

# INTRODUCTION TO PESTICIDE SAFETY

## Video Script

The University of Georgia Cooperative Extension, in partnership with the professional landscape industry, proudly presents, *Introduction to Pesticide Safety*.

Today, there is an ever-increasing awareness and concern for the effect of pesticides on people and the environment. Understanding pesticides and how to use them safely will help you protect yourself, your company, and the environment. When misused, pesticides can cause injury or death.

The first step in solving a pest problem is to understand what is causing it. Use of pesticides should only be considered after careful evaluation of the pest problem. It doesn't make sense to spray a fungicide for an insect problem; yet, this often happens when the cause of the problem isn't properly identified.

Pests are placed in one of five groups: (**SCROLL UP ON SCREEN**) insects and mites, snails and slugs, vertebrates, weeds, and plant diseases. Sometimes it is easy to see what has caused a problem. Other times, it is not. The problem may not be caused by pests. Excess water in the root zone, drought, nutritional deficiencies and other damage are often confused with pest problems. Make a thorough inspection of all plant parts, including leaves, stems and roots. Evaluate the soil and environmental conditions around the plant. If you can't identify the problem, ask for help from your supervisor or County Extension Agent.

Once you have correctly identified the problem, you must decide if control measures are needed. Talk with your supervisor about acceptable levels of damage that can be tolerated before determining control measures. Before spraying plants with a pesticide, determine if the pest can be controlled with non-chemical methods. Beneficial insects that feed on the harmful insects may also be present. Learn to identify helpful insects. Sometimes pruning out infected branches or physically removing pests will control the problem. Small weed infestations may be hand-pulled instead of sprayed. A program that combines all of these factors is called Integrated Pest Management, or IPM. (Overlay Words "INTEGRATED PEST MANAGEMENT" on Screen) In an IPM program, pesticide use and risks are minimized. Talk to your supervisor about an IPM program for your situation.

Pesticide labels provide important information on how to handle, mix, and apply pesticides safely. All labels contain this basic information.

The brand name is the name the company has given its product. An example of a brand name is Round-Up PRO. The brand name typically is the largest word on the label.

The list of active ingredients tells which chemicals and what quantities are in the product. Sometimes a common name is used to describe the active ingredient. For instance, Glyphosate is the common name for the active ingredient in Round-Up PRO. The list of active ingredients can help you compare different brands of pesticide.

One of the most important parts of the label is the signal word. It tells how toxic the chemical is. Signal words used on labels include (**OVERLAY WORDS ON SCREEN**) DANGER, WARNING, OR CAUTION.

The Hazards to Humans section of the label will give you more information about the health risks of the product.

The signal word DANGER means the product is highly toxic. A highly toxic product may also have the word POISON and a skull and crossbones on the label. This means it is very likely to cause illness when ingested through the mouth, when spilled on the skin, or when inhaled through the nose or mouth.

The word WARNING means the chemical is moderately likely to cause sudden and severe illness when ingested through the mouth, when spilled on the skin, or when inhaled.

The word CAUTION means the product is slightly toxic or relatively nontoxic and has a slight potential for causing sudden and severe illness when ingested through the mouth, when spilled on the skin, or when inhaled.

The signal words only provide an indication of the pesticide's toxicity. They do not tell you anything about the chronic risks, such as cancer, associated with the pesticide. Always minimize your exposure.

A Material Safety Data Sheet, also called MSDS sheet, is provided with each pesticide product. Your employer must keep a copy of the MSDS sheet for each pesticide your company uses. The MSDS sheet will give you additional information about the health risks associated with the pesticide.

Different types of pesticide formulations require different methods of handling and application. For instance, these two formulations look similar, but one is a dust which is applied dry without any mixing. The other one is a wettable powder that is mixed with water. The label tells which kind of formulation it is.

The pesticide label also provides the directions for mixing and applying the product. Don't trust your memory on mixing instructions. Read the label and follow the directions every time you use a product. Only apply pesticides to the use sites indicated on the label. Treating plants not listed on the label is illegal and can damage or kill them. Some labels list specific plants, while others refer to generic groups of plants, such as woody ornamentals. Talk to your supervisor if you are not sure which pesticide to use.

Remember, before you use a pesticide, read the label and know the answers to these questions: (**SCROLL UP ON SCREEN**) Does the label indicate that the product can be used on your site? Does the label indicate the product will help control your pest problem? What human and environmental risks are associated with the pesticide? What is the best way to apply the chemical? What are the risks of run-off and drift? What protective clothing and safety equipment are necessary when mixing and applying the pesticide?

This worker has determined that insects have infested this shrub. If the damage is unacceptable and the insects can not be controlled without chemicals, then a decision is made to use an insecticide. If you are not certain which insecticide is best for the insect pest, ask your supervisor. Also, determine where on the plants the pests are so you can use the best application technique to control them.

Before mixing pesticides, make certain the sprayer is in good working order, empty and clean. Pesticides used to control weeds should never be placed in the same sprayer with pesticides used for insect or disease control - always use a separate sprayer for weed control. Make sure the sprayer has been properly calibrated.

Before opening the pesticide container, read the label to find out what kind of protective clothing and equipment are necessary for mixing and applying the chemical. The label may require you to wear extra

protective clothing or use special equipment for measuring or mixing the pesticide. Your supervisor is required to provide the necessary clothing and equipment, and you must use them.

Put on the protective clothing required to mix and apply the pesticide before you open the pesticide container. Sometimes the clothing is uncomfortable, but it is essential for your safety.

This worker has protected one arm and hand during the mixing and handling of a spray solution containing fluorescent dye. The other arm and hand are unprotected. Look at how the dye has covered the unprotected hand, while the protected hand remains clean. It is easy to see the importance of wearing protective gloves and clothes when you handle pesticides.

Mixing pesticides is the MOST dangerous step in pesticide use because you are handling the concentrated form of the pesticide. To avoid fumes, mix pesticides outside when possible. If you must mix pesticides indoors, be sure there is good ventilation and lighting.

Use a specially marked measuring cup or spoon to add the pesticide to water. Do not use a spoon which could later be used with food or drink. Follow the label directions when mixing the concentrate with water. Some products, such as wettable powders, may require agitation to keep them mixed. Some also require additives, such as spreader-stickers, to make them more effective.

When filling the spray tank with water, make certain the end of the water hose does not drop below the level of liquid in the tank. Pesticides can be siphoned back into drinking water supplies if there is a decrease in water pressure and the end of the hose is below the water level. Watch the water level carefully to prevent spills caused by over-filling. Hoses used for filling pesticide sprayers should be equipped with a backflow prevention device. This prevents the pesticide from being siphoned back into the water hose.

A pesticide's effectiveness is determined by the way it is applied. Thorough coverage is essential for good insect and disease control. For example, some pests feed on the undersides of leaves, so for most effective control, direct spray to that area. Other pests may be best controlled with a systemic product that is absorbed by the plant.

Certain weather conditions may also influence pesticides effectiveness. Spraying on windy days causes pesticides to drift from one area to another. Spray drift is hazardous to human health; it also results in poor pest control and possible damage to a non-target plant. You may also face civil or criminal penalties if the pesticide drifts away from the spray area and injures other plants, pets or people. Spray when the wind is calm. Some pesticides are effective within certain temperature ranges, so read the label to determine environmental conditions required for application. Rain may wash some pesticides away before they have time to control a pest. To avoid these problems, watch daily weather forecasts and schedule applications appropriately.

Accurate records are required on many pesticides applied. Ask your supervisor to find out what records you must keep. A log book which notes such items as the name of the applicator, name of the product, date and time of application, rate and amount used, target pest or pests, location and weather conditions, is a valuable resource, even when not required.

Always mix only the amount of pesticide required for the job. However, if you have a pesticide left in the tank after application, either store it for later use, or check with your supervisor to see if it can be used elsewhere in the landscape. If you have to, you can temporarily store excess pesticide in a labeled container for later use. However, some pesticides become inactive and lose their effectiveness when stored. NEVER dump leftover pesticides on the ground, in the sewer, or down the drain!

Dispose of empty pesticide containers according to label directions. Containers of liquid pesticide should be triple rinsed. To do this, drain the container into the spray tank for 30 seconds. Next, fill the container one-fourth full of water, replace the cap and rotate the container so the water contacts all sides. Drain the rinse water into the tank for 30 more seconds. Repeat this rinsing procedure at least two more times or until the rinse water is clear and there is no evidence of the product in the container. Properly rinsed pesticide containers can sometimes be returned to the manufacturer. Others may be disposed of in the normal trash. If you rinse large numbers of pesticide containers, you may want to use a special hose attachment that punctures pesticide containers and rinses them quickly. If the label says you can place the container in the trash, be sure to crush it or put holes in it so it can not be re-used.

Boxes and bags of dry pesticides should be shaken out thoroughly, and then disposed of with normal trash. DO NOT burn empty pesticide boxes and bags!

If a pesticide spill occurs, act fast to prevent it from spreading by covering it with appropriate absorbent material. If a large quantity is spilled, confine the pesticide by building a dike of sand or soil around the spill. Keep people and animals away from the area. Once the spill is contained, collect all spill debris into leak-proof, heavy duty containers or plastic bags for proper disposal. Inform your supervisor and ask for assistance with clean-up and disposal. NEVER hose down a spill site with water! Be familiar with your company's plan for cleaning up pesticide spills.

If you get a pesticide on your skin, rinse the area quickly with any water available that does not contain pesticide. As soon as you can, wash the affected area with soap and water. Wash clothing exposed to pesticides separately from other clothes. Heavily contaminated garments should be thrown away. If you get the pesticide in your eyes or mouth, rinse immediately, notify your supervisor, and go to the nearest hospital or clinic as soon as possible. Take the label or MSDS sheet with you.

If the pesticide has a DANGER warning, seek medical advice for any exposure.

As a pesticide applicator, you should know what kinds of sicknesses are caused by the pesticides you use. Sickness may be mild or severe, depending on the particular pesticide used and the amount absorbed. Symptoms of mild poisoning may include (*OVERLAY WORDS ON SCREEN*) fatigue, nausea, headache, blurred vision or dizziness. Severe poisoning may cause (*OVERLAY WORDS ON SCREEN*) chest discomfort, muscle twitches, breathing difficulties, or convulsions. Seek medical assistance when any of these symptoms occur, and remember to take the pesticide label or MSDS sheet with you. Be familiar with your company's emergency plan so you will know what to do if someone is exposed to pesticide.

Misuse of pesticides not only harms people, it also damages the environment. When pesticides drift or run off into non-target areas, they can contaminate streams, lakes, wells and other water supplies. The label is your best source for information on environmental risks.

Attend all training offered on pesticide use and safety. Learn how to read pesticide labels, and become familiar with the emergency procedures established by your company.

When used safely and properly, pesticides can be a safe and effective tool in landscape management.. When used improperly or carelessly, pesticides can damage the environment, endanger your health, and the health of others.

When using pesticides, always follow these rules

- Correctly identify the pest
- Select the best pesticide and formulation for the job
- Read the label thoroughly
- Wear the proper protective attire
- Use the correct and properly maintained equipment
- Follow accurate and safe application techniques
- Keep detailed records
- Be prepared for emergencies

By learning everything you can about the pesticides you use and how to use them safely, you will be protecting yourself, others, and the environment. You will also be a valuable and responsible member of your team.

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