

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Space Treatment (Fog)	3.2%	6.6%	0.0%
Void	10.5%	12.7%	7.2%
This formulation is not use for this pest	85.9%	85.7%	85.7%

63. PYRETHROID FOAM USE FOR FLEA CONTROL

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Crack and Crevice	2.7%	5.0%	0.0%
Spot	2.7%	5.0%	0.0%
Void	2.7%	5.0%	0.0%
We do not use foam formulations containing pyrethroids to control fleas	94.7%	94.7%	94.4%

64. PYRETHROID LIQUID IN A BACKPACK FOR CONTROL OF FLEAS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Broadcast (general treatment)	N/A	N/A	38.9%
Crack and Crevice	N/A	N/A	3.0%
Perimeter (continuous band)	N/A	N/A	6.6%
Spot	N/A	N/A	39.9%
We do not use backpacks containing pyrethroids to control fleas	N/A	N/A	56.3%

65. PYRETHROID USE OUTDOORS IN AN Engine Pressurized Spray (Usually Truck Mounted) FOR CONTROL OF FLEAS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
broadcast (general treatment)	N/A	N/A	1.9%
We don't use engine pressurized spray with liquid pyrethroids control ants	N/A	N/A	97.0%

USE OF PYRETHRINS FOR CONTROL OF FLEAS IN RESIDENTIAL SETTINGS

66. PYRETHRIN AEROSOL USE FOR FLEA CONTROL

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Broadcast (general treatment)	13.5%	12.8%	2.0%
Crack and Crevice	70.3%	26.1%	0.9%
Perimeter (continuous band)	12.4%	9.9%	0.0%
Space Treatment (Fog)	17.1%	16.7%	1.2%
Spot	50.4%	25.9%	0.9%
Void	12.8%	10.8%	0.0%
We do not use pyrethrin aerosols for control of fleas	29.5%	29.5%	29.5%

67. PYRETHRIN LIQUID IN A MANUALLY PRESURIZED HANDWAND (for example, B&G) FOR FLEA CONTROL

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Broadcast (general treatment)	22.9%	17.1%	13.4%
Crack and Crevice	42.7%	36.7%	2.7%
Foaming	2.7%	2.7%	0.0%
Perimeter (continuous band)	11.1%	16.9%	1.9%
Spot	21.3%	35.0%	2.9%
Void	12.7%	11.5%	0.3%
We do not use this type of equipment with pyrethrin formulations to control fleas	60.8%	60.8%	60.8%

68. PYRETHRIN TOTAL RELEASE AEROSOL (CAN FOGGER) FOR FLEA CONTROL

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	
Space Treatment (Fog)	5.2%	4.6%	N/A
We do not use pyrethrin total release foggers for control of fleas	93.1%	92.1%	N/A

69.PYRETHRIN USE IN ULV MACHINE FOR FLEA CONTROL

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Space Treatment (Fog)	5.5%	7.9%	0.0%
We do not use pyrethrins with ULV equipment to control fleas	89.8%	89.6%	89.6%

70. PYRETHRIN USE IN A MECHANICAL AEROSOL GENERATOR/ PRESSURIZED AIR SYSTEM (for example, ACTISOL) FOR FLEA CONTROL

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Space Treatment (Fog)	4.9%	4.2%	0.0%
Void	5.3%	4.5%	0.4%
We do not use pyrethrins with this type of equipment to control fleas	92.1%	93.1%	93.1%

71. PYRETHRIN LIQUID WITH FOAMING AGENT FOR CONTROL OF FLEAS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Crack and Crevice	0.0%	0.0%	0.0%
Spot	0.0%	0.0%	0.0%
Void	0.0%	0.0%	0.0%
We do not use pyrethin foam formulations to control fleas	99.9%	99.7%	97.0%

72. PYRETHRIN DUST USED IN Small dusters; bulb, bellows, squeeze bottle and small battery powered applicator FOR CONTROL OF FLEAS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Broadcast	2.9%	4.2%	0.0%
Crack and Crevice	11.4%	49.3%	0.9%
Spot	10.5%	10.4%	0.9%
Void	9.4%	21.8%	1.3%
We do not use small dusters with pyrethrin dusts to control fleas	49.1%	48.3%	49.1%

73. PYRETHRIN DUST USED IN A PLUNGER DUSTER FOR FLEA CONTROL

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Crack and Crevice	2.7%	2.9%	0.0%
Spot	2.7%	2.9%	0.0%
Void	2.7%	2.9%	0.0%
We dont use pyrethrin dusts in a plunger duster for control of fleas	93.4%	93.2%	93.2%

74. PYRETHRIN DUST IN A POWER DUSTER (ELECTRIC) FOR FLEA CONTROL

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Crack and Crevice	10.1%	10.1%	0.0%
Void	9.9%	10.8%	0.0%
We don't use pyrethrin dust in electric power dusters for control of fleas	88.8%	88.8%	88.6%

75. PYRETHRIN LIQUID USED IN ENGINE PRESSURIZED SPRAY FOR FLEA CONTROL

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
broadcast (general treatment)	N/A	N/A	0.0%
We dont use pyrethrins with an engine pressurized spray to control fleas	N/A	N/A	100.0%

USE OF PYRETHROIDS FOR CONTROL OF MOSQUITOES IN RESIDENTIAL SETTINGS

76. PYRETHROID LIQUID IN A MANUALLY PRESURIZED HANDWAND (for example, B&G) FOR MOSQUITO CONTROL

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Broadcast (general treatment)	0.0%	2.7%*	2.9%*
Crack and Crevice	0.0%	2.9%*	2.9%*
Perimeter (continuous band)	0.0%	2.9%*	3%*
Spot	0.0%	2.9%*	2.9%*
We do not use pyrethroids in this type of equipment to treat for mosquitoes	59.9%	59.9%	59.7%

77. PYRETHROID LIQUID IN BACKPACK FOR MOSQUITO CONTROL

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Broadcast (general treatment)	N/A	N/A	6.5%
Crack and Crevice	N/A	N/A	2.9%
Perimeter (continuous band)	N/A	N/A	6.5%
Spot	N/A	N/A	6.5%
We do not use pyrethroids in backpacks for mosquito control	N/A	N/A	56.6%

(*represents one company of almost 20 people and one or two very small (1 person) companies). This pattern is repeated in the mosquito data.)

USE OF PYRETHRIN FOR CONTROL OF MOSQUITOES IN RESIDENTIAL SETTINGS

78. PYRETHRIN AEROSOL USE FOR MOSQUITO CONTROL

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Crack and Crevice	0.1%	2.9%*	2.7%*
Space Treatment (Fog)	0.1%	2.9%*	2.7%*
Spot	0.1%	2.9%*	2.7%*
We don't use pyrethrin aerosols for control of mosquitoes	59.8%	60.1%	59.9%

79. PYRETHRIN IN A MANUALLY PRESURIZED HANDWAND FOR MOSQUITO CONTROL

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Broadcast (general treatment)	0.0%	2.9%*	3.0%*
Crack and Crevice	0.0%	3.0%*	2.7%*
Perimeter (continuous band)	0.0%	3.0%*	2.7%*
Spot	0.0%	3.0%*	2.7%*
Void	0.0%	3.0%*	2.7%*
We don't use this type of equipment with pyrethrin formulations to control mosquitoes	95.7%	95.8%	95.7%

80. PYRETHRIN TOTAL RELEASE AEROSOL (CAN FOGGER) FOR CONTROL OF MOSQUITOES

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Space Treatment (Fog)	0.0%	2.7%*	no outdoor use
We don't use pyrethrin total release foggers for mosquito control	96.0%	96.0%	no outdoor use

81. PYRETHRIN USED IN A ULV MACHINE FOR CONTROL OF MOSQUITOES

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Space Treatment (Fog)	0.0%	0.1%	3.0%*
We don't use pyrethrin ULV treatments for mosquitoes	59.5%	59.8%	59.5%

82. PYRETHRIN USE IN A MECHANICAL AEROSOL GENERATOR/ PRESSURIZED AIR SYSTEM (for example, ACTISOL) FOR CONTROL OF MOSQUITOES

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Space Treatment (Fog)	0.0%	0.1%	2.7%*
Void	0.0%	0.1%	0.0%
We don't use this type of equipment with pyrethrins to control mosquitoes	95.8%	96.1%	84.3%

83. PYRETHRIN LIQUID IN BACKPACK FOR CONTROL OF MOSQUITOES

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Broadcast (general treatment)	N/A	N/A	3.0%*
Crack and Crevice	N/A	N/A	2.9%*
Perimeter (continuous band)	N/A	N/A	2.9%*
Spot	N/A	N/A	2.7%*
We don't use pyrethrin formulations to control mosquitoes	N/A	N/A	96.0%

(*represents one company of almost 20 people and one or two very small (1 person) companies). This pattern is repeated in the mosquito data.)

USE OF PYRETHROIDS FOR CONTROL OF FLIES IN RESIDENTIAL SETTINGS

84 PYRETHRIN AEROSOL USE TO CONTROL FLIES

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Broadcast (general treatment)	22.8%	12.7%	19.5%
Crack and Crevice	12.2%	19.5%	15.4%
Foaming	2.7%	5.2%	2.7%
Perimeter (continuous band)	2.7%	7.8%	11.5%
Spot	12.2%	32.4%	27.8%
Void	12.1%	16.7%	7.9%
We do not use aerosol pyrethroids to control flies	21.3%	9.2%	9.5%

85. PYRETHROID LIQUID IN A MANUALLY PRESURIZED HANDWAND (for example, B&G) FOR CONTROL OF FLIES

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Broadcast (general treatment)	10.1%	19.7%	16.0%
Crack and Crevice	12.2%	21.9%	54.2%
Foaming	2.7%	2.9%	2.9%
Perimeter (continuous band)	9.9%	20.2%	49.7%
Spot	12.1%	36.6%	66.1%
Void	12.1%	20.0%	8.2%
We do not use pyrethroid in this type of equipment to control flies	19.2%	17.9%	17.6%

86. PYRETHROID USED IN AN ULV MACHINE FOR THE CONTROL OF FLIES

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Space Treatment (Fog) including in attic areas	24.8%	30.4%	14.3%
Other	9.9%	10.1%	2.7%
Specifically to treat attics (separate from Space Treatment in this same section)	N/A	36.0%	N/A
We do not use pyrethroid ULV treatments for fly control	19.9%	20.9%	20.7%

87. PYRETHROID USED IN A MECHANICAL AEROSOL GENERATOR/ (Actisol) FOR CONTROL OF FLIES

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Space Treatment (Fog)	2.6%	17.9%	3.3%
Void	2.6%	13.5%	3.3%
We do not use this type of equipment for fly control	80.0%	81.1%	80.8%

88. PYRETHROID LIQUID IN A BACKPACK TO CONTROL FLIES

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Broadcast (general treatment)	N/A	N/A	8.9%
Crack and Crevice	N/A	N/A	49.3%
Perimeter (continuous band)	N/A	N/A	44.8%
Spot	N/A	N/A	48.6%
We do not use backpacks with pyrethroids for control of flies	N/A	N/A	51.7%

USE OF PYRETHRINS FOR CONTROL OF FLIES IN RESIDENTIAL SETTINGS

89. PYRETHRIN AEROSOL USE FOR CONTROL OF FLIES

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Crack and Crevice	12.2%	27.8%	12.0%
Space Treatment (Fog)	24.2%	36.6%	14.6%
Void	12.5%	23.9%	4.5%
We do not use aerosol pyrethrins to control flies	15.6%	4.8%	15.6%

90. PYRETHRIN LIQUID IN A MANUALLY PRESURIZED HANDWAND (for example, B&G) FOR THE CONTROL OF FLIES

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Broadcast (general treatment)	9.9%	16.0%	10.5%
Crack and Crevice	12.8%	17.0%	14.6%
Perimeter (continuous band)	10.5%	15.1%	10.2%
Spot	24.1%	16.6%	13.0%
Void	9.9%	16.0%	7.9%
We do not use this type of equipment with pyrethrin formulations to control flies	64.0%	63.8%	63.4%

91. PYRETHRIN TOTAL RELEASE AEROSOL (CAN FOGGER) FOR FLY CONTROL

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Space Treatment (Fog)	2.2%	8.4%	N/A
We do not use pyrethrin total release foggers to control flies	53.5%	54.3%	100.0%

92. PYRETHRIN USED IN A ULV MACHINE FOR CONTROL OF FLIES

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	**indoor soft**	**indoor hard**	**outdoors**
Space Treatment (Fog)	4.0%	19.9%	2.9%
We do not use pyrethrin total release fogger for fly control	41.4%	41.5%	41.9%

93. PYRETHRIN USE IN MECHANICAL AEROSOL GENERATOR/ PRESSURIZED AIR SYSTEM (for example, ACTISOL) FOR THE CONTROL OF FLIES

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Space Treatment (Fog)	6.5%	19.0%	4.0%
Void	3.2%	12.5%	3.2%
We do not use pyrethrins with this equipment for fly control	42.7%	43.7%	42.7%

94. PYRETHRIN LIQUID USE IN BACKPACK SPRAYER FOR THE CONTROL OF FLIES

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Broadcast (general treatment)	N/A	N/A	8.6%
Crack and Crevice	N/A	N/A	13.4%
Perimeter (continuous band)	N/A	N/A	8.8%
Spot	N/A	N/A	13.7%
We do not use pyrethrin formulations in a backpack to control flies	N/A	N/A	51.2%

USE OF PYRETHROIDS FOR THE CONTROL OF STINGING INSECTS IN RESIDENTIAL SETTINGS

95. PYRETHROID AEROSOL USE FOR CONTROL OF STINGING INSECTS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Crack and Crevice	17.4%	56.6%	76.8%
Foaming	7.2%	11.1%	16.7%
Spot	12.7%	19.7%	64.8%
Void	6.5%	58.2%	55.5%
We do not use aerosol pyrethroids to control stinging insects	5.6%	4.2%	3.3%

96. PYRETHROID LIQUID IN A MANUALLY PRESURIZED HANDWAND (for example, B&G) FOR CONTROL OF STINGING INSECTS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Broadcast (general treatment)	11.1%	14.8%	27.8%
Crack and Crevice	13.7%	56.3%	64.0%
Foaming	2.7%	5.3%	9.7%
Spot	13.7%	35.4%	70.5%
Void	12.5%	55.0%	64.6%
We do not use pyrethroid formulations in this equipment for control of stinging insects	5.0%	5.6%	4.6%

97. PYRETHROID USED IN A ULV FOR CONTROL OF STINGING INSECTS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Space Treatment (Fog)	4.9%	8.5%	3.9%
We do not use pyrethroid ULV treatments to control stinging insects	52.7%	53.2%	41.1%

98. PYRETHROID USED IN A MECHANICAL AEROSOL GENERATOR/ PRESSURIZED AIR SYSTEM (for example, ACTISOL) FOR STINGING INSECTS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Space Treatment (Fog)	5.3%	7.9%	10.8%
Void	3.2%	13.5%	7.8%
We do not use this type of equipment with pyrethroids to control stinging insects	47.1%	47.4%	47.1%

99. PYRETHROID FOAM FOR THE CONTROL OF STINGING INSECTS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Crack and Crevice	12.2%	14.6%	70.7%
Spot	12.8%	13.3%	69.5%
Void	12.1%	13.4%	53.9%
We do not use pyrethroid foam formulations to control stinging insects	27.2%	27.2%	24.6%

100. PYRETHROID LIQUID USED IN A BACKPACK FOR CONTROL OF STINGING INSECTS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Broadcast (general treatment)	N/A	N/A	7.8%
Crack and Crevice	N/A	N/A	12.5%
Spot	N/A	N/A	13.4%
We do not use pyrethroid formulations in a backpack to control stinging insects	N/A	N/A	51.4%

USE OF PYRETHRIN FOR THE CONTROL OF STINGING INSECTS IN RESIDENTIAL SETTINGS

101. PYRETHRIN AEROSOL USE FOR CONTROL OF STINGING INSECTS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Crack and Crevice	6.8%	14.0%	35.0%
Space Treatment (Fog)	6.6%	5.9%	15.6%
Spot	5.0%	25.6%	41.5%
Void	6.6%	16.0%	18.9%
We do not use pyrethrin aerosols to control stinging insects	3.2%	2.0%	0.9%

102. PYRETHRIN IN A MANUALLY PRESURIZED HANDWAND (for example, B&G) FOR CONTROL OF STINGING INSECTS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Broadcast (general treatment)	11.2%	12.1%	26.2%
Crack and Crevice	12.7%	17.3%	27.5%
Foaming	5.0%	3.2%	5.3%
Spot	5.6%	22.2%	35.4%
Void	12.7%	19.3%	23.9%
Other	7.2%	7.2%	7.3%
We do not use this equipment with pyrethrin formulations to control stinging insects	47.0%	45.8%	44.7%

103. PYRETHRIN TOTAL RELEASE AEROSOL (CAN FOGGER) FOR CONTROL OF STINGING INSECTS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Space Treatment (Fog)	4.9%	2.9%	N/A
We do not use pyrethrin total release foggers to control stinging insects	94.5%	94.7%	N/A

104. PYRETHRIN IN ULV MACHINE FOR CONTROL OF STINGING INSECTS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Space Treatment (Fog)	6.1%	5.2%	2.7%
We do not use pyrethrin ULV treatments for stinging insects	55.6%	55.9%	55.6%

105. PYRETHRIN IN A MECHANICAL AEROSOL GENERATOR/ PRESSURIZED AIR SYSTEM (for example, ACTISOL) FOR CONTROL OF STINGING INSECTS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Space Treatment (Fog)	2.6%	5.2%	2.7%
Void	3.2%	9.5%	7.6%
We do not use pyrethrins in this equipment to control stinging insects	41.7%	46.1%	46.3%

106. PYRETHRIN LIQUID WITH FOAMING AGENT STINGING INSECTS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Crack and Crevice	2.2%	7.5%	7.3%
Spot	2.7%	3.3%	8.9%
Void	2.2%	4.2%	8.4%
We do not use pyrethrin foam to control stinging insects	49.9%	50.0%	41.6%

107. PYRETHRIN Small Dusters - Bulb, Bellows, Squeeze Bottle and Small Battery Powered Applicator FOR CONTROL OF STINGING INSECTS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Broadcast	2.9%	3.0%	3.2%
Crack and Crevice	14.4%	65.6%	71.8%
Spot	12.2%	52.4%	61.4%
Void	13.1%	55.0%	60.8%
We do not use pyrethrins in small dusters to control stinging insects	34.9%	21.9%	19.7%

108. PYRETHRIN DUST USED IN A PLUNGER DUSTER FOR CONTROL OF STINGING INSECTS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Crack and Crevice	2.7%	3.7%	7.9%
Spot	2.7%	3.7%	7.9%
Void	2.7%	3.7%	8.4%
We do not use pyrethrins in plunger dusters for stinging insect control	55.9%	56.1%	55.8%

109. PYRETHRIN DUST USED IN A POWER DUSTER (electric) STINGING INSECTS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Crack and Crevice	7.3%	7.5%	14.6%
Void	7.9%	8.1%	14.4%
We do not use power duster with pyrethrins to control stinging insects	48.3%	49.0%	48.7%

110. PYRETHRIN LIQUID USED IN A BACKPACK FOR CONTROL OF STINGING INSECTS

Number of technicians on which data collected for this section = 694	Treatment Surface		
Type of application	indoor soft	indoor hard	outdoors
Broadcast (general treatment)	N/A	N/A	3.3%
Crack and Crevice	N/A	N/A	8.8%
Spot	N/A	N/A	9.8%
We do not pyrethrins in backpacks to control stinging insects	N/A	N/A	90.8%

Other question for Which CPMA Collected Data from Members and Nonmembers

111. Crack and Crevice Treatments - Members were asked to choose which description from the following options best describes how they typically treat cracks and crevices. They had to choose at least one answer and were instructed to choose all opitons that applied.

Value	Count	Percent
NONE - dont treat cracks and crevices	0	0.0%
Spray is directed into cracks and crevices	33	94.3%
Also treat baseboards	21	60.0%
Also treat sections of floor and wall	10	28.6%
Other (please specify)	3	8.6%

111. part 112. "Other" is described.

Aim for target pest entry, exit or home
Pipe chases, heat pipes
some of the baseboard may be treated.

Total Responses	35

113.**PERIMETER TREATMENTS - Typical WIDTH OF BAND for perimeter treatments. in feet.**

DEFINITIONS:

PERIMETER TREATMENT - Applying a band of product (e.g., to the exterior of a home or the interior walls or floor of a room.) -

I**NDOOR PERIMETER -** The treatment of the perimeter of a room at the floor/wall junction (i.e., not a broadcast application across the entire floor.) -

OUTDOOR PERIMETER - The treatment of the foundation perimeter of the building.

	Average Size of Band in Feet	Standard Deviation	Responses #
Indoor Perimeter Treatment - Ants	0.67	±0.91	34
Indoor Perimeter Treatment - Roaches	0.40	±0.43	34
Indoor Perimeter Treatment - Bed Bugs	0.64	±0.52	33
Indoor Perimeter Treatment - OTHER	0.31	±0.45	33
Outdoor Perimeter Treatment - Ants	2.12	±2.25	34
Outdoor Perimeter Treatment - Cluster flies	1.85	±2.74	34
Outdoor Perimeter Treatment - OTHER	0.99	±1.6	33

113. Part 114. "Other" pests considered for Indoor perimeter treatment.

Count	Response
1	As Directed on Label
1	EARWIGS
1	carpet beetle
1	earwigs
1	fleas
2	silverfish
1	sow bugs
1	spiders
1	stored product pests

115. "Other" pests considered for Outdoor Perimeter treatment above.

Count	Response
1	As Directed on Label
1	EARWIGS
1	Earwigs, Millipedes
1	centipedes
2	earwigs
1	sow bugs
1	sowbug
1	spiders
1	weevils
1	worms

116. Topic - SPOT TREATMENT DEFINITION

Respondants defined the typical square footage of each individual spot treatment

	Average Square Feet (Sq. Ft.)	Standard Deviation	Number of Responses
Indoor	1.85	±1.53	32
Outdoor	3.11	±3.01	32