

PROPERLY ASSESS RISK OF PESTICIDE

Fluid ounces of prevention can prevent a lot of cure

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People are often hesitant to use pesticides for their own safety and potential effects on children, pets, and environment. Others may use four or five different pesticides to get rid of a pest, with no apparent concern.

Both examples warrant a closer look at what pesticides are, how to assess their toxicity, and how they can be used safely.

What is a pesticide?

A pesticide is any material (natural, organic, or synthetic) used to control, prevent, kill, suppress, or repel pests. "Pesticide" is a broad term. Some of the most common pesticides used around homes or landscapes include herbicides to kill weeds, insecticides to kill insects, rodenticides to kill rodents and fungicides to control fungus.

Assessing Pesticide Toxicity

We must understand how toxicity is classified to understand pesticide toxicity. The Environmental Protection Agency tests all pesticides before approved for use and assigns them a toxicity level. This toxicity level is indicated by the signal word displayed prominently on the pesticide label. The signal words are, from least to most toxic: Caution, Warning, Danger, and Danger Poison. See Table 1 next page.

Toxicity level is determined by the chemical's LD_{50} , the "lethal dose" measured in milligrams of product per kilogram of body weight, required to kill 50 percent of a test population, usually mice or rats. The oral (ingestion) LD_{50} is the most common

number used in comparisons, although depending on the product, it may also have a dermal (skin contact) and an inhalation LD_{50} . See Table 2 to compare the oral LD_{50} values of some pesticides to those of common household chemicals. Note that many of the common chemicals we use on a daily basis are more toxic than some pesticides. Compare table salt and Roundup, for example, while other pesticides, such as paraquat, are more toxic. (Many of the most toxic pesticides of the past, such as Temick 10G [with a LD_{50} of 6.2 mg/kg], have been removed from the market.) The most important thing to remember about the LD_{50} is that the lower the number, the more toxic a chemical.

To understand what this means to you, take a look at the toxicity equation:

$$\text{Risk} = \text{Toxicity} \times \text{Exposure}$$

This means your risk when using a pesticide is a function of the pesticide's toxicity and the amount of your exposure. To reduce risk, use pesticides only when necessary; if needed, choose the least-toxic option and reduce your exposure by taking proper safety precautions. LD_{50} values will never be found on a product label, but they can be found in the pesticides corresponding Safety Data Sheet (SDS) – all pesticide labels and SDS's can be readily found by searching the internet.



