

# Broken Trust:

How Cal-EPA has Kept  
Californians in the Dark about  
66 Reproductive Toxins

August 6, 1997



Californians for Pesticide Reform

**CALPIRG Charitable Trust**  
**Natural Resources Defense Council**

# **Broken Trust: How Cal-EPA has Kept Californians in the Dark about 66 Reproductive Toxins**

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## **About Californians for Pesticide Reform**

Californians for Pesticide Reform (CPR) is a coalition of public interest organizations committed to protecting public health and the environment from pesticide proliferation. The coalition's mission is to hold government agencies accountable to protecting public health and Californian's right to know about pesticide use and exposure; eliminate the use of the most dangerous pesticides in California and reduce over-all pesticide use; and educate Californians about environmental and health risks posed by pesticides.

Action Now, Bay Area Action, Beeline Associates, Biological Urban Gardening Service, California Coalition for Alternatives to Pesticides, California Communities Against Toxics, California Indian Basketweavers Association, California League of Conservation Voters, California Nurses Association, California Public Interest Research Group Charitable Trust, California Rural Legal Assistance Foundation, Center for Environmental Health, Center for Ethics and Toxics, Center for Marine Conservation, Center for Urban Agriculture at Fairview Gardens , Citizens for a Toxic Free Marin, Clean Water Action, Consumer Attorneys of California, Earth Island Institute, Ecology Action, Ecology Center, Ecology Task Force-Southern CA Ecumenical Council of Churches, Endangered Habitats League, Environmental Defense Center, Environmental Defense Fund, Environmental Law Foundation, Environmental Working Group, Food First/Institute for Food and Development Policy, Foundation for Advancements in Science and Education, Greenpeace , Group for Alternatives to Spreading Poisons, Health and Habitat, Klaire Laboratories, Inc., Klamath Forest Alliance, Madres del Este de Los Angeles / Santa Isabel, National People's Campaign, Natural Resources Defense Council, Northcoast Environmental Center, People for Healthy Forests, Pesticide Action Network, Pesticide Education Network, Pesticide Watch, Physicians for Social Responsibility L.A., Physicians for Social Responsibility, San Francisco-Bay Area Chapter, Planning and Conservation League, Political Ecology Group, San Francisco BayKeeper, San Francisco DeltaKeeper, Silicon Valley Toxics Coalition, Sustainable Cotton Project, TRAC -The Transnational Resource and Action Center, Urban Habitat, Volunteers for a Health Valley, Willits Environmental Center, Women's Cancer Advocacy, Resources & Education, Women's Cancer Resource Center, Women's Environment and Development Organization (WEDO),

## **About the CALPIRG Charitable Trust**

The CALPIRG Charitable Trust is the 501(c)(3) sister organization of the California Public Interest Research Group (CALPIRG), the state's leading public interest watchdog organization with over 60,000 members and 15 field offices across the state. The Trust contributes research, public education and grassroots organizing to defend the environment, protect consumers and promote government accountability.

## **About NRDC**

NRDC is a non-profit environmental membership organization with over 350,000 members and contributors nationwide. Since 1970, NRDC's scientists, lawyers, and staff have been working to protect the world's natural resources and to improve the quality of the human environment. NRDC has offices in New York, Washington, DC, San Francisco, CA and Los Angeles.

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# Preface

Under counsel of the Natural Resources Defense Council, member organizations of Californians for Pesticide Reform (CPR) filed legal action against Cal-EPA's Office of Environmental Health Hazard Assessment on August 6, 1997 for failure to list 66 toxicants under the state's toxic right to know law. All of the 66 compounds included in the lawsuit have been identified as reproductive or developmental toxins by U.S. EPA; almost all of them are pesticides. While Cal-EPA continues to ignore state law, depriving millions of Californians of their right to know when and where they are exposed to these birth-defect/reproductive disorder causing chemicals, exposure is likely to be widespread, perhaps commonplace. As this report documents, millions of pounds of these toxicants are used every year in California agriculture and are sold to unsuspecting Californians in popular over-the-counter household products.

Unfortunately the use of the non-listed pesticides documented in this report is part of a larger problem of increasing pesticide use in California. Statewide, total pesticide use has gone up 31% between 1991 and 1995 (CDPR Pesticide Use Reports), despite the presence of available alternative pest control practices. Worse, the use of highly toxic carcinogens and reproductive toxins, long known to pose risk to human and environmental health, continue to be widely used; for many, use increases annually.

In the face of this growing proliferation of toxic chemicals, 57 public interest organizations have banded together, forming Californians for Pesticide Reform. Following the lead of many European nations, CPR is committed to turning the corner on pesticide use in California, phasing out the use of the most hazardous toxins and reducing over-all pesticide use wherever possible.

**Get Involved:**

If you're concerned about pesticides used in your homes, schools, parks, offices or in your community, call CPR toll free at 1 888 CPR 4880.

**The California  
Environmental Protection  
Agency has failed to  
adequately protect  
Californians from 66  
chemicals that cause birth  
defects and reproductive  
harm.**

## **Executive Summary**

The Cal-EPA's Office of Environmental Health Hazard Assessment (OEHHA) has failed to protect Californians from 66 toxins that cause birth-defects and reproductive harm. The agency has failed to list these toxins under the jurisdiction of the state's right to know law, the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). By law, OEHHA is required to list under Proposition 65 any carcinogens or reproductive toxins that are so identified by select regulatory agencies, including the U.S. EPA. Although the U.S. EPA identified the 66 toxic chemicals listed here as reproductive toxins in November of 1994, more than two and half years ago, Cal-EPA has yet to list them as such under the state law.

Failure to list these chemicals under Proposition 65 deprives Californians of perhaps their first line of defense against toxic chemical exposure: the right to know. Proposition 65 prohibits any significant exposure of a toxic chemical listed under the Act unless the party causing the exposure provides clear prior warning, such as a product label or posted sign. Warning requirements both enable Californians to avoid exposure, often by choosing safer products or services, and create a powerful incentive for manufacturers to seek safer chemical alternatives. Manufacturers are drawn to safer alternatives because they predict that consumers, once warned, will buy other, less-toxic products. By harnessing these market forces, Proposition 65 is credited for the reformulation of many products and for reducing emissions of listed toxins from industrial facilities across the state.

Proposition 65 also protects California drinking water from contamination by listed carcinogens and reproductive toxins. The law prohibits anyone from allowing significant amounts of these chemicals to enter drinking water sources and imposes steep, enforceable fines for violators.

Because OEHHA has failed to list 66 reproductive toxins under the jurisdiction of the law, Californians are inevitably exposed to these chemicals without their knowledge or consent. Those profiting from their use have little incentive to seek safer alternatives. Finally, Californians have been deprived of their best defense against drinking water contamination by these reproductive toxins. These concerns are magnified by the fact that many of the 66 chemicals are used frequently and in high volumes in California:

- Over 26 million pounds of these toxins were used as pesticides in California in 1995 — one out of every eight pounds of pesticides used in the state during that year.
- Many of the non-listed toxins are commonly used on fruits and vegetables: California carrots, tomatoes, potatoes and rice each receive over one million pounds per year of these non-listed pesticides that cause reproductive harm; these non-listed toxins were used on over 75 different food crops (based on 1995 data).
- Use of the pesticide metam sodium, the most widely used of all the

non-listed toxins, has more than tripled since 1991. In 1995, over 15 million pounds of this toxin were used and released in California. In addition to being a reproductive toxin, this chemical is a "probable human carcinogen."

- Eight of the 66 reproductive toxins are used in 55 household products — many for pet products that may be sources of exposure to children.
- Five of the non-listed pesticides have been implicated for contaminating 541 drinking water wells in California between 1986 and 1992. In 1995 alone, non-listed reproductive toxins warranted 22 actions by Regional Water Quality Control Boards for groundwater contamination.

Exposure to these chemicals may increase risk of physical and mental birth-defects, reproductive disorders, neurological problems and immune system suppression. Pregnant women, children and persons who are frequently exposed may be particularly susceptible to the health effects associated with these toxins. Because these chemicals are so widely used in California, it's likely that many of us have been exposed to them.

By keeping Californians in the dark about 66 reproductive toxins, OEHHA has inevitably contributed to unwitting exposures to these toxins and failed to set in motion incentives to reduce their use. The agency has thus failed to protect the people it purports to represent. It has broken the public's trust.

**Proposition 65 is Californians' first line of defense against toxic chemicals.**

**For over two and half years, OEHHA has failed to list and regulate 66 toxic chemicals under Proposition 65 that have been identified by US EPA to be reproductive toxins.**

## Proposition 65

The Safe Drinking Water and Toxic Enforcement Act, known as Proposition 65, was passed by the voters of California in 1986. The law forbids discharge of "significant" amounts of known reproductive toxins and carcinogens into sources of drinking water; it also requires that any persons using these chemicals provide warning before exposing someone above a specified threshold dose (C.H.S.C. § 25249). The governor of California is required to list which chemicals are "known" reproductive toxins or carcinogens and to update that list every year. This function is carried out by a branch of Cal-EPA known as the Office of Environmental Health Hazard Assessment (OEHHA).

Chemicals are listed under Proposition 65 if they are listed by another so-called "authoritative body." The U.S. EPA is considered to be an authoritative body under Proposition 65. Therefore, when U.S. EPA lists a chemical as a carcinogen or a reproductive toxin, OEHHA must also list that chemical under Proposition 65.

In enacting Proposition 65, the people of California found that hazardous chemicals pose a serious threat to their health and well-being and that state government agencies had failed to provide them with adequate protections. This was the rationale for providing a broad "right-to-know" about toxins in California. Because of Proposition 65, people in

**When U.S. EPA declares a chemical to be a carcinogen or reproductive toxin, Cal-EPA's OEHHA must regulate that chemical under Proposition 65.**

**"... moreover, the adverse effects associated with each of the chemicals being listed today are serious and significant. In some cases the effects are extreme, such as cancer or death. In others, the effects are serious and lasting, including, for example, impairment of a fetus' or an offspring's physical development, neurological effects inhibiting motor abilities or mental processes, or impairing the ability to reproduce. . ."**

California can make more informed choices about which products and services to purchase based on health factors. Proposition 65 has had an even more far-reaching benefit, because companies will often reformulate a product to remove a carcinogen or a reproductive toxin so that they do not have to provide warnings. This has made many consumer products safer for all Californians.

Finally, Proposition 65 has proven more effective than many environmental laws because it enables citizen groups to prosecute violators directly through litigation. The law leaves users of listed toxic chemicals liable for large fines if they are caught exposing persons to listed toxins without providing prior warning or discharging significant amounts of listed toxins to drinking water sources.

### **Cal-EPA Ignores Federal Identification of Reproductive Toxins**

In November of 1994, U.S. EPA published a final rule adding 286 chemicals to the Toxic Release Inventory (TRI) — the federal right to know law that requires industry to disclose emissions and transfers of listed toxic chemicals (U.S. EPA 1995). Like Proposition 65, this federal law has jurisdiction over a list of toxic chemicals -- the federal list is updated and maintained by U.S. EPA. In adding 286 chemicals to the federal list, U.S. EPA identified 66 reproductive toxins which were not yet listed under Proposition 65. Now, two and half years later, OEHHA has still not listed these toxins.\*

The 286 chemicals on U.S. EPA's list are highly toxic. Only those chemicals which are "known or can reasonably be anticipated to cause... serious or irreversible" health effects in humans warrant listing under the federal law (Emergency Planning and Community Right to Know Act 42 U.S.C. § 11023 (d)(2)(B)("EPCRKA")). Health effects which warrant listing include cancer; teratogenic effects; serious or irreversible reproductive dysfunction, neurological disorders, heritable genetic mutations, or other chronic health effects. In the final rule, U.S. EPA clearly states that the 286 chemicals meet these criteria and emphasizes their significant toxicity:

"...moreover, the adverse effects associated with each of the chemicals being listed today are serious and significant. In some cases the effects are extreme, such as cancer or death. In others, the effects are serious and lasting, including, for example, impairment of a fetus' or an offspring's physical development, neurological effects inhibiting motor abilities or mental processes, or impairing the ability to reproduce..." (59 FR 61433)

\*One of 66 compounds, propargite, is listed under Proposition 65 as a carcinogen but not as a reproductive toxin. Because reproductive toxins can pose severe health effects after a single exposure, the law regulates them more stringently than carcinogens, which generally accumulate risk with repeated exposures. Thus exposure levels which are exempted from warning requirements under Proposition 65 are typically significantly higher for carcinogens than for reproductive toxins. For this reason, it is critical that propargite also be listed as a reproductive toxin under the law.

**Although U.S. EPA has known for two and half years that the solvent NMP is toxic to the fetus, the chemical remains "under review" at Cal-EPA's Office of Environmental Health Hazard Assessment.**

## **Footdragging at OEHHA Prevents Listing**

Rather than immediately acting to list chemicals already found by U.S. EPA to be reproductive toxins, Cal-EPA's OEHHA has instead created a bureaucratic morass. The agency claims that it is required under Proposition 65 to re-evaluate each and every study that formed the basis for the U.S. EPA's listing. In addition, OEHHA intends to conduct two successive notice and comment periods to "foster scientific dialogue" over the merit of U.S. EPA's determination.

These actions violate Proposition 65 and eviscerate the purpose of the authoritative body listing mechanism. The imposition of procedural hurdles not authorized by statute or regulation are effectively defeating the intent of the voters who enacted Proposition 65 in 1986.

### Solvent Escapes Regulation

OEHHA's failure to protect the public from these reproductive toxins is perhaps best exemplified by lack of action in regulating NMP or N-methyl-pyrrolidone. In November of 1994, US EPA said in the Federal Register that there is sufficient evidence to establish that exposure to NMP is associated with infertility and fetal toxicity. In fact, EPA said, "the body of evidence supports the finding that NMP is uniquely toxic to the developing fetus."

In January 1996, 14 months after U.S. EPA's action, OEHHA issued notice in the California Register that the agency was considering listing NMP as a reproductive toxicant because of identification by an authoritative body. Five months later, OEHHA's Notice of Intent to List failed to include NMP. Instead there is a footnote indicating that NMP is still "under review." It is now over a year later and there has been no listing.

Meanwhile, use of the chemical is widespread:

- NMP is used in the microelectronics industry, in petroleum refining, and as a paint and varnish stripper.
- NMP is sold over the counter for home use as a solvent, cleaner, and stripper.
- Over 70 million pounds of this chemical are manufactured in the U.S. every year.
- The U.S. EPA estimates that over 2.7 million consumers and over 70,000 workers are exposed to this chemical every year, many of whom reside in California.

**While OEHHA delayed listing pesticides known to be reproductive toxins in 1995, seven of these chemicals contaminated California ground water, warranting 22 regulatory actions by Regional Water Quality Boards.**

**Non-listed Pesticides in Ground Water**

The State of California has determined that at least 541 wells have been contaminated with five of the 66 non-listed reproductive toxins between 1986 and 1992. In 1995, eight non-listed reproductive toxins leached into groundwater California. Seven non-listed toxins warranted 22 regulatory actions by Regional Water Quality Control Boards.

Two non-listed pesticides, diuron and simazine were the source of most detected contamination. These two herbicides alone accounted for all but five of the well poisonings between 1986 and 1992.

Diuron is a reproductive toxin and may cause damage to the developing fetus (New Jersey Department of Health, 1997). The chemical is also suspected to be a mutagen, capable of inflicting genetic damage to living cells. It's ability to cause cancer is inadequately studied.

Simazine is a suspected endocrine disrupter and may cause reproductive toxicity by impairing exquisitely sensitive human hormone systems (Wiles et al, 1994). Because of the toxin's ability to cause cancer in laboratory animals, U.S. EPA initiated cancellation of its use as an algacide in swimming pools, hot tubs and baths in 1994 (U.S. EPA, 1994).

Listing these chemicals under Proposition 65 would make it against the law to allow significant amounts them to enter drinking water. In addition to outlawing this contamination, listing under Proposition 65 would provide Californian's with a means of enforcing the law through citizen litigation.

Sources:

1. For these pesticides, the California Environmental Protection Agency Department of Pesticide Regulation noted either a confirmed detection in groundwater or that preventative action had been taken by the State or Regional Water Quality Control Board regarding contamination with the pesticide. The sources for the well contamination data are California Environmental Protection Agency Department of Pesticide Regulation, *Sampling for Pesticide Residues in California Well Water, 1992 Well Inventory Database, Cumulative Report, 1986-1992*, December 1992 and *Sampling for Pesticide Residues in California Well Water, 1995 Update of the Well Inventory Database*, December 1995.

2. The State concluded that "legal, non-point source agricultural use" of the pesticides contaminated wells. See *Cumulative Report, 1986-1992*, page 21.

3. Number of confirmed detections. See *Cumulative Report, 1986-1992*, page 14.

4. Number of preventative actions taken by the State or Regional Water Quality Control Board regarding contamination with the pesticide. See *1995 Update*, pages 125 to 139.

**Non-listed reproductive toxins found in California groundwater.**

	Found in groundwater/ RWQCB action taken in 1995. <sup>1</sup>	Legal use found to contaminate wells. <sup>2</sup>	Number of contaminated wells. <sup>3</sup>	Number of 1995 RWQCB Actions. <sup>4</sup>
2,4-DB	X			1
Diazinon	X		1	2
Dicamba				5
Dimethoate				1
Dithiocarbamates	X			2
Diuron	X	X	191	5
EPTC	X			
Molinate	X		3	
Simazine	X	X	345	6
Tebuthiuron	X		1	

**Eight of the non-listed reproductive toxins are used in at least 55 over-the-counter household products — many for pet products that may be sources of childhood exposure.**

## **Non-listed Pesticides in Consumer Products**

The authors of this report found 55 over-the-counter consumer products containing reproductive toxins that Cal-EPA has failed to list under Proposition 65. For the following six pesticides and an organic solvent, a list is provided of some of the brand-name products that are currently available in California stores which contain these reproductive toxins. If Cal-EPA had listed these chemicals under Proposition 65, the products would all bear warning labels (unless reformulated by the manufacturer or exposure levels pose no "significant risk"). Because Cal-EPA failed to list these chemicals, consumers have no practical way of knowing that the products contain reproductive toxins.

There are likely many more products sold in stores that also contain these and other reproductive toxins. We recommend that consumers check the product label as the most reliable method of determining what a particular product contains.

### **Diazinon (organophosphate insecticide)**

- Ace Hardware Diazinon Spray
- Cooke Diazinon Insect Granules
- Cooke Diazinon Spray
- Dexol Ant, Roach & Spider Control
- Enforcer Ant Kill Granules
- New Era 150 Reflecting Flea & Tick Collar for Cats
- Ortho Bug-B-Gon Insect Killer
- Ortho Bug-B-Gon Ready Spray (Multi-Purpose Insect Killer)
- Ortho Diazinon Granules Ortho Diazinon Plus Insect Spray
- Ortho Diazinon Soil and Turf Insect Control
- OSH Ant, Roach & Spider Control OSH Diazinon 25% Insect Spray
- OSH Diazinon 2% Granules
- Real-Kill Diazinon Insect Killer Spray Concentrate
- Scotts Diazinon Lawn Insect Control
- Spectracide Diazinon Insect Spray
- Zema 5 Month Flea & Tick Collar for Cats

### **Dicamba (herbicide)**

- Best Weed & Feed 15-5-7 for Grass & Lawns
- Cooke Ready-to-Use Spurge, Oxalis & Dandelion Killer
- Dexol Spot Weeder
- Lilly Miller Spurge & Oxalis Killer
- Miracle-Gro Extra Long Lasting Lawn Food Plus Weed Control
- Ortho Weed-B-Gon Lawn Weed Killer<sup>2</sup>
- OSH Lawn Weed Killer
- OSH Premium Weed "N" Feed for Grass Lawns
- Safer Brand Weed-Away Lawn Weed Killer
- St. Augustine & Bermuda Grass Weed & Feed

Spectracide Weedstop Weed Killer for Lawns

**Fluazifop-butyl (herbicide)**

Enforcer Plant Bed Grass and Weed Killer  
Enforcer Roots and All Grass Weed Killer  
Ortho Grass-B-Gon Grass Killer (Formula II)  
Real-Kill Grass Weed  
Spectracide Systemic Grass & Weed Killer

**Hydramethylnon (insecticide)**

Combat Ant Baits  
Combat Outdoor Ant Killing Granules  
Combat Outdoor Ant Killing Stakes  
Combat Roach Baits 2  
Combat Roach Killing Gel for Cracks & Crevices  
Combat Roach Killing System 1  
Combat Superbait Brand Ant Baits  
Combat Superbait Brand Insecticide Roach Bait Injection System  
Combat Superbait Brand Insecticide Patented Action Roach Control  
Combat Superbait Brand Large Roach Bait1

**Naled (organophosphate insecticide)**

Bansect Flea & Tick Collar for Cats  
Bansect Flea & Tick Collar for Dogs  
Sergeants Dual Action Flea & Tick Collar  
Sergeants Sentry V Flea & Tick Collar

**N-Methyl-2-Pyrrolidone (solvent)**

Citristrip Paint and Varnish Stripping  
Gel Fasco 1-Hour Paint Remover

**Resmethrin (synthetic pyrethroid insecticide)**

Dexol Tender Leaf Spider Mite Control  
Dexol Tender Leaf Whitefly & Mealybug Control  
Dexol Tender Leaf Whitefly & Mealybug Spray  
Ortho Outdoor Insect Fogger  
Orthonex RosePride Insect and Disease Control  
Term-Out Kills Termites, Roaches, Ants

**Triforine (fungicide)**

Ortho RosePride Insect and Disease Control  
Ortho RosePride Funginex Rose and Shrub Disease Control

**Non-listed pesticides that cause birth-defects or reproductive harm accounted for approximately one in every eight pounds of pesticide used in 1995.**

**While Cal-EPA delayed listing of metam sodium during 1995, use of the pesticide increased by over a million pounds.**

## Non-listed Toxins in Agriculture

Over 26 million pounds of pesticides identified as reproductive toxins by U.S. EPA, but not listed under Proposition 65, were used in California in 1995 — one out of every eight pounds of pesticides used in the state during that year (CDPR, Pesticide Use Reports). Many of the non-listed toxins are commonly used on fruits and vegetables: California carrots, tomatoes, potatoes and rice each received over one million pounds of these chemicals in 1995, the most recent year for which data is available (CDPR, Pesticide Use Reports). In all, more than eighty different kinds of food crops received applications of non-listed pesticides. No county was spared: Non-listed pesticides were used all across the state, released through tens of thousands of agricultural pesticide applications.

As the table below indicates, several of the most widely used non-listed pesticides has increased or remained constant since 1991. In aggregate, the top seven non-listed pesticides, comprising 90% of all agricultural use of the non-listed pesticides, more than doubled since 1991. During 1995, while OEHHA delayed listing these chemicals under Proposition 65, aggregate use of the top seven pesticides increased 23%, or 4,446,420 pounds.

A summary of agricultural use of these non-listed pesticides by chemical, crop and county is provided in Appendix A: Use of Non-listed Pesticides by Crop and County.

### Use of the Seven Highest Volume Non-listed Pesticides

	1991	1992	1993	1994	1995
<b>Metam sodium</b>	4,887,334	8,566,076	8,589,017	11,173,565	15,274,166
<b>Diazinon</b>	1,007,052	1,347,402	1,491,710	1,387,854	2,376,883
<b>Propargite</b>	1,392,713	1,873,729	1,691,679	1,833,525	1,813,831
<b>Molinate</b>	1,147,766	1,387,628	1,533,104	1,540,144	1,427,055
<b>Diuron</b>	1,085,864	932,257	1,090,684	1,330,908	1,073,681
<b>Simazine</b>	829,264	941,741	1,129,947	897,587	842,712
<b>Naled</b>	176,871	164,905	180,041	909,844	711,519

Source: California Department of Pesticide Regulation, Pesticide Use Reports

## Profiles of High Use Non-listed Pesticides

### Metam Sodium

In addition to being a reproductive toxin, metam sodium is a category B2 "probable human" carcinogen (U.S. EPA, memorandum from William Burnam, 1997), mutagen, causing chromosomal aberrations in laboratory

**Because of its high chronic and acute toxicity, widespread use and ability to evaporate into ambient air, the California Department of Pesticide Regulation has ranked metam sodium third out of a 134 pesticide candidates as a priority for air monitoring and evaluation under the state's Toxic Air Contaminant Program.**

**After first assuring residents of Dunsmuir that a massive metam sodium release posed no threat, Cal-EPA reversed itself after discovering over-looked toxicity studies and urged pregnant women in Dunsmuir to take a blood test to determine if the neural tubes of their babies had been damaged.**

animals (National Coalition Against the Misuse of Pesticides, December, 1991) and is a U.S. EPA's Category I toxin, the agency's highest most hazardous ranking for acute toxicity (like mustard gas, metam sodium can burn skin and respiratory tissue; (Meister, 1997);

Relative to most pesticides used in California, metam sodium is capable of causing health effects at very low doses -- Cal-EPA puts the "No Observed Effect Level" dose for metam sodium at 0.10mg or less per kilogram of body weight per day (CDPR, 1996). For a 150 pound person, this equals only 1/4000 of an ounce.

Because of its high chronic and acute toxicity, widespread use and ability to evaporate into ambient air, the California Department of Pesticide Regulation has ranked metam sodium third out of 134 pesticide candidates for air monitoring and evaluation under the state's Toxic Air Contaminant Program. The program is intended to protect Californians from airborne pesticides and requires CDPR to prioritize pesticides based on their potential for causing significant health impact. Although ambient air monitoring for metam sodium was conducted in Contra Costa County in 1993, CDPR's evaluation of the chemical for health risk as an air contaminant is still under review four years later (California Department of Pesticide Regulation, 1995).

Metam sodium received little attention until the evening of July 14, 1991, when an over-turned rail car spilled 19,000 gallons of the toxin into the Sacramento River (Schneider,1991). The highly toxic pesticide killed thousands of fish and devastated over 45 miles of the river's ecosystem.

In the days immediately following the spill, Cal-EPA's director of risk assessment assured residents of Dunsmuir who had been exposed to fumes from the spill that they were in no danger of long-term health effects. Approximately three weeks after issuing these assurances, however Cal-EPA reversed itself after discovering over-looked chronic toxicity studies that had been submitted by manufacturers years earlier. The studies showed severe spinal and neurological birth-defects in rats and rabbits which had been exposed to high levels of the toxin. After reviewing the studies, Cal-EPA announced that exposure to metam-sodium fumes could cause long-term health effects and urged pregnant women in Dunsmuir to take a blood test to determine if the neural tubes of their babies had been damaged.

Cal-EPA officials notified U.S. EPA of the studies only to learn that their colleagues in the federal agency also had the studies on file, but had also never reviewed them.

As noted in the previous section, use of metam sodium has more than tripled since 1991. While OEHHHA delayed listing metam sodium under Proposition 65, use increased by over four million pounds during 1995, amounting to 15,274,166 pounds used in agriculture that year. Major

uses include:

Carrots	5,301,284
Tomatoes, processing/canning	2,888,208
Potatoes	1,448,609
Cotton	1,213,651
Soil application, preplant-outdoor (seedbeds etc.)	650,552

### Diazinon

Diazinon is associated with a variety of health effects including cancer, mutagenicity and reproductive toxicity.

U.S. EPA reported finding a wide variety of reproductive effects in the offspring of rats orally administered diazinon: urogenital defects, musculoskeletal abnormalities in offspring, decreased litter size, delayed behavioral effects, and abnormalities in the immune system and biochemical and metabolic abnormalities (Federal Register, January, 1994).

Diazinon has also been associated with harmful health effects in humans. Use of diazinon by farmers in Iowa and Minnesota has recently been linked to increased risk of non-Hodgkins lymphoma (Cantor et al, 1992). An epidemiological study of workers at a diazinon production facility found that chromosome aberrations were more common than in a group of non-exposed workers (Kiraly, 1979). Finally, two EPA surveys found diazinon to be the sixth most frequent cause of accidental death due to pesticides and the sixth most frequent cause of pesticide-related hospitalizations (U.S. EPA, 1988).

Diazinon is used widely in California and there are many routes of human exposure to this toxin:

- **Indoor/Structural Use:** In 1995, 1,419,056 pounds of diazinon were released “within or on buildings” in California. (CDPR Pesticide Use Reporting data, 1995) Indoor use of diazinon is troubling because of the pesticide’s ability to persist long after application. Researchers examining diazinon residues in university dormitories detected residues 42 days following a crack and crevice application (Cox, 1992).
- **Food Residues:** According to a 1990 U.S.D.A. survey, diazinon is the eighth most common detected pesticide residue on food (Cox 1992). In 1995, California’s Department of Pesticide Regulation reported a total of 455,460 pounds of diazinon sprayed on food. High use crops include:

Almonds	235,431
Peaches	81,566
Prunes	76,311
Nectarines	62,152

- **Consumer products.** We found 16 over-the-counter pesticide products that contain diazinon as the active ingredient, including flea collars for pets (See the preceding section entitled “Non-listed

**Two EPA surveys found diazinon to be the sixth most frequent cause of accidental death due to pesticides and the sixth most frequent cause of pesticide-related hospitalization.**

**Researchers examining diazinon residues in university dormitories detected residues 42 days following a crack and crevice application. Over 1.4 million pounds of the pesticide were applied in and around buildings in California in 1995.**

Pesticides in Consumer Products” for more information).

- **Groundwater.** According to U.S. EPA’s Office of Drinking Water, diazinon contaminated well water has been found in 46 states, including California. The agency reports that diazinon contaminated three percent of the 3,000 groundwater samples analyzed (Cox 1992). Diazinon contamination has also warranted two regulatory actions by the Regional Water Quality Control Board in 1995 (CDPR,1995; CDPR, 1992).

Because diazinon remains non-listed by Proposition 65, Californians are not entitled to prior warning before being exposed to this hazardous pesticide.

### Propargite

Like metam sodium, propargite stands out amongst the food use pesticides for being particularly hazardous. In addition to being a reproductive toxin, propargite is also a B2 "probable human" carcinogen (U.S. EPA, February, 1997) and warrants U.S. EPA's highest Class I ranking for acute toxicity (Meister, 1997).

Propargite bears the unique distinction of being the first of 134 pesticides ranked in order of priority by CDPR for further air monitoring and evaluation as a toxic air contaminant (CDPR, October, 1996). As noted above, CDPR ranks candidate pesticides for further scrutiny based on the airborne pesticide's potential to harm public health. CDPR scored propargite as potential risk number one because of the chemical's carcinogenicity, chronic toxicity, acute toxicity, ability to vaporize into ambient air and widespread use in California.

**Propargite bears the unique distinction of being at the very top of CDPR's toxic air contaminant candidate list -- a group 134 pesticides ranked for their potential to cause significant health risk.**

Like metam sodium, however, propargite has seen little regulation as a potential toxic air contaminant. Although propargite has been used for years in California, and was ranked second in CDPR's 1994 toxic air contaminant candidate list, the first and only ambient air monitoring for the chemical was conducted in June of 1996 (CDPR, May 1997). Neither the monitoring report nor the required health risk assessment have been completed. Because propargite is not listed under Proposition 65, farmworkers and those living in agricultural communities have little protection from this pesticide.

Under pressure from public interest groups, the U.S. EPA canceled several uses of Propargite in the Spring of 1996, indicating that even low level food residues of the chemical pose greater health risk than previously thought, especially to infants and children (PANUPS, April 1996). Under an agreement with Uniroyal Chemical Company, U.S. EPA canceled use of propargite on apricots, apples, peaches, pears, plums, figs, cranberries, strawberries, green beans and lima beans-- crops frequently eaten by American consumers, particularly children. According to EPA, the cancellations should reduce propargite exposure to

**Citing unacceptable cancer risk, U.S. EPA canceled several food uses for propargite in 1996.**

**Unfortunately, none of these cancelations will affect the bulk of propargite use in California.**

adults and children by more than 85%, and to infants by more than 98%.

Unfortunately, none of these cancellations will affect the major uses of propargite in California. In 1995, 80% of propargite use in California was for crops not canceled by U.S. EPA (CDPR Pesticide Use Reporting Data (1995)):

Cotton	524,537
Grapes	316,476
Almonds	265,643
Corn (forage-fodder)	24,112
Grapes, Wine	90,381
Total For All Uses	1,813,831

Propargite is also a health hazard to communities exposed to airborne propargite and to farmworkers who are exposed through agricultural operations. In 1986, propargite injured 198 farmworkers in Tulare County who were exposed to the chemical while picking oranges (Saunders, 1987.) All of the exposed workers suffered from dermatitis; many suffered severe dermatitis (exfoliating skin).

## Appendix A: Use of Non-Listed Pesticides by Crop and County

### Pounds of non-listed reproductive toxicants applied as pesticides, 1995

Source: CDPR, Pesticide Use Report Data

Compound	Number of applications	Pounds applied
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Metam-Sodium	4,756	15,274,166
Diazinon	67,284	2,376,883
Propargite	23,630	1,813,831
Molinate	4,586	1,427,055
Diuron	16,086	1,073,681
Simazine	22,710	842,712
Naled	11,944	711,519
EPTC	4,225	666,432
Dimethoate	36,971	596,791
Prometryn	4,318	213,145
Thiophanate-Methyl	15,546	122,955
Oxydemeton-Methyl	15,258	122,748
Bromoxynil Octanoate	4,031	119,837
Myclobutanil	28,107	100,956
Linuron	2,615	85,931
Fenbutatin-Oxide	4,719	80,156
Amitraz	2,454	77,198
Dicamba and its salts	9574	59,477
Vinclozolin	5,900	49,977
Cycloate	771	49,897
4(2,4-DB), Dimethylamine Salt	698	49,496
Triforine	6,512	40,858
Metribuzin	1,596	30,953
Triadimefon	6,701	22,996
Fluazifop-Butyl	4,168	21,265
Thiabendazole	2,591	18,561
Anilazine	457	17,912
Diclofop Methyl	277	16,540
Imazalil	257	13,699
Bromacil, Lithium Salt	47	6,517
Chlorsulfuron	602	6,172
Tau Fluvalinate	9,440	5,230
Tebuthiuron	249	4,817
FenoxaPropositionEthyl	1,043	4,100
Fenoxycarb	6,179	1,673
4(2,4-DB), Butoxyethanol Ester	13	930
Resmethrin and related compounds	1,735	893
4(2,4-DB), Isooctyl Ester	13	850
Nitrapyrin and related compounds	94	710
2,4-DP, incl. esters and salts	162	497
Others	25	744

<b>Total pounds of non-listed reproductive toxicants applied in California in 1995</b>	<b>26,130,760</b>
<b>Total pounds of pesticides applied in California in 1995:</b>	<b>211,798,752</b>
<b>Percent of total pounds of pesticides applied that were non-listed reproductive toxins:</b>	<b>12.3 %</b>

## Most common applications of non-listed reproductive toxicants, 1995

As reported to California's Pesticide Use Database

Compound	Commodity	Number of applications	Pounds applied
1. Metam-Sodium	Carrots, General	473	5,301,284
2. Metam-Sodium	Tomatoes	905	3,131,252
3. Metam-Sodium	Potato (White, Irish, Red, Russet)	142	1,448,609
4. Molinate	Rice	4,582	1,426,845
5. Diazinon	Structural Pest Control	24,202	1,419,056
6. Metam-Sodium	Cotton, General	361	1,213,651
7. Metam-Sodium	Soil Application, Preplant-Outdoor (Seedbeds,Etc.)	156	650,552
8. Naled	Cotton, General	6,405	565,284
9. Propargite	Cotton, General	5,253	524,537
10. Diuron	Rights Of Way	2,151	504,724
11. Metam-Sodium	Cantaloupe	81	428,859
12. Metam-Sodium	Broccoli	195	344,261
13. Metam-Sodium	Onion (Dry, Spanish, White, Yellow, Red, Etc.)	43	341,547
14. Propargite	Grapes	5,326	316,476
15. Metam-Sodium	Peppers (Fruiting Vegetable), (Bell,Chili, Etc.)	91	315,495
16. EPTC	Alfalfa (Forage - Fodder) (Alfalfa Hay)	1,919	280,915
17. Propargite	Almond	2,394	265,643
18. Propargite	Corn (Forage - Fodder)	2,824	254,112
19. Metam-Sodium	Lettuce, Head (All Or Unspec)	99	245,354
20. Diazinon	Almond	1,849	235,431
21. Metam-Sodium	Sweet Potato	36	214,026
22. Simazine	Orange (All Or Unspec)	3,722	208,490
23. Diuron	Orange (All Or Unspec)	4,396	201,509
24. Prometryn	Cotton, General	2,630	190,985
25. Metam-Sodium	Lettuce, Leaf (All Or Unspec)	278	188,491
26. Simazine	Grapes	4,880	145,716
27. Metam-Sodium	Uncultivated Agricultural Areas (All Or Unspec)	68	136,298
28. Simazine	Rights Of Way	1,209	135,690
29. Metam-Sodium	Watermelons	38	127,471
30. Metam-Sodium	N-Outdr Grwn Trnsplnt/Prpgtv Mtrl	67	125,570
31. Diuron	Alfalfa (Forage - Fodder) (Alfalfa Hay)	1,303	115,703
32. Metam-Sodium	Parsley (Leafy Vegetable)	40	104,770
33. Simazine	Grapes, Wine	3,046	104,407
34. EPTC	Corn (Forage - Fodder)	499	103,506
35. Metam-Sodium	Brussels Sprouts	85	99,354
36. Dimethoate	Alfalfa (Forage - Fodder) (Alfalfa Hay)	4,705	98,880
37. Propargite	Grapes, Wine	1,226	90,381
38. Metam-Sodium	Celery, General	76	82,963
39. Dimethoate	Cotton, General	2,212	81,773
40. Diazinon	Peach	2,508	81,566
41. Propargite	Walnut (English Walnut, Persian Walnut)	1,236	81,080
42. Dimethoate	Orange (All Or Unspec)	1,514	79,071
43. Diazinon	Prune	930	76,311
44. Amitraz	Cotton, General	2,396	72,968
45. Linuron	Carrots, General	1,720	67,779
46. EPTC	Sugarbeet, General	319	67,513
47. Diazinon	Nectarine	1,877	62,152
48. Diazinon	Lettuce, Head (All Or Unspec)	5,195	56,108
49. EPTC	Potato (White, Irish, Red, Russet)	426	58,225
50. Oxydemeton-Methyl	Broccoli	7,644	51,887

## Commodities treated with non-listed reproductive toxicants, 1995

As reported to California's Pesticide Use Database

Commodity	Pounds Applied
Carrots, General	5,391,329
Tomatoes	3,277,513
Cotton, General	2,696,721
Potato (White, Irish, Red, Russet)	1,520,249
Rice (All Or Unspec)	1,430,946
Structural Pest Control	1,429,623
Rights Of Way	716,672
Soil Application, Preplant-Outdoor (Seedbeds, Etc.)	652,010
Alfalfa (Forage - Fodder) (Alfalfa Hay)	640,343
Almond	636,228
Grapes	633,128
Orange (All Or Unspec)	526,373
Broccoli	453,885
Cantaloupe	443,716
Corn (Forage - Fodder)	374,842
Onion (Dry, Spanish, White, Yellow, Red, Etc.)	369,676
Lettuce, Head (All Or Unspec)	361,250
Grapes, Wine	359,752
Peppers (Fruiting Vegetable), (Bell, Chili, Etc.)	326,277
Lettuce, Leaf (All Or Unspec)	228,811
Sweet Potato	214,636
Walnut (English Walnut, Persian Walnut)	190,200
Sugarbeet, General	182,905
Peach	160,648
Uncultivated Agricultural Areas (All Or Unspec)	145,960
Landscape Maintenance	144,370
Watermelons	134,597
N-Outdr Grwn Trnsplnt/Prpgtv Mtrl	133,115
Celery, General	121,870
Nectarine	117,345
Wheat, General	116,663
Brussels Sprouts	108,360
Prune	108,268
Parsley (Leafy Vegetable)	106,061
Beans, Dried-Type	104,490
Safflower, General	91,044
Strawberry (All Or Unspec)	83,325
Corn, Human Consumption	76,470
Lemon	68,939
Plum (Includes Wild Plums For Human Consumption)	67,147
Spinach	65,813
Apple	61,667
Asparagus (Spears, Ferns, Etc.)	60,260
Barley, General	56,925
Melons	49,555
Cauliflower	49,478
N-Outdr Container/Fld Grwn Plants	45,943
Beans (All Or Unspec)	44,973
Olive (All Or Unspec)	40,707
Cabbage	36,901
Beans, Succulent (Other Than Lima)	31,287
Cucumber (Pickling, Chinese, Etc.)	29,806
Gai Lon	28,932

**Carrots, tomatoes, cotton, potatoes, rice, structural pest control, and rights-of-way were the highest-volume uses of non-listed reproductive toxin pesticides.**

## Commodities treated with non-listed reproductive toxicants, con't.

As reported to California's Pesticide Use Database

Commodity	Pounds Applied
Mustard, General	28,187
Avocado (All Or Unspec)	26,966
Chicory (All Or Unspec)	26,758
Artichoke (Globe) (All Or Unspec)	26,231
N-Outdr Grwn Cut Flwrs Or Greens	24,919
Grapefruit	24,452
Apricot	24,262
Garlic	23,332
Bok Choy (Wong Bok)	22,801
Pear	22,360
Oats, General	19,503
Ornamental Turf (All Or Unspec)	19,057
Cherry	17,522
Animal Husbandry Premises	16,493
Kale	16,113
Squash (All Or Unspec)	15,001
Collards	14,969
N-Grnhs Grwn Cut Flwrs Or Greens	14,565
Uncultivated Non-Ag Areas (All Or Unspec)	13,708
Beets, General	12,974
Swiss Chard (Spinach Beet)	12,724
N-Grnhs Grwn Plants In Containers	11,169
Tangerine (Mandarin, Satsuma, Murcott, Etc.)	10,507
Parsnip	9,397
Citrus Fruits (All Or Unspec)	9,126
Peppers (Chili Type) (Flavoring And Spice Crop)	9,050
Cilantro (Chinese Parsley, Coriander Leaves)	8,921
Anise (Sweet Alice)	7,936
Turnip, General	7,164
Basil (Bush, Garden, Sweet)	6,628
Onions (Green)	6,573
Oats (Forage - Fodder)	6,390
Mushrooms	5,658
Eggplant (Oriental Eggplant)	4,077
Dill	3,958
Clover (All Or Unspec) (Forage - Fodder)	3,762
Bermudagrass (Forage - Fodder)	3,699
Peas, General	3,596
Mushroom Houses (All Or Unspec)	3,309
Chinese Cabbage (Nappa, Won Bok, Celery Cabbage)	2,653
Regulatory Pest Control	2,385
Pecan	1,995
Leek	1,924
Commercial, Institutional Or Industrial Areas	1,879
Public Health Pest Control	1,674
N-Grnhs Grwn Trnsplnt/Prpgtv Mtrl	1,604
Wheat (Forage - Fodder)	1,485
Kiwi Fruit	1,442
Irrigation Systems (Ditches, Canal Banks, Etc.)	1,409
Forage - Fodder Grasses (All Or Unspec) (Hay)	1,302
Sorghum/Milo General	1,297
Others	17,889
<b>Total</b>	<b>26,130,760</b>

## Use of Non-listed Pesticides by County (1995)

**All 58 California counties reported using non-listed pesticides that cause birth defects or reproductive harm in 1995.**

Rank	County	Total Reported Use (1995)
1	Fresno	5,397,042
2	Kern	4,935,921
3	Imperial	3,703,820
4	Sacramento	1,287,108
5	Tulare	1,094,874
6	Kings	900,160
7	Merced	884,100
8	Santa Barbara	755,520
9	Yolo	643,869
10	San Joaquin	571,922
11	Riverside	551,468
12	Stanislaus	532,498
13	Colusa	503,257
14	Monterey	482,994
15	Butte	414,548
16	Madera	366,945
17	Glenn	356,673
18	Ventura	329,985
19	Sutter	326,523
20	San Luis Obispo	231,433
21	Solano	185,152
22	Contra Costa	157,515
23	Orange	151,488
24	Yuba	131,111
25	San Diego	123,484
26	Del Norte	122,851
27	Los Angeles	118,508
28	San Bernardino	116,694
29	Santa Cruz	103,092
30	Alameda	86,044
31	Sonoma	84,447
32	Santa Clara	78,489
33	Modoc	56,762
34	Placer	50,076
35	San Mateo	49,580
36	Tehama	44,051
37	San Benito	41,020
38	Mendocino	33,222
39	Siskiyou	24,973
40	Napa	24,421
41	Lake	11,756
42	Mono	10,021
43	Tuolumne	9,655
44	Calaveras	9,643
45	Shasta	8,151
46	Amador	6,737
47	El Dorado	6,232
48	Marin	6,053
49	Nevada	5,912
50	Lassen	4,698
51	Mariposa	2,772
52	San Francisco	2,327
53	Plumas	2,120
54	Humboldt	1,317
55	Inyo	374
56	Sierra	101
57	Alpine	38
58	Trinity	14

## Appendix B: 66 Non-listed Reproductive Toxins

Abamectin  
Amitraz  
Anilazine  
Bromacil, Lithium Salt  
Bromoxynil Octanoate  
Chinomethionat  
Chlorsulfuron  
Cycloate  
Cyclohexanol  
2,4-D 2-ethyl-4-methylpentyl ester  
2,4-D 2-ethylhexyl ester  
2,4-DB  
2,4-DP, incl. esters and salts  
Diazinon  
Dicamba  
Dichlorophene  
Diclofop Methyl  
Dimethoate  
Dimethyl chlorothiophosphate  
Disodium cyanodithiomidocarbamate  
Diuron  
Ethyl dipropylthiocarbamate (EPTC)  
Fenbutatin-Oxide  
Fenoxprop ethyl  
Fenoxycarb  
Fluazifop-Butyl  
Fluvalinate  
Hydramethylnon  
Imazalil  
Linuron  
Metam-Sodium  
Methazole  
Metiram  
Metribuzin  
Molinate  
Myclobutanil  
N-methyl-2-pyrrolidone  
Nabam  
Naled  
Nitrapyrin  
Oxydemeton-Methyl  
Oxydiazon  
Potassium dimethyldithiocarbamate  
Potassium N-methyldithiocarbamate  
Prometryn  
Propachlor  
Propargite  
Quizalofop-ethyl  
Resmethrin  
Simazine  
Sodium dicamba  
Sodium dimethylfdithiocarbamate  
Sodium fluoroacetate  
Sodium nitrite  
Sulprofos  
Tau Fluvalinate  
Tebuthiuron  
Terbacil  
Thiabendazole  
Thiophanate-Methyl  
Triadimefon  
Tributyltin methacrylate  
Triforine  
Triphenyltin chloride  
Triphenyltin hydroxide  
Vinclozolin

## Appendix C: Toxicology of Selected Non-listed Toxins

U.S. EPA was explicit in describing why it was listing each compound. In each case, the agency reviewed the relevant animal studies on the chemical, and then, in the case of reproductive or developmental toxins, concluded that the evidence warranted additional regulation under the federal right to know law. Excerpts from this compound by compound analysis are presented below (Federal Register, January 1994):

### Molinate

“In a rat developmental toxicity study, adverse effects included increased post-implantation loss, lower fetal body weight, increased incidence of runts, and external/soft tissue/skeletal variants... Since molinate is reaching the gonads in all species, not only in rodents, molinate can reasonably be anticipated to cause fertility/reproductive effects in humans.”

### N-Methyl-2-pyrrolidone

“Exposure resulted in significant reductions in the male fertility index and in the female fecundity index. There was also evidence of developmental toxicity in both generations after exposure as demonstrated by reduced litter size, reduced postnatal survival, and reduced pup weight... The data presented above clearly show a correlation between dose and decreased fertility.”

“In addition, EPA believes that the body of evidence supports the finding that NMP is uniquely toxic to the developing fetus.”

### Metam sodium

“In rats fed metam sodium, increased variations, retardations, and anomalies were reported... ...the weight of evidence indicates that metam sodium induces developmental toxicity. In addition, metam sodium is metabolized to carbon disulfide, a potent developmental toxicant.”

### Resmethrin

“In a one-generation reproduction rat study, administration in the diet produced an increase in dead pups and lower pup weight among survivors. In a 3-generation reproduction rat study, dietary administration produced an increase in pups cast dead and lower pup weight among survivors.”

### Vinclozolin

“...vinclozolin interacts with numerous steroid hormones in male and female animals. A broad spectrum of steroid hormones were affected in these animals.” “Males had increases in testes weights, increased bilirubin, and prostate atrophy... ...Pseudohermaphroditism occurred in male offspring of rat. Other developmental effects included developmental delays, reduced male and female pup weight, increased stillbirths and increased pup mortality throughout lactation.”

### Diazinon

“Urogenital defects in the offspring of female rats orally administered

diazinon has been reported. Diazinon also induced musculoskeletal abnormalities in offspring. Post-implantation mortality was increased in female rats. Similar reproductive and developmental effects were observed in mice. Oral administration of diazinon caused decreased litter size and delayed behavioral effects in the newborn. [Diazinon] caused abnormalities in the immune and reticuloendothelial system and biochemical and metabolic abnormalities of the offspring.”

#### Simazine

“Sheep that received simazine had necrotic changes in the germinal epithelium of the testis and disturbances in spermatogenesis.”

#### Propargite

“In a developmental toxicity study in which rabbits were exposed delayed ossification, increased fetal resorption, decreased fetal viability and reductions in fetal body weight were noted. Developmental effects were also reported in offspring of rats.”

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## Appendix E: Pesticide Use by County

Alameda	
BROMACIL LITHIUM SALT	257
BROMOXYNIL OCTANOATE	79
CHLORSULFURON	18
DIAZINON	15,912
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	194
DICAMBA DIMETHYLAMINE SALT	848
DICAMBA	9
DIMETHOATE	271
DIURON	43,230
FENOXYCARB	21
FLUAZIFOP-BUTYL	68
METAM-SODIUM	12,703
MYCLOBUTANIL	26
NALED	1
RESMETHRIN	2
SIMAZINE	6,913
TAU FLUVALINATE	118
TEBUTHIURON	6
THIOPHANATE-METHYL	3,582
TRIADIMEFON	547
TRIBUTYLTIN METHACRYLATE	4
TRIFORINE	5
VINCLOZOLIN	996
	85,810
Alpine	
DIAZINON	38
	38
Amador	
BROMOXYNIL OCTANOATE	151
DIAZINON	270
DIMETHOATE	42
DIURON	1,900
EPTC	244
FENBUTATIN-OXIDE	1
FENOXYCARB	1
FLUAZIFOP-BUTYL	20
LINURON	180
METRIBUZIN	50
MYCLOBUTANIL	88
NALED	334
PROPARGITE	641
SIMAZINE	2,670
TEBUTHIURON	11
THIOPHANATE-METHYL	40
TRIADIMEFON	92
	6,737
Butte	
4(24-DB) DIMETHYLAMINE SALT	278
BROMOXYNIL OCTANOATE	451
CHLORSULFURON	14
DIAZINON	31,129
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	23
DICAMBA DIMETHYLAMINE SALT	102
DICAMBA	1
DICLOFOP METHYL	164
DIMETHOATE	152
DIURON	14,829
EPTC	4,119
FENBUTATIN-OXIDE	2,815
FENOXAPROP ETHYL	475
FENOXYCARB	18
FLUAZIFOP-BUTYL	64
METAM-SODIUM	191
METRIBUZIN	4
MOLINATE	322,316
MYCLOBUTANIL	144
NALED	604
OXYDEMETON-METHYL	56
PROPARGITE	13,225
RESMETHRIN OTHER RELATED	1
RESMETHRIN	6
SIMAZINE	12,676
THIOPHANATE-METHYL	4,450
TRIADIMEFON	33
TRIFORINE	5,714
VINCLOZOLIN	429
	414,483

Calaveras		TRIADIMEFON	1
			122,851
DIAZINON	984	Ed Dorado	
DICAMBA	5	24-DP BUTOXYETHANOL ESTER	3
DIMETHOATE	60	BROMOXYNIL OCTANOATE	21
DIURON	4,177	DIAZINON	2,517
MYCLOBUTANIL	91	DICAMBA DIMETHYLAMINE SALT	20
OXYDEMOTON-METHYL	3	DIMETHOATE	6
PROPARGITE	420	DIURON	1,004
SIMAZINE	3,873	FENOXYCARB	7
TEBUTHIURON	9	FLUAZIFOP-BUTYL	4
THIOPHANATE-METHYL	17	LINURON	11
TRIADIMEFON	3	MYCLOBUTANIL	134
	9,643	PROPARGITE	90
		SIMAZINE	2,074
Colusa		TAU FLUVALINATE	1
4(24-DB) DIMETHYLAMINE SALT	251	TEBUTHIURON	6
AMITRAZ	67	THIOPHANATE-METHYL	307
BROMOXYNIL OCTANOATE	498	TRIADIMEFON	26
CHLORSULFURON	9	TRIFORINE	2
CYCLOATE	969		6,232
DIAZINON	8,465	Fresno	
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	252	24-DP BUTOXYETHANOL ESTER	4
DICAMBA DIMETHYLAMINE SALT	1,016	4(24-DB) DIMETHYLAMINE SALT	4,808
DICAMBA	1	AMITRAZ	12,869
DICLOFOP METHYL	1,025	ANILAZINE	73
DIMETHOATE	3,333	BROMACIL LITHIUM SALT	580
DIURON	6,304	BROMOXYNIL OCTANOATE	28,730
EPTC	6,636	CHLORSULFURON	23
FENBUTATIN-OXIDE	162	CYCLOATE	3,650
FENOXAPROP ETHYL	1,954	DIAZINON	206,500
FENOXYCARB	1	DICAMBA DIMETHYLAMINE SALT OTHER RELATED	452
FLUAZIFOP-BUTYL	89	DICAMBA DIMETHYLAMINE SALT	1,852
LINURON	19	DICAMBA	1
METAM-SODIUM	27,530	DICLOFOP METHYL	925
METRIBUZIN	2,056	DIMETHOATE	51,707
MOLINATE	383,826	DIURON	91,797
MYCLOBUTANIL	22	EPTC	67,334
NALED	6,906	FENBUTATIN-OXIDE	10,761
OXYDEMOTON-METHYL	1,369	FENOXAPROP ETHYL	28
PROPARGITE	45,969	FENOXYCARB	18
RESMETHRIN	3	FLUAZIFOP-BUTYL	2,986
SIMAZINE	3,251	IMAZALIL	1,835
TAU FLUVALINATE	91	LINURON	2,472
THIOPHANATE-METHYL	427	METAM-SODIUM	3,804,322
TRIADIMEFON	282	METRIBUZIN	197
TRIFORINE	384	MOLINATE	5,949
	503,165	MYCLOBUTANIL	15,146
		NALED	312,991
Contra Cos		NITRAPYRIN OTHER RELATED	23
4(24-DB) DIMETHYLAMINE SALT	62	NITRAPYRIN	206
ANILAZINE	1	OXYDEMOTON-METHYL	17,349
BROMACIL LITHIUM SALT	335	PROMETRYN	13,923
BROMOXYNIL OCTANOATE	446	PROPARGITE	564,087
CHLORSULFURON	35	RESMETHRIN OTHER RELATED	1
DIAZINON	23,780	RESMETHRIN	38
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	259	SIMAZINE	143,450
DICAMBA DIMETHYLAMINE SALT	1,162	TAU FLUVALINATE	27
DICAMBA	6	TEBUTHIURON	29
DICLOFOP METHYL	85	THIABENDAZOLE	3,142
DIMETHOATE	6,022	THIOPHANATE-METHYL	9,232
DIURON	23,069	TRIADIMEFON	1,071
EPTC	3,231	TRIFORINE	7,338
FENBUTATIN-OXIDE	63	VINCLOZOLIN	6,549
FENOXYCARB	31		5,394,477
FLUAZIFOP-BUTYL	17	Glenn	
LINURON	208	24-DP DIMETHYLAMINE SALT	44
METAM-SODIUM	84,345	4(24-DB) DIMETHYLAMINE SALT	2,440
METRIBUZIN	972	BROMOXYNIL OCTANOATE	847
MYCLOBUTANIL	470	DIAZINON	12,628
NALED	91	DICAMBA DIMETHYLAMINE SALT OTHER RELATED	269
OXYDEMOTON-METHYL	560	DICAMBA DIMETHYLAMINE SALT	1,087
PROPARGITE	4,289	DICLOFOP METHYL	2,420
RESMETHRIN	1	DIMETHOATE	2,561
SIMAZINE	5,964	DIURON	7,360
TAU FLUVALINATE	56	EPTC	13,473
THIOPHANATE-METHYL	1,386	FENBUTATIN-OXIDE	1,064
TRIADIMEFON	170	FENOXAPROP ETHYL	409
TRIFORINE	25	FENOXYCARB	1
VINCLOZOLIN	7	IMAZALIL	6
	157,148	METAM-SODIUM	16
		METRIBUZIN	138
Del Norte		MOLINATE	285,634
DIAZINON	354	MYCLOBUTANIL	6
DICAMBA DIMETHYLAMINE SALT	5	NALED	838
DICAMBA	1	OXYDEMOTON-METHYL	7
DIURON	2,858	PROMETRYN	84
METAM-SODIUM	119,503	PROPARGITE	15,359
RESMETHRIN	1	SIMAZINE	6,579
SIMAZINE	53	TEBUTHIURON	13
TAU FLUVALINATE	23		
THIOPHANATE-METHYL	51		

THIABENDAZOLE	39	THIABENDAZOLE	2,816
THIOPHANATE-METHYL	2,487	THIOPHANATE-METHYL	15,429
TRIADIMEFON	80	TRIADIMEFON	1,264
TRIFORINE	776	TRIFORINE	971
	356,665	VINCLOZOLIN	248
			4,933,200
<b>Humboldt</b>		<b>Kings</b>	
24-DP BUTOXYETHANOL ESTER	3	4(24-DB) DIMETHYLAMINE SALT	863
CHLORSULFURON	15	AMITRAZ	23,594
DIAZINON	67	BROMACIL LITHIUM SALT	354
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	7	BROMOXYNIL OCTANOATE	7,124
DICAMBA DIMETHYLAMINE SALT	46	DIAZINON	26,558
DICAMBA	3	DICAMBA DIMETHYLAMINE SALT OTHER RELATED	1,672
DIURON	523	DICAMBA DIMETHYLAMINE SALT	6,725
FENOXYCARB	1	DIMETHOATE	47,131
MYCLOBUTANIL	39	DIURON	43,417
RESMETHRIN	3	EPTC	68,533
SIMAZINE	341	FENBUTATIN-OXIDE	480
TAU FLUVALINATE	1	FENOXYCARB	5
TEBUTHIURON	6	FLUAZIFOP-BUTYL	1,482
THIOPHANATE-METHYL	167	LINURON	509
TRIADIMEFON	45	METAM-SODIUM	321,584
TRIFORINE	5	MYCLOBUTANIL	667
VINCLOZOLIN	43	NALED	144,106
	1,317	OXYDEMOTON-METHYL	2,936
		PROMETRYN	9,340
<b>Imperial</b>		PROPARGITE	184,932
4(24-DB) BUTOXYETHANOL ESTER	739	SIMAZINE	5,424
4(24-DB) DIMETHYLAMINE SALT	19,624	TAU FLUVALINATE	1
AMITRAZ	488	TEBUTHIURON	1
BROMOXYNIL OCTANOATE	16,992	THIOPHANATE-METHYL	1,501
CYCLOATE	10,129	TRIADIMEFON	11
DIAZINON	57,984	TRIFORINE	787
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	19	VINCLOZOLIN	406
DICAMBA DIMETHYLAMINE SALT	78		900,144
DICLOFOP METHYL	1,389		
DIMETHOATE	78,753	<b>Lake</b>	
DIURON	10,069	4(24-DB) DIMETHYLAMINE SALT	9
EPTC	148,679	AMITRAZ	673
FLUAZIFOP-BUTYL	1,252	DIAZINON	1,213
LINURON	16,035	DIMETHOATE	442
METAM-SODIUM	3,322,308	DIURON	1,900
METRIBUZIN	2,838	EPTC	10
MYCLOBUTANIL	207	FENOXYCARB	1
NALED	286	METAM-SODIUM	20
OXYDEMOTON-METHYL	4,543	MYCLOBUTANIL	164
PROMETRYN	680	OXYDEMOTON-METHYL	3
PROPARGITE	2,939	PROPARGITE	486
SIMAZINE	972	SIMAZINE	6,830
TRIADIMEFON	4,659	THIOPHANATE-METHYL	2
TRIFORINE	364	TRIADIMEFON	3
VINCLOZOLIN	1,793		11,756
	3,703,820		
		<b>Lassen</b>	
<b>Inyo</b>		4(24-DB) DIMETHYLAMINE SALT	45
DICAMBA DIMETHYLAMINE SALT	3	BROMOXYNIL OCTANOATE	393
DIURON	86	CHLORSULFURON	8
RESMETHRIN OTHER RELATED	4	DIAZINON	128
RESMETHRIN	33	DICAMBA DIMETHYLAMINE SALT OTHER RELATED	394
SIMAZINE	116	DICAMBA DIMETHYLAMINE SALT	1,582
TEBUTHIURON	129	DIURON	1,530
THIOPHANATE-METHYL	2	FLUAZIFOP-BUTYL	22
	374	METRIBUZIN	567
		MYCLOBUTANIL	12
<b>Kern</b>		SIMAZINE	17
4(24-DB) DIMETHYLAMINE SALT	87		4,698
AMITRAZ	15,204	<b>Los Angeles</b>	
BROMACIL LITHIUM SALT	2,379	24-DP BUTOXYETHANOL ESTER	3
BROMOXYNIL OCTANOATE	14,305	4(24-DB) DIMETHYLAMINE SALT	94
CHLORSULFURON	7	AMITRAZ	1
CYCLOATE	116	ANILAZINE	171
DIAZINON	125,867	BROMACIL LITHIUM SALT	684
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	207	BROMOXYNIL OCTANOATE	242
DICAMBA DIMETHYLAMINE SALT	917	CHLORSULFURON	47
DICAMBA	1	DIAZINON	66,328
DIMETHOATE	73,272	DICAMBA DIMETHYLAMINE SALT OTHER RELATED	54
DIURON	111,675	DICAMBA DIMETHYLAMINE SALT	425
EPTC	47,068	DICAMBA	16
FENBUTATIN-OXIDE	9,213	DIMETHOATE	719
FENOXYCARB	19	DIURON	31,435
FLUAZIFOP-BUTYL	5,898	EPTC	24
IMAZALIL	735	FENBUTATIN-OXIDE	106
LINURON	40,317	FENOXYCARB	219
METAM-SODIUM	3,915,263	FLUAZIFOP-BUTYL	591
MYCLOBUTANIL	14,077	LINURON	416
NALED	40,953	METAM-SODIUM	1,068
OXYDEMOTON-METHYL	3,129	METRIBUZIN	49
PROMETRYN	121,455	MYCLOBUTANIL	67
PROPARGITE	281,523	NALED	1,093
RESMETHRIN	186	OXYDEMOTON-METHYL	20
SIMAZINE	88,489	PROPARGITE	1,999
TAU FLUVALINATE	9		
TEBUTHIURON	101		

RESMETHRIN OTHER RELATED	3	SIMAZINE	5,499
RESMETHRIN	91	TAU FLUVALINATE	1
SIMAZINE	6,197	TEBUTHIURON	40
TAU FLUVALINATE	248	THIOPHANATE-METHYL	7
TEBUTHIURON	990	TRIADIMEFON	37
THIOPHANATE-METHYL	4,077	TRIFORINE	19
TRIADIMEFON	597	VINCLOZOLIN	20
TRIFORINE	34		33,222
VINCLOZOLIN	266		
	118,374	Merced	
Madera		24-DP BUTOXYETHANOL ESTER	4
4(24-DB) DIMETHYLAMINE SALT	1,128	24-DP DIMETHYLAMINE SALT	1
AMITRAZ	846	4(24-DB) DIMETHYLAMINE SALT	3,136
BROMOXYNIL OCTANOATE	3,139	AMITRAZ	2,586
CHLORSULFURON	8	BROMACIL LITHIUM SALT	908
DIAZINON	54,997	BROMOXYNIL OCTANOATE	7,036
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	112	CHLORSULFURON	1
DICAMBA DIMETHYLAMINE SALT	450	CYCLOATE	3,859
DICLOFOP METHYL	157	DIAZINON	21,557
DIMETHOATE	11,488	DICAMBA DIMETHYLAMINE SALT OTHER RELATED	255
DIURON	35,550	DICAMBA DIMETHYLAMINE SALT	1,033
EPTC	4,534	DICAMBA	1
FENBUTATIN-OXIDE	8,534	DICLOFOP METHYL	511
FENOXYCARB	4	DIMETHOATE	15,395
FLUAZIFOP-BUTYL	1,617	DIURON	50,618
LINURON	1,150	EPTC	46,740
METAM-SODIUM	81,334	FENBUTATIN-OXIDE	10,116
MOLINATE	240	FENOXAPROP ETHYL	10
MYCLOBUTANIL	4,785	FENOXYCARB	1
NALED	18,938	FLUAZIFOP-BUTYL	1,468
OXYDEMETON-METHYL	602	METAM-SODIUM	503,823
PROMETRYN	1,850	METRIBUZIN	1,064
PROPARGITE	81,303	MOLINATE	10,629
RESMETHRIN	1	MYCLOBUTANIL	2,786
SIMAZINE	47,673	NALED	39,183
TAU FLUVALINATE	133	OXYDEMETON-METHYL	328
TEBUTHIURON	27	PROMETRYN	633
THIOPHANATE-METHYL	4,553	PROPARGITE	123,745
TRIADIMEFON	55	RESMETHRIN	14
TRIFORINE	471	SIMAZINE	24,274
VINCLOZOLIN	52	TAU FLUVALINATE	168
	365,730	TEBUTHIURON	1
		TERBACIL	16
Marin		THIABENDAZOLE	12
BROMOXYNIL OCTANOATE	7	THIOPHANATE-METHYL	8,853
DIAZINON	2,243	TRIADIMEFON	48
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	9	TRIFORINE	2,076
DICAMBA DIMETHYLAMINE SALT	47		882,890
DICAMBA	7	Modoc	
DIMETHOATE	47	4(24-DB) DIMETHYLAMINE SALT	142
DIURON	3,207	BROMOXYNIL OCTANOATE	12
FENBUTATIN-OXIDE	1	CHLORSULFURON	6
FENOXYCARB	8	DIAZINON	25
FLUAZIFOP-BUTYL	7	DICAMBA DIMETHYLAMINE SALT OTHER RELATED	805
MYCLOBUTANIL	25	DICAMBA DIMETHYLAMINE SALT	3,232
NITRAPYRIN OTHER RELATED	1	DICLOFOP METHYL	73
NITRAPYRIN	13	DIMETHOATE	395
RESMETHRIN	2	DIURON	7
SIMAZINE	303	EPTC	673
TAU FLUVALINATE	23	FLUAZIFOP-BUTYL	228
THIOPHANATE-METHYL	82	METAM-SODIUM	48,340
TRIADIMEFON	20	METRIBUZIN	2,597
	6,053	THIABENDAZOLE	16
		TRIADIMEFON	90
Mariposa		VINCLOZOLIN	60
BROMOXYNIL OCTANOATE	1		56,700
DIAZINON	867	Mono	
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	4	4(24-DB) ISOCTYL ESTER	710
DICAMBA DIMETHYLAMINE SALT	19	BROMOXYNIL OCTANOATE	16
DIURON	482	DIAZINON	5
METAM-SODIUM	12	DIMETHOATE	239
PROPARGITE	2	METAM-SODIUM	9,051
RESMETHRIN	1	TEBUTHIURON	1
SIMAZINE	1,381		10,021
TEBUTHIURON	3		
	2,772	Monterey	
Mendocino		ANILAZINE	325
AMITRAZ	552	BROMOXYNIL OCTANOATE	1,344
BROMOXYNIL OCTANOATE	22	CHLORSULFURON	61
CHLORSULFURON	7	CYCLOATE	1,135
DIAZINON	661	DIAZINON	78,138
DICAMBA DIMETHYLAMINE SALT	1	DICAMBA DIMETHYLAMINE SALT OTHER RELATED	185
DICAMBA	4	DICAMBA DIMETHYLAMINE SALT	924
DIMETHOATE	4,044	DICAMBA	2
DIURON	2,040	DIMETHOATE	44,785
FENBUTATIN-OXIDE	20	DIURON	21,038
FENOXYCARB	4	EPTC	5,986
METAM-SODIUM	18,654	FENBUTATIN-OXIDE	2,931
MYCLOBUTANIL	808	FENOXYCARB	42
NALED	84	FLUAZIFOP-BUTYL	66
PROPARGITE	697	LINURON	5,471

METAM-SODIUM	182,825	DIURON	7,142
METRIBUZIN	39	EPTC	602
MYCLOBUTANIL	5,464	FENBUTATIN-OXIDE	83
NALED	29,113	FENOXAPROP ETHYL	72
OXYDEMOTON-METHYL	47,244	FENOXYCARB	4
PROMETRYN	7,641	FLUAZIFOP-BUTYL	3
PROPARGITE	4,329	LINURON	48
RESMETHRIN OTHER RELATED	2	METAM-SODIUM	2,181
RESMETHRIN	13	MOLINATE	31,679
SIMAZINE	18,322	MYCLOBUTANIL	12
TAU FLUVALINATE	1,080	OXYDEMOTON-METHYL	2
THIABENDAZOLE	284	PROPARGITE	1
THIOPHANATE-METHYL	2,127	RESMETHRIN	1
TRIADIMEFON	1,665	SIMAZINE	1,750
TRIFORINE	190	TAU FLUVALINATE	1
VINCLOZOLIN	20,212	TEBUTHIURON	153
	482,983	THIOPHANATE-METHYL	342
		TRIADIMEFON	28
		TRIFORINE	68
Napa			50,076
BROMOXYNIL OCTANOATE	244		
DIAZINON	432	Plumas	
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	8	BROMOXYNIL OCTANOATE	22
DICAMBA DIMETHYLAMINE SALT	32	CHLORSULFURON	4
DIMETHOATE	3,885	DIAZINON	40
DIURON	1,596	DIURON	1,939
FENBUTATIN-OXIDE	484	OXYDEMOTON-METHYL	2
FENOXYCARB	4	SIMAZINE	110
METRIBUZIN	8	TRIADIMEFON	2
MYCLOBUTANIL	4,436		2,119
NALED	31		
PROMETRYN	8	Riverside	
PROPARGITE	331	24-DP BUTOXYETHANOL ESTER	3
RESMETHRIN	1	4(24-DB) DIMETHYLAMINE SALT	3,603
SIMAZINE	11,909	AMITRAZ	205
THIOPHANATE-METHYL	405	ANILAZINE	13
TRIADIMEFON	604	BROMOXYNIL OCTANOATE	1,763
TRIFORINE	3	CHLORSULFURON	204
	24,421	CYCLOATE	324
		DIAZINON	33,263
		DICAMBA DIMETHYLAMINE SALT OTHER RELATED	219
		DICAMBA DIMETHYLAMINE SALT	1,076
		DICAMBA	1
		DIMETHOATE	43,360
		DIURON	34,386
		EPTC	53,821
		FENBUTATIN-OXIDE	225
		FENOXYCARB	158
		FLUAZIFOP-BUTYL	637
		IMAZALIL	1,365
		LINURON	612
		METAM-SODIUM	327,802
		METRIBUZIN	1,351
		MYCLOBUTANIL	1,808
		NALED	7,742
		NITRAPYRIN OTHER RELATED	2
		NITRAPYRIN	18
		OXYDEMOTON-METHYL	88
		PROMETRYN	1,227
		PROPARGITE	5,042
		RESMETHRIN OTHER RELATED	1
		RESMETHRIN	8
		SIMAZINE	19,024
		SULPROFOS	171
		TAU FLUVALINATE	59
		TEBUTHIURON	1,156
		THIABENDAZOLE	1,618
		THIOPHANATE-METHYL	4,381
		TRIADIMEFON	4,562
		TRIFORINE	107
		VINCLOZOLIN	2
			551,406
		Sacramento	
		24-DP BUTOXYETHANOL ESTER	9
		4(24-DB) DIMETHYLAMINE SALT	183
		ANILAZINE	6
		BROMOXYNIL OCTANOATE	2,715
		CHLORSULFURON	25
		CYCLOATE	3,908
		DIAZINON	1,164,082
		DICAMBA DIMETHYLAMINE SALT OTHER RELATED	323
		DICAMBA DIMETHYLAMINE SALT	1,395
		DICAMBA	3
		DICLOFOP METHYL	559
		DIMETHOATE	2,874
		DIURON	29,241
		EPTC	12,151
		FENBUTATIN-OXIDE	28
		FENOXAPROP ETHYL	76
		FENOXYCARB	48
		FLUAZIFOP-BUTYL	26
		LINURON	236
Orange			
24-DP BUTOXYETHANOL ESTER	8		
AMITRAZ	152		
ANILAZINE	1,965		
CHLORSULFURON	176		
CYCLOATE	2		
DIAZINON	21,543		
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	39		
DICAMBA DIMETHYLAMINE SALT	515		
DICAMBA	20		
DIMETHOATE	2,075		
DIURON	5,979		
FENBUTATIN-OXIDE	1,714		
FENOXYCARB	283		
FLUAZIFOP-BUTYL	312		
METAM-SODIUM	93,015		
METRIBUZIN	36		
MYCLOBUTANIL	88		
NALED	636		
OXYDEMOTON-METHYL	263		
PROMETRYN	465		
PROPARGITE	2,483		
RESMETHRIN OTHER RELATED	13		
RESMETHRIN	181		
SIMAZINE	13,235		
TAU FLUVALINATE	353		
TEBUTHIURON	319		
THIOPHANATE-METHYL	4,540		
TRIADIMEFON	612		
TRIFORINE	289		
VINCLOZOLIN	105		
	151,415		
Placer			
DIAZINON	5,683		
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	36		
DICAMBA DIMETHYLAMINE SALT	179		
DIMETHOATE	7		

METAM-SODIUM	12,390	DICAMBA DIMETHYLAMINE SALT	171
METRIBUZIN	545	DICAMBA	1
MOLINATE	25,202	DIURON	698
MYCLOBUTANIL	827	FENOXYCARB	20
NALED	383	FLUAZIFOP-BUTYL	6
NITRAPYRIN OTHER RELATED	40	RESMETHRIN	7
NITRAPYRIN	362	SIMAZINE	11
OXYDEMETHON-METHYL	309	TAU FLUVALINATE	7
PROPARGITE	5,051	THIOPHANATE-METHYL	375
RESMETHRIN	4	TRIADIMEFON	25
SIMAZINE	17,890	TRIFORINE	1
TAU FLUVALINATE	12		2,327
TEBUTHIURON	121		
THIOPHANATE-METHYL	5,696	San Joaqui	
TRIADIMEFON	355	4(24-DB) DIMETHYLAMINE SALT	2,343
TRIFORINE	11	BROMOXYNIL OCTANOATE	9,840
VINCLOZOLIN	2	CHLORSULFURON	43
	1,287,086	CYCLOATE	7,884
		DIAZINON	31,591
San Bernardino		DICAMBA DIMETHYLAMINE SALT OTHER RELATED	695
24-DP BUTOXYETHANOL ESTER	55	DICAMBA DIMETHYLAMINE SALT	2,832
4(24-DB) DIMETHYLAMINE SALT	209	DICAMBA	1
AMITRAZ	124	DICLOFOP METHYL	2,810
ANILAZINE	13	DIMETHOATE	21,011
BROMACIL LITHIUM SALT	251	DIURON	72,790
BROMOXYNIL OCTANOATE	240	EPTC	59,590
CHLORSULFURON	86	FENBUTATIN-OXIDE	6,447
DIAZINON	11,102	FENOXAPROP ETHYL	18
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	46	FENOXYCARB	29
DICAMBA DIMETHYLAMINE SALT	326	FLUAZIFOP-BUTYL	194
DICAMBA	15	LINURON	7,877
DIMETHOATE	4,909	METAM-SODIUM	157,442
DIURON	35,881	METRIBUZIN	4,597
FENBUTATIN-OXIDE	50	MOLINATE	8,626
FENOXYCARB	31	MYCLOBUTANIL	9,681
FLUAZIFOP-BUTYL	396	NALED	9,769
IMAZALIL	449	OXYDEMETHON-METHYL	493
METAM-SODIUM	43,608	PROPARGITE	95,690
MYCLOBUTANIL	29	RESMETHRIN	85
NALED	6,736	SIMAZINE	53,965
OXYDEMETHON-METHYL	4	TAU FLUVALINATE	40
PROMETRYN	247	TEBUTHIURON	58
PROPARGITE	965	THIABENDAZOLE	2
RESMETHRIN	29	THIOPHANATE-METHYL	3,346
SIMAZINE	8,370	TRIADIMEFON	695
TAU FLUVALINATE	34	TRIFORINE	395
TEBUTHIURON	534	VINCLOZOLIN	450
THIABENDAZOLE	411		571,330
THIOPHANATE-METHYL	1,268		
TRIADIMEFON	168	San Luis O	
TRIFORINE	24	24-DP BUTOXYETHANOL ESTER	2
VINCLOZOLIN	49	ANILAZINE	118
	116,658	BROMOXYNIL OCTANOATE	744
		CHLORSULFURON	133
		CYCLOATE	119
		DIAZINON	7,859
		DICAMBA DIMETHYLAMINE SALT OTHER RELATED	252
		DICAMBA DIMETHYLAMINE SALT	1,082
		DICAMBA	10
		DIMETHOATE	10,193
		DIURON	6,926
		EPTC	989
		FENBUTATIN-OXIDE	315
		FENOXYCARB	9
		FLUAZIFOP-BUTYL	32
		LINURON	2,991
		METAM-SODIUM	176,661
		MYCLOBUTANIL	1,899
		NALED	1,701
		OXYDEMETHON-METHYL	8,241
		PROMETRYN	772
		PROPARGITE	3,448
		RESMETHRIN	1
		SIMAZINE	4,378
		TAU FLUVALINATE	178
		TEBUTHIURON	4
		THIABENDAZOLE	101
		THIOPHANATE-METHYL	715
		TRIADIMEFON	87
		TRIFORINE	49
		VINCLOZOLIN	1,212
			231,220
		San Mateo	
		24-DP BUTOXYETHANOL ESTER	4
		24-DP DIMETHYLAMINE SALT	8
		BROMOXYNIL OCTANOATE	16
		CHLORSULFURON	15
		DIAZINON	5,810
		DICAMBA DIMETHYLAMINE SALT OTHER RELATED	352
		DICAMBA DIMETHYLAMINE SALT	1,486
		DICAMBA	3
		DIMETHOATE	730
San Francisco			
DIAZINON	965		
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	41		

DIURON	1,428	CHLORSULFURON	214
FENBUTATIN-OXIDE	20	CYCLOATE	50
FENOXYCARB	11	DIAZINON	26,178
FLUAZIFOP-BUTYL	6	DICAMBA DIMETHYLAMINE SALT OTHER RELATED	267
LINURON	2	DICAMBA DIMETHYLAMINE SALT	1,237
METAM-SODIUM	27,950	DIMETHOATE	1,622
MYCLOBUTANIL	22	DIURON	19,458
NALED	185	EPTC	223
OXYDEMOTON-METHYL	557	FENBUTATIN-OXIDE	40
PROPARGITE	3	FENOXYCARB	304
RESMETHRIN OTHER RELATED	1	FLUAZIFOP-BUTYL	14
RESMETHRIN	14	LINURON	15
SIMAZINE	5,147	METAM-SODIUM	20,863
TAU FLUVALINATE	96	METRIBUZIN	265
TEBUTHIURON	1	MYCLOBUTANIL	776
THIABENDAZOLE	527	NALED	461
THIOPHANATE-METHYL	4,791	OXYDEMOTON-METHYL	720
TRIADIMEFON	203	PROMETRYN	423
TRIFORINE	32	PROPARGITE	14
VINCLOZOLIN	161	RESMETHRIN OTHER RELATED	1
	49,580	RESMETHRIN	13
		SIMAZINE	2,855
San Benito		TAU FLUVALINATE	48
24-DP DIMETHYLAMINE SALT	65	TEBUTHIURON	10
ANILAZINE	4	THIABENDAZOLE	161
BROMOXYNIL OCTANOATE	1,068	THIOPHANATE-METHYL	940
CHLORSULFURON	2	TRIADIMEFON	398
DIAZINON	8,070	TRIFORINE	184
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	64	VINCLOZOLIN	13
DICAMBA DIMETHYLAMINE SALT	287		78,179
DICLOFOP METHYL	8		
DIMETHOATE	6,808	Santa Cruz	
DIURON	1,884	24-DP DIMETHYLAMINE SALT	1
EPTC	24	ANILAZINE	4
FENBUTATIN-OXIDE	37	BROMOXYNIL OCTANOATE	31
FENOXYCARB	45	DIAZINON	6,763
FLUAZIFOP-BUTYL	10	DICAMBA DIMETHYLAMINE SALT OTHER RELATED	8
LINURON	13	DICAMBA DIMETHYLAMINE SALT	43
METAM-SODIUM	13,959	DIMETHOATE	2,661
METRIBUZIN	550	DIURON	1,302
MYCLOBUTANIL	227	FENBUTATIN-OXIDE	255
NALED	2,102	FENOXYCARB	48
OXYDEMOTON-METHYL	2,377	FLUAZIFOP-BUTYL	7
PROMETRYN	173	LINURON	135
PROPARGITE	310	METAM-SODIUM	78,473
RESMETHRIN	4	MYCLOBUTANIL	806
SIMAZINE	1,426	NALED	2,559
TAU FLUVALINATE	4	OXYDEMOTON-METHYL	2,508
THIOPHANATE-METHYL	747	PROMETRYN	139
TRIADIMEFON	352	PROPARGITE	3,702
TRIFORINE	8	RESMETHRIN	3
VINCLOZOLIN	359	SIMAZINE	522
	40,984	TAU FLUVALINATE	320
		THIABENDAZOLE	114
		THIOPHANATE-METHYL	1,258
		TRIADIMEFON	407
		TRIFORINE	93
		VINCLOZOLIN	906
			103,066
Santa Barb			
4(24-DB) DIMETHYLAMINE SALT	22		
ANILAZINE	840	Shasta	
BROMOXYNIL OCTANOATE	355	4(24-DB) DIMETHYLAMINE SALT	23
CHLORSULFURON	4,698	ANILAZINE	2
CYCLOATE	681	BROMOXYNIL OCTANOATE	162
DIAZINON	7,835	CHLORSULFURON	35
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	122	DIAZINON	1,327
DICAMBA DIMETHYLAMINE SALT	505	DICAMBA DIMETHYLAMINE SALT OTHER RELATED	56
DICAMBA	5	DICAMBA DIMETHYLAMINE SALT	251
DIMETHOATE	12,956	DICAMBA	10
DIURON	13,570	DIURON	4,598
EPTC	4,367	FENBUTATIN-OXIDE	2
FENBUTATIN-OXIDE	561	FENOXYCARB	3
FENOXYCARB	12	FLUAZIFOP-BUTYL	38
FLUAZIFOP-BUTYL	8	LINURON	10
LINURON	6,191	METAM-SODIUM	5
METAM-SODIUM	645,413	METRIBUZIN	150
METRIBUZIN	75	MYCLOBUTANIL	82
MYCLOBUTANIL	3,113	OXYDEMOTON-METHYL	1
NALED	4,369	PROPARGITE	162
OXYDEMOTON-METHYL	21,554	RESMETHRIN OTHER RELATED	2
PROMETRYN	2,384	RESMETHRIN	15
PROPARGITE	329	SIMAZINE	955
RESMETHRIN	1	TAU FLUVALINATE	12
SIMAZINE	17,227	TEBUTHIURON	16
TAU FLUVALINATE	552	THIOPHANATE-METHYL	231
TEBUTHIURON	5	TRIADIMEFON	4
THIABENDAZOLE	26		8,151
THIOPHANATE-METHYL	1,569		
TRIADIMEFON	314		
TRIFORINE	348		
VINCLOZOLIN	5,511		
	755,520		
		Sierra	
Santa Clara		DIURON	62
AMITRAZ	3	SIMAZINE	38
ANILAZINE	7		100
BROMOXYNIL OCTANOATE	401		

Siskiyou		DICAMBA DIMETHYLAMINE SALT OTHER RELATED	130
24-D 2-ETHYLHEXYL ESTER	278	DICAMBA DIMETHYLAMINE SALT	585
4(24-DB) DIMETHYLAMINE SALT	228	DIMETHOATE	24,888
BROMOXYNIL OCTANOATE	155	DIURON	30,086
CHLORSULFURON	29	EPTC	21,512
DIAZINON	17	FENBUTATIN-OXIDE	12,126
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	391	FENOXAPROP ETHYL	2
DICAMBA DIMETHYLAMINE SALT	1,582	FENOXYCARB	18
DICLOFOP METHYL	158	FLUAZIFOP-BUTYL	135
DIURON	7,289	METAM-SODIUM	239,885
EPTC	11,224	METRIBUZIN	976
FLUAZIFOP-BUTYL	82	MOLINATE	4,813
METRIBUZIN	2,822	MYCLOBUTANIL	2,228
MYCLOBUTANIL	5	NALED	14,612
SIMAZINE	349	OXYDEMOTON-METHYL	567
THIOPHANATE-METHYL	306	PROMETRYN	51
TRIADIMEFON	41	PROPARGITE	90,689
VINCLOZOLIN	8	RESMETHRIN	19
	24,965	SIMAZINE	36,056
Solano		TAU FLUVALINATE	313
24-DP BUTOXYETHANOL ESTER	1	THIABENDAZOLE	14
4(24-DB) DIMETHYLAMINE SALT	3,244	THIOPHANATE-METHYL	8,179
BROMOXYNIL OCTANOATE	878	TRIADIMEFON	208
CHLORSULFURON	18	TRIFORINE	1,136
CYCLOATE	4,444	VINCLOZOLIN	1,277
DIAZINON	12,956		532,064
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	268	Sutter	
DICAMBA DIMETHYLAMINE SALT	1,104	4(24-DB) DIMETHYLAMINE SALT	109
DICAMBA	2	AMITRAZ	324
DICLOFOP METHYL	3,309	BROMACIL LITHIUM SALT	432
DIMETHOATE	8,052	BROMOXYNIL OCTANOATE	758
DIURON	20,106	CHLORSULFURON	18
EPTC	10,697	CYCLOATE	2,402
FENBUTATIN-OXIDE	48	DIAZINON	46,837
FENOXYCARB	24	DICAMBA DIMETHYLAMINE SALT OTHER RELATED	56
FLUAZIFOP-BUTYL	3	DICAMBA DIMETHYLAMINE SALT	245
LINURON	50	DICLOFOP METHYL	851
METAM-SODIUM	95,130	DIMETHOATE	4,902
METRIBUZIN	2,671	DIURON	4,962
MYCLOBUTANIL	395	EPTC	1,621
NALED	538	FENBUTATIN-OXIDE	2,786
NITRAPYRIN	5	FENOXAPROP ETHYL	758
OXYDEMOTON-METHYL	35	FENOXYCARB	1
PROPARGITE	12,442	FLUAZIFOP-BUTYL	13
SIMAZINE	7,781	LINURON	1
TAU FLUVALINATE	4	METAM-SODIUM	24,125
TEBUTHIURON	1	METRIBUZIN	1,886
THIOPHANATE-METHYL	833	MOLINATE	205,940
TRIADIMEFON	88	MYCLOBUTANIL	268
TRIFORINE	23	NALED	2,599
VINCLOZOLIN	1	OXYDEMOTON-METHYL	435
	185,152	PROPARGITE	12,002
Sonoma		SIMAZINE	3,167
BROMOXYNIL OCTANOATE	252	TEBUTHIURON	2
CHLORSULFURON	19	THIOPHANATE-METHYL	531
DIAZINON	7,581	TRIADIMEFON	127
DICAMBA DIMETHYLAMINE SALT OTHER RELATED	54	TRIFORINE	7,844
DICAMBA DIMETHYLAMINE SALT	221	VINCLOZOLIN	518
DICAMBA	2		326,522
DIMETHOATE	5,548	Tehama	
DIURON	4,711	BROMOXYNIL OCTANOATE	232
FENBUTATIN-OXIDE	556	CHLORSULFURON	10
FENOXYCARB	13	DIAZINON	15,512
FLUAZIFOP-BUTYL	4	DICAMBA DIMETHYLAMINE SALT OTHER RELATED	30
METAM-SODIUM	35,521	DICAMBA DIMETHYLAMINE SALT	120
METRIBUZIN	12	DICLOFOP METHYL	307
MYCLOBUTANIL	6,589	DIMETHOATE	510
NALED	117	DIURON	6,989
PROPARGITE	2,006	EPTC	550
RESMETHRIN OTHER RELATED	6	FENBUTATIN-OXIDE	1,003
RESMETHRIN	62	FENOXYCARB	1
SIMAZINE	20,269	FLUAZIFOP-BUTYL	22
TAU FLUVALINATE	13	METAM-SODIUM	11
THIABENDAZOLE	28	MOLINATE	4,453
THIOPHANATE-METHYL	606	MYCLOBUTANIL	59
TRIADIMEFON	216	NALED	910
TRIFORINE	30	PROPARGITE	6,192
VINCLOZOLIN	4	SIMAZINE	5,111
	84,440	TEBUTHIURON	1
Stanislaus		THIOPHANATE-METHYL	885
24-DP DIMETHYLAMINE SALT	12	TRIADIMEFON	12
4(24-DB) BUTOXYETHANOL ESTER	28	TRIFORINE	1,129
4(24-DB) DIMETHYLAMINE SALT	1,256		44,050
4(24-DB) ISOCTYL ESTER	140	Trinity	
ANILAZINE	41	DIAZINON	2
BROMACIL LITHIUM SALT	335	DIURON	11
BROMOXYNIL OCTANOATE	4,865		14
CHLORSULFURON	1	Tulare	
CYCLOATE	22	24-DP DIMETHYLAMINE SALT	7
DIAZINON	34,856		



