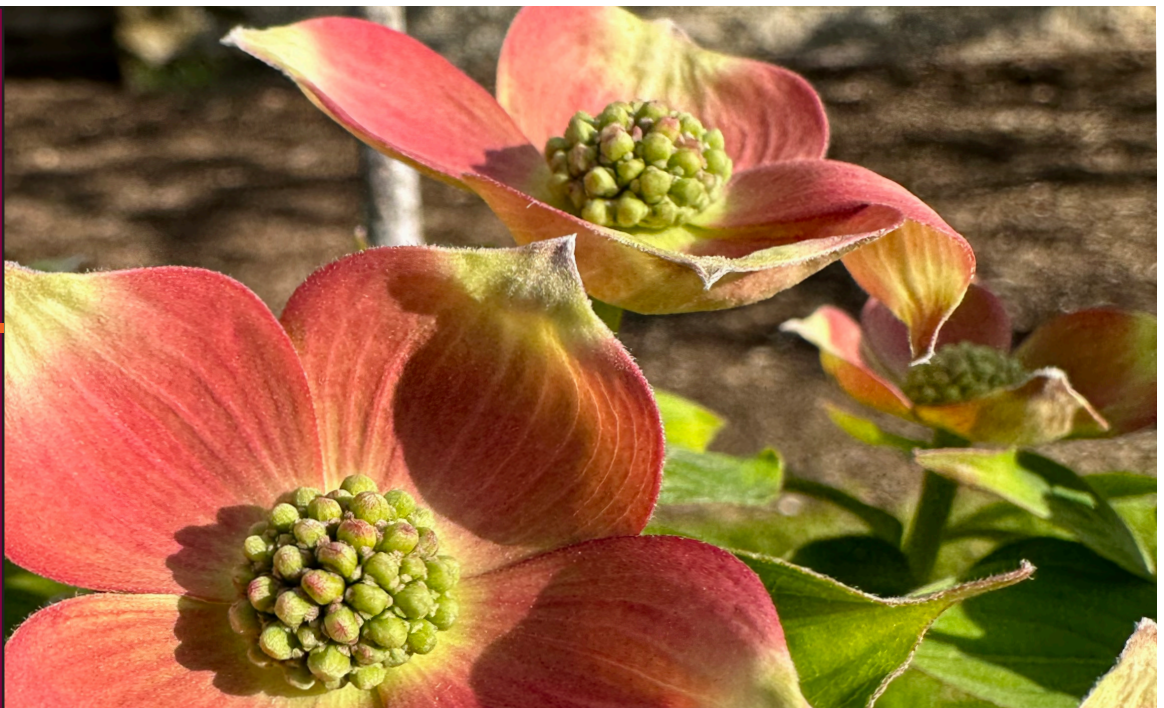


VTPP Quarterly

A Newsletter From Virginia
Tech Pesticide Programs

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Respirator Fit Testing for Pesticide Application

Kathleen Miller – Extension Associate

As a pesticide applicator, it is your responsibility to follow all personal protective equipment (PPE) requirements provided by the label. These legally binding requirements ensure applicator safety during pesticide use. A major component of PPE is the respirator, which plays a critical role in protecting pesticide applicators from inhalation exposure.

Respirators come in many different forms. The two main types are atmosphere-supplying respirators and air-purifying respirators. Atmosphere-supplying respirators provide uncontaminated air from an air tank or offsite location. Air-purifying respirators remove contaminants from the air through a canister, cartridge, or particulate filter. Respirators are either loose-fitting or designed to seal tightly to the face. Those meant to have a tight seal must be fitted to the specific user.

Fit Testing Respirators

For optimum safety and efficacy, a respirator must fit and seal to the user’s face properly. “Fit testing” is a method used to determine if there is a proper seal. The U.S. Occupational Safety and Health Administration (OSHA) enforces a Respiratory Protection Standard that requires a fit test prior to using a respirator for the first time. Retesting is required annually as well as when a new facepiece is used or when there are changes to the user’s physical condition (e.g., cosmetic surgery or weight change) that could affect the fit.

There are two types of fit tests: qualitative and quantitative. Qualitative fit testing relies on the respirator user’s senses to detect an irritating substance (typically an irritant smoke such as stannic chloride) while wearing the respirator (fig. 1). During the test, the user must make a series of OSHA-approved movements. If the user detects the smoke, there is a leak in the respirator seal and adjustments

must be made. Note: Before testing, the user should be exposed to a weakened concentration of the smoke to become familiar with its properties.



Figure 1. Qualitative respirator fit test using irritant smoke.

Quantitative fit testing uses a particle-counting instrument to quantify the respirator fit. This tool compares the dust particle concentration in the surrounding air with the concentration inside the respirator. While wearing the mask and attached to the instrument (fig. 2), the user must complete a set of OSHA-approved movements. During this time, the instrument measures the ratio of the two dust concentrations, known as the “fit factor,” and determines if there are any leaks. Half-face and full-face respirators must have a minimum fit factor of 100 and 500, respectively, to be approved for use.



Figure 2. Quantitative respirator fit test.

Fit Checks

In addition to fit testing, a fit check is a quick, yet vital, procedure to assess the positioning and seal of the respirator. A fit check should be conducted each time you use your respirator.

There are two components of a fit check: a positive-pressure check and a negative-pressure check. To conduct

a positive-pressure check, cover the exhalation valve of the respirator with your hand and exhale. Conversely, to conduct a negative-pressure check, cover the air inlet valves with your hands and inhale. In both cases, if there are no signs of air leakage, the fit and seal of the respirator are sufficient.

Fit Testing at Virginia Tech

Any Virginia Tech employee who wears a tight-fitting respirator is required to undergo respirator fit testing. Tests are conducted by Virginia Tech Environmental Health and Safety personnel or by designated trained staff for the Agricultural Research and Extension Centers. Virginia Tech uses the OSHA-approved controlled negative pressure (CNP) REDON fit testing protocol which uses a particle-counting instrument, described earlier. In this protocol, the user is required to perform three different test exercises and two redonnings (removing and putting on again) of the respirator. If the respirator being tested requires a fit factor less than 500, a qualitative irritant smoke test will be used instead of the CNP REDON protocol.

For further information on respirator fit testing, please refer to these links:

- [OSHA Controlled Negative Pressure REDON Fit Testing Protocol.](#)
- [OSHA Fit Testing Procedures.](#)
- [Virginia Tech Environmental Health and Safety: Respirator Fit Testing.](#)

Pesticide Product Labels vs. Safety Data Sheets

Stephanie Blevins Wycoff – Extension Associate

When it comes to pesticides, there are two important documents you should be familiar with: the pesticide product label and Safety Data Sheet (SDS). Each contains important information for working with pesticides, but their uses are very different. This article will compare pesticide product labels and SDSs and discuss how each document should be used.

Pesticide Product Labels

If you apply pesticides on a regular basis, you have most likely read several pesticide product labels. The label is intended for the user of the pesticide. It describes how and where to use the product, how to protect yourself during use, and how to protect the environment. Always read the label before you purchase, use, store, or dispose of a pesticide product or its container.

It is important to note that pesticide labels often change

over time as they are updated by manufacturers. Therefore, you should always read the product label each time you purchase a pesticide to make sure you have the most current information.

Sections of the Pesticide Label

Pesticide product labels are arranged into four main sections: Identifying Information, Precautionary Statements, Directions for Use, and Conditions of Sale. Each section contains important information to help pesticide applicators use the product safely, effectively, and legally. Figure 3 shows the four sections of the pesticide label and the pertinent information contained in each one.

of each RUP application, and these records must be kept for two years. If you are a commercial pesticide applicator or registered technician, you must keep records of ALL pesticide applications performed on the job. These records must also be maintained for two years.

Additionally, if the Worker Protection Standard (WPS) applies to your operation, pesticide application records must be displayed in a central location accessible to all pesticide handlers and agricultural workers employed by your operation. This information must be posted within 24 hours of the pesticide application, and it must remain displayed for 30 days after the restricted-entry interval expires.

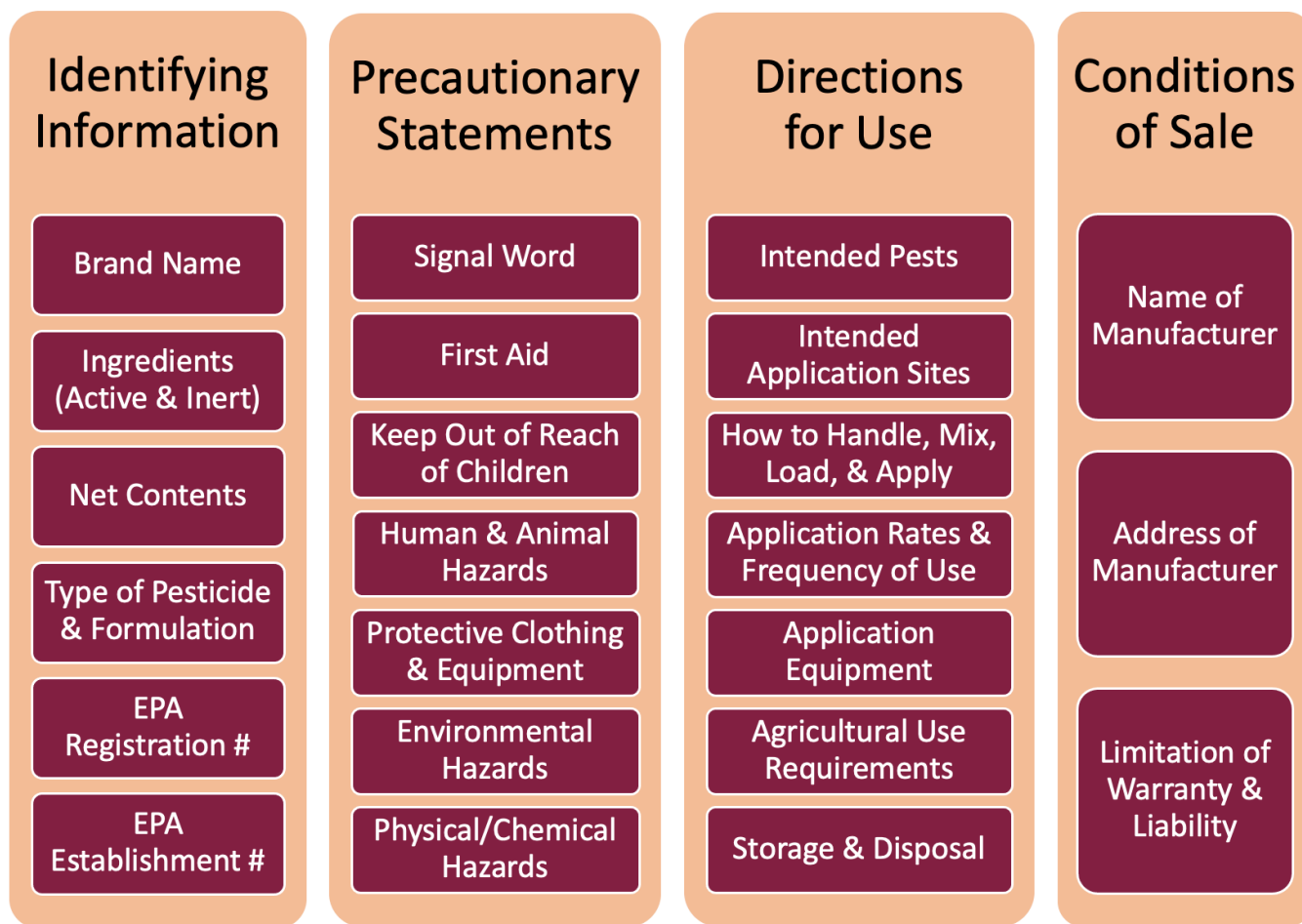


Figure 3. Pesticide product labels contain four main sections of information that pesticide applicators need to read and understand before using any pesticide.

Requirements of Pesticide Applicators

Homeowners applying a pesticide must read and understand the product label and use the product according to the directions. Certified pesticide applicators, however, are bound by further legal requirements.

There are different types of certified pesticide applicators in Virginia. If you are a private pesticide applicator, you must keep records of any restricted use pesticide (RUP) application. A record must be written within 14 days of

Safety Data Sheets

Safety Data Sheets contain different information than pesticide product labels. SDSs are not intended as a guiding document for pesticide applications. Instead, they convey information for

- Employees, who could be exposed to chemicals in the workplace.
- Employers, who store and transport chemicals.
- Emergency responders.

SDSs are useful for certified pesticide applicators since they contain product specifics like physical and chemical properties, toxicity information, and spill clean-up procedures. However, when it comes to applying a pesticide, applicators must follow the pesticide product label.

Sections of a Safety Data Sheet

Like pesticide product labels, Safety Data Sheets contain different sections of information. Figure 4 depicts the 16 sections of SDSs and the type of information you will find in each one.



Figure 4. Safety Data Sheets contain a wealth of information important for anyone working with or near hazardous chemicals.

SDS Requirements

Neither homeowners nor certified pesticide applicators are required to read SDSs to perform pesticide applications. However, if a pesticide operation falls under WPS, it is required to display the SDS for each pesticide product applied on the property. Like pesticide application records, the SDS must be displayed in a central location accessible to all pesticide handlers and agricultural workers employed by an operation. This information must also be posted within 24 hours of the pesticide application and remain posted for 30 days after the restricted-entry interval expires.

Resources

For more information about pesticide product labels,

SDSs, and requirements under the WPS, please refer to the following resources:

- Pesticide labels – Environmental Protection Agency: <https://www.epa.gov/pesticide-labels>
- Safety Data Sheets – Occupational Safety and Health Administration: <https://www.osha.gov/hazcom>
- Worker Protection Standard – Pesticide Educational Resources Collaborative: <https://pesticideresources.org/>

Blast From the Past

Stephanie Blevins Wycoff – Extension Associate

“Dead Stuck” for Bugs

This antique bottle contained an insecticide manufactured by the Penn Chemical Company of Philadelphia, Pennsylvania, circa 1890. The manufacturer gave the insecticide a brand name of “Dead Stuck” for Bugs. Little other information is included on the bottle, but it does say “non-poisonous” and “won’t stain.” The trademark displays a bug with a needle pinned through the abdomen. Although it is difficult to tell, some have theorized that the bug is actually a beetle or a bed bug (I agree with the latter). It was not until much later that pesticides were required to be sold with descriptive labels. The Federal

Insecticide, Fungicide, and Rodenticide Act of 1947 paved the way for better labeling and regulation of pesticides across the United States.



Figure 5. “Dead Stuck” for Bugs insecticide bottle, circa 1890.

Program Updates

VDACS Updates

Online Testing Now Available

Prospective pesticide applicators can now take their certification exam(s) from their home or office via an online portal. Remote Testing will be hosted by Everblue and requires a \$26 online testing fee per exam that is paid directly to Everblue. This is in addition to the application fee paid to Virginia Department of Agriculture and Consumer Services, Office of Pesticide Safety (VDACS-OPS). The exam can be taken 24 hours a day, seven days a week during the 90-day authorization period. Computer, webcam, and microphone are required. Information regarding the remote testing option will be included on the prospective pesticide applicator’s Letter of Authorization. Applicators who provided an email address on their application to become a certified applicator will receive an email from Everblue with additional information regarding testing options. For an introduction to Remote Testing, there is a walk through

available at vimeo.com/everblueeducation/vdacsdemo.

Online Submission of Applications and Issuance of Letters of Authorization

The online pesticide system was recently upgraded to make the application submission process more user-friendly. The upgraded system also provides expedited approval for the issuance of an authorization to take the registered technician exam after submission of the application form for new registered technicians (RT-A). The current upgrades to expedite the approval process for the issuance of the authorization to take the certified applicator exam is for registered technicians only. These upgrades, which are described below, were installed March 22, 2023, and are designed to allow the prospective applicator to receive the authorization to test the day after their application is successfully submitted. VDACS-OPS is currently developing the same expedited process for commercial applicators. The expedited process includes the following features:

- For online applications, the new process will not allow an application to be submitted and payment processed unless all information has been provided (i.e., all information in the required fields has been entered by the applicant). Credit card or ACH payments will be processed upon submission of the application. Application fees may be paid by check and mailed to the agency. Applications for which the fee is paid by check will be processed upon receipt of the check and reconciliation of the payment by the Office of Pesticide Services.
- Once the application has been successfully submitted, the authorization to take the registered technician exam will be emailed to the applicant using the email address associated with the account through which the application was submitted. Under normal circumstances the following will occur:
 - Authorizations to test will be emailed the next day to applicants who pay the application fee by credit card or ACH.
 - Authorizations to test will be emailed to applicants who pay the application fee by check after receipt of payment and reconciliation of payment by VDACS-OPS.

Applicants who have submitted their RT-A application utilizing the online system can determine the status of their application on the Online Pesticide System main forms list page, by scrolling down to the “View Previous Form Submissions or Update Forms in Progress” section. In this section, you will find the most recent forms and the associated status. After a payment is processed via the payment portal (credit card or ACH) or a customer selects the option to remit a physical check, applicants are

encouraged to confirm their submission on the main forms list screen. The following provides information relative to the status of an application for a registered technician form:

- New (internal review pending) – This form has been accepted by VDACS, and an email with an authorization to test will be sent to the account email address.
- Draft – This form has not been submitted and requires action by the applicant to submit the form before it can be processed.
- Pending for Payment – This indicates that the payment is by paper check and the application is not being processed until the agency receives the check. This status only appears for those who elect to pay by check. Once VDACS receives and processes the check payment, the status will be updated to “New” (Pending internal review).

If the applicant has successfully passed the registered technician exam, whether taken at the Department of Motor Vehicles (DMV) or via remote testing, they will receive documentation that will serve as a provisional certificate that is valid for 45 days. If testing at DMV, the letter of authorization will be updated with the exam grades and will serve as the provisional certificate. If testing remotely, an email will be sent to the applicator and will serve as the provisional certificate. Upon receipt of the exam score, VDACS will conduct a final review of the application and the status will be listed as approved or rejected:

- Approved – The application has been approved and test score has been accepted and a certificate will be issued and emailed to the applicant at the email address provided in the application.
- Rejected – The review by VDACS indicates a problem with the application. If necessary, VDACS will request additional information, via email, from the applicant. If the problem cannot be resolved, the application will be rejected.

Further questions can be directed to VDACS-OPS at opsclrt.vdacs@vdacs.virginia.gov or 804-786-3798.

VTPP Updates

2023 Pesticide Safety Educators Workshop

Mark your calendars for the 2023 Pesticide Safety Educators Workshop (PSEW), our annual in-service training for Virginia Cooperative Extension, Agriculture and Natural Resources (VCE-ANR) agents and specialists. The workshop will be held on Thursday, Aug. 24 and Friday, Aug. 25 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.