The Pesticide Applicator Report

News for Vermont's Pesticide Applicators from the Vermont Agency of Agriculture, Food & Markets and UVM Extension

THE UNIVERSITY OF VERMONT EXTENSION

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Categories of Confusion

Doug Johnstone, Vermont Agency of Agriculture

Considering that there are roughly seventeen pesticide applicator certification categories in Vermont, it can be an arduous process to determine which category will cover a specific application. While most application categories are largely straight forward, there are a few that are not, such as invasive species and biting arthropod treatments. Every properly registered pesticide requires that the application be made only to a site, or sites listed on the respective label, regardless of the pest.

Invasive species applications are treatments intended to suppress or control noxious weeds, or non-native plants that are harmful to the environment, economy or human health. When the application is made on agricultural lands, such as pasture renovation, the applicator must be certified in category 1A (agricultural plant). When invasive species are treated in a forest setting, the applicator must be certified in category 2 (forest pest), while category 6 (right-of-way) allows for invasive species control in and along rights of way, including roadside, rail road and utilities. Invasive species to organisms other than plants would still require proper certification within the proper category based upon the site of application.

Due to the **increase in tick and mosquito activity** across our region, many applicators are asked to control biting arthropod pests in residential settings, although proper certification based upon the site is required for the legal application of these treatments. Category 3A (trees & ornamentals) allows an applicator to make these treatments only in areas where trees and ornamentals are present, such as a landscape bed, or to the trees or ornamentals only at the edge of a yard. Category 3B (turf) only allows for

(continued)

treatments to turf or turf grasses. Category 7A (general pest control) allows the applicator to treat out to four feet around the exterior of a structure, while category 7B (health related pest control) allows the applicator to treat any outdoor site where biting arthropods may be located.

Don't forget that the site of application must be listed on the label and proper certification is required for all pesticide applications made by private, non-commercial and commercial applicators.

For more information:

Contact your local field agent

or

Anne Macmillan
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802-828-3479

Things to Know About Personal Protective Equipment BEFORE You Handle a Pesticide

Adapted from an article provided by The National Association of County Agricultural Agents, Syngenta and the National Pesticide PPE Training Solutions Committee

PPE is anything worn to protect the body from contact with pesticides or pesticide residues. PPE includes aprons, chemical-resistant suits, coveralls, footwear, gloves, headgear, protective eyewear and respirators. The pesticide label may also require certain types of work clothes.

Always read and follow label directions BEFORE buying or using a pesticide. PPE must be selected according to the pesticide label. It must also be inspected, used, cleaned, and stored according to the PPE instructions. If the PPE instructions are missing, get them from your employer, the PPE manufacturer or get new PPE equipment that has the instructions. If you cannot read the pesticide label, someone must explain it to you before you handle the product.

PPE instructions, pesticide labels, and laws can change at any time.
FOLLOW THE INSTRUCTIONS ON EACH CONTAINER

If you do not have the PPE that is required on the pesticide label,
DO NOT APPLY THE PESTICIDE

The required PPE will be different **for different products**. Even liquid and dry products having the same brand name often require different PPE.

You may need different PPE **for different types of jobs**. These jobs include mixing, loading, applying, cleanup, and early entry into a treated area. If you are handling more than one product, choose the most protective PPE.

Use the **exact** PPE that is listed on the pesticide label.

- "Water-resistant" is different from "chemical-resistant".
- Chemical-resistant does not give the same protection from all types of pesticides.
- The type of work and length of pesticide contact will affect how long the PPE works.
- Protection will depend on whether diluted sprays, concentrated product splashes, granules, or powders contact PPE.

Aprons must be made of chemical-resistant material. The apron must cover the front of the body from mid-chest to the knees.

Coveralls are usually made of fabric such as

cotton or a cotton-polyester blend, which is *not* chemical-resistant. The pesticide label may say that coveralls must be worn over work clothes.

Eye protection may be shielded safety glasses, goggles, a face shield, or a full-face respirator. Special goggles are needed when wearing a half-mask respirator or prescription glasses. Goggles and safety glasses that have simple air holes will not protect against splashes.

Gloves are made of different materials that provide different levels of protection. Barrier laminate gloves are very good for all pesticides. Nitrile gloves are very good for many pesticides. Waterproof gloves are good only for certain dry and water-based formulations. **Pesticide labels will usually list "examples" of glove types – use the exact examples listed.**

Footwear includes water-proof boots, chemical-resistant boots, and shoe covers worn over regular shoes or work boots. Make sure spray cannot soak into footwear. Always wear the pant legs *outside* the footwear.

Headgear includes chemical-resistant hoods/ hats with a wide brim.

Respirator type will usually be a dust/mist filtering respirator (which removes particles), or a respirator with an organic-vapor cartridge or canister fitted with a prefilter. Use only respirators that say "NIOSH" (certified by the National Institute for Occupational Safety and Health).

Respirators that require a tight seal to the face must be **fit tested** before use. Fit testing is also required every year, *or* when the type of respirator changes, *or* when there are major changes in weight or facial features. Only a trained person should conduct the fit testing.

A respirator **seal check** is very different than a fit test. It must be done **EVERY** time the respirator is worn. Follow the PPE instructions on how to do a proper seal check.

Replace filters, canisters, cartridges, etc. according to the PPE instructions or pesticide label (whichever is more often). Also replace parts when there is damage, breathing resistance, odor, taste, irritation, or soiling.

Your Safety is Very Important!

PPE must be working correctly **every** time you use it. When several pieces of PPE are used together, they must not hinder each other. Before and after every use, check for any type of damage to the PPE. If it is damaged, dispose of it properly.

Sometimes PPE is uncomfortable. This may be due to hot weather, poor fit, or long use. However, there is no good excuse for not using the required PPE.

This full article can be downloaded at nacaa.com, pesticidestewardship.org, and syngentacropprotection.com/Env_Stewardship.

Preventing Surface Water and Groundwater Contamination by Pesticides

Anne Macmillan, Vermont Agency of Agriculture

Because cleanup of water contaminated with one or more pesticides is complicated, time-consuming, expensive, and usually not feasible, prevention is the best tactic for keeping pesticides out of water. The following regulatory requirements and management practices will help retain pesticides in target areas and keep pesticides out of water resources.

Read the Pesticide Label - Don't forget the label is the law**!** Following the use directions on a pesticide label will reduce the risk of water

contamination. Labels will also provide specific warnings in the "Precautionary Statements" section. Any pesticide product with directions for outdoor uses must include the following environmental hazard statements on the label:

"Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high-water mark. Do not contaminate water supplies when cleaning equipment or disposing of equipment wash waters."

Some labels may contain more detailed information in the environmental hazard statement i.e. for Atrazine 90DF:

"Atrazine can travel (seep or leach) through soil and can enter groundwater which may be used as drinking water. Atrazine has been found in groundwater. Users are advised not to apply atrazine to Sand and Loamy sand soils where the water table (groundwater) is close to the surface and where these soils are very permeable, i.e. well-drained. Your local agricultural agencies can provide further information on the type of soil in your area and the location of groundwater.

This product must not be mixed or loaded within 50 feet of intermittent streams and rivers, natural or impounded lakes and reservoirs. This product must not be applied aerially or by ground within 66 feet of the points where field surface water runoff enters perennial or intermittent streams and rivers or within 200 feet around natural or impounded lakes and reservoirs. If this product is applied to highly erodible land, the 66-foot buffer or setback from runoff points must be planted to crop or seeded with Grass or other suitable crop."

Pesticides which have the potential to be found in groundwater must bear groundwater warning statements on their labels; this information helps applicators choose appropriate pesticides where extra precautions are needed to reduce contamination risk.

Best Management Practices - You can greatly reduce the risk and adverse effects of point- or non- point-source contamination by following best management practices (BMPs). BMPs are effective, commonsense practices that emphasize proper mixing, loading, application, and disposal of pesticides.

Use IPM - Following IPM principles, use nonchemical control methods whenever possible. If pesticides are needed:

- Select a product that will provide adequate control while being less likely to leach or run off;
- Calibrate pesticide application equipment regularly; and
- If possible, reduce the amount applied by using spot treatments, band applications, and/or the lowest effective application rates.

Identify Vulnerable Areas - The presence of sandy soil, wells, streams, ponds, wetlands, and shallow groundwater increases the chance of surface or groundwater contamination. Avoid pesticide application in these locations, if possible. Never dispose of empty pesticide containers in these areas or dump or rinse sprayers into or near water sources. Also exercise care to avoid contamination of streets, storm sewers, drainage ditches, and other potential sources of runoff to streams and waterways. Do not under any circumstances clean tanks or intentionally discharge water from a tank of any vehicle into a street, along a road, or into a storm drain.

Keep Pesticides Away from Wells - Do not store pesticides around wells. Poorly constructed or improperly capped or abandoned wells can allow runoff or leaching water containing

pesticides and other contaminants direct entry into groundwater. These wells are sometimes located in or near treated fields and other application sites.

Select Appropriate Mix and Load Sites - Consider using a sealed permanent or portable mixing and loading pad to prevent seepage into soil. Do not mix pesticides near wells or surface water or where a spill or overflow could get into them (directly or via storm drains or ditches). If a well, storm drain, drainage ditch, or surface water is nearby, the site should be graded to slope away from them. Ideally, mix and load as far as possible (at least 50 feet) from such sites. Sometimes, a pesticide label or your state laws and regulations will tell you how far you must be from water or wells to mix and load pesticides.

Groundwater has been contaminated because of pesticides being spilled during filling and mixing. Even small spills can lead to problems if you always mix and load at the same site. Vary the location by mixing and loading at the site of application, but not always at the same spot if you make repeated applications to a site. If a spill does occur, respond immediately.

Containment Pads for Mixing and Loading - If you often use the same location to mix and load pesticides or clean equipment, a pesticide containment pad may be necessary. These pads are designed to contain spills, leaks, overflows, and waste water for reuse by the applicator or for disposal by a commercial waste management contractor. If the spray tank contains pesticides, keep it on the pad. The pads make spills easier to clean up and help prevent environmental contamination. The containment pad must be made of an impermeable material such as sealed concrete, glazed ceramic tile, welded steel, synthetic liners, or no-wax sheeting. Construct a concave pad or one having curbs, berms, or walls high enough to hold the largest amount of spill, leak, or equipment wash water likely to occur at the site. It also must be equipped with a system for removing and recovering spilled, leaked, or released material by either an automatic sump system or a manually operated pump. Smaller, portable pads and lightweight trays made of heavy-duty plastic may be used when mixing and loading at the application site.

Avoid Back-Siphoning - Back-siphoning is the reverse flow of liquids into a fill hose. Suction occurs at the end of a fill hose or pipe when you turn off the water or if there is a drop in water pressure. If the end of the hose or pipe is in the spray tank and below the level of the spray mix, the suction could cause the pesticide mixture to back-siphon into your water source; if you are drawing water from a well, public water supply, or surface water, back-siphoning would contaminate those water sources.
There are three ways you can prevent back-siphoning from contaminating groundwater or surface water:

- **Use a water tank.** A water tank is used only for carrying water that you originally drew from a well, public water supply, or surface water. By drawing water from a water tank during mixing and loading, you will not contaminate the original water source if back-siphoning occurs.
- **Maintain an air gap.** When filling your spray tank, keep the end of the hose or pipe well above the level of the mixture; a distance of at least twice the diameter of the hose or pipe is recommended. The resulting air gap prevents contamination of the hose or pipe and keeps pesticide from back-siphoning into the water source. Secure the hose or pipe over the spray tank to avoid letting it fall into the tank.
- **Install backflow prevention between the hose or pipe end and the water source.** An ***antisiphoning device*** has a mechanism that automatically closes if a drop or loss of water pressure occurs. This prevents anything from back-siphoning into the water source. Check valves prevent back-siphoning in chemigation systems that inject pesticides into irrigation water.

NOTE:
Vermont requires that you use at least one of the above to preventing back-siphoning.

Avoid Overflow - If a tank is filled beyond capacity, the overflow will result in a spill that could eventually leach into groundwater or run off into surface water. To avoid overflow, never leave a spray tank unattended while it is being filled.

Improve Land Use and Application Methods - In agriculture, terraces and conservation tillage practices can reduce runoff and soil erosion. Ideally, leave as much plant residue as possible on the soil surface to lessen erosion. Where conservation tillage is not possible, reduce runoff potential by incorporating pesticides into the soil. In ornamental plantings, use mulches to reduce runoff and soil erosion. Grass buffer strips are very effective in reducing runoff from a treated site because they trap sediment containing pesticides and slow runoff water, allowing more of it to infiltrate the soil. Leave untreated grass strips next to streams, ponds, and other sensitive areas.

Watch Weather Conditions - Pesticides are most susceptible to runoff from heavy rains or irrigation during the first several hours after application. Time applications appropriately to avoid runoff; often, the pesticide label will tell you not to apply the product within so many hours of expected rainfall.
To avoid allowing pesticide to drift onto surface water, check the pesticide label for Application precautions and for restrictions during windy conditions. Wind speed, temperature, and humidity all affect the off-target movement of pesticides.

Select Products Wisely - Check site conditions to determine if contamination of surface water or groundwater poses the bigger risk. Then, whenever possible, use pesticides that are less likely to leach and/or runoff, depending on the site's particular risk. Read labels for leaching warnings.

Handle Pesticides Safely - Follow these guidelines to prevent surface or groundwater contamination:

- Immediately contain and control pesticide spills.
- Check application equipment regularly for leaks or damage.
- Mix and load pesticides away from water sources.
- After the pesticide application is complete, follow label directions for proper equipment cleanup and container disposal.
- After applying granular pesticides, sweep or blow any granules from sidewalks, driveways, or patios onto the treatment area.
- Clean sprayers at the application site, whenever possible, and at a safe distance from wells, ponds, streams, and storm drains. Spray the rinsate on the treated area or on another site listed on the pesticide label or use in the next tank mix of the pesticide. Be sure not to exceed label rates.

NOTE:
Vermont requires that certified applicators obtain a ***Water Quality Permit*** *(from the Vermont Department of Environmental Conservation, Water Quality Division), prior to using pesticides in the waters of the state.*

Permit information:

https://dec.vermont.gov/watershed/lakes-ponds/permit/control/aquatic-nuisance-control

Introducing…

Erica Cummings, Agrichemical Research and Policy Specialist
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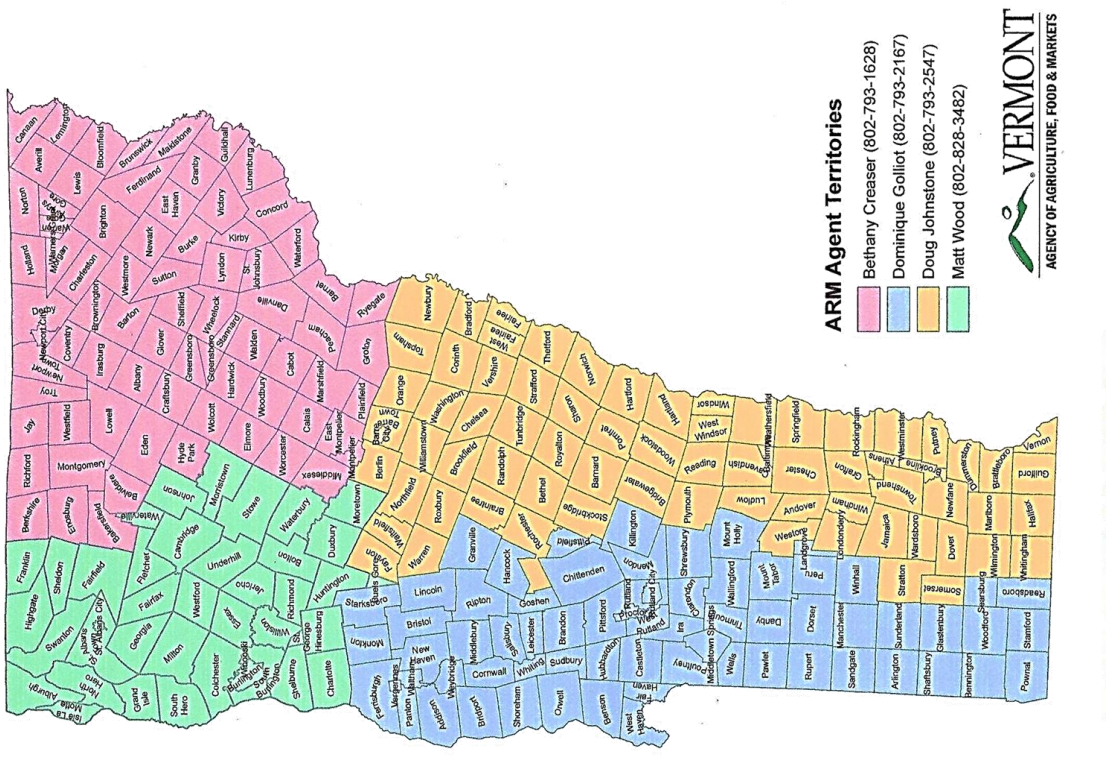
Erica comes to the Agency from University of Vermont (UVM) Extension where she has been working with Dr. Heather Darby for the past decade on applied agronomy research. Erica is a Certified Crop Advisor, Commercial Pesticide Applicator, and has an extensive laboratory background. She has overseen the Cereal & Grain Testing and the Agricultural and Environmental Testing Laboratories at UVM. Erica has also served in the Peace Corps in Senegal as an Environmental Education Coordinator. She is a graduate from St. Michael's College and is a native of Montpelier. She is a mean knitter and professional-grade potter in her spare time!



See also: ***Helpful Contacts for Pesticide Applicators***

Helpful Contacts for Pesticide Applicators

Vermont Agency of Agriculture, Food & Markets

Field Agent NE	(802) 793-1628	Bethany.Creaser@vermont.gov
Field Agent SW	(802) 793-2167	Dominique.Golliot@vermont.gov
Field Agent SE	(802) 793-2547	Doug.Johnstone@vermont.gov
Field Agent NW Golf Course Permit Coordinator	(802) 318-1383	Matthew.Wood@vermont.gov
Certification & Training Toxicologist	(802) 828-3479	Anne.Macmillan@vermont.gov
Agrichemical & Plant Industry Director	(802) 828-6531	Cary.Giguere@vermont.gov
Agrichemical Section Chief	(802) 828-6417	Linda.Boccuzzo@vermont.gov
Agrichemical Research & Policy Specialist	(802) 917-2073	Erica.Cummings@vermont.gov
Groundwater Monitoring Program Manager	(802) 522-6858	Patti.Casey@vermont.gov
Entomologist	(802) 828-1319	Judy.Rosovsky@vermont.gov

University of Vermont Extension

Pesticide Safety Education Program	(802) 656-0475	Sarah.Kingsley@uvm.edu
Pesticide Safety Education Program Plant Diagnostic Clinic	(802) 656-0493	Ann.Hazelrigg@uvm.edu
Vegetable & Berry	(802) 257-7967 x303	Vernon.Grubinger@uvm.edu
Entomology	(802) 656-5440	Margaret.Skinner@uvm.edu
Field Crops & Nutrient Management	(802) 388-4969 x332	Jeff.Carter@uvm.edu
Agronomy	(802) 656-0478	Sid.Bosworth@uvm.edu
Agronomy	(802) 524-6501 x437	Heather.Darby@uvm.edu

Home Study Quiz 1 – Things to Know About Personal Protective Equipment BEFORE You Handle a Pesticide

(Please keep answers brief; use additional paper as needed.)

1. **List four types of PPE.**

2. **Different PPE may be required for mixing, loading, applying, cleanup, and re-entry.**

   True False

3. **Liquid and dry products with the same brand name require the same PPE.**

   True False

4. **As long as you are using the same brand from the same manufacturer, you can use the same PPE for every container of that product.**

   True False

5. **Describe the difference between fit testing and seal checking of respirators.**

6. **Instructions that come with a piece of PPE should include information on …**

   A. what pesticides to use it with

   B. cleaning

   C. storage

7. **What will affect how well or how long PPE works?**

The following information is required.

Name:		
Certificate #:		Please check: ☐Commercial ☐Private ☐ Non-Commercial ☐Government
Street Address:		
City/State/Zip		
Company/Farm:		
Signature:	Date:	
Email address (optional):		

Mail the completed quiz to receive one (1) pesticide recertification credit:

Vermont Agency of Agriculture, Food & Markets
Attn: Anne Macmillan
116 State Street
Montpelier, VT 05620-2901

Home Study Quiz 2 – Preventing Surface Water and Groundwater Contamination by Pesticides

(Please keep answers brief; use additional paper as needed.)

1. **List and describe three distance setbacks for atrazine 90DF that are found in the environmental hazards section of the label.**

2. **In what ways can sprayer rinsate be legally disposed of?**

3. **During mixing/loading, even small spills can lead to problems if you always mix and load…**
   A. on a containment pad
   B. at the same location every time
   C. at different locations every time

4. **Which of the following is an acceptable way to avoid back siphoning when filling a spray tank?**
   A. Keep the filler hose at the bottom of the spray tank to agitate the mixture.
   B. Keep the filler hose above the spray mixture and spray tank opening.
   C. Only fill the spray tank from surface water sources and not wells.

5. **Pesticides are most susceptible to run off from heavy rains or irrigation…**
   A. more than a week after application.
   B. before the application takes place.
   C. during the first several hours after application.

6. **Which of the following is a way to prevent surface or ground water contamination with pesticides?**
   A. Clean your application equipment in a pond.
   B. Immediately contain and control pesticide spills.
   C. Leave granular pesticides on hard surfaces such as driveways and sidewalks.

7. **Describe two IPM practices that can reduce impacts of pesticides to ground and surface water.**

The following information is required.

Name:		
Certificate #:		Please check: ☐Commercial ☐Private ☐ Non-Commercial ☐Government
Street Address:		
City/State/Zip		
Company/Farm:		
Signature:	Date:	
Email address (optional):		

Mail the completed quiz to receive one (1) pesticide recertification credit:

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