



# MEMO

**TO:** Bill Johnson **DATE:** March 15, 2002  
**FROM:** Kelly D. Moran **PROJECT:** 33a  
**SUBJECT:** Shelf Surveys at Orchard Supply Hardware and Home Depot

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On March 7 and 13, I visited two major pesticide retailers in the San Francisco Bay Area (Orchard Supply Hardware in Foster City and Home Depot in San Mateo) to survey insecticide products available for sale. These informal shelf surveys focused on identification of the products coming on the market to replace diazinon and chlorpyrifos. I obtained product brand name, insecticide active ingredient, formulation type, and application location<sup>1</sup> for insecticides. I omitted all non-chemical insect controls, all baits, and all diazinon products from the survey. I also omitted soaps, neem extract, and oils. This was a wintertime survey, so the selection of lawn care products was relatively smaller than previously observed during summer and fall surveys.

In general, the nature of the insecticide product mix has changed substantially since I last surveyed the shelves of these stores a little over a year ago (December 2000<sup>2</sup>). Major findings were:

- Diazinon and chlorpyrifos phase out is evident. All chlorpyrifos products were gone as were most diazinon products. Remaining diazinon products included concentrates, granules and dusts in small and large quantities. The dusts were especially surprising, as these dust products—including the large quantity product in a 5-pound bag—were not previously observed. Some products were accompanied by shelf talkers saying “Looking for Dursban?” and recommending the product as a replacement.
- Brand mix has changed. Ortho had substantially reduced shelf space at both stores. At one store, it was replaced by a new display of least-toxic controls and additional shelf space for the Bayer Advanced brand. At the other store, Real-Kill and Spectracide products were the primary replacements.
- Formulation mix has changed. The most important change was that there were far more dusts and far fewer granules. Foggers have also obtained much more shelf space in the last year. At one store, there were fewer concentrate products and more shelf space was devoted to ready-to use products (both hand pump liquids and aerosol cans); however, this change was not observed at the other store. Some of these observations may be seasonal.
- Application instructions on new products are similar to instructions on diazinon and chlorpyrifos products. Many products had “band around the structure”

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<sup>1</sup> Application location was not obtained for aerosols and foggers.

<sup>2</sup> Described in *Diazinon & Chlorpyrifos Products: Screening for Water Quality Implications*, TDC Environmental, May 15, 2001.

- application instructions. All formulations were also available for applications on lawns and ornamental landscaping. Many products have instructions for indoor applications, also similar to those observed for now phased out chlorpyrifos products. Several liquid and dust products that appear to be intended primarily for other uses also had instructions for applications directly to dogs and cats.
- Use of synergists was much less than anticipated. Only six products at each store contained one of the two observed synergists (PBO and n-octylbicycloheptene dicarboximide). None of these products was labeled for outdoor structural pest control or lawn uses; only two were outdoor use products (for ornamental landscaping). Ten of the 12 products with synergists were foggers or aerosols. One fogger product and one flea shampoo contained both synergists. Four of five products with pyrethrins contained synergists. Other active ingredients in products with synergists were allethrin, permethrin, S-methoprene, prallethrin, esfenvalerate, tetramethrin, and phenothrin.

On the basis of the results of the previous related study,<sup>3</sup> the most important products from a water quality perspective are those:

- Sold in containers with larger volumes of active ingredient
- Concentrates (require mixing, more active ingredient per container)
- With application instructions for “band around structure” and lawn applications.

Products of lower water quality concern are:

- Containerized baits
- Aerosols (because they have a small volume of active ingredient)
- Products with limited application locations in landscaping (*e.g.*, products specifically for roses)

A total of about 60 products meeting the survey criteria were on sale at each store, some in multiple container sizes. The products contained 27 individual insecticide active ingredients (two of which are simply selected stereoisomers of other insecticides, for a total of 25 different substances) and two synergists. All ready-to-use liquid were in volumes of 24 ounces or more; most also were available in 128-ounce size. No concentrates were observed in volumes greater than 32 ounces. Dusts and granules were in 1-pound shaker cans and in 5 and 10 pound bags.

Attached tables summarize the active ingredients, formulations, and sites of use most important for water quality purposes. The tables show a relatively large number of active ingredients are replacing diazinon and chlorpyrifos in retail insecticides. Most of these ingredients are from a family of insecticides known as “pyrethroids.” Because these insecticides have similar chemical structures and a common mode of action, it is likely that they will have cumulative effects in the environment.

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<sup>3</sup> *ibid*

## Ingredient Analysis: Home Depot Survey March 13, 2002

Active Ingredient	Structure			Number of Observed Products								
	Outdoors	Lawn	Indoor non-aerosol	Grand Total	Aerosol Only	Dust	Granule	Concentrate	Fogger	RTU Liquid	Fertilizer	Foam
Acephate	2	1		5				3				
Allethrin				8	X							1
Bifenthrin	2	2	2	4				1		2	1	
Carbaryl		1		1				1				
Cyfluthrin	2	2		3			1	1		1		
Cypermethrin				1	X							
Dimethoate (being cancelled)	1			1				1				
Disulfoton				1			1					
Esfenvalerate	1	1		1				1				
Imidacloprid				2				1		1		
Imiprothrin				1	X							
Malathion	2	1		2				2				
Mint Oil				2	X							
Nylar			1	1							1	
Permethrin	6	3	4	16		2	2	3	4	2		
Phenothrin/Sumethrin			1	7		1						
Pyrethrins			2	6					1	3		
Resmethrin				3	X							
S-Methoprene				1	X							
Tetramethrin				5					1			
Tralomethrin	1		3	8					2	1		1
<b>Synergist</b>												
n-octylbicycloheptene dicarboximide			1	4					1	1		
PBO			1	4						2		

## Ingredient Analysis: OSH Survey, March 7, 2002

Active Ingredient	Number of Observed Products					Aerosol Only	Dust	Granule	Concentrate	Fogger	RTU Liquid
	Structure-Outdoors	Lawn	Indoor non-aerosol	Total excluding aerosols	Grand Total						
Acephate	0	1	0	3	4				3		
Allethrin/D-Trans Allethrin	0	0	0	0	8	X					
Bifenthrin	2	2	1	3	3				1		2
Boric Acid	0	0	0	1	1				1		
Carbaryl	1	2	1	3	3		1		1		1
Cedar oil	0	0	0	0	1	X					
Cyfluthrin/Beta Cyfluthrin	6	4	1	8	8			2	2		3
Cypermethrin	0	0	1	1	3					1	
Disulfoton	0	0	0	2	2			2			
Esfenvalerate	2	1	0	2	3				1		1
Hydramethylnon	1	0	0	1	1			1			
Imidacloprid	0	0	0	3	3				2		1
Imiprothrin	0	0	0	0	2	X					
Malathion	1	0	0	1	1				1		
Mint oil	0	0	0	0	1	X					
S-Methoprene	0	0	1	1	1					1	
Permethrin	4	3	7	12	16		2	2	3	3	2
Phenothrin	0	0	0	0	4	X					
Prallethrin	0	0	0	0	1	X					
Pyrethrins	0	0	2	3	4					2	1
Resmethrin	0	0	0	0	2	X					
Tetramethrin	0	0	1	1	3					1	
Tralomethrin	1	0	1	1	3						1
<b>Synergist</b>											
n-octylbicycloheptene dicarboximide	0	0	2	2	4	X					
PBO	0	0	1	2	3						1