

Pesticides

The experts at Robson Forensic are frequently retained to investigate incidents involving human exposure to toxic substances. Very often those exposures involve pesticides. The nature of these investigations varies broadly depending on the specifics of each case, including the substance in question, the dose, and the routes of exposure. 1.1 billion pounds of pesticide active ingredient are used annually in the United States.

Pesticides are substances that are designed to attract, seduce, destroy, or mitigate a pest. They are a class of Biocide. In general, a pesticide is a chemical or biological agent that deters, incapacitates, kills, or otherwise minimizes the effects of pests. By their very nature they are inherently toxic. They are often used to control organisms that are considered to be harmful or simply a nuisance.

Human Pesticide Exposures

Pesticide Exposures

A pesticide exposure may lead to a variety of health effects, from a simple irritation of the skin and eyes, to more severe effects targeting the central nervous system.

Due to the widespread use of pesticides, low-level exposures to numerous pesticide ingredients are common.

- Pesticides are present in most commercially grown food, are used extensively for residential, commercial building pest control, and agricultural concerns.
- The Environmental Protection Agency (EPA) has jurisdiction over pesticide use. There are drinking water standards for only a few pesticides.
- Proper procedures for application of pesticides are typically found on the product label.

The exposure standard for each active ingredient in a pesticide is determined for that ingredient alone. Consideration is not given to the additive effects of other similar-acting members of the same pesticide class. Nor is the synergistic effect of pesticide exposure accounted for in

setting standards. Consequently, an individual exposure to a class of pesticides may reach a much higher level than the federally determined safe level for specific members of a class.

What Can Go Wrong?

If pesticides are improperly applied a potential health exposure may develop. Pest Control Operators must be properly trained and certified to apply pesticides. In addition, any pesticide application must be done in conformance with the directions and precautions identified on the pesticide label. Those pesticides that are regulated are only to be used by a licensed pest control operator because of their inherent toxicity. They are not available to the public because of their potency.

Pesticide misapplications can and do occur because of poorly trained or untrained operators, lack of adherence to the requirements of the label, or simply human error when applying the pesticide. For example, chlordane, a chlorinated hydrocarbon pesticide, has been used to treat termites in residential homes. Misapplication has occurred in many cases due to



accidental penetration of the pesticide into the homeowner heating ducts. The homeowner would only become aware of the situation when the heat was turned on for the first time, often months later. With windows closed and pesticide vapors emanating from the ducts, human exposures occur.

Other examples are spills that may occur in the area of the application, and not following the label instructions. Unfortunately, the acute and chronic effects of exposure to chlorinated pesticides have not been determined.

Experts

There are a variety of experts whose services may be relevant in a pesticide related investigation. Examples of specific Robson Forensic experts who may be relevant to your case include:

Toxicologist: Michael J. McCabe, Jr., Ph.D., DABT, ATS - A toxicologist may be necessary to review the toxicological information associated with the pesticide and the potential health effects associated with exposure.

Industrial Hygienist: Diane Trainor, Ph.D., CHCM - An industrial hygienist may be needed if an indoor air quality hazard exists and air sampling and analysis are necessary. In many cases drinking water and surface samples may also be necessary.

Facilities Engineer: Michael Klein, P.E. - A facilities engineer may be called in to answer questions regarding construction and heating and ventilation concerns.

Certified Arborist: Mark A. Webber - An arborist may be valuable in evaluating pesticide applications around plants and the selection of specific chemicals relevant to the target pest.

Contact

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Michael Klein, P.E. heads the environmental practice at Robson Forensic. Contact Michael directly to discuss your case; he can assist you in identifying the most appropriate experts to address the specific technical aspects of your case.