

# VTPP Quarterly

A Newsletter From Virginia  
Tech Pesticide Programs

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### Pesticide Emergency Response Preparedness

Kathleen Miller – Extension Associate

As a pesticide applicator, preparing for and being aware of potential pesticide-related emergencies can help minimize harmful outcomes. In the event of a pesticide emergency, the best defense is being prepared. There are several ways to prepare for such emergencies. Creating an emergency response plan specific to your operation is critical. In addition, having the right emergency response equipment on hand and knowing the signs and symptoms of pesticide exposure, can play a key role in responding quickly to an exposure involving yourself or others.

#### Background

Being aware of potential pesticide-related emergencies and knowing how to spot them can assist in prevention

and preparation. Common emergency incidents involving pesticides include spills (and other accidental releases), exposures, and fires. These events can happen when pesticide equipment, storage sites, or transport vehicles are damaged. Potential causes for such incidents include:

- Accidents.
- Vandalism.
- Fires.
- Natural disasters (floods, lightning, tornadoes, hurricanes, earthquakes, landslides, sinkhole formations, etc.).

It may not always be evident when you or a colleague has been exposed to a pesticide. Therefore, knowing the signs and symptoms of pesticide exposure can lead to a faster response. Signs and symptoms may include headache, nausea, chills, vomiting and/or diarrhea, chest pains and/or difficulty breathing, a slow pulse, and constricted pupils.

## Emergency Prevention

Preventing an emergency is much easier than dealing with one after it occurs. As a pesticide handler, the key to prevention is consistently adopting safe pesticide-handling practices. Some important ways to decrease the chances of a pesticide emergency include:

- Selecting a pesticide storage and handling site that is secure and safe from vandalism, flooding, fire, and theft.
- Storing products safely according to the label and avoiding keeping excess pesticides (such as over-purchased or unwanted pesticides, and rinsates).
- Reading and following the pesticide product's label for safe and legal application. This includes wearing the appropriate personal protective equipment (PPE) listed on the product label.
- Designating an emergency coordinator to take charge of emergency preparation for your operation.

## Preparing for a Pesticide Emergency

In addition to emergency prevention, it is important to have an emergency response plan. Not all emergencies can be prevented, but having the forethought to prepare ahead of time can help reduce the severity when they occur.

As part of your emergency response plan, create a list of emergency contacts for specific pesticide situations. You can use this [“Pesticide Emergency Information Sheet”](#) to keep track of contacts specific to your area. Your emergency response plan should include a map indicating your pesticide storage location, a floor plan of the storage area, and an updated inventory of the stored pesticides. Additionally, keep labels and safety data sheets (SDSs) of each stored chemical on file as part of the emergency response plan. Store these documents in a well-marked, central location but not inside the pesticide storage area. This central location should have fire, law enforcement, poison control, and other emergency telephone numbers posted for quick retrieval.

In addition to your emergency response plan, a Hazard Communication (HazCom) plan is required for all businesses with employees who could be exposed to hazardous chemicals in any workplace setting,

including greenhouses and field environments.

A HazCom plan identifies and lists all hazardous chemicals present in the workplace and includes the labels and SDSs for each chemical. The HazCom plan must also address how employees will be trained on the hazards, safe handling procedures, and protective measures associated with these chemicals.

Review and update your emergency response and HazCom plans annually to reflect any changes in your operation. It is also beneficial to contact your local fire authorities, law enforcement, and/or Local Emergency Planning Committee (LEPC) and invite them to tour your chemical storage area(s). Review your plans with these groups or anyone who could be involved in an emergency at your facilities.

## Emergency Response Equipment

Maintaining emergency response equipment, such as a decontamination kit (fig. 1), first aid kit, and spill kit, as well as fire extinguishers and safety showers is essential for pesticide emergency preparedness. Store this equipment together in a clearly marked area that workers can access quickly.

Creating emergency response kits is a simple and effective way to reduce harm during emergency situations. Three essential kits to prepare and maintain are a decontamination kit, a first aid kit, and a spill kit. The following sections describe the purpose and basic contents of each kit:

- Decontamination kit – Used to quickly remove pesticides from a person who has been exposed.
  - Water source. Access to running water (e.g., safety shower, eyewash station, or faucet) is the preferred option for pesticide decontamination. If running water is not available, keep at least one pint of emergency eyewash water in a sealed container (fig. 2) immediately accessible during pesticide handling activities. In addition, portable water containers (such as insulated jugs or dedicated hand-wash stations filled with clean, potable water) should be available for routine handwashing before eating, drinking, smoking, or using the restroom. Keep these containers clean, protected from contamination, and filled with fresh water.
  - Soap.



- Towels.
- Uncontaminated change of clothes.
- PPE for individuals assisting with decontamination to protect them from exposure.
- **First aid kit** – Used to provide immediate medical care until professional help is available.
  - Supplement your standard first aid kit with supplies specifically for pesticide poisoning or injury:
    - » Syrup of ipecac. Used to induce vomiting. Ipecac should be given **ONLY** when directed by emergency personnel (i.e., poison control operator) or instructed by the pesticide product label. Some pesticide products can cause more damage if vomiting occurs. **NEVER** induce vomiting if the person is unconscious.
    - » Activated charcoal. When mixed with water, a slurry of activated charcoal can be swallowed after vomiting to help absorb any remaining pesticide. This should be given **ONLY** if directed by emergency personnel.
- **Spill kit** – Used to quickly contain, control, and clean up an accidental pesticide spill, leak, or release.
  - Absorbent materials (absorbent pads, socks, and granules).
  - PPE.
  - Clean-up equipment (detergent, shovel, broom, dustpan, and plastic bag or bucket).



Figure 1. A decontamination kit can be assembled using clean water, soap, towels, a change of uncontaminated clothing, and PPE for responders assisting with decontamination. (Virginia Tech Pesticide Programs)



Figure 2. If there is no access to running water, at least one pint of water must be readily available in the event of an emergency. (Virginia Tech Pesticide Programs)

### Following a Pesticide Emergency

Once an emergency has been addressed, the incident (pesticide spill, exposure, drift, etc.) must be reported before the situation is considered fully resolved. If the pesticide incident poses a threat to any person, to public health or safety, or to the environment, you must report it by phone to the Virginia Department of Agriculture and Consumer Services, Office of Pesticide Services (VDACS-OPS) within 48 hours of its occurrence. The applicator must submit a detailed written report describing the incident to VDACS-OPS within 10 days of the initial phone report. Pesticide emergency reporting requirements are also listed on the provided [“Pesticide Emergency Information Sheet.”](#)

### Safe Use of Disinfectants

Stephanie Blevins Wycoff – Extension Associate

Recently, there have been several reports from national and local news outlets on influenza (flu) activity across the United States. While cases have trended down in some areas, flu activity remains elevated and the season is far from over. One way to help prevent the spread of flu and other infectious illnesses is by using disinfectants to treat high-touch

surfaces. Disinfectant use is common practice in many workplace settings and households; however, the proper use of these products is often not discussed.

### What Are Disinfectants?

Disinfectants, also called antimicrobials, are substances used to kill or reduce the spread of germs and other microorganisms like fungi, bacteria, and viruses. Disinfectants are commonly used against mold and mildew (fungi), *E. coli* and Salmonella (bacteria), and SARS-CoV-2 and influenza (viruses). These products are widely available, and their labels list the types of microorganisms they control.

### Are Household Cleaning Products Considered Pesticides?

Yes, household cleaning products are considered pesticides when they are used to disinfect surfaces such as countertops, floors, bathroom fixtures, and other common areas. Pesticides are substances used to prevent, destroy, repel, or control pests, including germs and other microorganisms. Because disinfectants control germs, they are regulated as pesticides by the Environmental Protection Agency (EPA). Take time to read the labels on your household disinfectants. Look for an “EPA registration number,” which indicates the product is a pesticide and is regulated and approved for use by the EPA. Figure 3 shows examples of household disinfectants with EPA registration numbers.



Figure 3. Examples of common household disinfectants.

### Proper Use of Disinfectants

#### Always Read the Product Label

Before purchasing, using, storing, or disposing of a disinfectant or its container, READ THE LABEL. This

step is often skipped, but it is important for your safety and the safety of others. The label explains how to use the product, how to protect yourself during use, what first aid steps to take if an accident occurs, and proper storage and disposal. The label also lists what pests the product can control. You may see label statements such as “Kills COVID-19 Virus;” “Kills 99.9% of Viruses and Bacteria;” or “Kills Staph, E. Coli, MRSA, Salmonella, Strep, and Klebsiella.”

#### Wear the Recommended PPE

If personal protective equipment (PPE) is needed to use a product, it will be listed on the label. For household disinfectants, the PPE may be as simple as wearing rubber gloves or safety glasses. You may see label statements such as “for prolonged use, wear gloves.” Anytime you use a pesticide, it is recommended that you wear a long-sleeved shirt, long pants, socks, and closed-toed shoes.

#### Use the Product as Directed

Read the “Directions for Use” section on the label to learn how to use a product properly. Household disinfectant labels will list approved application sites (e.g., showers/tubs, sinks, toilet bowls, and floors) and intended uses (e.g., disinfecting, sanitizing, deodorizing, and removing mold and mildew). The label also describes how to apply or mix the product. Never use a disinfectant in any way other than what is listed on the label!

Another key piece of information listed in the “Directions for Use” section is contact time. Contact time refers to how long the product must stay in contact with a surface to properly disinfect it. Different contact times may be required for sanitizing or for mold and mildew removal. Label statements about contact time vary. Examples include “let solution stand for 10 minutes;” “allow solution to contact surface for 5 minutes;” or “wipe surface area with solution for 2 minutes.”

**IMPORTANT** – NEVER mix household disinfectants with other cleaning products! If combined, these products can chemically react and create toxic fumes, which can lead to accidental exposure or poisoning. Store household disinfectants and other cleaning products in their original containers with labels intact.



### Follow First Aid Instructions

Household disinfectant labels, like all pesticide labels, include first aid recommendations to follow in the event of an accident. Always read the “First Aid” section on the label before using any product. This section will give instructions on how to handle accidental exposures, like spilling the product on your skin, getting the product in your eyes, or accidentally inhaling or ingesting it. If an accident occurs and help is needed, call your physician (or 911 for emergencies) or the National Poison Control Center at 1-800-222-1222.

### Consider Storage and Disposal

Read the “Storage and Disposal” section of the label to learn how to store and dispose of each disinfectant safely. Proper storage is one of the most important steps for keeping people and pets safe. Improper storage of household disinfectants and other pesticides is a root cause for many accidental poisonings, especially in young children. Always keep these products stored out of the reach of children and pets, preferably in a locked cabinet. Never transfer household disinfectants or other pesticides to containers like soda bottles, where they could be mistaken for a drink.

### Conclusion

Now that you’re more familiar with disinfectants, take time to look at the products you have and read the labels. You may be surprised to learn what each product can or cannot control, and how the way you use it can affect the desired outcome. Follow the label instructions closely to ensure you are using each product safely and effectively. For additional information, please consult the following resource:

- Using Disinfectants, Sanitizers, and Cleaners Safely and Effectively – University of Idaho Extension: <https://www.uidaho.edu/extension/publications/bul-1068>

### Blast From the Past

Stephanie Blevins Wycoff – Extension Associate

#### Bowker’s Pyrox

These antiques once contained Pyrox, which was a pesticide product that included insecticide and fungicide for use on vegetables and fruits (fig. 4). It was manufactured by the Bowker Insecticide Company of Boston, MA. Bowker’s Pyrox was touted as the “biggest success in spray history” for its ability

to “kill bugs, control diseases, and improve foliage.” Based on vintage advertisements, this product was a smooth, creamy paste that was mixed with water to apply. Application directions varied for different crops; however, instructions for small quantities stated, “for atomizers or small compressed-air sprayers, use at the rate of one heaping teaspoonful to one quart of water for ordinary purposes.” Once applied, the product covered the foliage like paint, decreasing the number of applications needed per season. Pyrox ranged in price from 25 cents to \$13.50 or more depending on the amount purchased (fig. 5).



Figure 4. Antique Pyrox containers, circa early 1900s.

PRICES.	
1 pound (not mailable),	\$0.25
5 pounds,	1.00
10 pounds,	1.75
25 pounds,	4.00
50 pounds,	7.50
100 pounds,	13.50
200 pounds or more, special price on application.	

Figure 5. An advertisement from a Pyrox Spray Guide, circa early 1900s.

## Program Updates

### VTPP Updates

VTPP will continue to host our online private applicator recertification (PAR) course until midnight on Feb. 28, 2026. There is a \$30 fee for this self-paced online recertification course that provides full credit for Categories 90 and 91. Share the below registration link with any private applicator(s) who may be interested in this option.

[tinyurl.com/VCE-VTPPPAR-90-91](https://tinyurl.com/VCE-VTPPPAR-90-91)

You can also find the registration at [register.ext.vt.edu](https://register.ext.vt.edu) by searching under “Programs” and then under “Agriculture or Natural Resources,” or by using keywords (i.e., pesticide, applicator, private, recertification, PAR, private applicator, VTPP, Category 90, Category 91).

For guest account issues, please call the helpline at 540-231-3131 or email [vceprograms@mail.ext.vt.edu](mailto:vceprograms@mail.ext.vt.edu)

### Updated Resource

Fact Sheet: An Introduction to Integrated Pest Management

This updated fact sheet is available on the VCE publications website ([https://www.pubs.ext.vt.edu/content/pubs\\_ext\\_vt\\_edu/en/ENTO/ENTO-365/ENTO-365.html](https://www.pubs.ext.vt.edu/content/pubs_ext_vt_edu/en/ENTO/ENTO-365/ENTO-365.html)) and provides a basic understanding of integrated pest management (IPM). IPM is commonly discussed and used by pest management professionals but is not widely understood by the general public. This publication explains the fundamentals of IPM and why it is an important tool for professionals and homeowners (fig. 6).



#### An Introduction to Integrated Pest Management

Authored by Stephanie Blanton Wieroff, Extension Associate, Virginia Tech Pesticide Program; and Daniel Frank, Director, Virginia Tech Pesticide Program. Edited by Dana Beegle, Publications Manager, Virginia Tech Pesticide Program.

##### Introduction

Pest management professionals commonly discuss “IPM” or integrated pest management. Although IPM is seldom understood by the general public, it remains an important framework for making pest management decisions. This publication seeks to increase your understanding of IPM. It explains what IPM is, why it is an important pest management tool for both professionals and homeowners, and shares guidelines and resources to help you start using IPM.

##### What Is IPM?

IPM is an assessment-based, ecological approach to controlling pests. In an IPM program, the pest is identified to determine important information about its biology, such as its life cycle and life cycle. Once this information is understood, it can be used to develop a management plan tailored to control that pest. Because integrated pest management considers both nonchemical and chemical control methods, it ensures the most effective management tactics are used for each pest situation. IPM provides practical, cost-effective solutions while protecting people, animals, and the environment.

##### Guidelines for IPM

The major components of any IPM program include:

- Identify the pest(s) to be managed.
- Use prevention strategies to deter the pest(s) and/or minimize population buildup.
- Monitor pest populations and assess their damage.
- Determine a guideline (threshold) for when proactive management action is needed (e.g., the

point at which the pest is causing economic or aesthetic losses from its activity).

- Use nonchemical and/or chemical control methods to “reduce” pest populations.
- Assess how well the management tactics controlled the pest.

These components work together to create an IPM program (fig. 1). It is important to note that the goal of IPM is often not to eliminate the pest population, but to “reduce” it to levels that are considered acceptable or below threshold levels. Using an integrated pest management program helps promote a more balanced ecosystem.

##### Nonchemical & Chemical Control Methods

Different pests require different control methods, so always identify the pest before choosing management tactics.

Nonchemical controls are often most effective before pest populations reach damaging levels. Nonchemical control methods include:

- **Host plant resistance** - Using plant varieties or cultivars that are resistant or tolerant to pest damage (e.g., planting rice varieties that are less susceptible to black shuck).
- **Biological controls** - Using living organisms (i.e., natural enemies) to reduce pest populations (e.g., ladybird beetles feeding on aphids).
- **Cultural controls** - Modifying the pest's habitat to make it less favorable for survival (e.g., using mulch for moisture control, eliminating standing water from plant pots to

*Figure 6. A recently updated factsheet on IPM.*

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# NATIONAL PESTICIDE SAFETY EDUCATION MONTH

February  
is  
National  
Pesticide  
Safety  
Education  
Month!

- There are about 1 million certified pesticide applicators in the U.S.\*
- 11,000-15,000 pesticide products are registered for use in each state.\*
- Common consumer products that contain pesticides include
  - Flea collars.
  - Ant and roach traps.
  - Some lawn care products like weed and feed.
- Pesticide Safety Education Programs (PSEPs) are housed at land-grant universities.

\*Facts provided by National Stakeholder Team for PSEP Funding

9th Annual NPSE Month - Pesticide Stewardship Resources:

- [vttp.org](http://vttp.org)
- [pesticidestewardship.org](http://pesticidestewardship.org)

Organized by the National Stakeholder Team for Pesticide Safety Education Program Funding, this month-long awareness campaign aims to reinforce safe pesticide use with a wide variety of audiences.