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A Publication for Vermont Pesticide Applicators

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Vermont Department of Agriculture Web Page - <u>http://www.state.vt.us/agric/</u> Cooperative Extension Web Page - <u>http://ctr.uvm.edu/ctr/white.htm</u>



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Have questions or comments on this newsletter? Please call Wendy Anderson at (802) 828-3475.



News from the Vermont Department of Agriculture, Plant Industry Division

Help Us Identify Uncertified Pesticide Applicators.

Many landscaping companies are offering weed management services without realizing that they need to be certified to apply commonly used herbicides such as Roundup and "weed and feed" products. If you see individuals making pesticide applications, and have any doubt as to whether they are certified, please contact the Department of Agriculture at 802-828-2431. If possible, please make note of the company's name, and the date and location where the application was being made. Your identity will be maintained in strict confidence.

Pesticide Applicators: Take Advantage of Pesticide Disposal

Anyone with unwanted pesticides is able to dispose of them at no charge at household hazardous waste collections held across the state. The pesticide disposal program, started in 1996, will pay for disposal costs of all unwanted and banned pesticides. Be sure to contact your local Solid Waste District or visit

http://www.state.vt.us/agric/wastepest.htm to see the dates and times for pesticide collection events nearest you. Some Districts require preregistration, so be sure to call before you head down to the event.

Farms, homes and businesses will become safer places with the removal of these unwanted toxic materials. It is very important to remove these products from barns, and household or business cellars. Unwanted or banned pesticides are an accident waiting to happen. People often buy more than they need and it is important to dispose of them properly. Animals and children are especially at risk, and leaking containers can be an unknown hazard. Check in storage sheds, garages, barns, and basements for unwanted products and get rid of them, for free! Questions? Call Anne Macmillan at 802-828-3479.

News from the University of Vermont, Cooperative Extension Service

JUNE 2002 FLOOD -

Forage and Feeding Concerns

By Willie Gibson, Field & Forage Crops Specialist and Dennis Kauppila, Farm Business Management Specialist

ARNING! The silt and organic material from flooding contains molds and bacteria, which can be highly dangerous for people and livestock. Breathing in dust should be avoided at all times. Use 95-100% rated, NIOSH-approved dust/mist respirators (NOT 'comfort masks' or other lesser products) when handling flooded materials, walking in flooded fields, or when working the land after a flood. Mold spores can cause permanent damage to lung, bronchial, and throat tissues. The smaller the person, the less exposure is required for damage. Anyone who already has breathing troubles should avoid all exposure to flooded materials.

Q: What precautions should I use when handling flooded forages?

A: Use a 95-100% efficiency rated, NIOSH approved dust/mist respirator (mask). These flooded forages contain fine silt, fungus spores, bacteria and more things that ARE BAD TO BREATHE. You may need a full-face respirator to avoid eye irritations, as well.

Q: I was about to take a cut of hay when it flooded. What should I do?

A: Based on experience with previous floods, feeding heavily silted material to livestock can / cause health problems, production problems,

and/or reproduction problems. Generally, this material should be considered debris. Avoid feeding it if possible. Try to get this standing hay off the field as soon as possible to encourage regrowth. Use a NIOSH-approved dust/mist respirator or filtered cab so you are not breathing this dust.

Q: Can I put this flooded hay into my silo?

A: To be safe, avoid making silage out of it. However, if you must, keep it separate from the rest of your unflooded silage. It may spoil and it could contaminate adjacent silage. Adding a lactobacillus inoculant may improve fermentation. Extra packing may help as well. If you ensile these flooded crops, you may find that once the silo is opened, they spoil faster than other silage.

Q: Will I be able to get the next cutting?

A: It depends on the type of forage, soil, and silt-level conditions. If the growth is early, chances are better than if it is mid-way or later. If growth is above silt level, chances are better than if all growth is under silt. More than 6 inches of silt should probably be scraped off, if possible. You may want to boost the next cutting yield of a grass crop by adding 50 lbs of nitrogen per acre (about 110 lbs of urea, or 155 lbs of ammonium nitrate).

Q: Can I graze flooded pastures?

A: Be cautious. Flooding can leave Clostridium bacteria on the plants and in the soil, which can lead to serious diseases. The safest approach would be to clip the contaminated pastures and then wait to graze the regrowth. But don't graze it too closely. Move them out of pastures before they 'grub' down into the old dead material. Watch your livestock closely for any signs of problems. If any of your animals appear sick, call your vet immediately. If you lose any animals, you may want to request an autopsy.

Q: My corn was flooded. What will happen to it?

A: Corn under standing water for less than 48 hours will have a good chance of growing normally, as long as the weather allows. Corn plants that are buried under silt can probably grow through a couple of inches of silt, but if the silt/soil is waterlogged for more than 48 hours (including flooding time), then chances are that significant die-off will occur.

Look at the growth point on a sample of plants to check corn plant health. Pull the plant gently from the ground, slit lengthwise with a knife, look at the little triangle where the leaves all connect. Healthy growing point tissue should be white and cream colored. Darkened or soft tissue indicates plant death. At 30 days from planting, the growing point should be at or just below the original soil level. New leaf growth should occur within 3-5 days after the water drains from the field.

Long-term damage can occur, even if plants do appear viable and growing well. Root growth can be retarded, making the plants unable to capture sufficient moisture or nutrients during droughty weather. Some diseases are more likely, especially corn smut, but there is no way of predicting this in June.



News from the University of Vermont, Cooperative Extension Service

Q: Should I replant flooded corn?

A: Review the last question, and do the field checks. Get someone to go out with you, if you want more guidance. Several factors need to be considered, such as: a) stand population compared to target population; b) uniformity of stand after damage; c) stage of growth when damaged; d) possible replanting date; e) costs of replanting versus the likely value of harvestable crop from this planting date.

Q: My wrapped round bales got wet. What do I do?

A: Flooded wrapped bales are apt to spoil. We have seen wrapped round bales that were flooded, the plastic was not torn, and there was silt inside the plastic.

Q: Should I feed flooded forage?

A: Not if you don't have to. Farm profitability is closely tied to your forage supply and quality. Can you afford to take chances? If you do decide to feed it, you might consider diluting it with other forage. Be sure that you have it tested for nutritional value. With added silt, you may find a higher dry matter and ash content and a lower protein and energy content. If you feed any flooded material, watch your animals closely.

Q: Should I use my good equipment to harvest this flooded hay?

A: The silt on this grass will wear out your machinerybearings, knives, any moving parts. Use old equipment if possible. Cleaning and greasing will be important. Remember not to breathe the dust!!!

Q: Who can I contact with UVM Extension?

A: The following persons are listed with their expertise and phone number

• Willie Gibson, Field & Forage Crops, Phone:(802) 223-2389 ext.16 OR 751-8307 ext. 37; email: <u>willie.gibson@uvm.edu</u>

• Dennis Kauppila, Farm Business Management, Phone: (802) 751-8307 ext. 24; email: <u>dennis.kauppila@uvm.edu</u>

• Colleen Helenek, Dairy Production & Nutrition, Phone:(802) 334-7325 ext. 13; email: <u>colleen.helenek@uvm.edu</u> • Sid Bosworth, Forage Management & Quality, Phone:(802) 656-0478; email: <u>sid.bosworth@uvm.edu</u>

• Alan Gotlieb, Plant Pathology & Mycotoxins, Phone:(802) 656-0474; email: <u>alan.gotlieb@uvm.edu</u>

RESOURCES:

Gempler's,Inc., web: <u>http://www.gemplers.com</u>/, "How to Select a Respirator", (2002)

Bosworth, Sid and Kauppila, Dennis, "JULY 1997 FLOOD – FORAGE AND FEEDING CONCERNS", University of Vermont Extension (1997)

Thomison, Peter R., "Effects of Flooding and Ponding on Corn", Ohio State University Extension, (undated), web: <u>http://ohioline.osu.edu/agf-fact/0118.html</u>

Thomison, Peter R., "Guidelines for Corn Replant Decisions", Ohio State University Extension, (undated), web: <u>http://ohioline.osu.edu/agf-fact/0124.html</u>



Pesticide Applicator Report

News from the Vermont Department of Agriculture, Plant Industry Division

LOCAL OBSERVATIONS ON VIBURNUM LEAF BEETLE

Scott Pfister, Plant Pathologist Vermont Department of Agriculture

Viburnum leaf beetle (Pyrrhalta viburni) is a recently introduced pest that was first found in the Burlington area in 2000. In 2001 the beetle was found throughout northwestern Vermont with the most severe damage occurring on Viburnum trilobum (American cranberrybush viburnum) and V. dentatum (arrowwood viburnum). Viburnum leaf beetle (VLB) causes extensive leaf skeletonizing as both a larvae and adult. A fact sheet with up to date information on biology and control can be found at

http://www.hort.cornell.edu/rossi/turfweb/shortcutt/index.html.



Aduit Beetle

Larval stage

I found a good way to scout for this insect is in the early spring when buds begin to swell. The buds on branches that serve as overwintering egg sites remain dark and shriveled when the rest of the buds are enlarging and taking on green hues. Apparently egg laying in the fall by adults kills these terminal branches. This is a good time to practice a little mechanical control by pruning out dead terminal branches. I would dispose of the branch ends by burning or in the garbage. I suspect that at this late point in the season, VLB would be able to complete its life cycle and emerge, even with pruned branches laying on the ground.

Locally, I observed VLB beginning to hatch in mid-May with leaf skeletonizing being evident shortly thereafter. In Waterbury, I noticed larvae beginning to feed on May 21. If you need to spray for control, this is the time to do it before extensive damage occurs and the larvae begin to drop to the ground, enter the soil, and pupate. The larval stage only lasts a few weeks and by mid-June no larvae were found in surveys throughout Chittenden County. Since the UVM Horticultural Research Farm has a large collection of viburnum species, I decided to stop in and see what plants were affected by VLB. Out of the 16 species represented at the hort farm, only 4 of the species seemed to be affected. *Viburnum opulus* (European cranberrybush viburnum) suffered the most damage, but *V. trilobum* and *V. dentatum* were a close second. Skeletonizing on *V. sargentii* (sargent viburnum) was evident, but the damage was slight and I suspect that VLB will not be an issue with this species of viburnum. The unaffected species were *V. wrightii*, *V. farreri*, *V. plicatum*, *V. dilatum hispidum*, *V. x rhytidophylloides*, *V. sieboldi*, *V. x burkwoodi*, *V. carlcephalum*, *V. bitchuensis*, *V. latana*, *V. prunifolium*, and *V. x* "Emerald Triumph". These results are similar to those found by Cornell.

Characteristic I skeletonizing



(Photos supplied by the Vermont Department of Forests, Parks and Recreation)



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Information Resources

THE NATIONAL PESTICIDE TELECOMMUNICATION NETWORK (NPTN) HAS A NEW NAME!

o better represent the services provided by this valuable resource, the National Pesticide Telecommunication Network has changed its name to the National Pesticide Information Center (NPIC). NPIC will continue to provide the same type and quality of service that was provided under its previous name.

Services include:

A toll-free telephone service that provides pesticide information 24 hours a day, seven (7) days a week.

Objective, science based information about a wide variety of pesticide-related subjects.

Access to highly qualified and trained pesticide specialists knowledgeable in toxicology and environmental chemistry.

National Pesticide Information Center Phone: 1-800-858-7378 FAX: 1-541-737-0761 E-mail: <u>npic@ace.orst.edu</u> Internet: <u>http://npic.orst.edu</u>

Mail written requests to: NPIC Oregon State University 333 Weniger Hall Corvalis, Oregon 97331-6502

RECOGNITION AND MANAGEMENT OF PESTICIDE POISONINGS



f you work with pesticides on a daily basis, you should be familiar with the symptoms of pesticide poisonings. **Recognition and Management of Pesticide Poisonings, fifth edition**, was written by two physicians under the sponsorship of the Environmental

Protection Agency. This valuable resource provides up-todate information on the health hazards of pesticides currently in use along with current consensus recommendations for the management of poisonings and injuries caused by them. While this publication was developed for use by health professionals, it is also an essential resource for pesticide applicators. The publication is available in electronic format at http://www.epa.gov/pesticides/safety/healthcare, or you can

call (703) 305-7666 to order copies.

WEEDING/CULTIVATION REVISITED (*)



ne of the most extensive and up-to-date reviews of field cultivation and weeding equipment has been revised with new information in a 2002 version of *STEEL IN THE FIELD*, first published in 1997. Author Greg Bowman has retained the same informative mix of technical data, outstanding black and white line drawings, and first-hand reports from growers of dryland, orchard/horticultural, and agronomic crops. However, this version contains numerous addresses and added websites to make this 128-page work an even more valuable reference. Contact: Sustainable Agriculture Publications, Hills Bldg., Rm 210, Univ. of Vermont, Burlington, VT 05405-0082, USA.

E-mail: SANpubs@uvm.edu. Phone: 1-802-656-0484.

PLANT DISEASE NOMENCLATURE (*)

The American Phytopathological Society's Committee on Standardization of Common Names for Plant Diseases has prepared, and continues to maintain and revise, an extensive and freely accessible **listing of** common names of plant diseases at:

www.APSnet.org/online/common/toc.asp. Clicking on a listed plant reveals both common and scientific names of known bacterial, fungal, and miscellaneous diseases or disorders, as well as the authority and date of the latest report or revision. The same information, in either hardcopy or diskette format, is currently out of print.

A BIOPESTICIDES DATABASE (*)

From a description of microbial biopesticides (MB) including mode of action and spectrum of control, to a global listing of MB manufacturers and suppliers, this website offers a wide range of useful information and pertinent links. The **Database of Microbial Biopesticides** (DMB) - <u>http://ippc.orst.edu/biocontrol/biopesticides</u>/, developed by W.I. Bajwa, forms one of the newer elements in the suite of data and knowledge bases that comprise the well regarded *Database of IPM Resources*. DMB includes environmental risk assessment of MBs, a feature on Bt-based pest management, plus brief discussions on a variety of MB-related aspects. Contact: W.I. Bajwa, Bajwaw@bcc.orst.edu.

(*) Source: IPMnet NEWS, June 2002, Issue 102 The Consortium for International Crop Protection produces and provides IPMnet NEWS as a free, electronic, global, IPM information resource. To receive IPMnetNEWS, contact: deutscha@mail.science.oregonstate.edu.

Lyme Disease - The Basics

yme disease is an illness caused by a bacterium, Borrelia burgdorferi, which is transmitted to animals and man through the bite of infected ticks. While the disease is reported worldwide and throughout the United States, the states of New York, Massachusetts, Connecticut, Rhode Island and New Jersey account for the majority of cases in the United States. The deer tick, *Ixodes scapularis*, is the major carrier of the bacterium in the Northeast and Midwest. Not all ticks are infected. Infection rates in tick populations vary by tick species and geographic region, and can range from as few as two (2) percent to 90 percent or more. Deer ticks are found in grassy areas (including lawns), and in brushy, shrubby and woodland sites. They prefer areas where some moisture is present.

The tick has three life stages - all of which may carry the bacterium: larva (about the size of a grain of sand), nymph (about the size of a poppy seed) and adult (about the size of a sesame seed). Each stage takes a single blood meal. They feed on a variety of warm blooded animals including man, dogs, cats, horses and cows. The bite is painless so most victims do not know they have been bitten.

LYME DISEASE SYMPTOMS IN MAN

The most characteristic symptom of Lyme disease is a rash or lesion called "erythema migrans", which begins a few days to a few weeks after the bite of an infected tick. The rash generally looks like an expanding red ring. It is often described as looking like a bull's-eye with alternating light and dark rings. However, it can vary from a reddish blotchy appearance to red throughout, and can be confused with poison ivy, spider or insect bites, or ringworm. At about the same time that the rash develops, flu-like symptoms may appear with fatigue, chills, fever, headache, muscle aches, joint pain, sore throat, stiff neck, and general malaise. Some people develop the flu-like illness without getting a rash.

Seek prompt medical attention if any of these symptoms appear, especially after being bitten by a tick or visiting an area where Lyme disease is common.

If ignored, the early symptoms may disappear, but more serious problems can develop months to years later. The later symptoms of Lyme disease can be quite severe and chronic and can include muscle pain, arthritis, and severe fatigue. Chronic Lyme disease, because of its diverse symptoms, mimics many other diseases and can be difficult to diagnose.

TREATMENT

Lyme disease is treated with antibiotics. Timely treatment increases chances of recovery and may lessen the severity of any later symptoms. The most effective treatment will depend on the stage of the disease. Treatment for later stages is more difficult, often requiring extended and repeated courses of antibiotic therapy.

HOW TO AVOID TICK BITES

When out of doors, the following precautions can minimize your chances of being bitten:

Minimize skin exposure - tuck your pant legs into your socks and your shirt into your pants; wear long-sleeved shirts;

Wear light colored clothing. Dark ticks are more easily spotted against a light background;

 Inspect clothes often for ticks. Have a companion inspect your back;

Apply repellents containing DEET according to label instructions. Applying directly to clothing appears to be most effective;

Upon returning home, remove and launder clothing to kill any ticks. (NOTE - If you have been applying pesticides, make sure you wash and dry your clothing separately from family laundry!); and,

Shower and inspect your body thoroughly. Especially check groin, navel, armpits, head and behind knees and ears. Have a companion check your back, or use a mirror.

HOW TO REMOVE ATTACHED TICKS

Prompt removal of ticks decreases the chances of getting Lyme disease. The proper and easiest method is to grasp the tick with fine tweezers, as near to the skin as you can, and gently pull it straight out. Be careful not to squeeze the tick when removing it - this could result in more bacteria being injected through the bite. Do not try to remove the tick with your fingers or attempt to remove with lighted cigarettes, matches, nail polish, or vaseline.

Once removed, save the tick for identification. (See following page.) Accurate identification becomes very important if you develop disease symptoms. Proof of a tick bite and the kind of tick responsible for the bite is especially important to document in areas where Lyme disease is not considered prevalent and doctor suspicion is low.

(Source - Carnegie Mellon University http://www-2.cs.cmu.edu/afs/cs.cmu.edu/user/jake/mosaic/lyme.html)

Pesticide Applicator Report

Lyme Disease Surveillance in Vermont So... Do We Have to Worry About Lyme Disease in Vermont?

Basically, the answer is — yes! While the risk of contracting Lyme disease in Vermont remains low, both the vector (deer ticks) and the Lyme disease bacterium are present in Vermont. In fact, for the years 1999 to 2001, 84 confirmed cases of human Lyme disease were reported to the Vermont Department of Health. Twenty-two of these cases, representing nine counties, were likely to have resulted from exposure in Vermont. The remaining cases were classified as imported.

Vermont has some state-wide surveillance data on tick species and their distribution. For the past three years, the Department of Forests, Parks and Recreation has collaborated with the Department of Fish and Wildlife to collect data on the number and species of ticks found on deer checked at 18 stations during the open weekend of rifle season. In both 2000 and 2001, deer or moose ticks were found on 11 percent of the deer examined. Deer ticks have been found in Northern and Southern Vermont.

In addition, in 2000 and 2001, the Vermont Department of Health collaborated with nine veterinary practices in Bennington, Rutland, Windham and Windsor counties to test canine blood for the presence of antibodies to the Lyme disease bacterium - which would indicate that they had been exposed to the bacterium. Only dogs that had never traveled more than 10 miles outside of Vermont were included in the study - to rule out the possibility of exposures having taken place outside of the State. Over the course of 2 years, 92 dogs were tested. Nine of the dogs (9.7%) tested positive for Lyme disease.

In an effort to expand our knowledge of tick vector species in Vermont, the departments of Health, Agriculture, and Forests Parks and Recreation are collaborating on a project to collect ticks from selected veterinarians in every county in Vermont beginning in the Spring of 2002. Veterinarians will retrieve ticks they find on their canine patients and submit them to the Department of Agriculture and the Department of Forests,



e Department of Porests, Parks and Recreation's Forest Biology Laboratory for identification. Other sources of historical tick data will also be compiled and used in assessing the risk of transmission of tickborne illnesses, including Lyme disease, to people in Vermont.

HELP US TO EXPAND THIS EXTREMELY IMPORTANT DATABASE!

If you encounter ticks this season, they can be submitted for identification and entry into the surveillance database.

Send specimens to:

Jon Turmel, State Entomologist Vermont Department of Agriculture 116 State Street, Drawer 20 Montpelier, Vermont 05620-2901



Place the tick in a small container with isopropyl alcohol or ethanol (gin or vodka also work).

FOR ADDITIONAL INFORMATION:

Lyme Disease Foundation, Inc. 1 Financial Plaza, 18th Floor, Hartford, CT 06103. (800) 525-2000

 Vermont Department of Health Epidemiology Field Unit 802-863-7240

HOW TO USE DEET INSECT REPELLANTS SAFELY

 Read and follow all directions and precautions on the product label.

✓ Do not apply the product over cuts, wounds or irritated skin.

✓ Use just enough repellant to cover exposed skin and/or clothing.

✓ Do NOT use under clothing.

✓ Avoid over-application of the product.

✓ After returning indoors, wash treated skin with soap and water.

✓ Wash treated clothing before wearing it again.

NOTE: If you have been making pesticide applications, make sure to launder DEET-treated clothing separately from other household laundry.

✓ Do NOT spray in enclosed spaces.

To apply to face, spray on hands first, and then rub on face. Do NOT spray directly onto face.

Source: Disease Control Bulletin, Vermont Department of Health, May 2002

Handling Pesticide Spills: Prevention and Management

I. Preventing Spills Through Planning

E very pesticide applicator needs a plan for dealing with pesticide spills. The spill may be a minor problem with a few leaking containers, it may be a major accident where a tank truck or rail car overturns and spills its cargo, or an equipment malfunction where the contents of a fully loaded backpack sprayer or spray truck are suddenly released.

Only by planning ahead can you be ready to react quickly and handle a spill properly. The time spent today on preparing a plan will be extremely valuable in an emergency when seconds count. While no plan can anticipate every pesticide emergency, reviewing the checklists in this article and following the safety tips provided will help you avoid spills when possible and manage spills appropriately if they occur.

The first step in your plan is to identify the practices that increase the risk or danger of pesticide spills. These practices can be divided into three activities: storage, mixing/handling, and transportation. Use the checklist as a guide to determine if your operation has any practices that could be improved. **Safe operators will be able to answer "Yes" to all of the questions below.** Safety tips follow the checklist to help you improve your practices, if necessary.

PESTICIDE STORAGE CHECKLIST

YES D	NO D	Have you submitted a Material Data Safety Sheet (MSDS) to your local fire department for every restricted use pesticide stored or used at your facility?
		Do you keep a complete list of pesticides stored on the premises posted or filed in at least 2 different locations?
		Are pesticides stacked and stored properly?
۵		Is the storage area securely locked to keep out children, unauthorized persons, or vandals?
		Are pesticides protected from extremes of temperature, which could lead to container breakage as well as product damage?
		Have old, banned, or unlabeled pesticides been disposed of properly, with none remaining in storage?

YES D	NO D	Do you avoid storing excess pesticides by purchasing only what you need for a single season's use?
		In the event of a storage area spill, have you considered where the spill will flow?
		Are pesticides in granular or dust form protected from dampness, rain water, and flooding?
		Is a spill clean-up kit available in case of a spill?

Storage safety tips

⇒ Dispose of cancelled, suspended, or unwanted pesticides through the Vermont Waste Pesticide Disposal Program. Collections take place during usual Household Hazardous Waste Collection Days run by Vermont's local solid waste district. Contact your local solid waste district for collection dates, or view the Department of Agriculture's web site at http://www.state.vt.us/agric/wastepest.htm.

⇒ Securely lock the storage area. Post signs on the door, building or fence that indicate the structure is used for the storage of pesticides. Example: "Danger - Pesticides -Unauthorized Persons Keep Out!"

Prepare a spill clean-up kit consisting of:

at least 25 pounds of kitty litter or other absorbent material such as spill pillows, absorbent clay or vermiculite;

- a shovel, broom and plastic dust pan;
- sweeping compound;
- >>> bleach/heavy duty detergent;
- heavy duty plastic bags;
- watertight metal or plastic containers;
- plastic sheeting;
- warning tapes and signs;
- waterproof markers for labeling containers;

protective gear, including: coveralls, rubber or neoprene boots and gloves, goggles, and a respirator; and,

a emergency phone numbers.

⇒ For more information on safe pesticide storage, refer to the November 2001 issue of the *Pesticide Applicator Report*, or call 802-828-3475 for a copy of the article.

Pesticide Applicator Report

Pesticide Applicator Report

I. Preventing Spills Through Planning, cont'd.

MIXING/HANDLING CHECKLIST

YES D	NO D	Do you wear all necessary personal protective equipment (PPE) when mixing and handling pesticides?
		Do you have a mixing pad that is properly diked to contain pesticide spills and/or residue from rinsing equipment?
D ·		If you mix pesticides in the field, do you change your pesticide mixing location yearly?
		Are pesticides mixed more than 100 feet from vulnerable areas such as wells, streams, or livestock?
		When filling a tank with water, is there an air gap between the hose and the pesticide to prevent back-siphoning or has an anti- backsiphon valve been installed?
		Is someone constantly supervising the filling of spray tanks?
٦		Could your pesticides be transferred in a "closed system" or bulk system?
		Is your equipment free of cracks in hoses, tanks, and containers, and generally well- maintained?

Mixing/handling safety tips

Pesticide applicators are most likely to be dangerously exposed to pesticides when mixing since you are handling the concentrated form of the product. Make sure you wear all necessary PPE when mixing and filling!

⇒ Choose a mixing and loading area that is either outdoors or in a well-ventilated indoor area. The area should have good lighting, be away from unprotected people, animals, food, other pesticides, and other items that might become contaminated. If possible, mix and load on an impervious pad that is curbed to contain spills. If you are not using an impervious pad, avoid "hot spots" of overloaded soil by changing your mixing location every year.

⇒ To avoid water contamination, never mix pesticides near a wellhead, stream, storm drain or other water body.

TRANSPORTATION CHECKLIST

YES	NO	
		When transporting pesticides and pesticide mixtures, do you carry copies of all pesticide labels in your vehicle?
		When picking up pesticides from your dealer, do you bring rope or cords to securely tie the containers down?
		Do you block and brace containers?
		Are your pesticides kept separated from the driver, such as in the trunk or the bed of a pickup?
		Do you carry clean-up equipment in your vehicle in case of a spill?
۵		Do you maintain vehicles and sprayers in good condition?
ū		When transporting a load of pesticides, do you drive with special care and avoid bad roads, steep embankments, and roads along rivers or streams?

Transportation safety tips

⇒ It is a good idea to keep a note book in your vehicle which contains labels and MSDS's for all pesticides being transported, along with any emergency phone numbers you may need. In case of an accident - emergency responders can use this information to identify what pesticides are on board and what precautions need to be taken when handling the spilled materials.

⇒ When transporting pesticide containers, tie them down securely. Carry clean-up equipment and emergency phone numbers in the vehicle. **Never** leave your vehicle unattended when transporting pesticides in an open, unsecured vehicle.

⇒ If transporting pesticides labeled for agricultural use, the provisions of the EPA Worker Protection Standard (WPS) require that drivers of vehicles transporting anything but factory-sealed containers be trained as WPS handlers or be certified applicators.

[For more information about the Worker Protection Standard program, contact Anne MacMillan at the Department of Agriculture at 828-3479.]

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Handling Pesticide Spills: Prevention and Management

II. Managing Pesticide Spills / Accidents

E ven with the best emergency response plan in place, accidents may still happen. Extreme caution must be taken by pesticide applicators at all times to prevent spillage of pesticides during storage, transportation, mixing, application, or any other handling of pesticides.



According to the Vermont Regulations ' for the Control of Pesticides, a pesticide accident - which includes

pesticide spills - is "any release of a pesticide or pesticide mix from its container or application equipment which is contrary to label instructions for use of that pesticide."

There are five steps you must take when managing a pesticide spill:

- ⇒ 1. Control the spill
- ⇒ 2. Contain the spill
- ⇒ 3. Report the spill
- ⇒ 4. Clean up the spill
- ⇒ 5. Dispose of all contaminated materials

NOTE: There is no threshold quantity for the reporting of pesticide spills. ALL SPILLS MUST BE REPORTED.

1. CONTROL THE SPILL

⇒ Identify the source of the spill and try to stop it, preventing further spillage. For example, if a small container is leaking, place it in a larger waterproof container. If a hose has broken, turn off the pump. If a valve is open, close it.

⇒ Isolate the area. Rope off the area or place barriers around it. Keep people and animals at least 30 feet away from the spill. Do not allow vehicles to drive through the spill. Avoid coming into contact with any pesticide or its fumes. Do not use road flares if you suspect the spilled or leaking material is flammable.

⇒ If at all possible, do not leave the spill site until someone relieves you. Someone should be present at the spill site continuously until the chemical is cleaned up and the danger removed. It is a good idea to carry a cellular phone with you so you can report the spill and call for assistance from the spill site.

2. CONTAIN THE SPILL

⇒ Put on appropriate personal protective equipment (PPE), if you are not already wearing it. At a minimum, a long-sleeved shirt, long pants, and rubber or neoprene boots and gloves should be worn while cleaning up a spill. Depending on the product, the amount spilled, and whether the spill is within an enclosed area or outdoors, you may also need a

respirator and goggles. Wear all PPE indicated on the pesticide label while handling a pesticide spill.

⇒ Stop the spread of the pesticide spill. It is important to prevent the pesticide from entering any body of water, including storm sewers or sanitary sewers.

• Liquid Spills: Place containment booms around the spill or build a dam of soil. If the spill is running downhill towards a water body or storm drain, dig a sump and pump out the liquid that flows into the hole. Spread absorbent material such as kitty litter, vermiculite, or a commercial spill containment product over the remainder of the spill.

• Spills of dusts, granulars and powders: Dry pesticides can spread rapidly and over great distances on a windy day (dusts and powders more so than granulars). You can reduce further spreading by using a sweeping compound, misting the material lightly with water, or covering the spill with a plastic tarp. Note: This tarp is now contaminated and must be disposed of as hazardous waste.

⇒ NEVER HOSE DOWN A SPILL! This only spreads the pesticide and results in a larger area of contamination that must be cleaned up and decontaminated.

3. REPORT THE SPILL

By law, you are required to report all pesticide accidents immediately by telephone to either the Vermont Department of Agriculture or the Vermont Department of Public Safety.

Vermont Dept. of Agriculture - (802) 828-2431

Vermont Dept. of Public Safety - 1-800-641-5005 (Public Safety hot line operates 24 hours, 7 days a week)

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II. Managing Pesticide Spills / Accidents, cont'd.

⇒ When you call the Department of Agriculture or Public Safety, be ready to provide the following information:

- What material was spilled?
- How much was spilled?
- What was the source of the spill (tanker truck, sprayer, product container)
- What was the concentration of the spilled material?
- Is the spill contained?
- Has the spill entered any watercourse?

⇒ When you report the spill, you will be advised on:

- How to proceed with the clean up of the spilled material.
- Proper decontamination procedures to use.
- Proper disposal of the contaminated materials.

4. CLEAN UP THE SPILL

The following are general suggestions for the clean up of a pesticide spill. When you report the spill to either the Department of Agriculture or Public Safety, you will be advised on what steps to take in cleaning up the spill.

Remember to wear all appropriate personal protective equipment when cleaning up the spill!

⇒ Liquid spills: Continue adding the absorbent material until all of the liquid is soaked up. Then, sweep or shovel the material into a drum or other container for disposal as hazardous waste. Label the contents of the container.

⇒ Spills of dusts, granulars or powders: If you haven't already done so, you can make the spilled material easier to sweep by using a sweeping compound or lightly misting it with water. Sweep or shovel the spilled material directly into a drum or other container for disposal as hazardous waste. Label the contents of the container.

⇒ For all spills: Avoid using sawdust or sweeping compounds if the pesticide is a strong oxidizer - such a combination presents a possible fire hazard.

⇒ Soil contamination: The only effective way to decontaminate soil saturated with pesticide is to remove the top 2 to 3 inches of soil, place in a container labeled hazardous waste and dispose of it properly. Then, cover the area with at least 2 inches of lime, followed by fresh topsoil. Soils contaminated as a result of application

errors or minor spills can sometimes be cleaned up by applying activated charcoal to the contaminated surface immediately after the spill or misapplication. However, if a large area is involved, application of activated charcoal will do little to reduce soil contamination and subsequent plant damage.

Decontaminate the area.

Decontaminate areas as advised by the Department of Agriculture or Public Safety, or as directed by the product's Material Safety Data Sheet. Decontaminate all equipment used in the clean-up using the same procedure.

5. DISPOSAL OF CONTAMINATED MATERIALS

 \Rightarrow If it is possible to recover the spilled pesticide, it can be applied to a labeled site at or below the labeled rate.

⇒ Some commercial products available for soaking up spills are designed to dissolve when water is added. The mixture can then be added back into the spray tank and applied to a labeled site.

⇒ Contaminated soil, absorbent materials, and unusable spilled pesticide must be disposed of properly. Check with the Vermont Department of Agriculture to determine how to safely dispose of these materials.

IMPORTANT NOTES!

✓ While the guidance in this article focuses on the actual handling of a pesticide spill, it is important to remember that protection of human health is always the primary concern when any accident occurs. Therefore, if a pesticide spill occurs as a result of a vehicular accident, fire, or any other situation in which harm has been done to human health, the first thing you must do is contact the appropriate emergency personnel (i.e., ambulance, fire fighters, etc.). Once help arrives, you should then attend to managing the pesticide spill.

✓ If pesticide gets on anyone during the spill/accident, have them wash thoroughly, change their clothes, and seek medical attention if necessary.

Adapted from "Handling Pesticide Spills", Pesticide Information Leaflet No. 16, Maryland Cooperative Extension, August 1993, "How to Handle Chemical Spills", Agrichemical Fact Sheet #5, Penn State University, and, "Ways to Avoid Pesticide Spills", Fact Sheet 96-025, Ontario Ministry of Agriculture, Food and Rural Affairs, 1996.

On-Line Insect Tutorials Approved for Recertification Credits

he University of Florida, Department of Entomology and Nematology, has developed software tutorials on a wide variety of insects to enhance the training of personnel involved in the field of pest management. A total of twenty (20) tutorials are available on: insect pests of ornamentals, turfgrass, and structures; beneficial

insects; and, of special interest to those of you certified in Category 7b - two tutorials on Mosquitoes! The categories for which each tutorial has been approved is indicated on the website (see below). All tutorials are worth one (1) recertification credit, with the exception of the mosquito tutorials, which are worth two (2) credits each.

Following are the specific steps you should follow in order to complete the tutorials and earn your recertification credits.

1. Access the site-<u>http://pests.ifas.ufl.eud/software/</u>. You will be taken to a screen titled "Insect and Insect-Related Software Developed by the University of Florida". Select "CEU Tutorials".

2. The top-most box on the next screen has the heading "CEU Tutorials". Under "Listing of Approved Tutorials", select "Vermont".

3. Following the "Introduction" and "State of Vermont Approval Procedures", you will be advised to either call the University of Florida Extension Bookstore to order the tutorial(s), or to order on-line. The cost of each tutorial is \$15.00. To order the tutorial directly from the website, you must provide a credit card number. All other orders must be accompanied by a check or credit card. Government agencies or state universities may pay with a purchase order, but the Extension Bookstore will need a copy of the purchase order before you can have access to the tutorial. Any questions can be directed to (800) 226-1764.

4. Before you order, you can review a list of the insects covered under each tutorial by clicking on the title of each tutorial.

5. Each tutorial consists of 50 questions accompanied by text and full-color graphics and photographs. Each tutorial can be completed within 50-60 minutes (except for the mosquito tutorials, which may take longer). A passing score of 90% is required to earn the CEU, but the tutorial may be re-taken as many times as is necessary - at no additional charge - in order to achieve that score. **Remember - the goal of the tutorials is training, not testing!**



HOW THE TUTORIALS WORK

Each tutorial comes with a self-install program that creates the necessary directory and icons as it copies itself to your hard drive. Each tutorial uses less than 7 MB of hard disk space and runs under Windows.

> Each question screen within the tutorial allows the student to access text (under an Info Text button) or graphics (under an Image button) necessary to answer the question. Questions 1 and 50 provide information on using the test. The text for answering the questions, using the program and applying for CEUs can be printed from within the program. This allows students the

option of handling printed material, as well as electronic information, to answer the questions.

Questions answered correctly provide the student with additional information not found under the Info Text button. The student is not tested on this additional information. Questions answered incorrectly provide the student with the correct answer, and often with additional information that helps the student understand the subject better.

Simple instructions for printing the test results are provided under the Intro Text button of Questions 1 and 50. Students can print these instructions off from within the tutorials. The tutorial can be used over and over again for instruction without requiring a student to print the results.

Only after students have answered all 50 questions are they prompted to enter their name into a pop-up screen. They can then proceed to access their test results.

It is very important that you follow the Vermont approval procedures provided on the website exactly in order to receive credit. You must sign your printed score results and submit them to the Department of

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Agriculture in order to receive credit. Score results submitted without a signature will not be accepted for credit.

GOOD LUCK AND HAVE FUN!!

Pesticide Applicator Report

Home Study Quiz - I. Preventing Pesticide Spills Through Planning

The following set of questions pertains to the *Handling Pesticide Spills: Prevention and Management; I. Preventing Spills Through Planning* article on pages 8 - 9. Fill out the information on the back of the quiz and mail the completed quiz to the Vermont Department of Agriculture to receive one pesticide recertification credit. You can include extra sheets of paper for answers if needed.

1. List three major pesticide-related activities during which pesticide accidents or spills are most likely to occur.

- 2. List six (6) items that should be included in a spill clean-up kit.
- 3. What is the best way to dispose of cancelled, suspended, or unwanted pesticides?
- 4. What is the best way to avoid long-term storage of excess pesticides?
- 5. Why is it important to make sure you wear all appropriate Personal Protective Equipment (PPE) when mixing and handling a pesticide?
- 6. If you mix pesticides in the field, why is it important to change the pesticide mixing location yearly?
- 7. List three (3) precautions you should observe when transporting pesticides.
- 8. What is the importance of having a notebook with pesticide labels and Material Data Safety Sheets in the vehicle you are using to transport pesticides?
- 9. Of the 25 check-list items listed in the article (Storage 10; Mixing/handling 8; Transportation 7), how many did you respond "yes" to?

10. If you responded "no" to any of the items, do you plan on changing your current practice(s)?

Fill out the following information and mail the completed quiz to the Vermont Department of Agriculture to receive <u>one pesticide recertification credit.</u>

Name:	 		
Certificate #:	 	_	
Address:	 -		
Company/Farm:			

Mail to:

Vermont Department of Agriculture 116 State Street, Drawer 20 Montpelier, Vermont 05620-2901

Attn: Wendy Anderson

Pesticide Applicator Report

Home Study Quiz - II. Managing Pesticide Spills / Accidents

The following set of questions pertains to the *Handling Pesticide Spills: Prevention and Management; II. Managing Pesticide Spills / Accidents* article on pages 10-11. Fill out the information on the back of the quiz and mail the completed quiz to the Vermont Department of Agriculture to receive **one pesticide recertification credit**. You can include extra sheets of paper for answers if needed.

1. List the five (5) steps you must follow when handling a pesticide spill.

At what amount must you report pesticide spills / accidents (check one):
All spills; _____ Spills over 2 gallons; _____ Spills over 5 gallons;

___Spills over 7.5 gallons

3. List the three actions to take when controlling a pesticide spill.

4. Briefly describe how you would contain a liquid pesticide spill.

5. Who should you call to report a pesticide accident?

6. List the six (6) pieces of information you should be able to provide when reporting a pesticide accident.

7. If someone is injured during a pesticide accident, what is the first thing you should do?

True or False (check one)

9.

- 8. __T __F Contaminated soil and materials used in the clean up of a pesticide spill can be disposed of like regular household trash.
 - __T __F The best way to clean up a pesticide spill is to hose down the area with large quantities of water.
- 10. __T __F You should wear all appropriate personal protective equipment (PPE) when cleaning up a pesticide spill.

Pesticide Applicator Report Vermont Department of Agriculture, Food and Markets

Vermont Department of Agriculture, Food and Markets Plant Industry Division 116 State Street, Drawer 20 Montpelier, Vermont 05620 NONPROFIT U.S. POSTAGE PAID MONTPELIER, VT 05620-2901 PERMIT No.74



Fill out the following information and mail the completed quiz to the Vermont Department of Agriculture to receive one pesticide recertification credit.

Name:			 	
Certificate #:	 			
Address:	 			
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Company/Farm:				