

# VTPP Quarterly

A Newsletter From Virginia  
Tech Pesticide Programs

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### Early Monitoring Catches the Pest

Kathleen Miller – Extension Associate

With planting season, comes pest season, and growers must be ready with a strong pest management and monitoring plan. The success of pest management often hinges on the proper implementation of a pest monitoring and evaluation program. Without adequate pest monitoring, it can be difficult to make effective integrated pest management (IPM) decisions.

#### What are IPM and pest monitoring?

IPM is a pest control system. It combines all suitable pest management measures, both chemical and non-chemical. The goal of IPM is to keep pest populations below levels that cause economic damage. Pest monitoring (also called scouting) is one of the first steps of an IPM plan. It also plays a vital role in determining if

control of a pest is achieved.

Monitoring for a pest involves regularly searching for and assessing its population size and/or damage in an area. Regular monitoring helps identify the types of pests that are present, how abundant they are, where they are present, and the extent of damage they have inflicted. This information can help determine whether control measures are warranted to prevent economic losses. The level at which a pest population triggers some form of control is known as the “action threshold.”

The most common and efficient way to monitor a pest population is through sampling. This practice collects pest population data over a period of time. Rather than monitoring an entire area, sampling focuses on counting the pests in a representative portion of an area called a “sampling unit.” A group of sampling units, known as a “sample,” is

then used to make an estimate of the pest population throughout the season.

### Monitoring/Sampling Techniques

There are many different ways to sample or estimate a pest population. Each technique is suitable for certain pests but might not work in all situations. Some common sampling techniques include

- In situ counting.
- Knockdown.
- Sweep netting.
- Trapping.
- Leaf wetness sensors and immunoprinting kits.
- Remote sensing and drone monitoring.

In situ counting is a simple sampling technique that involves observing a specified area (e.g., plant part or animal body region) and recording the number of pests observed. For example, when scouting for weeds, a simple map of the field can be used to record weed species and denote areas of heavier weed pressure. In-situ sampling can also catch visibly developing diseases caused by pathogens.

Knockdown is a form of sampling similar to in situ. However, knockdown involves removing pests from the specified area in order to count them. You can either physically dislodge pests onto beat cloths or into jars (physical knockdown) or employ insecticides within enclosures (chemical knockdown).

Sweep netting is a common technique used to sample insect pest populations that works similarly to knockdown. It involves swinging a net (at a downward angle) from side to side through a field or row to dislodge insects from plants. The insects collect in the bottom of the net, and after a set number of “sweeps,” they are counted in the field or transferred to a container for later counting.

Trapping involves intercepting or luring a pest to a designated location for capture and containment. Trapping can be passive (e.g., pitfall, Malaise, and sticky traps) or it can involve attractants (e.g., pheromones, blacklight, color). Passive and attractant-style trapping techniques can be used simultaneously, such as adding a pheromone lure to a sticky trap (fig. 1). Furthermore, some trapping techniques use multiple attractants. For example, the



*Figure 1. A Delta-style sticky trap with an adhesive bottom liner captures insect pests. The addition of a pheromone lure can help attract pests into the trap for capture.*

bucket-style trap combines a chemical pheromone and yellow color to lure pests to the trap (fig. 2).

Leaf wetness sensors are a different type of pest monitoring tool. They work by assessing site conditions in order to catch diseases before they emerge. Specifically, leaf wetness sensors measure how long a plant stays wet during and after an event, such as rainfall, overhead irrigation, or morning dew. Sensor readings help growers predict whether environmental conditions favor pathogen infection and necessitate preventative control measures. In general, the longer a leaf stays wet, the greater the chance a plant disease will develop. Immunoprinting kits are an additional monitoring technique that can aid in the rapid identification of plant diseases directly in the field. Both leaf wetness sensors and immunoprinting kits allow growers to proactively manage plant diseases at their earliest stages.

In recent years, new sampling techniques have emerged. Remote sensing uses satellite images to monitor and analyze an area over time to determine when pest management action should be taken. Similarly, drones can be used to obtain aerial images of an area for monitoring purposes.

### Who should monitor pests?

Pest monitoring is important for both private and commercial groups. For example, private growers monitor pests on their own land. Commercial landscapers scout for pests on properties they



manage. Greenhouse managers use sampling techniques in wholesale and retail spaces. These groups can also draw pest population information from data collected from government funded groups, scientific institutions, or private firms for hire.



*Figure 2. Pheromone-baited bucket-style traps feature a pheromone lure held within the basket beneath the lid. These traps are available in various colors.*

#### **Additional Resources**

- USDA Pest Tracker, Pests and Maps: [www.pesttracker.org/pests](http://www.pesttracker.org/pests).
- EDDMaps: [www.eddmaps.org/](http://www.eddmaps.org/).
- Virginia Plant Pest Survey & Detection: [www.vdacs.virginia.gov/plant-industry-services-plant-pest-survey-and-detection.shtml](http://www.vdacs.virginia.gov/plant-industry-services-plant-pest-survey-and-detection.shtml).

### **Complying With the Environmental Protection Agency's Worker Protection Standard**

The Worker Protection Standard (WPS) is a federal regulation (40 CFR Part 170) designed to protect employees in the production of agricultural plants from exposure to pesticides. The Virginia Department of Agriculture and Consumer Services, Office of Pesticide Services (VDACS-OPS) coordinates the WPS at the state level.

The WPS applies in agricultural production areas where WPS-labeled pesticides are used, such as farms, orchards, forests, Christmas tree farms, nurseries, greenhouses, vineyards, and research facilities. If the pesticide product label contains

an "Agricultural Use Requirements" box, the WPS applies.

Growers must comply with all provisions of the WPS, as referenced on the label, including

- Providing pesticide safety training for all agricultural workers and noncertified pesticide handlers.
- Following central posting area requirements (WPS poster, application records, copies of pesticide labels and Safety Data Sheets).
- Providing personal protective equipment and decontamination supplies.
- Providing emergency assistance.
- Providing establishment-specific information (location of decontamination sites, pesticide safety information, and pesticide application hazard information).
- Abiding by the retaliation prohibition policy for complying or attempting to comply with the WPS.
- Following all recordkeeping requirements for pesticide applications.

Employers are required to provide WPS training approved by the Environmental Protection Agency (EPA) to their handlers (noncertified applicators) and workers annually. The training must be received before the employees enter the treated area within 30 days of a pesticide application. Training must be conducted by a current certified private or commercial applicator, or an approved trainer.

VDACS-OPS provides WPS training at no cost to growers in Virginia through Telamon Corporation ([sbokschooten@telamon.org](mailto:sbokschooten@telamon.org)). Telamon provides the EPA-approved 'handler' and 'worker' trainings in English, Spanish, French, and Haitian Creole.

Growers should refer to the WPS *How To Comply* manual, which provides information on how to comply with the WPS requirements, including exceptions, restrictions, and exemptions. The *Quick Reference Guide* within the manual is a list of the basic requirements. Checklists in the appendix provide growers with tools to review compliance at their site. The [How To Comply manual](#) can be downloaded from the Pesticide Education Resources Collaborative website. For a hardcopy, contact Susan Odom at the VDACS-OPS office at: [susan.odom@vdacs.virginia.gov](mailto:susan.odom@vdacs.virginia.gov), 804-786-8934.

## Pesticides and the Endangered Species Act: What You Need to Know

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*The following was developed by the Weed Science Society of America, Entomological Society of America, and American Phytopathological Society.*

### 1: What is the Endangered Species Act (ESA)?

The Endangered Species Act is a long-standing federal law, first passed in 1973, which requires government agencies to ensure any actions they take do not jeopardize a species that has been federally listed as endangered or threatened. When an agency has a proposed action that might affect a listed species or its habitat, they consult with one or both of the agencies that helps enforce the ESA, the U.S. Fish and Wildlife Services or the National Marine Fisheries Service (this is known as “a consultation” with “the Services”). The Services then may recommend changes to the project or action to protect listed species or habitats.

### 2: How does the ESA affect pesticide use?

The Environmental Protection Agency (EPA) Office of Pesticide Programs (OPP) is the federal agency that regulates pesticide use. Because the use of pesticides can affect animals and plants (or their habitats), pesticide registrations are considered “actions” that would trigger an endangered species consultation.

### 3: Why am I hearing about the ESA and pesticide use now?

Due to the complex nature of the process, the EPA has not fully completed the required endangered species consultations with the Services for pesticide registrations in the past. This has left many of those pesticides vulnerable to lawsuits. Courts have annulled pesticide registrations which has led to their removal from the market. To make pesticide registrations more secure from litigation, ultimately all pesticide registrations will comply with the [Endangered Species Act](#).

### 4: How will this affect the pesticide I use today?

Many pesticide labels will likely have changes that could include

- Requirement to check the [EPA's Bulletins Live!](#) [Two website](#) and follow current ESA restrictions
- Measures to reduce spray drift.

- Measures to reduce runoff/erosion.
- Other measures to reduce pesticide exposure to listed species and their habitats.

**In short, farmers and applicators should expect to see some new application requirements on their pesticide labels.** But there is no need to panic. To date, no pesticide has ever been fully removed from the market based solely on endangered species risks, and that remains an unlikely scenario in the future.

### 5: Why does complying with the ESA matter?

By starting to fully comply with the ESA, EPA anticipates this will give farmers and applicators more stable, reliable access to the pesticides they need. Furthermore, the ESA has been successful at bringing back some species Americans care about – such as the bald eagle and the Eggert sunflower – and restoring them to healthy populations. This has benefited the natural and cultivated ecosystems that agriculture (and society) rely on.

## Blast From the Past

Stephanie Blevins Wycoff – Extension Associate

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### Pesticide Safety Poster of the Month

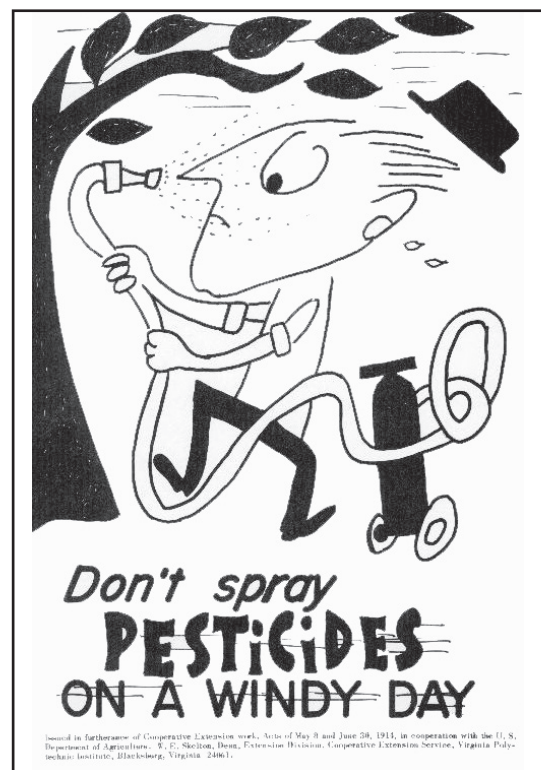


Figure 3. VCE Pesticide Safety Poster of the Month, August 1968.

This poster was released by Virginia Cooperative Extension (VCE) between 1968 and 1974 as part of the Pesticide Safety Poster of the Month collection. The message on the poster is simple, concise, and still extremely applicable in the world of pesticide safety education today. Figure 3 reinforces the concept of avoiding pesticide applications on windy days. If winds exceed 10 miles per hour (mph), pesticide applications should be delayed until weather conditions improve. Windy conditions not only cause pesticides to drift offsite, they can also lead to increased exposure for the applicator. It is best to make pesticide applications when winds are light and steady, around 3-5 mph.

## Program Updates

### VTPP Updates

#### 2024 Pesticide Safety Educators Workshop

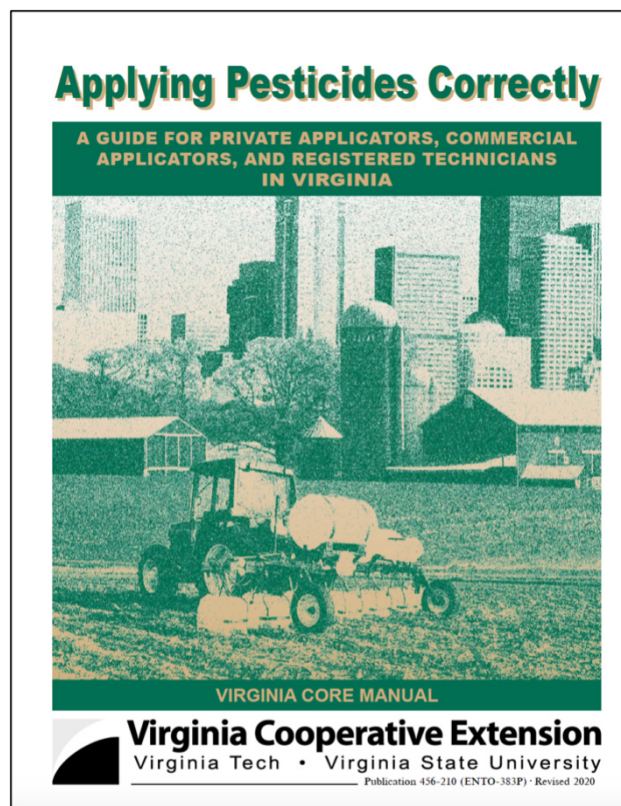
Mark your calendars for the 2024 Pesticide Safety Educators Workshop (PSEW), our annual in-service training for Virginia Cooperative Extension, Agriculture and Natural Resources agents and specialists. The workshop will be held on Thursday, Sept. 5 and Friday, Sept. 6 at the Hotel Roanoke. PSEW is designed to update agents and specialists on pesticide applicator training procedures and practices, as well as recognize the outstanding teamwork enjoyed between VDACS-OPS and VCE. Registration for the event will be available later this summer.

#### VCE Recognition Awards

VDACS-OPS is opening the nomination period for the Virginia Cooperative Extension Recognition Awards Program. Agents who conducted programs between April 1, 2023, and March 31, 2024, may be nominated for an award. The categories are for outstanding pesticide safety education and environmental programs (pesticide collection and plastic pesticide container recycling). Nominations are due by June 30, 2024. For more information and the nomination packet, contact Rachel Parson at [rparson@vt.edu](mailto:rparson@vt.edu) or 540-231-4639.

## Searching for a NEW Cover Image for the Virginia Core Manual

The Virginia Core Manual is getting a new cover. We need your help to find the perfect photo(s) for it!



Current Core Cover (1999-2024)

For over 25 years, the image above has been the face of Virginia pesticide safety education (PSE). More than 37,000 copies of the Core manual have been printed during that time.

The new cover will be full color and include 1-3 images.

If you have an image(s) that represents pesticide application or safety in Virginia that you think would make a good cover, please email it to Dana Beegle at [dbeegle@vt.edu](mailto:dbeegle@vt.edu). Files should be

- JPG or PNG format.
- 300 DPI minimum.

If we use your image, you will be credited in the manual and leave a PSE legacy for years to come!