ILLINOIS STATE UNIVERSITY

2026

Pesticide/Herbicide Training

Facilities Management

Environmental Health and Safety

1/1/2026

Illinois State University – Pesticide/Herbicide Training

In spite of the many changes relating to chemical use seen over the past half-century, chemicals remain an essential part of the arsenal available for the control of pests. When working with chemicals it is necessary to maintain careful and continuous control over the use and handling of these chemicals. Care must be exercised when handling, mixing, and spraying chemicals at Illinois State University. **Only staff that have the Operator or Applicator License may spray chemicals on campus.** All Grounds staff that are required to spray chemicals on campus must read and understand the following information.

Exposure

Exposure may be divided into two types, based on the number of exposures to a chemical and the time it takes for symptoms to develop.

Acute – Acute exposure is a short-term exposure to a chemical generally lasting anywhere from seconds to hours at a time.

Chronic- Chronic exposure is continued or repeated exposure over a long period of time, months to years at a time, and often from daily use of the chemical.

Routes of Entry

There are four common ways in which chemicals can enter the human body: through the skin, the mouth, the lungs, and the eyes.

Dermal (Absorption)

Absorption through the skin is the most common route by which chemical applicators can have exposure to chemicals. This may occur as a result of a splash, spill, or drift when mixing, loading or disposing of chemicals.

DON'T TAKE CHANCES: WEAR YOUR PERSONNEL PROTECTIVE EQUIPMENT!! IF YOU GET PRODUCT ON YOU, WASH IT OFF IMMEDIATELY!

Oral (Ingestion)

If enough chemical gets into the mouth, it may cause serious illness, severe injury, or even death. The most frequent cases of accidental oral exposure are those in which chemicals have been transferred from their original labeled container to an unlabeled bottle or food container. After removing PPE wash your hands thoroughly with soap and water.

Respiratory (Inhalation)

Chemicals are sometimes inhaled in sufficient amounts to cause serious damage to nose, throat, and lung tissues. The hazard of respiratory exposure is great because of the potentially rapid absorption of chemicals through this route. Read the manufactures label for required PPE.

Eye Exposure

Eyes are particularly absorbent, and therefore getting any chemical in the eye presents an immediate threat. Eye protection is required when measuring or mixing concentrated chemicals. Eye protection should also be used when there is a risk of exposure from chemical spray and dusts that may drift into the eyes.

CHECKLISTS FOR AVOIDING CHEMICAL EXPOSURE

AVOIDING DERMAL EXPOSURE

- Check the label for special instructions or warnings regarding dermal exposure.
- Use recommended protective clothing and other equipment as listed on the label.

AVOIDING ORAL EXPOSURE

- Check the label for special instructions or warnings regarding oral exposure.
- Never eat, drink, or smoke while working with any chemical.
- Wash thoroughly with soap and water before eating, drinking or smoking.
- Do not touch your lips to contaminated objects (such as nozzles).
- Do not wipe your mouth with contaminated hands or clothing.
- Do not expose food, beverages, drinking vessels, or cigarettes to chemicals.
- Wear a face shield when mixing concentrated chemicals.

AVOIDING RESPIRATORY EXPOSURE

- Read the label to find out if respiratory protection is required.
- If respiratory protection is required, only use the respirator issued to you.
- All respirator users must be included in the University Respiratory Protection Program.

AVOIDING EYE EXPOSURE

- Read the label to find out if eye protection is required.
- If eye protection is required, use goggles, safety glasses or a face shield with safety glasses to protect your eyes.
- Pour or mix chemicals below eye level.

Manufactures Label

A chemical label is a legal document. It contains information on how, when, and where the chemical can be used. It lists hazards to humans, domestic animals, and lists any environmental hazards.

Every label contains a signal word – **DANGER (most hazardous)**, **WARNING**, or **CAUTION (least hazardous)**- and GHS Label depending upon its toxicological classification.


Irritant


Health Hazard


Corrosion


Flammable


Acute Toxic

READ ALL LABELS PRIOR TO SPRAYING ANY CHEMICAL!!!

For every chemical there is also a document known as a Safety Data Sheet (SDS). A link to all SDS's can be found on the Environmental Health and Safety website. https://ehs.illinoisstate.edu/
The SDS includes information such as physical properties, hazard identification, first aid measures, personal protection, and handling/storing properties.

Labels and Labeling

All secondary containers must be labeled. Secondary container labels can be obtained from your supervisor or requested from Environmental Health and Safety. Secondary container labels shall have at a minimum the following information:

- Product name
- Hazard statement
- Signal words
- GHS label

Only approved secondary containers can be used.

Personal Protective Equipment (PPE)

Refer to the manufactures label and product SDS for information regarding proper PPE.
The following PPE must be worn while working with chemicals. Additional PPE may be required by the manufacture.

- Chemical resistant gloves
- Safety glasses/goggles or face shield with safety glasses
- Long sleeve shirt
- Pants (no shorts)
- Respirators (when required by manufacture)

Inspect all personal protective equipment (PPE) prior to use. Any defective or damaged equipment must be replaced. Replacement PPE can be found at Stores or contact your supervisor.

Mixing and Loading

Before handling a chemical, **READ THE LABEL**

- Put on personnel protective equipment.
- Mix the chemical in a place where there is good light and ventilation.
- Stand upwind of the chemical to avoid contaminating yourself.
- Only mix the amount of chemical needed for the job.
- Measure accurately; use only the amount you need to apply at the rate specified on the label.
- When removing the concentrated material from the container, keep the container below your waist if possible, to prevent the possibility of splashing or spilling any chemical into your face and eyes.
- If you splash or spill a chemical while mixing or loading, stop immediately! Remove contaminated clothing; and wash thoroughly with detergent and water. Time is essential if you or your clothing are contaminated. Notify your supervisor.
- Label the container.
- 300-gallon tanks must have a 12" air gap.

Reporting Sheets

Prior to any chemical application the Pesticide/Herbicide Application Report must be filled out.

The following information will be logged on the report:

- Date, Location, Time, Wind direction, Air temperature, Name of product used, Area treated, Flagged, PPE used, and any additional comments.

Report sheets will be periodically reviewed throughout the year. All records must be kept for a minimum 2 years.

Applying Chemicals

READ THE LABEL. Don't trust your memory for details concerning the use of any chemical.

- Inspect the application equipment. Look for leaking hoses or connections, plugged or worn nozzles, and examine the seals on the filter openings to make sure they will prevent spillage of the chemicals.
- Make certain that your equipment is adjusted according to the manufacturer's specifications and meets label requirements for the product being applied. This will assure that the proper concentration is being applied to the target site.
- Apply the chemical at the recommended rate. Do not exceed the maximum application rate specified on the label or the manufactures recommendation.
- Apply chemicals only at the correct time and under acceptable weather conditions – check the label for specific limitations.
- Use extreme care to prevent the chemical from contaminating unintended target sites.
- The area sprayed must be flagged during spraying operations. Once the chemical has dried or 24 hours later the flag can be removed.
- Spaying operations must stop if winds are stronger then 10MPH.

Lab Schools

All lab schools must be notified prior to any spraying operations. Spraying is only allowed when students are **NOT** present, on weekends, or during non-school hours.

Greenhouses

When spraying outside of any greenhouse the greenhouse attendant must be notified at least 24 hours prior to spraying and again prior to spraying, if possible.

Equipment Clean-up

After completing the application of any chemical, immediately clean the application equipment. Clean the equipment according to the manufacture’s requirements.

- Wear the appropriate personal protective equipment.
- Use the specific area set aside for cleaning in the Reinstate Building.

Chemical and Equipment Storage

It is necessary and legally required that chemicals be stored in a safe, secure place. Here are some rules which pertain to chemical storage:

Chemical

- Always store chemicals in their original, labeled container with the label clearly visible.
- Always store chemicals in tightly sealed containers and check containers periodically for leakage, corrosion breaks, tears, etc.
- Store chemicals where they are protected from freezing or excessive heat.
- Be certain that chemical storage areas are well-ventilated to prevent the accumulation of toxic fumes.
- Store different types of chemicals in different areas to prevent cross contamination and the possibility of applying a product inadvertently.
- Never store chemicals in old bottles or food containers where they could be mistaken for food or drink.
- Chemical containers should not be stored on shelves **higher** then 5 feet.

Equipment

- All large spraying equipment and backpack sprayers must be stored in the Reinstate Building.
- Hudson sprayers and hand pump units can be stored at the two Grounds shops.
- All Hudson sprayers and hand pump sprayers must be stored inside a 5-gallon bucket.
- Any equipment stored with chemical in it must be labeled with the chemical name.

Spills

Chemical spills can and do happen anywhere chemicals are transported, stored, or applied. When a spill occurs, it should be cleaned up as quickly and safely as possible. See the manufactures label or SDS for instructions. Wear all required PPE to protect yourself. All large spills must be reported to Environmental Health and Safety immediately.

Container Disposal

Always dispose of chemical containers in a manner specified on the label. Chemical container disposal can be a significant problem, particularly if you have a large number of containers. Many chemical containers can be recycled, see the manufactures label for this information.

Before disposing any empty chemical container, it must be rinsed. The correct rinse procedure is as follows:

- First complete the triple rinse method described here, adding the rinse solution to the sprayer tank as described below.
- Add the correct amount of water to ensure thorough rinsing:

Size of Container	Amount of Rinse Water
Less than 5 gallons	One-fourth container volume
5 gallons or more	One-fifth container volume

- Replace the container lid; then rotate and shake the container, so that the rinse reaches all interior surfaces.
- Drain the rinse solution from the container. Allow the container to drain for an extra 30 seconds after emptying.
- Repeat this rinsing procedure at least two more times for a total of three rinses.

Disposal of Unused Chemical

The best way to dispose of any chemical is to apply it according to the label. If that is not possible then contact your supervisor or the Environmental Health and Safety Department for proper disposal.

ILLINOIS STATE UNIVERSITY

Acknowledgement of Training (Pesticide/Herbicide Application)

RECORD OF EMPLOYEE TRAINING

By signing below, I acknowledge that I have received the Pesticide/Herbicide Training attached to this document.

_____ _____

Signature Date

_____

Print Name