

HERBICIDE SAFETY

An Attack on Ignorance and Carelessness

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WE are experiencing poisonings caused by herbicides. These are caused by carelessness, or ignorance, or both. Those guilty of either or both of these two counts will not be pleased to hear the charge made. But what of the lives—human or animal—of those endangered by improper handling of herbicides?

Every worker handling toxic materials should be advised of possible danger to him, and should be instructed on correct rates of application and proper protective measures.

Possibly more important than this is to tell workers in advance what to do in case of a severe splash or spill of the concentrated chemical into eyes or onto skin.

An example of the cases of poisoning reported, what types of poisonings they were, and what types of herbicides caused them, is offered by California. The State Department of Public Health, Bureau of Occupational Health, issues an annual report entitled "Occupational Disease In California Attributed to Pesticides and Other Agricultural Chemicals." The types of poisonings included in a recent report fall into three categories:

1. systemic poisoning
2. respiratory condition
3. skin conditions

This report lists 66 cases of poisoning attributed to herbicides and defoliants. However, there were also 18 additional cases attributed to phenolic compounds which may very well have been caused by herbicides such as pentachlorophenol, DNBP, and related materials. Therefore, there probably were more than 66 cases of herbicide poisoning. And there may be even more, because not all cases of pesticide poisonings are reported—only workers covered by Workmen Compensation insurance are included, as required by law.

Five of the 66 known herbicide poisonings were of the systemic type, which is often severe but rarely fatal.

There were 10 reports of respiratory conditions, and 57 of skin conditions. The latter conditions can cause the victim pain and loss of work.

About 500 reports of "eye conditions" and "chemical burns" were reported by physicians but not tabulated because of lack of clerical help. However, a review of a prior year's report showed that approximately 100 chemical burns and eye conditions were attributed to herbicides. I believe that it is obvious that there is a gross under-reporting of pesticide poison cases.

In the report in question there were no occupational deaths recorded or attributed to pesticides. This is only the third year in the 18 years of these reports that we have no record of such deaths. However, in previous years herbicides such as sodium arsenite, pentachlorophenol and paraquat have caused accidental death of a number of humans and livestock. These deaths occurred because someone was ignorant or careless and left chemicals where they could be accidentally consumed by humans (mostly children) or by livestock.

Eating or drinking pesticides, often from unlabeled containers, including soft drink and wine bottles, has been the main cause of accidental deaths of a number of children as well as adults. So, the rule is to keep all pesticides in their original labeled containers and locked at all times when they are not being used by a trained person.

Not all deaths from pesticides are caused by eating or drinking them from a container. In the past few years throughout the country, at least 95 cattle have died from grazing on grass which had received accidental drift of arsenical herbicides from near-by spraying operations. Arsenic trioxide and sodium arsenite were the materials most frequently causing these deaths. However, one of the newer organic arsenicals, MSMA, caused the deaths of a two-

year-old girl and 41 beef cattle during 1967-68.

Pesticides can enter the body in any one or all three of the following ways:

1. through the lungs—by inhalation
2. through the mouth—by ingestion
3. through the unbroken skin—by absorption

Occupationally, the most common route of absorption is through the skin. However, under certain working conditions, inhalation is also an important route of entry.

Oral ingestion of pesticides by workers has not occurred often.

You do not have to be a toxicologist to know how toxic or hazardous a pesticide is. You simply read the label on the container and look for certain key words such as "DANGER" "POISON" "WARNING" or "CAUTION." These "signal words," and in some cases the skull and crossbones symbol, will provide the approximate toxicity rating of the chemical in the container.

Toxicity ratings are as follows:

1. The signal words "DANGER," "POISON," and the skull and crossbones symbol are required on the labels for all highly toxic compounds. These materials all fall within the acute oral LD₅₀ range of 0 to 50 mg/kg.

2. The word "WARNING" is required on the labels for all moderately toxic compounds. These materials all fall within the acute oral LD₅₀ range of 50 to 500 mg/kg.

3. The word "CAUTION" is required on the labels for all slightly toxic compounds. These chemicals all fall within the acute oral LD₅₀ range of 500 to 5000 mg/kg.

4. No special signal words or symbols are required on labels for compounds that have an acute oral LD₅₀ greater than 5000 mg/kg. However, unqualified claims for safety are not acceptable on any label and all labels must bear the statement "Keep out of the reach of children."