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Shelf Survey Of Home Use Products In Sacramento And Contra Costa Counties, 2003.

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In spring 2003, we conducted a survey of home and garden pesticide use products available on shelves in northern California as part of a larger study on residential pesticide use in California; this project was partially funded by California Department of Pesticide Regulation Contract 01-0219C. In conducting this survey, we were interested in finding out about the range of pesticide choices consumers had at different types of stores. We were also interested in looking at the availability of information on pesticide safety, environmental and health hazards associated with pesticides and IPM or alternative pest management practices in retail establishments.

Procedures

We tallied pesticide products in 28 stores in Sacramento and Contra Costa Counties. Surveys were carried out between February 15 and March 7, 2003. An informal phone survey of stores indicated that their complete line of spring products was on the shelves by that time. The actual surveys were carried out by Christine Joshel of the UC Office of Pesticide Information & Coordination, who has a great familiarity with pesticide products.

In each of the two counties we sampled 14 stores of the following types:

- 2 large home supply stores (Home Depot, Lowes)
- 2 large superstore-type grocery or drug stores
- 3 discount department stores (WallMart, Target, KMart)
- 3 hardware stores
- 4 retail nurseries.

Although the results of our earlier phone survey of residents in these counties (available at http://www.cdpr.ca.gov/docs/sw/contracts/ncalifsurvey_1.pdf) confirmed that the largest share (about half) of products is purchased at home supply stores, we wanted to investigate the store-type differences. There are many independent retail nursery and hardware stores that stock a variety of types of products.

At each store, we noted all registered pesticides except products for application on pets or insect repellents for humans and disinfectants. Active ingredient, trade name, formulation, EPA registration number, and registrant were noted for every product on the shelf of each store. We also counted the number of products in each store, the shelf space devoted to pesticide products and the range of products carried by the store. We also noted if the store had any special displays related to pesticide safety, safer alternatives or potential environmental/health problems or IPM. As an informal survey of employee awareness of pest control products and potential problems, an employee of each store was asked the following question:

“Can you help me? I’m looking for a product to control ants crawling along my sidewalk and I want a product that would be least toxic to my dog?”

The response was rated as (1) Not Knowledgeable, (2) Knowledgeable, or (3) Very Knowledgeable.

Results

Number of products

We recorded 568 different home use pesticide products among the 28 stores; 26 of these no longer had active registrations. These products included 112 active ingredients (plus 5 additional active ingredients no longer registered for home use). Many products contained the same active ingredient. For instance, 78 different products contained permethrin. Talomethrin, metaldehyde, dicamba, pyrethrin and glyphosate each were the active ingredients in 25 to 32 products. Diazinon, which used to be the most common insecticide in home use products but is now being phased out, was the active ingredient in only 13 products. Sixty-four different registrants were represented.

Formulation

Ready-to-use products were most common. 122 products were ready-to-use squirt bottles or already mixed in other application devices. Another 86 products were aerosol sprays (including wasp nest treatments) or foggers that are also essentially ready-to-use. The third most common formulation—granules—the fifth most common formulation—pellets—also require no mixing. Aqueous concentrates (AC), emulsifiable concentrates (EC), flowable concentrates (FC), and wettable powders (WP) together accounted for 143 different products. These products are a special concern for water quality because users often mix up too much and dispose of leftovers in gutters, sinks or drains. A complete list of formulations of the currently registered products is given below:

Table 1. Formulation of Active Products found in 2003 Survey

Formulation	Number of products
Ready-to-use (RTU)	122
Spray/fogger	86
Granule	84
Aqueous concentrate (AC)	64
Pellet	48
Emulsifiable concentrate (EC)	48
Flowable concentrate (FC)	28
Dust	25
Gel Paste	9
Bait Station	6
Oils	6
Pest strips	3
Wettable powder	3
Implants	2
Other	8

Inactive Products

Ten of the 28 stores we surveyed had inactive products on their shelves. These included 7 out of 8 retail nurseries surveyed, 2 out of 6 hardware stores surveyed and one out of the 4 home supply stores surveyed. We found no inactive products in groceries, drug stores or discount department stores. We suspect the independent retail nurseries and hardware stores have less turnover of stock and less tight inventory control than the large chain supermarkets and discount department stores. Twenty-six inactive products were found. Most contained active ingredients still active in other products. However, we also found products containing captan, rotenone, endosulfan, and diuron; none of which have products currently active for residential use. California Code of Regulations, title 3, Division 6, Section 6301 states that stores can sell existing stocks of most products for two years after the last date of registration; however, 19 of these products had been active for more than two years and the chlorpyrifos product was required to be removed from shelves by 12/31/01. Table 2 includes a list of the inactive products found in the survey.

Table 2. Inactive Home Use Products found in Store Surveys in 2003

Trade Name	Active Ingredient	EPA #	When became inactive
Safer Brand Surefire Concentrate Grass & Weed Killer	Glufosinate	270-317-AA-42697	2001
Cooke Fast Kill Weed & Grass Killer	Diquat	802-582-ZA-909	1993*
Dexol Grass-Out! Systemic Grass Killer (2 stores)	Fluazifop	2217-751-AA-192	12/2000*
Ortho Home Orchard Spray	Captan	239-568-ZA	12/2001
Dexol Vegetable Insect Killer	Pyrethrins	198-144-ZB	12/1998*
Green Light Borer Killer II	Chlorpyrifos	869-172-AA	12/2001#
Lilly/Millar Noxall Vegetation Killer	Prometon	802-533-AA	12/1999*
Spectracide Mole Stop Mole Repellent Spray Concentrate	Castor oil	8845-30001-AA	12/2000*
Cooke Non-Selective Weed Killer Granules	Diruon	802-352-ZA-909	12/1995*
Cooke Spurge, Oxalis & Dandelion Killer (2 stores)	Dicamba, 2,4-D, mcpp	802-485-AA-909	12/2000*

(Table 2 continues)

Cooke Weed & Grass Preventer (2 stores)	Oryzalin	802-564-AA-909	12/1998*
Eaton's All Weather Bait Bitz-Formula D	Diphacinone	56-55-AA	12/1995*
Black Flag Flea Ender Spray I	Phenothrin/tetramethrin	475-220-ZD	12/1996*
Cooke Pursue Roach & Crawling Insect Killer	Pyrethrin	33176-17-AA-909	12/1990*
Safer Brand Wasp & Hornet Killer	Phenothrin, tetromethrin	40849-4-AA-42697	12/1997*
Safer Brand Weed & Grass Killer	Potash soap	42697-22-ZE	12/2000*
Ortho Rotenone Dust or Spray	Rotenone	239-690-AA	12/1993*
Ortho Outdoor Insect Fogger	Resmethrin	239-2421-ZA	12/2000*
Cooke Vegetation Killer	Prometon	802-533-AA-909	12/2001
Cooke Daconil	Chlorothalonil	909-95-AA	12/2001
Monterey Bravo Flowable Fungicide	Chlorothalonil	505340161-AA-54705	12/2001
Ortho Ant-Stop Ant Killer Spray	Phenothrin, tetramethrin	239-2524-ZA	12/1998*
Cooke Garden Insect Spray containing Thiodan	Endosulfan	802-516-AA-909	12/2000**
Concern Pesticidal Oil	Canola oil	67702-4-AA-50932	4/2001
Weed Prevention Plus	Corn gluten meal	50932-50001-AA	12/2000*
Poast	Sethoxydim	7969-58-AA-54705	12/1998*

*Products found on shelves more than 2 years after last active date of registration.

#Home use chlorpyrifos products were to be removed from shelves by 12/31/01.

Variations among store types

Hardware stores had the greatest number of different products; these stores featured full lines of both garden products and indoor products. Home supply and retail nurseries also had a good variety of products. Nurseries primarily carried pesticides for garden/landscape pest problems, so although they had fewer products than hardware stores, they often featured the greatest variety of garden products, including the best selection of least toxics. Discount department stores, groceries and drugs had significantly fewer products than most hardware, nursery or home

supply stores. Grocery and drug stores tend to focus their stock more on products for indoor and nuisance pests.

Table 3. Average number of products carried by each store type.

Store Type	# stores of type surveyed	Mean # products	range
Hardware	6	122.5	74-166
Home Supply	4	109	93-118
Retail Nursery	8	90	45-131
Grocery/Drug	4	70	50-99
Discount Dept.	6	65.2	37-78

When given the test question about managing ants around pets, we found that staff at hardware stores tended to be most knowledgeable about pesticides and alternatives, although staff at retail nurseries and home supply stores were also knowledgeable. Employees at discount department stores, groceries and drug stores had little knowledge of pest control products or their hazards. All the hardware stores, six out of eight retail nurseries and half the home supply stores (Lowe's) carried handouts related to environmentally sound alternatives.

Table 4. Knowledge level of Employees and handouts on alternatives by store type.

Store type	# stores	Mean knowledge rating*	Handouts on alternatives?
Hardware	6	2.83 very knowledgeable	Yes in 6 of 6 stores
Home supply	4	2 knowledgeable	Yes in 2 of 4 stores
Retail Nursery	8	2 knowledgeable	Yes in 6 of 8 stores
Grocery/Drug	4	1.25 not knowledgeable	None in any stores
Discount Dept.	6	1.12 not knowledgeable	None in any stores

*Ratings were based on a scale of 1 to 3 with 1 being not knowledgeable and 3 being very knowledgeable.

Discussion

The California consumer has a rather daunting range of choices in home use pesticide products. In our survey of 28 stores, we found 542 different active products containing 112 active ingredients (plus 26 additional products that no longer have active registrations). Consumers have few resources to help them distinguish between this large array of products, active ingredients and formulations. Although some stores had handouts about pesticide safety, disposal or safer alternatives; these information sheets did not provide much guidance in helping to choose specific products for many pest problems. We found employees in most hardware stores and many nurseries and home supply stores helpful, although not familiar with every product. Consumers purchasing in grocery stores, drug stores or discount department stores are

unlikely to be able to get any knowledgeable assistance when selecting pesticides. In the telephone survey that was carried out in conjunction with this survey, we learned that the top 4 sources of information consumers used when choosing a pesticide product were “word of mouth”, product labels, store employees and advertisements. We question whether these sources are enough to allow consumers to make good choices, especially in stores with no trained staff.

Registrants have not made it easy for consumers to find out about their products prior to purchase. Labels and MSDS sheets for agricultural pest control products are readily available on the web for viewing by users. However, when we checked the web sites of 33 registrants who had them, only 10 (or less than a third) included copies of labels or MSDS sheets. The other 23 web sites were devoted entirely to marketing and ordering information.

In addition to active ingredient choices, consumers also have a wide range of product formulations to choose from. Of most concern from a water quality point of view are the concentrates, which make up slightly more than a quarter of the products in our survey. These products are often mixed up in larger quantities than necessary with the remainder poured down the gutter or drain. They are often also improperly mixed or used at too high concentration. Granules or pellets may also be a hazard if washed into gutters or waterways. The products probably least likely to get into waterways are ready-to-use products or sprays, foggers and enclosed baits or impregnated products which made up about 42% of the products on the shelves. We have no data on how much of each product is sold, so can make no estimate of the total market share for each product type.

Consumers looking for the widest range of all types of pesticide products are likely to find them in hardware stores. However, retail nurseries often have an even greater variety of garden products and “less toxic” materials. Most of the retail nurseries (and several of the hardware stores) we surveyed were independently owned stores, so there were significant differences between stores in terms of products (numbers of products stocked ranged from 45 to 131), knowledge of staff, and available information. The two large home supply chains—Home Depot and Lowes—had a surprisingly large variety of products and have begun to offer more pest control information to consumers in recent years.. However, they are still less likely to include innovative alternatives in their product lines. For instance, none of these stores had a *Bacillus thuringiensis* kurstaki product for controlling caterpillars, whereas most nurseries and many hardware stores carried 3 or more different Bt products for caterpillar control.

We found 26 inactive products on the shelves; this represented about 4.5% of the products recorded in our survey. A little over a third of the stores had inactive ingredients with more retail nurseries and hardware stores having inactive products than other store types. Although stores can legally sell existing stocks of products for two years after products become inactive, more than 75% of these products had remained on shelves beyond the legal limit.. Eleven of these 26 products had had their registrations inactivated for four years or more. The California Department of Pesticide Regulation may want to look into the long time that some of these products remain available. Is there any routine monitoring of products in home use pesticide stores?

Training and certification programs for retail staff and informative, non-biased handouts on how to make better decisions would greatly improve consumers' ability to make good choices. Also, requiring registrants to put labels and MSDS sheets on the web for consumer viewing would be very helpful. However, even with improvements in information resources, a lot of responsibility will remain on untrained consumers—who may be applying materials that require a license to apply in an agricultural situation. The limited knowledge of consumers should be considered when making registration and labeling decisions for home use products.

Although this shelf survey gives us some insight into the range of products available to consumers in northern California, it gives us no information on how much of these products is purchased or applied. There are no public records of residential pesticide use in California, making it difficult to track potential impacts and direct educational activities. The California Department of Pesticide Regulation should consider requiring stores to make a monthly report of pesticide products sold. This could be done through tracking of bar codes.