

## **“Are All Pesticides Toxic?”**

A mother sprays her child with bug spray before an afternoon walk in the summer. A homeowner applies an organic dust to his outdoor plants to control insects. A farmer uses an herbicide to control weeds in his crop. What do each of these have in common? They are all using pesticides.

There are many misconceptions related to pesticides, but one I'd like to address is that of toxicity. At the risk of giving away the answer to this article title too quickly, yes all pesticides are toxic. Organic sprays are toxic, "natural" chemicals are toxic, the weed killer at the big box store is toxic, even the home remedy your cousin shared on Facebook is toxic.

All pesticides must be toxic, or poisonous, to be effective against the pests they are intended to control. Because pesticides are toxic, they are potentially hazardous to humans, animals, and the environment. Therefore, people who use pesticides should understand the relative toxicity and potential health effects of the products they use.

How toxic is the pesticide you are using? An easy way to find out is to look at the signal word on the label which is an indicator of the toxicity of the product. Every registered pesticide will have the words CAUTION, WARNING, or DANGER on the label, and that word reflects the level of toxicity of the product. Products that say CAUTION are the lowest in toxicity, WARNING indicates medium toxicity products, and DANGER is found on the most toxic products.

Now at this point you may be a little uneasy after all this talk about warnings and danger and toxicity. Keep in mind though that the health risks from exposure to a pesticide are determined not only by the toxicity of the product, but also the length and amount of exposure time. Sometimes we put this in the form of a formula, Risk = Toxicity X Exposure.

If I take one Tylenol, that would be beneficial for a headache or back pain. If I take an entire bottle, well that would cause some problems to say the least. In other words, "the dose makes the poison". Water, caffeine, or just about any chemical can be deadly if you ingest too much too quickly.

So how do we limit risk when using pesticides? By limiting the toxicity and/or the exposure. Using the least toxic product that will do the job is a good place to start. In other words, don't use an insecticide with a signal word of WARNING when a product with the word CAUTION would work just as well. For the vast majority of products available to homeowners this isn't an issue as they will generally have low concentrations of active ingredients, and those active ingredients have been determined to be relatively safe.

To limit your exposure when applying pesticides, read the label to see what clothing, such as chemical resistant gloves or goggles, is recommended an applicator wear. Think about the 3 routes of pesticide entry into the body (dermal, inhalation, and oral), and how you might protect yourself. It is unlikely that you would purposely eat or drink the chemicals you are using, but you may breathe them in, splash them on your skin, or have them blown into your eyes when spraying.

Pesticides are a critical tool for controlling insects, diseases, and weeds whether it be in the landscape, home garden, or farm. Properly selecting your product, and using that product according to the label will help ensure your safety, the safety of beneficial organisms, and the health of the environment around you. For help with pesticide selection and safety, contact the University of Tennessee Extension office at 615-735-2900.