

Pesticide Toxicology

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The California Poison Control System has answering sites in Sacramento, San Francisco, Fresno, and San Diego. The System is overseen by the University of California, San Francisco, School of Pharmacy. There are two phone numbers for Poison Control: 1-800-876-4766 (1-800-8POISON) which is good anywhere in California, and 1-800-222-1222 which is a nationwide number.

Nationally, in 2004, there were 2,776,925 exposures reported to Poison Control Centers. Of these, 1,096,356 were non-drug exposures, and 9% (or 102,754) of the non-drug exposures were to pesticides. The majority of pesticide exposures resulted in no effect or minor effect, but 2853 of the exposures caused moderate effects, 219 cause major effects, and there were 8 deaths. 74% of all human exposure calls are managed at home.

The most common class of insecticide involved in these exposures was pyrethrin/pyrethroids, followed by the Organophosphates, Carbamates, and Chlorinated Hydrocarbons. Glyphosate, (Roundup) accounted for 46% of the herbicide calls.

Pesticides can be toxic by ingestion, dermal exposure, inhalation, or ocular exposure. They also can have a high risk for secondary exposure to rescuers and health care providers.

The mechanism of action, symptoms of toxicity, and medical management of a poisoning with various classes of insecticides were discussed. These classes included: Organophosphates and Carbamates (Cholinesterase inhibitors); Pyrethrins and Pyrethroids; Chlorinated Hydrocarbons; Methoprene; Hydramethylnon, and N-Ethyl Perfluorooctane Sulfonamide.

The toxicity profiles of several classes of herbicides was also discussed. These herbicide included: the Chlorophenoxy Compounds, Paraquat and Diquat, Pentachlorophenols and Nitrophenols, Carbamate herbicides, Glyphosate, and Urea Substituted herbicides.