Pesticide Safety

The term pesticide is broadly defined as any product that controls, destroy, or repels pests. This includes synthetics and biological products. Pests include weeds, insects, rodents, birds, fungi, germs, or other organisms that cause loss or damage, are harmful to landscape health, are unsightly, or just plain annoying.

The term pesticide includes herbicides, insecticides, even disinfectants. All have to be registered by the US Environmental Protection Agency after passing rigorous personal and environmental safety tests. Of course just because a product is registered by the EPA does not guarantee that there's no risk to you or to the environment; knowing this, the EPA requires certain labeling so you will know all the handling precautions for the product as well as where you could legally and safely use it. In this video we'll review some of these legal and safety aspects of pesticide selection and use. Our goal is to make sure you know the safety issues concerning pesticide application and how to minimize the health risks to you and the environment.

First, we trust you are using an integrated pest management approach in your landscape because IPM is the most environmentally friendly way to control pests. If not please review our video the Homeowner's Guide to Integrated Pest Management. The video discusses methods to minimize pesticide use in your lawn, garden, or general landscape. Now if your IPM program determines that you should use a pesticide to manage a pest population, make sure you select the correct product for your needs. Read the label carefully and make sure you have a clear understanding of everything on that label before you purchase the product. Make absolutely sure that the site you want to treat is listed on that label. For example, if you have scab on your apple tree make sure the fungicide you choose can be used on fruit trees, because the tree is your site. The labels on products used to treat fruit and vegetable crops may be very specific. The golden pesticide rule is that the site must be on the label in order to legally use that product; it's that simple. Don't second guess the label, it protects you and the environment. You are already jumping the gun, though, if you're reading product labels on a store shelf and you have not researched all the management options available for that pest. If you're using pesticides, do you know which active ingredients are effective in controlling the pest? If not, use the Hortsense website and other references shown in our IPM video to determine which active ingredients in their products would be effective in controlling that pest.

Now find out what type of material the product comes in and if you have the right equipment to apply the product. For instance, some products are applied in a dry granule or pellet formulation and may require a spreader or similar equipment. Others are mixed with water and sprayed or wiped on the application site. Finally, since you probably will not use the entire container, decide if the product is something that you can safely store at home. Again, refer to the label to make this decision. It provides valuable information about proper handling, use, potential risk to humans, animals, plants, and the environment, and instructs how to minimize or avoid risks. But reading the label is not good enough. Understand it completely and abide by its directions.

Let's examine what information is listed on the label and what it all means. Every pesticide product is often referred to by two different names.
The brand name is the manufacturer's name for the product. They’ll usually list the brand name first and largest so you’ll remember it and buy the product again. The active ingredient is the actual chemical that controls the pest; for instance, Glyphosate is the active ingredient in Roundup Weed and Grass Killer - which is the company’s brand name for this herbicide. All labels have a signal word. This is an instant indicator of the product’s toxicity and its potential risk to humans. Pesticide toxicity occurs in two ways. Products are either corrosive or irritating, or they cause normal physiological processes in our bodies to malfunction. Following is a discussion of all four signal words and their meanings, listed from most dangerous the least; this is very important.

Products with DANGER-POISON, along with a skull and crossbones symbol, are highly toxic and deadly at low doses. DANGER, all by itself, without the word poison, indicates that the product is corrosive and can cause irreversible eye damage or severe skin injury. WARNING products are either moderately toxic to our body systems, or can cause moderate eye or skin irritation. CAUTION products are either slightly toxic to our body systems, or may cause slight eye or skin irritation. Any products containing these signal words require special care when applying, even those that are not pesticides. You may be surprised at the number of household products that use signal words on their labels. Look in your garage, laundry cabinet, or under the kitchen sink, and evaluate the potential hazard of chemicals stored within these easily accessible places. Automobile products like anti-freeze or window washer fluid often carry a DANGER-POISON signal word while dish soap often displays WARNING or CAUTION. Next, under the signal word is a section entitled Precautionary Statements. Precautionary Statements further identify potential hazards and recommend ways to minimize or avoid risks. Types of Precautionary Statements include Hazards to Humans and Domestic Animals, Environmental Hazards, and Physical or Chemical Hazards.

Under the Hazards to Humans and Domestic Animals Statement you will find the signal word repeated, with information indicating if the product poses a risk to your mouth, skin, lungs, or eyes. These routes of entry must be protected and the label will tell you exactly what clothing and equipment are required to safely apply the pesticide. Laundering instructions are included as well. If the label does specify certain clothing or safety equipment be safe and follow those warnings. These are not suggestions, they are instructions, so treat them as gospel. Even if the label doesn't specify any protective clothing or equipment, it's always a good idea to wear long pants, a long-sleeved shirt, shoes or boots, and waterproof gloves. If the product is a dust or a powder, wear eye protection and a dust mask to protect your eyes and lungs. At the very least, eye protection will keep you from splashing pesticides into your eyes while mixing. The label also contains information about environmental concerns such as the possibility of harming fish, bees, and other organisms. It lets you know if the product could leech into groundwater or drift away from the area where you're applying the pesticide. These statements should concern you because you want to be sure you can apply the product without causing damage to the environment.

Make sure you heed all label precautions. Protect yourself, protect others, protect the environment. So let's review the responsible steps you should take when handling pesticides. Before you leave the store with the pesticide product, make sure you have done all of your homework, you have correctly identified your plant or target site as well as the pest, you understand all of the integrated management options. Now about that label,
make sure your site is listed and you’ve read the precautions about the personal and environmental hazards. You also know what kind of personal protective equipment is needed, and buy if you don't have it.

When transporting pesticides from the store to your home, make sure you bag your groceries separately from the pesticides and keep them separate and as far away as possible from any people or pets in your vehicle.

Also make sure the containers are well secured so they don't fall over. Store the pesticides and other hazardous products well out of the reach of children or pets; that means placing the products at least four feet off the ground, preferably in a locked and labeled cabinet. Don't put leftover pesticides in soft drink bottles or any other container that can be confused with food; in fact, you need to store them in their original containers with the labels still intact. That label contains critical information in case of a medical emergency; of course, never store these pesticides with food or medical supplies. Keep your storage area dry and well ventilated. Check the containers periodically for leaks, corrosion, breaks, tears, or rust. If you find that a container is broken, take it to your household hazardous waste collection. Call your local health department or county Extension office for the nearest location.

When you're ready to apply a pesticide, review the label again to make sure you are wearing the correct personal protective equipment. Under the label section that describes the Directions for Use, it states how much product to mix into solution or how much to apply to a given area. Some products are sold ready-to-use and require no mixing or measuring. They may be a bit more expensive but they're easier to handle and create less waste, so it's a smart trade off. For products that you need to mix; don't worry, it's usually fairly easy. First you determine how much total spray you need to treat your area. Do this first by spraying your area with just water. Use a clean sprayer, fill it with one gallon of water, and spray the area that you want to treat. Now measure how much water is remaining in your tank. Subtract the amount remaining from the gallon you started with to determine how much you used. This is the amount of spray mix you need to treat the entire area.

For example, you determine that you need one third of a gallon to treat your apple tree. The label states to mix one tablespoon of product per one gallon of water, so you would mix one third of a tablespoon, or a teaspoon, of product to one third gallon of water to treat your tree. If you need to treat on an area basis, proceed as you did a minute ago. Fill the sprayer with a known amount of water, spray the area listed on the label (for example one hundred square feet), determine how much you applied to the one hundred square feet. Using the formula we explained earlier: let's say you found out it takes twenty ounces of water to treat a one hundred square foot test area. If your total area to be treated were six hundred square feet then you would need one hundred and twenty ounces to treat your entire area. If this math is confusing or complicated, don't use products that require measuring application area; purchase ready-to-use products or products with simple mixture rates.

First, check the weather conditions before you get ready to spray. Make sure you haven't picked a windy day to apply the product since the pesticides can drift to non-target areas. Also, like we've just explained, mix only the amount you need to do the job. Mix it outdoors or in a well ventilated area. Keep children and pets out of the area where you are
doing the mixing as well as away from the application area until the spray is dry or the dust has settled.

Don't eat, drink, or smoke when using pesticides, otherwise you could easily transfer traces of the pesticide from your hand to your mouth.

Avoid wearing contact lenses when dealing with the pesticides since they may trap the material against your eye. Only use the product indoors if the label specifically states it can be used inside the home. If you're going to treat anything in the kitchen, such as the cabinets, remove food, dishes, pots, and pans from the room before beginning. Pay very close attention to the ventilation and reentry instructions included on the product label.

After you finish applying the pesticide, clean your equipment well, run rinse water through your spray equipment to rinse it thoroughly, apply the rinse material to the site of application, don't dump it or throw it away. When finished store the unused product properly. Never flush unused pesticides down the toilet, sink, or storm drain. It may get into local streams and harm aquatic plants and wildlife, or leech into the local water supply. Do not put a partially filled pesticide product container directly into the garbage, either. Follow the disposal directions on the label or find someone else who could use it. If it's not usable, then contact your county health office regarding their disposal policies and programs. Most counties have household hazardous waste collections. If the container is empty, triple rinse it by filling the container a quarter full of water, putting the lid on, and shaking it; then pour the rinse water into the spray tanks so you’ll use it. Repeat this rinse process two more times. After triple rinsing, dispose of the container with your household waste or as directed on the label; don't reuse the empty pesticide containers. Never attempt to burn them in the fireplace, wood stove, or your burn barrel, and never put the containers in your trash compactor. Again, pesticide residues on your hands easily transfer to food and cigarettes and to your children, so thoroughly wash your hands with soap and water after handling any pesticide.

If you do spill a pesticide, make sure you identify what was spilled so you can find out how much risk any exposure to that pesticide poses to you. Regardless, the minimum safety equipment you should wear are gloves. Clean the spill promptly and never leave it unattended. If you do need help send someone else to get it. Do not use a hose to wash the spill away because the runoff can damage non-target plants and pollutes surface and groundwater. Sprinkle the spill site with kitty litter or sawdust and then sweep the mixture into a plastic garbage bag. Next, dispose of the bag as you would an unused pesticide. If you spill a pesticide on yourself, wash it off immediately with soap and water, or as the label instructs.

If you, or someone that's with you was exposed to a pesticide you need to perform basic first aid and get medical help immediately. Check the pesticide label for important first aid information; this could be vital as time could be a factor. If you get a pesticide on your skin, wash with soap and water and rinse thoroughly. Take off and get rid of any contaminated clothing. If a pesticide gets in someone’s eyes, wash slowly and gently for ten to fifteen minutes or more if you can. If someone inhales a pesticide you need to get them out of fresh air. If they're unconscious give them artificial respiration. If someone swallows a pesticide you need to get them water or milk to drink and read the back of the pesticide label to see if you need to induce vomiting. Also you want to get a hold of the poison control center in your area. Remember if you are exposed to a pesticide you want
to act quickly to reduce the amount that enters the body. Again, just to be safe, don't neglect to get medical attention.

Pesticides come with the potential to cause personal or environmental harm if you do not handle or apply them correctly. First and foremost, make sure you really need a pesticide prior to purchasing one. Select the product that is most appropriate for the site, your pest problem, and your equipment. Know how to apply the product at the correct rate. Protect yourself, your family, and your pets from pesticide exposure. Lastly, if you are unsure of any of the points and issues detailed in this video please ask someone for help or would talk with a professional about applying the pesticides for you.