

The Pesticide Applicator Report

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



Fall 2020 Volume 21 – Issue 2

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New Certification Category

Matt Wood, Vermont Agency of Agriculture, Food & Markets

The Agency of Agriculture, Food & Markets, the state lead Agency that regulates all aspects of pesticide use in Vermont, has created its first new pesticide applicator certification category in almost 30 years! This new individual category has been needed for those performing mold remediation for some time, but the need became more urgent due to the COVID-19 pandemic caused by the coronavirus called SARS-CoV-2. The pesticide program at the Agency quickly obtained study materials and developed an exam that truly tests the knowledge of an individual on the safe and proper use of antimicrobial pesticides of all types.

Remember, application of any pesticide including disinfectants and antimicrobial products to property that is not your own or your employer's, requires certification. If you are using these products of any classification on a customer's property--offering sanitizing and disinfecting services--then you would need to be certified as a commercial applicator. Many of you receiving this newsletter are already certified as a commercial or non-commercial applicator in Vermont, and therefore adding this new category would mean studying the Category 7F – Disinfection & Antimicrobial Pest Control manual and passing the Category 7F certification exam to add the category to your existing certificate. Those that are not yet certified will also need to pass the Vermont CORE exam based on the Northeast CORE manual.

The Vermont study material for category 7F was adopted from a Microbial

(continued)

Pest Control Training Manual developed by The University of Maine Cooperative Extension in 2009. This 27-page manual covers an overview of state and federal regulations, detail about the various microorganisms and viruses and their management, antimicrobial pesticides and their use, and mold remediation. It is available as a .pdf file for free download from the Agency website, easily found by searching online for “Vermont Pesticide Applicator Certification” and scrolling down to category 7F.

A successful candidate will demonstrate practical knowledge of microorganisms and their life cycles, viruses, product labels and hazards of disinfectants, sanitizers, sterilizers, and biocides. They will also understand proper moisture and microbial pest management and product application techniques to assure adequate control while minimizing exposure to humans and the environment.

Please contact for more information or to schedule an exam:

Anne.Macmillan@vermont.gov

802-828-3479

Pesticide Certification & Training
Coordinator, VAAF

The World of Antimicrobial Products Vermont Agency of Agriculture, Food & Markets

With the rise of SARS-Cov-2 and COVID-19 there has been a lot of talk and increased usage of antimicrobials in our homes, schools, and workplaces. There is a highlighted need for education about the use of antimicrobial pesticide products to a wide variety of audiences. An antimicrobial pesticide product is intended to disinfect, sanitize, reduce/mitigate growth or development of microbes or protect inanimate objects, industrial processes, hard surfaces, or water, from bacteria, viruses, fungi, protozoa, algae, or slime. Antimicrobial

pesticides are regulated by the EPA, and account for approximately 4000 (and growing!) pesticide products in the US, and come in many formulations and forms: sprays, powders, liquids and gases.

These products cover a wide array use patterns and are further divided into two distinct categories: non-public health and public health. Examples of non-public health products are antimicrobials in paint and treatments for textiles and papers. Most antimicrobials products, however, are intended to control microbes that can be infectious to humans and are public health products.

When public health antimicrobial products are registered by the USEPA, the products must meet all the requirements for registration as other pesticide products, but also have an additional hurdle to demonstrate efficacy against specific microbes. The EPA breaks public health antimicrobials into five categories, but the most recognized and commonly sold are disinfectants and sanitizers. Antimicrobial products used on humans e.g. hand sanitizers are regulated by the Food and Drug Administration, not EPA.

Sanitizers are tested to reduce, but not necessarily kill microbes, they must reduce at least 99.9% of the microbe tested against. Disinfectants kill or irreversibly inactivate certain microbes, but not necessarily any spores. A product may be labeled as both a sanitizer and a disinfectant and will be labeled for use (see photo). Sanitizers and disinfectant products used on food contact surfaces must be specifically labeled for that site.

As pesticide applicators you are used to reading and following labels, understanding sites, directions for use and personal protective equipment; these products are no different. One of the most important things about the use of these products is “contact time” or “dwell time”. This is the time that the product must remain on

the surface, usually wet, to meet the reduction claim on the product label. As you use these products in your workplace or home, be sure to be aware of the varying nature of the contact time and other label directions. The EPA currently is maintaining a list of products which have had the claims reviewed and are expected to be effective against SARS-CoV-2 virus and can be searched by active ingredient, company name, and contact time:

<https://www.epa.gov/pesticide-registration/list-n-advanced-search-page-disinfectants-coronavirus-covid-19>

CLEANING AND DEODORIZING:
Wipe surface until clean. Let air dry.

TO SANITIZE NONFOOD CONTACT SURFACES:

Use a wipe to remove heavy soil. Unfold a clean wipe and thoroughly wet surface. Treated surface must remain visibly wet for 15 seconds. Use additional wipe(s) if needed to assure continuous 15 second wet contact time. Let air dry.

TO DISINFECT:

Use a wipe to remove heavy soil. Unfold a clean wipe and thoroughly wet surface. Treated surface must remain visibly wet for a full three (3) minutes. Use additional wipe(s) if needed to assure continuous 3 minute wet contact time. A thorough rinse with potable water is required for surfaces in direct contact with food.

Pesticide Applicator Exams During COVID Annie Macmillan, Vermont Agency of Agriculture, Food & Markets

During a typical year, the Public Health Agricultural Resource Management (PHARM) division of Vermont Agency of Agriculture, Food, & Markets (VAAF) routinely proctors pesticide applicator exams throughout the State. Exam sessions are scheduled every Wednesday in Montpelier; the first Monday of every month in Rutland; the second Wednesday of every month in Derby; the first Thursday of every

month in Brattleboro and Saint Johnsbury; and alternating first Thursdays in Saint Albans and Williston.

This year has been far from typical, beginning with the COVID-19 outbreak in the spring of 2020. All exam sessions ceased on April 15, 2020, due to Governor Scott's implementation of the Addendum 6 to Executive Order 01-20 directing all Vermonters, except critical services, to stay at home unless essential reasons require leaving home. At that time, pest control services had yet to be determined essential.

Shortly after April 15, the Agency of Commerce and Community Development (ACCD) identified many essential services that could continue to operate outside of the home, provided those entities develop strategies, procedures, and practices designed to comply with the strict guidance for social distancing provided by Center for Disease Control (CDC) and the Vermont Department of Health (VDH). Some of the essential services include individuals or businesses that must use pesticides to protect crops, human health, or to maintain a pesticide applicator certificate to comply with regulations that correspond to agricultural pesticide use.

After implementation of the Governor's Stay at Home Order, the PHARM division received dozens of phone calls and emails requesting information about when the pesticide applicator exams would be made available to examinees. Since Executive Order 01-20 had been extended to a predicted end date of May 15, 2020, many of the PHARM staff vocalized their concern about the impacts the restrictions would have on essential individuals and businesses that were not able to procure their pesticide applicator certificates. Therefore they would not be able to comply with state and federal regulations related to pesticide applications, to protect their crops, to provide essential services to other essential service providers, or even to provide protection

to customers from disease vectoring pests. To respond to this need, PHARM staff devised a plan to proctor exams for essential services in accordance with Executive Order 01-20.

COVID-19 Pesticide Applicator Exam (COVID PAE) Plan

After a brief hiatus of not offering exams, PHARM Field Agents resumed exams in their territories at sites they have identified. Examinee numbers were limited to six including the proctor.

These sites were large parking lots or areas whereby examinees parked their vehicle (1 person per vehicle) far enough away from the next vehicle to provide safe distancing. Examinees were required to pre-register so that the exams could be safely processed prior to the exam session. Exams were safely distributed to all examinees, wearing appropriate personal protection equipment (PPE) and maintaining social distancing. All examinees were required to have and wear masks for any portion of the process that was outside of the examinee's vehicle. PHARM staff had the right to refuse examination to any examinee that did not adhere to this rule. All examinees were required to bring their own pencil, writing surface (such as a clipboard or thick textbook not related to the exam materials), and approved calculator, -cell phone calculators were not be permitted.

When the weather improved, exam locations were moved outdoors to picnic tables where examinees sat socially distanced, two to a table. If numbers exceeded the space available, examinees were asked to bring their own chair. Beginning in October, exams were moved indoors due to the change of weather. Please see the following exam schedule.

This plan continues to allow individual regional PHARM staff and field agents to proctor exams regularly but minimizes examinee numbers at

any one location, which would in turn, reduce the number of potential interactions while allowing: essential services to continue their food production and crop protection; provide protective services to other essential service providers; comply with state and federal regulations; and provide general health related insect-disease vector protection.



Spring Parking Lot Exams, Williston



Summer Picnic Table Exams, Montpelier

Fall 2020 Exam Schedule

Montpelier

- Weekly: Wednesdays, 9am-12 noon
- DHR Training Facility at the College of Fine Arts Campus Center for Achievement in Public Service.
32 College Street, Montpelier - Room #209.

Rutland

- Monthly: 1st Tuesday, 9am-noon
- Asa Bloomer State Office Building.
88 Merchants Row, Rutland - 2nd Floor Conference Room.

Newport

- Monthly: 1st Thursday, 9am-noon
- Emory Hebard State Office Building.
100 Main Street, Newport - Conference Room #205.

Williston

- Monthly: 1st Thursday, 9am-noon
- Vermont Agency of Agriculture.
94 Harvest Lane - 2nd Floor Conference Room.

Please contact to schedule an exam:

Anne.Macmillan@vermont.gov

802-828-3479

Pesticide Certification & Training
Coordinator, VAAFM

Drift and Volatility

*Erica Cummings, Vermont Agency of
Agriculture, Food & Markets*

The Vermont Regulations for the Control of Pesticides requires applicators to use pesticides and conduct operations under conditions known to minimize contamination of non-target land

and water areas. Non-target contamination is synonymous with drift at the Vermont Agency of Agriculture, Food, and Markets (VAAFM), although it is important to note there are different types of drift. The Cornell CORE manual defines spray drift as, small particles of spray droplets that are carried by air movement from the target area. Drift can also occur when a pesticide is moved off target by rain, run off, or even over-spray. Volatility, or vapor drift is defined as when a volatile pesticide turns into a gas after application and the chemicals move out of the target area.

In the past few years, there have been plenty of news stories regarding pesticide drift and volatility. As a result, the public has become much more aware of drift. In 2016 & 2017, issues with drift and volatilization of over-the-top (OTT) dicamba-containing products has resulted in widespread crop losses across the US, predominantly in the Midwest, Mid-Atlantic and the Southeast. A 2017 study, for example, shows that about 5 million acres of soybean fields were damaged by dicamba drift. Post-emergent applications of dicamba drift has also caused mass injury to forests, vegetable crops, orchards, and vineyards. This has led to litigation and court-ordered cancellation of several OTT dicamba-based herbicides in 2020. This issue continues to evolve into 2021 on the national level.

Vermont has dealt with vapor drift resulting from the use of other active ingredients: clomazone and 2,4-D. Products containing clomazone and 2,4-D, and other potentially volatile active ingredients, have language on the labels for the potential for vapor drift and steps to take to prevent it. Some formulations of active ingredients have different risks of volatility: amine, ester, choline. It is the applicator's responsibility to minimize drift.

There are many ways to reduce drift and non-target contamination, including:

- Increase droplet size to largest effective size, which may require changing the nozzle.
- Use anti-drift adjuvants which reduce the number of small droplets.
- Maintain the lowest possible pressure within the range for the nozzle and spray rates.
- Higher spray rates require larger nozzles and use a higher concentration of water to active ingredients, which can help to “water” it in.
- Keep the nozzles as close to the target as possible to reduce the effects of air movement.
- Make applications during periods of low wind speed, such as early morning or evening. Many labels state that optimum wind speed is 3-5 mph.
- Temperature and humidity also play a role in drift. Higher temperatures and lower humidity evaporate water making the spray more prone to drift. It takes 8 droplets to equal the same volume as one that is twice the size: that results in 8x the surface area that can be affected by heat and humidity.
- Other weather-related issues such as temperature inversions, air stability and gusting winds will also make it more prone to drift.
- Choose the formulations that are best suited to your application conditions.

Summer Season Recap

Ann Hazelrigg, University of Vermont Extension

This summer has turned out to be the hottest on record for the state, averaging 72.3 F. The high temperatures coupled with dry conditions influenced pest and disease incidence and severity. Although there were some areas that received heavy rains over the summer, most of the state remained dry. According to the Vermont Forest and Parks and Recreation ‘Forest Health’ observations for August 2020 (<https://fpr.vermont.gov/sites/fpr/files/documents/2020%20Forest%20Health%20August%20Observations.pdf>), in the beginning of August, the

U.S. Drought Monitor listed 41.78% of the state in moderate drought. By the end of the month, this increased to 50.69%, with the rest of the state listed as abnormally dry (49.31%). The good news is the dry weather limited fungal diseases.

Although gardeners are still seeing fungal leafspot diseases (early blight and Septoria leaf spot) on their tomatoes, the diseases have mainly stayed on the lower leaves and have not moved throughout the plant which is common in rainy summers. Late blight, a very aggressive disease of tomatoes and potatoes, has not arrived in the state as of mid-September. This disease has been found in western NY and could still blow into Vermont before the first frost and cause losses in high tunnels. We are seeing a fair amount of powdery mildews, the white fungus that covers leaves of the cucumber family, lilacs, phlox and others. This fungus disease prefers high humidity and can quickly cover foliage reducing plant vigor and in the case of pumpkins, making the stems more susceptible to breakage. The best management for these diseases which are VERY host specific and will not move between hosts (i.e. the powdery mildew on pumpkins is different from the one that infects phlox) is maintaining good air circulation through pruning in the case of lilacs, or wide plant spacing in the case of the squash and pumpkins. Growers may use fungicides to manage the disease, but there are several organic materials that are very effective.

Temperatures over 90 F caused blossom drop in tomatoes, peppers and eggplants and many growers noticed a decrease in production following the high temperatures. At high temperatures pollen can become ‘sticky’ and pollination may be impeded in cucurbit crops. Additionally, high temperatures may result in more male flowers, delaying fruit production in this family. Ripening disorders in tomatoes are common in hot dry summers causing blossom end rot, gold flecking and yellow shoulders.

Insects and arthropod pests were abundant in the hot summer. High temperatures can increase reproduction rates and can increase the number of generations per season of the pest. High numbers of flea beetles, stink bugs, cucumber beetles, tomato hornworms, onion leek moths and squash bugs were noted. Two-spotted spider mites, thrips and broad mite numbers were high in several crops and became unmanageable due to rapid reproduction in some instances.

Critters were also present in high numbers around the state with commercial growers and home gardeners voicing complaints! Chipmunks and squirrels were reported feeding on tomatoes and completely stripping pear and apple trees in some cases. Voles were plentiful and were found causing damage to lawns and feeding on root crops. These vegetarians can have multiple generations per year and can also cause damage to trees and shrubs. Due to the high vole populations of the summer, tree guards should be used to protect trunks of fruit and other hardwood trees before winter to minimize girdling damage.

The UVM Plant Diagnostic Clinic has remained open for samples for commercial growers during COVID-19. It is best to email directly if you have a sample you want to submit at ann.hazelrigg@uvm.edu since the lab is not open every day. Although the Clinic did not accept any home garden disease and pest samples, home garden questions have been answered remotely by a dedicated staff of UVM Master Gardener Helpline volunteers. Over 500 gardening questions have been answered so far this season. If you have a gardening question, you can use this portal to post pictures and ask the Master Gardeners for assistance: <https://uvmmastergardener.wufoo.com/forms/pvzwea70y4kgf7/>

Cleaning & Winterizing Application Equipment

*Doug Johnstone, Vermont Agency of
Agriculture, Food & Markets*

Proper maintenance of pesticide application equipment is essential for many reasons, and includes cleaning the sprayer after each application, when changing to different crops or pesticide types, and regularly replacing faulty equipment. Proper maintenance helps prevent crop injury, cross-contamination of pesticides or other materials, corrosion to internal components, and reduces costs by extending the life of the application equipment and increasing its accuracy.

There are numerous sources of information pertaining to proper equipment maintenance and cleaning. The operator's manual should provide maintenance and cleaning instructions whether it is a boom sprayer or a backpack sprayer. Many pesticide labels also provide specific instructions on proper cleaning, including which cleaners are recommended for that formulation. The Northeast CORE Manual contains information on proper maintenance, cleaning and winterization, and there are many state extension websites which provide similar information as well. It is a good idea to create a check list, or standard operating procedure for each type or model of sprayer so that the process is consistent and thorough, and no steps are overlooked.

As the summer leads into fall, it might be a good time to winterize application equipment that will no longer be used before the fall harvest dominates the time schedule. This activity would include any equipment used in the process, including sprayers, nurse tanks and all corresponding components. Personal protective equipment (PPE) must be worn when maintaining and cleaning all spray equipment and the most restrictive label of products used should dictate what PPE should be donned.



Personal protective equipment (PPE) must be worn when maintaining and cleaning all spray equipment

To begin the winterization process, the sprayer should be thoroughly washed inside and out and any rinsates may be able to be applied to a labeled site. Nozzles, screens and filters should be removed, cleaned and stored in a plastic bag or sealed container in a warm area. Metal parts should be stored in vegetable or light oil over the winter. The sprayer should be cleaned with an appropriate cleaner and rinsed two to three times. It is recommended that the lines be blown out with an air compressor to remove as much remaining water as possible. Remove pressure gauges, plug openings and store indoors in an upright position. Antifreeze can be run through the system as long as it can be collected from the boom lines. Otherwise turn off boom lines when moving antifreeze through the system. Antifreeze may be left in the system or largely removed if it can be recaptured. Most recommendations suggest automotive antifreeze and water at a 50:50 concentration since it is less corrosive, although RV antifreeze may be used at 100% and may be released onto the ground. Recaptured antifreeze can be reused for two or three years. Consult the pump manufacturer's instructions for proper winterization to not void any warranties. Pressure regulators should be released, and any O-rings should be removed and stored indoors. Ideally the sprayer should be stored undercover with all openings plugged, and the unit covered

to deter wildlife from using it as winter harborage.

Proper maintenance, frequent cleaning and annual winterization protects crops, soils, and groundwater from potential injury and contamination. They also protect the investment in the application equipment and help to ensure accurate and efficient pesticide applications for many years.

Pesticide License Renewal Season is Coming Up Soon!

Annie Macmillan, Vermont Agency of Agriculture, Food & Markets

Pesticide Applicator, Company, and Dealer License Renewal season is coming up in November. The Public Health and Agricultural Resource Management Division (PHARM) pesticide program will be offering both electronic and paper renewals this year. Electronic renewals will begin mid-November, with paper renewals sent out the first week of December.

- Use this link to begin the renewal process should you choose to renew online: <https://agriculture.vermont.gov/license-and-registrations>.
- Please refer to this link for assistance should you run into any issues: <https://agriculture.vermont.gov/document/updated-faq-external-licensing>.

Those choosing to renew online may pay by credit card, those renewing by paper must pay by check. Make sure to submit your use report as well, otherwise we will not be able to renew your certification. Non-commercial and government applicators should be prepared to scan and upload their usage. Commercial companies can enter directly into the software system.

Reciprocal licensed applicators cannot renew online and will need to submit all relevant paperwork plus a copy of their current pesticide license to demonstrate an active license in the state from which they are currently certified..

Renewal fees are \$30.00 per category for commercial, noncommercial and government applicators, \$25.00 for private applicators (these licenses are renewed on a five-year cycle so not all private applicators licenses come up for renewal this year), \$75.00 per pesticide company license, and \$50.00 for Pesticide Dealer licenses. Renewals received later than 30 days following expiration date of your current license (12/31/2020) will be charged a \$27.00 late fee.

It is important that you have enough credits to renew your certification.

- Use this link to see your credit status: You can check your pesticide credits (need the last 4 digits of your certificate number (i.e. "4287") and your last name) here:
<https://usaplants.vermont.gov/USAPlants/PesticideApplicator/ApplicatorExternalSearch.aspx>.
- One of the quickest ways to obtain more credits quickly is to complete the quizzes in the Pesticide Applicator Report newsletters that are found at the bottom of this page:
<https://agriculture.vermont.gov/public-health-agricultural-resource-management-division/pesticide-programs/applicator-types-0>.
- Online training and recertification credit courses are also available through the UVM Pesticide Safety Education Program at <https://www.uvm.edu/extension/pseponline>.

Please contact with any questions:

Anne.Macmillan@vermont.gov

802-828-3479

Pesticide Certification & Training
Coordinator, VAAFM

What's Happening at VAAFM

*Annie Macmillan, Vermont Agency of
Agriculture, Food & Markets*

Last fall we welcomed **Steve Cash** as an Agrichemical Resource Management Specialist. Steve had previously worked for the Agency in the Water Quality Division and focused on Large Farm permitting. Prior to coming to the Agency in 2016, Steve worked on and managed several diversified beef operations in New York and Vermont. Steve also spent 3 years working for the US Forest and National Park Services as a responder to wildfire activities. He has a degree from SUNY New Paltz. Steve is home-based in Ripton and currently covers Rutland, Addison, and Washington counties.

Clark Parmelee was hired in August, also as an Agrichemical Resource Management Specialist. Clark had also previously worked in the Water Quality Division and specialized in working with small farms throughout the state. Clark has extensive on-farm experience and we are looking forward bringing that experience into our Division. Clark has a degree in Diversified Agriculture from Vermont Technical College. Clark is home-based in Randolph, where he also runs a beef operation. Clark currently covers Orange County and his territory will expand as he completes his training.

Back in March, we also welcomed **Kanika Gandhi** to our group. Kanika accepted the position of Program Manager and oversees the Division's field staff and pesticide regulatory programs. Kanika joined us from VPIRG, where she worked as a lobbyist on agricultural and environmental issues. She began her agricultural

career working on a produce farm in Vermont and continued her work experience with positions at the Federal Trade Commission and National Sustainable Agriculture Coalition in Washington D.C. She has undergraduate and graduate degrees from Brown University.

With these new comings, there is one important

farewell: our long-time co-worker and friend, **Dominique Golliot**. Dominique retired on September 30th. We are certain that Addison, Rutland and Bennington Counties will not be the same without him. Dominique worked tirelessly for the Agency for the past 26 years and served his regulated community with in-depth agricultural knowledge and experience

Training and Recertification Credit Online Courses

uvm.edu/extension/pseponline

- Vermont Pesticide Safety Education: CORE Manual Review (no credit)
- Vermont Pesticide Safety Education: CORE Manual Review, Unit #1 (1 credit)
- Vermont Pesticide Safety Education: CORE Manual Review, Unit #2 (1 credit)
- Vermont Pesticide Safety Education: CORE Manual Review, Unit #3 (1 credit)
- Vermont Pesticide Safety Education: CORE Manual Review, Unit #4 (1 credit)
- ***NEW*** Vermont Pesticide Education: Category 7A Manual Review (no credit)



Welcome to the Pesticide Safety Education Program Online Courses!

Resources to help study for pesticide applicator exams and/or to provide recertification credits for certified pesticide applicators. Presented by University of Vermont Extension Pesticide Safety Education Program and the Vermont Agency of Agriculture, Food & Markets.



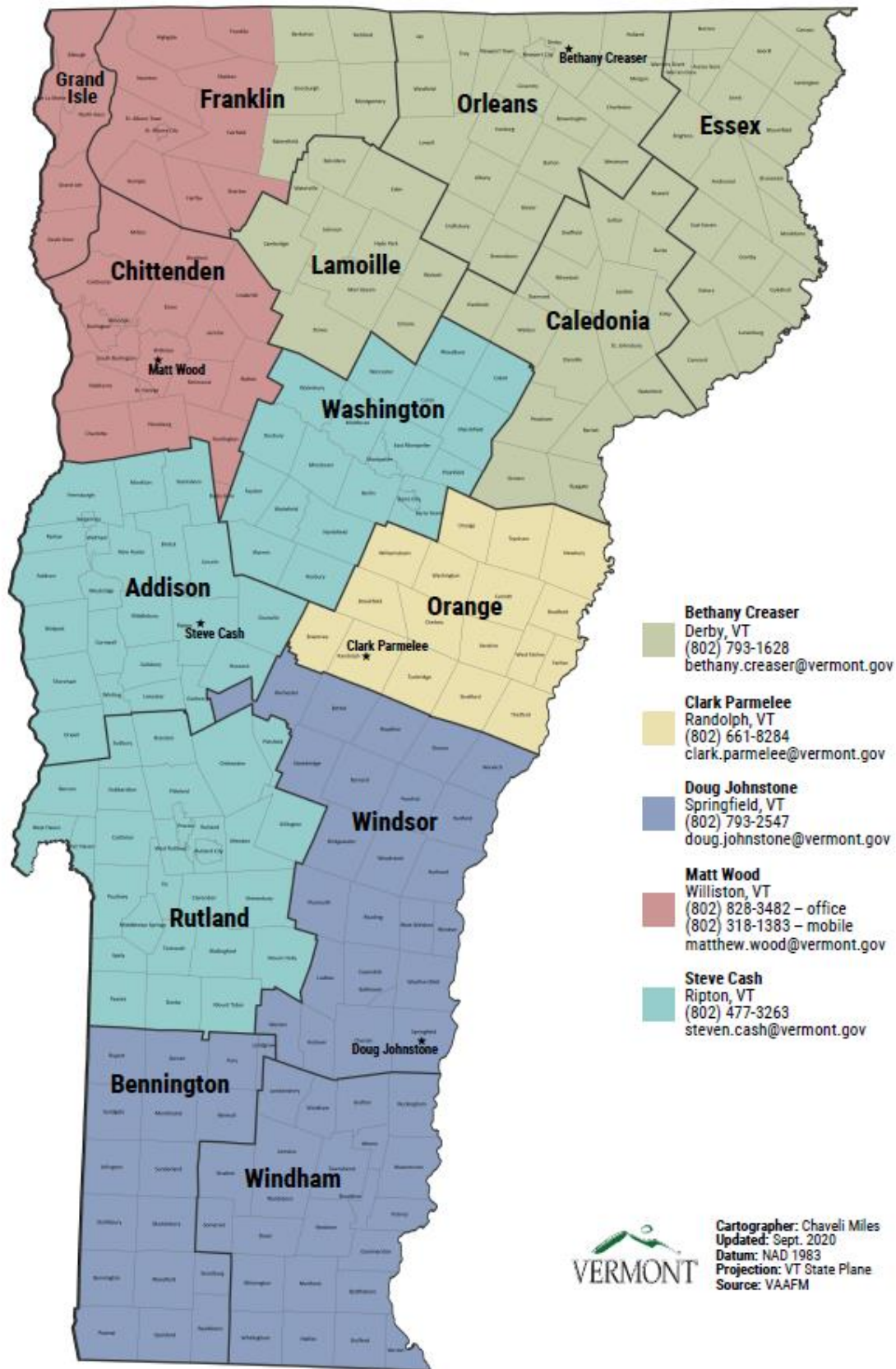
Helpful Contacts for Pesticide Applicators

Vermont Agency of Agriculture, Food & Markets

Field Agent NE	(802) 793-1628	Bethany.Creaser@vermont.gov
Field Agent SW	(802) 477-3263	Steven.Cash@vermont.gov
Field Agent CTR	(802) 661-8284	Clark.Parmelee@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
Pollinator Health Specialist	(802) 272-6688	Brooke.Decker@vermont.gov
Entomologist	(802) 279-2212	Judy.Rosovsky@vermont.gov
Groundwater Monitoring Program	(802) 828-3473	Patti.Casey@vermont.gov
Agrichemical Research & Policy	(802) 917-2073	Erica.Cummings@vermont.gov
Agrichemical Section Chief	(802) 461-5040	Kanika.Gandhi@vermont.gov
Assistant Director	(802) 828-6417	Linda.Bocuzzo@vermont.gov
Director	(802) 828-6531	Cary.Giguere@vermont.gov

University of Vermont Extension

Pesticide Safety Education Program	(802) 656-0475	Sarah.Kingsley@uvm.edu
Plant Diagnostic Clinic Pesticide Safety Education Program	(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 Outreach Specialist	(802) 751-8307 x356	Laura.O.Johnson@uvm.edu
Agronomy	(802) 524-6501 x437	Heather.Darby@uvm.edu



Home Study Quiz 1 – COVID-19 and Antimicrobial Products

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

- 1. What is the name of the microbe (virus) that causes COVID-19?**
- 2. If you are offering commercial disinfection and sanitizing services, and/or _____ you need to be certified in Vermont Antimicrobial Category. (name the industry)**

- 3. Identify three types of “microbe pests” which products may be used against.**

Questions 4- 7 are about the table on the back of this page. *The table is a random listing of products taken from EPA’s List N (Disinfectants for Coronavirus) and no endorsement of any product is intended by its inclusion in the chart.*

- 4. What is the EPA number of the product on this list that could *not* be used in a doctor’s office?**
- 5. What 4 products on this list could *possibly* be allowed for use in restaurants? (EPA # or name)**
- 6. What is the product name of the fastest disinfecting wipe on this list?**
- 7. What is the contact time *required* for the dilutable sodium hypochlorite product to be effective as a disinfectant? (minutes)**

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

The following information is required.

Name:		
Certificate #:		Please check: <input type="checkbox"/> Commercial <input type="checkbox"/> Private <input type="checkbox"/> Non-Commercial <input type="checkbox"/> Government
Street Address:		
City/State/Zip		
Company/Farm:		
Signature:	Date:	
Email address (optional):		
Mail to:	<p>Vermont Agency of Agriculture, Food & Markets Attn: Anne Macmillan 116 State Street Montpelier, VT 05620-2901</p>	

EPA Registration Number	Active Ingredient(s)	Product Name	Contact Time (In minutes)	Formulation Type	Surface Types	Use Sites
5813-50	Sodium hypochlorite	Ultra Clorox Brand Regular Bleach	5	Dilutable	Hard Nonporous (HN)	Healthcare; Institutional; Residential
84150-1	Ethanol (Ethyl alcohol)	PURELL Professional Surface Disinfectant Wipes	5	Wipe	Hard Nonporous (HN); Food Contact No Rinse (FCNR)	Healthcare; Institutional; Residential
87742-1	Thymol	Thymox Disinfectant Spray	4	Ready-to-use	Hard Nonporous (HN); Food Contact No Rinse (FCNR)	Healthcare; Institutional; Residential
4822-593	L-Lactic acid	Windex Disinfectant Cleaner	5	Ready-to-use	Hard Nonporous (HN)	Institutional; Residential
67619-10	Quaternary ammonium	Fantastik® Multi-Surface Disinfectant Degreaser	0.5 (30 seconds)	Dilutable	Hard Nonporous (HN); Food Contact Post-Rinse Required (FCR)	Healthcare; Institutional; Residential
37549-2	Sodium hypochlorite	Micro-kill Bleach Solution	0.5 (30 seconds)	Ready-to-use	Hard Nonporous (HN); Food Contact Post-Rinse Required (FCR)	Healthcare; Institutional; Residential
74559-10	Hydrogen peroxide	Oxy-1 Wipes	0.5 (30 seconds)	Wipe	Hard Nonporous (HN)	Healthcare; Institutional; Residential
777-83	Sodium hypochlorite	Lyso!® Brand Bleach Mold And Mildew Remover	0.5 (30 seconds)	Ready-to-use	Hard Nonporous (HN)	Healthcare; Institutional; Residential

Home Study Quiz 2 – Cleaning & Winterizing Application Equipment

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

- 1. What are at least 2 objectives of properly maintaining pesticide application equipment?**
- 2. What is the first resource to refer to when seeking information on proper maintenance and cleaning of pesticide application equipment?**
- 3. What must be worn before beginning any application equipment maintenance?**
- 4. What is the first step in preparing the application equipment for winterization?**
- 5. Where and in what position should pressure gauges be stored over the winter?**
- 6. If using RV type antifreeze, what concentration is recommended to reduce corrosion?**
- 7. Name at least 2 resources for information on how to maintain and clean application equipment.**
- 8. Name at least 2 occasions when pesticide application equipment should be cleaned.**

(continued)

9. What is suggested to assist in consistent and thorough maintenance and cleaning processes so that no steps are overlooked?

10. Which resource provides the specific cleaning agents to use when cleaning application equipment?

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

The following information is required.

Name:		
Certificate #:		Please check: <input type="checkbox"/> Commercial <input type="checkbox"/> Private <input type="checkbox"/> Non-Commercial <input type="checkbox"/> Government
Street Address:		
City/State/Zip		
Company/Farm:		
Signature:	Date:	
Email address (optional):		
Mail to:	Vermont Agency of Agriculture, Food & Markets Attn: Anne Macmillan 116 State Street Montpelier, VT 05620-2901	

Home Study Quiz 3 – Volatility and Drift & Summer Recap (Please keep answers brief; use additional paper as needed.)

- 1. Describe volatility and its relationship to drift.**
- 2. How does a lower application pressure application help reduce volatility?**
- 3. Identify two ways to reduce volatility.**
- 4. What is the good pesticide news about the dry weather experienced this summer?**
- 5. What is the best management for powdery mildew fungus?**
- 6. How can high temperatures influence insect and arthropod pests?**
- 7. How can you protect trees and shrubs from the high vole populations following this summer?**
- 8. Name the UVM plant health diagnosis resource for commercial growers and the one for home gardeners.**

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

The following information is required.

Name:		
Certificate #:		Please check: <input type="checkbox"/> Commercial <input type="checkbox"/> Private <input type="checkbox"/> Non-Commercial <input type="checkbox"/> Government
Street Address:		
City/State/Zip		
Company/Farm:		
Signature:	Date:	
Email address (optional):		
Mail to:	Vermont Agency of Agriculture, Food & Markets Attn: Anne Macmillan 116 State Street Montpelier, VT 05620-2901	

Did you know?

- The **UVM Pesticide Safety Education Program (PSEP)** works closely with the Vermont Agency of Agriculture, Food & Markets to provide training and education resources for current and prospective pesticide applicators: *Certification Information, **Online Training and Recertification Courses**, CORE and Other Training, The Pesticide Applicator Report, COVID-19 Resources, Fact Sheets, Helpful Links.*

UVM Pesticide Safety Education Program

(802) 656-0475

uvm.edu/extension/psep