



Pesticide Applicator Report

UVMEXT

A Quarterly Publication for Vermont Pesticide Applicators

Volume 3 Issues 1&2

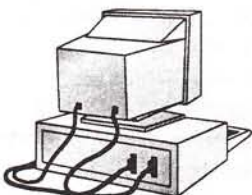
July 2001

In This Issue:

- News from the Vermont Department of Agriculture, Plant Industry Division
Pages 1 - 2
- News from the University of Vermont, Cooperative Extension Service
Page 3
- Pesticide News and Product Update
Page 4
- Steps for Reducing the Risks of West Nile Virus
Page 5 - 6
- Integrated Pest Management and Advanced Technology
Page 7 - 9
- Department of Agriculture and Cooperative Extension Contacts
Page 10
- Home Study Quiz
Page 11

Visit the Department of Agriculture Web Page

The Department of Agriculture Web Page has a new feature that will make accessing web page information much easier. Visit us at www.state.vt.us/agric/ and select the "alphabetical subject listing" for a list of all web page topics. You can download pesticide usage report forms, get a copy of the state's pesticide regulations, learn more about integrated pest management (IPM), and find out what courses are available for recertification credits!



The Pesticide Applicator Report Returns!



After a lengthy hiatus, the quarterly production of the *Pesticide Applicator Report* has resumed. A change in staffing forced a temporary shutdown of the newsletter, but the Department remains committed to providing Vermont's pesticide applicators with helpful regulatory and industry-related information that will help you in your day-to-day pesticide application activities. The Report remains a collaborative effort between the Vermont Department of Agriculture, Food and Markets and the University of Vermont, Cooperative Extension Service.

The editor of this newsletter is Wendy Anderson, Pest Management Education Coordinator. Direct any comments you may have to her by calling 802-828-3475, or writing to the Vermont Department of Agriculture.

Pesticide Applicator Certificate Renewals

The Department is still receiving numerous calls from private and commercial applicators who are faced with the need to apply pesticides and realize, a bit too late, that they have not renewed their applicator certificates. Remember, if you are out making an application with an expired applicator certificate, you are in violation of the law and are subject to fines. All company licenses must also be renewed in order for company employees to be issued commercial certificates. If you have misplaced your renewal paperwork, please call Wendy Anderson at 828-3475 and you will be sent the appropriate forms to fill out.

News from the Department of Agriculture, Plant Industry Division

Are You Certified to Perform Mosquito Control?



With the growing concern over West Nile Virus, many commercial applicators will be getting requests from concerned homeowners to perform mosquito control applications this Summer. But, be aware!

If you do not hold a pesticide applicator certification in category 7b (Mosquito and Biting Fly) you are not legally authorized to perform mosquito control applications. If you are interested in adding mosquito control to your list of services offered, call Wendy Anderson at 828-3475.

Vermont Waste Pesticide Disposal Program

The Vermont Waste Pesticide Disposal Program provides pesticide users and applicators with a means to dispose of canceled, suspended, or unwanted pesticide products. The program is free of charge to all Vermont residents, farmers and businesses. Collections take place during usual Household Hazardous Waste Collection Days run by Vermont's local solid waste districts. You can either contact you local solid waste district for collection dates, or view our website at <http://www.state.vt.us/agric/wastepest.htm>. Since the program began in 1996, 59,533 pounds of unwanted pesticides have been collected!



Looking for Reliable Pesticide Information? Try NPTN

The National Pesticide Telecommunications Network (NPTN) operates out of Oregon State University as a cooperative project between the Environmental Protection Agency (EPA) and the University. NPTN's mission is to serve as a source of objective, science-based information on pesticides and related subjects, including recognition and management of pesticide poisonings, toxicology and environmental chemistry. NPTN also provides referrals for laboratory analysis, emergency treatments, safety practices, health and environmental effects, and clean-up and disposal.

NPTN is a good place to go for you and your customers. They operate seven days a week, excluding holidays, from 9:30 AM to 7:30 PM. NPTN can be reached by phone at 1-800-858-7378, or by E-mail at nptn@ace.orst.edu. You can also visit their web site at <http://ace.orst.edu/info/nptn/>.

Pesticide Regulations Undergoing Revision

The *Vermont Regulations for the Control of Pesticides* are undergoing a long-awaited revision. A draft of the revised regulations is available for viewing and downloading on the Department of Agriculture web page.

Some proposed regulatory changes include:

- ⇒ Changes to the record keeping requirements for certified applicators.
- ⇒ The addition of a "Worker Protection Standard Trainer" category of certified applicator.
- ⇒ Record keeping requirements for the Worker Protection Standard.
- ⇒ Changes to the standards of operation relating to the application of pesticides.
- ⇒ Addition of a requirement for applicators to carry labels for any and all pesticide concentrations or dilutions being transported over public highways.
- ⇒ Requirements for the posting of indoor use of total release aerosols and space sprays.

Changes in Personnel? Let Us Know!

Pesticide applicator companies need to supply the Department with a list of all the certified commercial applicators they employ. This is initially done when applying for a company license. However, we know that companies are going to have a turnover of personnel from time to time, so companies are also required to notify the Department within 30 days of hiring a new applicator or terminating the employment of an applicator. Similarly, when non-commercial and commercial applicators change employers, the Department must be notified within 30 days of the name and address of the new employer.

Remember - companies are still required to report the pesticide usage of **ALL** applicators employed by them in a given year, regardless of whether they have been terminated during that year.

News From the University of Vermont, Cooperative Extension Service

New Fact Sheets on Lake Friendly Gardening Awareness

By Jurij Homziak, Watershed Management Specialist,
UVM Extension

From the blue expanses of Lake Champlain to the quiet waters of the many smaller lakes and ponds, lake waters are the heart of our region. To help protect these waters, UVM Extension's Master Gardener program, with Lake Champlain Sea Grant support, is making sure local residents are aware of Lake Friendly Gardening. Lake Friendly Gardening promotes the following landscaping principles:

- Use Low Input
- Water Efficiently
- Fertilize Appropriately
- Control Erosion
- Manage Pests & Diseases Responsibly
- Recycle Yard & Household Wastes
- Reduce Nonpoint Source Pollution
- Attract Birds and Provide for Wildlife
- Protect the Watershed



This outreach education effort is for residents and others involved in planning, designing, installing, and maintaining private and public landscapes. The core of the program is a series of 12 information bulletins, with tips and "how to" advice on low impact gardening, lawn care and landscaping for the homeowner.

These bulletins are available for free on the web at <http://ctr.uvm.edu/ctr/elecpubs.htm>, or they can be purchased from UVM. Contact Sheri Bissonnette, Publications Distribution Officer (Phone: 656-0298; E-mail: sheri.bissonnette@uvm.edu).

What began as a local initiative on the west coast years ago is now a very successful nation wide effort supported by state Extension and coastal Sea Grant programs. It first appeared in the Lake Champlain region a few years ago, as an Essex Co., NY reprint of a NY Sea Grant Great Lakes program publication. Lake Champlain Sea

Grant enlisted the UVM Extension Master Gardener program to review and revise the information to adapt it to the needs of gardeners, homeowners and other residents in the Lake Champlain basin and Vermont.

Since Lake Friendly gardening made its debut at the Burlington Flower Show in early March, the UVM Master Gardeners have been active in getting the word out to homeowners, gardeners,

residential property managers and others, such as neighborhood planning associations and volunteer organizations. Making entire neighborhoods aware of lake friendly activities, such as low input lawn care, is an important way to translate awareness into action. Sea Grant, UVM Extension Specialists and the Master Garden program are working with the Burlington Public Works and Burlington School District staff to have

a low input lawn care demonstration underway this spring on the grounds of the Champlain Elementary School on Pine Street in Burlington.

In addition to increasing awareness about pollution prevention and water quality protection, the Lake Friendly Gardening program also raises awareness of important related issues such as backyard solid waste, soil erosion and plant and wildlife conservation. Not only does the education program help homeowners protect lake resources, it also assists Vermont and Basin municipalities meet the requirements of the US EPA storm water rules to reduce non point source pollution from urban runoff and discharges. By getting residents to become aware and involved in maintaining good water quality, we help to preserve the quality of life and promote sustainable development of the lake basins in our region.



 **Master Gardener Hotline - 800-639-2230**

Pesticide News and Product Updates

Pesticide Product Updates

As the Environmental Protection Agency continues to conduct extensive reviews of the potential hazards of various pesticides under the Food Quality Protection Act, we will continue to see product cancellations, elimination of various use patterns, and revised labeling requirements. Below are some of the most recent pesticide registration changes.



☛ Diazinon

- **12/31/2002** - Retailers must stop the sale of products, containing diazinon, intended for indoor uses.
- **12/31/2004** - Dealers must cease the sale of products intended for outdoor, non-agricultural uses (such as home lawn and garden).
- EPA is also proposing to cancel a number of agricultural uses. Diazinon is currently registered for use on more than 64 different food crops.

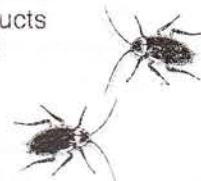


☛ Chlorpyrifos

- **12/31/2000** - Post-bloom applications on apples and use on tomatoes were canceled. The tolerance for grapes was lowered resulting in lower application rates. All other products intended for agricultural use were reclassified as restricted use or packaged in larger containers and all labeling was revised to bear new restricted entry intervals.
- **12/31/2001** - Retailers must cease the sale of products intended for: crack and crevice treatments in the home; home lawn and other home outdoor uses; whole-house, post-construction termiticide use; and, use in non-residential indoor and outdoor areas where children could be exposed (schools, day care centers, parks).
- A number of uses will be allowed to continue with revised product labeling. These include use on outdoor areas such as golf courses, road medians and industrial plant sites, where children are not likely to be exposed, and public health uses for fire ant mounds and mosquito control. Residential use of containerized baits will also be allowed to continue.
- Registered chemical alternatives for Chlorpyrifos can be found on EPA's Office of Pesticide Programs web site at: <http://www.epa.gov/pesticides/op/chlorpyrifos/alternatives.htm>.

☛ Ethyl parathion

- Registered uses of the product include: alfalfa; barley; corn; cotton; canola; sorghum; soybean; sunflower; and, wheat.
- **8/31/2003** - Dealers must cease all sales and distribution of ethyl parathion products
- **10/31/2003** - Use of all of purchased products containing ethyl parathion must cease.



Pest Resistance Checklist

If you've been using the same pesticide season after season, year after year, you may have encountered pest resistance. This checklist will give you some tools to help you delay resistance to a particular pesticide.

- ✓ **Alternate products.** For example, if you use a certain organophosphate, choose a product from a different class, such as a biopesticide or an insect growth regulator.
- ✓ **Mix products** when permitted. *IF* the label and manufacturer's instructions allow, mix two or more products with different modes of action.
- ✓ **Treat only when absolutely necessary.**
- ✓ **"Spot" spray.** Treat only localized areas where pest numbers are above the "action threshold."

(Source: *IPM Solutions*, December 1999, produced by GEMPLER'S, Inc., web site: <http://www.ipmalmanac.com>.)

Pest Identification on the Web

It's essential to use pest control methods appropriate for your plants, region and potential pests. A search engine developed by Ohio State University allows you to enter your crop or plant and/or pest names, and select your region. The search will generate a list of on-line Extension fact sheets from more than 200,000 on file. To access this unique resource go to <http://plantfacts.ohio-state.edu/>.



Steps for Reducing the Risks of West Nile Virus



Vermont was very fortunate last year in regard to West Nile virus (WNV) with its first and only confirmed case coming in September when a dead Hermit Thrush found in Putney tested positive for the potentially deadly virus. There have been no positive cases reported in Vermont so far this year, but two dead crows found in New Jersey have tested positive.

Education and prevention are critical in dealing with West Nile virus. While there is no vaccine, there is a lot that can be done to prevent its introduction.

2000 West Nile Virus Summary

- The total number of human cases was 21, including two deaths; an 82 year-old man from Passaic County, NJ, and an 87 year-old woman from Kings County, NY.
- Six wild mammals were classified as WNV-positive.
- A total of 4,323 birds were documented as infected with WNV in 12 States plus the District of Columbia.
- The total number of sentinel birds confirmed as WNV-positive was six, all chickens, in New Jersey and New York.
- There were 481 WNV-positive mosquito pools detected in 5 states.
- There were a total of 60 equine cases of clinical illness due to infection with WNV confirmed by the U.S. Department of Agriculture, Animal and Plant Health Inspection Service (USDA/APHIS) during the year 2000 in the United States. Of the 60 ill horses, 37 survived and 23 (38%) died or were euthanized. Horses ranged in age from 4 months to 38 years, with an average age of 14.0 years. Thirty-six cases occurred in male horses and 24 in females. Seven different states had equine cases.

About West Nile Virus

West Nile virus is a vector-borne virus that was recognized in the Western Hemisphere for the first time in 1999. Invertebrate vectors, such as mosquitoes, circulate the virus among wild birds. Occasionally the virus is introduced into other vertebrate populations, such as humans or horses, that serve as incidental hosts. Incidental hosts are infected animals that do not pass the virus on to vectors.

The only vectors found to be associated with the initial WNV outbreak in New York, New Jersey, and Connecticut were mosquitoes. Several species of mosquitoes were found positive for WNV, including *Culex* spp., especially *Culex pipiens*, and *Aedes vexans*. No evidence has been found which suggests that any invertebrate vectors other than mosquitoes are associated with the transmission of WNV.

Prevention Practices

The key to protecting human health and preventing or controlling future outbreaks of WNV among horses, livestock, or poultry is to prevent exposure to adult mosquitoes. The following recommendations are based on current knowledge about WNV. Prevention and control recommendations may be revised as new information is obtained.

✓ Reduce Mosquito Breeding Sites

Mosquitoes need water to reproduce. They can breed in any puddle or standing water that lasts for more than four days. The most important step any property owner can take to control mosquito populations is to **remove all potential sources of stagnant water in which mosquitoes might breed.**

- Dispose of, or regularly empty, any water-holding containers such as metal cans, plastic containers, ceramic pots, and trash cans.
- Pay special attention to discarded tires. Tires are a very common place for mosquitoes to breed!
- Drill holes in the bottom of containers that are left out-of-doors.
- Clean clogged roof gutters to promote drainage.
- Turn over plastic wading pools or wheelbarrows when not in use and do not allow water to stagnate in bird baths.
- Aerate ornamental pools or stock them with fish.
- Clean and chlorinate swimming pools that are not in use and be aware that mosquitoes can breed in the water that collects on swimming pool covers.
- Use landscaping to eliminate standing water that collects on your property; mosquitoes can breed in any puddle that lasts more than 4 days.
- Thoroughly clean livestock-watering troughs monthly.

Steps for Reducing the Risks of West Nile Virus, contd.

Local mosquito control authorities may be able to help in assessing the mosquito breeding risks associated with a specific property.

✓ **Decrease Human Exposure to Adult Mosquitoes**

Mosquitoes feed primarily at dawn and dusk. Take the following precautions to protect yourself and your family.

- Wear loose fitting, light colored clothing with long sleeves and pants when you are outdoors from dusk to dawn.
- Limit the amount of time you spend outdoors during the period from dusk to dawn.
- If you need to use insect repellants, read the label directions carefully and do not apply more than the recommended amount.
- Cover baby carriages and outdoor playpens with mosquito netting.
- Fix all holes in screens and make sure they are tightly attached to the doors and windows.

✓ **Decrease Animal Exposure to Adult Mosquitoes**

• **Screened housing**

Housing animals in structures with well-maintained insect screening can be useful to reduce exposure to adult mosquitoes. Use of such mosquito-resistant structures may actually lead to mosquito exposure unless precautions are first taken to eliminate mosquitoes from inside the structure. This may be accomplished through a number of means including the use of mosquito adulticides. In addition, use of fans may reduce potential access of mosquitoes to equine or other livestock hosts.

• **Insect repellents**

Use of insect repellents may be of some value in decreasing exposure of horses to adult mosquitoes. Due to practical limitations in the coverage area that may be achieved on any given horse with a particular product formulation, and due to limited duration of effectiveness of some formulations under certain conditions (e.g., perspiration), repellents should not be solely relied upon to prevent mosquito exposure. Repellents should be used according to their label instructions regarding appropriate species, method of application, and other precautions.

• **Outdoor exposure**

Although some species of mosquitoes feed at dusk or dawn, others are daytime feeders. As it is not yet clear which mosquitoes are responsible for the transmission of WNV to horses and other mammalian species, making recommendations as to when certain animals should avoid outdoor exposure is not particularly useful at this time. If more information becomes available, recommendations on out-door exposure will be updated appropriately.

What Is The State Doing?



The Department of Health and Department of Agriculture, Food & Markets, in cooperation with other state agencies, have written a draft West Nile Virus Surveillance and Response Plan. It is available for review and public comment at the Health Department's website: www.state.vt.us/health. It emphasizes public education about the virus and how it is transmitted, steps people can take to eliminate mosquito breeding habitats, and measures people can take to prevent or reduce their risk of exposure to mosquitoes. It also outlines surveillance measures that the State will undertake to detect West Nile virus infection in mosquitoes, birds, horses and humans.

For More Information

As the summer progresses, we'll have more information on the Department's website which can be found at www.state.vt.us/agric. Go to the Links page and select "West Nile Virus."

(Sources: *Steps for Reducing the Risks of West Nile Virus*, Agriview, May 15, 2001 and *Preventing West Nile Virus*, Vermont Department of Health Fact Sheet, August 7, 2000)



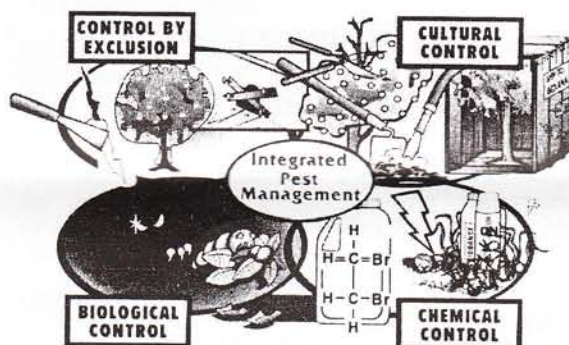
Integrated Pest Management and Advanced Technology:

What Role do Pesticides Play in an Integrated Pest Management Program?

The Use of Pesticides in Your IPM Program

*By Thomas A. Green, Ph.D., President,
IPM Institute of North America, Inc.*

What role do pesticides play in your IPM program? Are there opportunities to increase profits and reduce risks by improving the way you choose and use pesticides?



(Graphic by Stephen Adduci)

When action against pests is necessary, IPM calls for consideration of all of the pest control options available and selection of the most effective choice with the least amount of risk. Cultural, mechanical, biological and chemical controls such as crop rotation, cultivation, natural enemies and pesticides are among the possible tools.

Are you faithful to this basic tenet of IPM or do you reach into the chemical toolbox too quickly or too often? When chemical options are truly the best choice, do you carefully consider which pesticide offers the best return for the problem at hand? Do risks to health and the environment enter into your decision-making process?

Pesticides and IPM

IPM evolved as a needed improvement to costly, inefficient and risky calendar-based spraying of pesticides. Prior to IPM, most pesticides were

broadly toxic to pests and non-targets. Pest resistance, environmental pollution with persistent chemicals, and declines in wildlife populations dictated a change to a more thoughtful strategy.

IPM replaces the "shotgun" approach with a more complete arsenal including non-chemical strategies to prevent and avoid pest problems, and finely tuned chemical weapons targeting specific pests and sparing beneficials. IPM is built on detailed knowledge of pest biology, behavior and ecology, not simply chemistry and toxicology.

Identifying Least-Impact Pesticides

When we measure IPM progress, the bottom line should be pesticide risk reduction. But how can we identify pesticide options with the least risk to health and the environment?

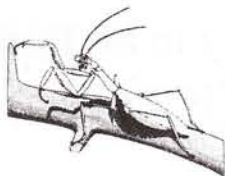
Risk is a function of toxicity and exposure. Toxicity refers to how poisonous a pesticide is to non-targets such as humans and wildlife. A measure of toxicity to mammals is indicated by the EPA-regulated "signal word" on the product label. "Danger" signifies the most toxic and "caution" the least. Toxicity is also affected by the rate, or dose, at which the pesticide is applied.

Exposure is the opportunity for non-targets to come into contact with the pesticide's toxic ingredients. Exposure depends upon the method of application, how long the active ingredients persist in the environment, and how readily the material moves into ground or surface water. Climate, cropping systems, soil types, and the kinds of non-target organisms present are among the many factors that affect exposure.

Risk is thus an outcome of complicated interactions between toxicity, exposure and crop and region-specific conditions. How can growers identify and select reduced-impact pesticides for their crops and environments? Basically, if you're doing a good job managing beneficials and resistance, you're likely doing a good job minimizing other impacts.

What Role do Pesticides Play in an Integrated Pest Management Program?

How do you know if your choices are the best for preserving beneficials? Beneficials include many types of living organisms essential for crop production, including soil microbes, earthworms and pollinators. Other beneficials can have a direct impact on pest populations, pest damage and control costs. Predatory mites, parasitic wasps, lady bugs, praying mantids, green lacewings, fungi, spiders and birds are some of the many natural enemies that can play a significant role in controlling pests.



Attempts at creating a comprehensive resource to single out pesticides with the greatest impacts on beneficials have not been successful. The challenge resides in the rapid frequency at which pesticides enter and leave the market and the enormous number of environments and cropping systems that need to be examined.

In lieu of a comprehensive database, your Extension specialist, crop consultant and crop and region-specific IPM publications are the best sources of information on avoiding harm to beneficials for your crop. In many cases, replacing a single pesticide with a material softer on beneficials can restore cost-free, natural enemy control of key pests.



Resistance Management

If you subject any pest population to repeated applications of the same pesticide, you may spare individual pests that possess genetic qualities favoring survival. These survivors reproduce, spreading these resistance genes to offspring and transforming once effective pesticides to useless relics.

The green peach aphid is the world record holder, resistant to 71 chemical pesticides, according to the University of Florida's Book of Insect Records (available at <http://ufbir.ifas.ufl.edu/>). This pest is followed by the Colorado potato beetle (47 pesticides) and the diamondback moth (51 pesticides).

Pest resistance to pesticides can be extremely costly to growers and to agriculture at large.

Undetected resistance can lead to crop failures. Responding to resistance problems often requires new and more costly pesticides.

The key to managing resistance is to rotate pest controls, ensuring that pesticides in the rotation have different modes of action and not simply varying brand or trade names. Identifying these modes, including nerve toxins, growth regulators or microbial pathogens, is not an easy task. Again, your best resources are your Extension specialist, crop consultant, agchem retailer, and crop and region-specific IPM publications. You can work with these resources to design a rotation that avoids repeated exposure to the same chemical classes and modes of action.

Carrots and Sticks

Legislative action is driving a widespread shift away from many of the older, high-risk pesticides toward lesser impact alternatives. The Food Quality Protection Act (FQPA) has mandated the largest reevaluation of pesticides and uses ever undertaken, and applies a high standard for reducing risks to children in particular. The result has been wholesale changes in pesticide availability, permitted uses and pre-harvest intervals.

Government action has also provided incentives for agrochemical producers, offering lower product registration costs and speedier processing for reduced risk chemistry. Industry has responded in kind, resulting in 16 of the 22 new registrations in the last fiscal year qualifying under EPA's expedited reduced-risk and biopesticide categories.

Finally, the private sector has been responsible for a new resource to evaluate pesticides. The Pesticide Action Network, a non-profit organization based in San Francisco, has created an on-line database of pesticide active ingredients. Users can enter an active ingredient and the database responds with information culled from EPA, industry and other sources.

These data include confirmed, probable or likely health threats; pesticide label indications regarding risks to wildlife, bees, or ground and surface water; and brand name lists of pesticides containing the active ingredient. In the future, the

What Role do Pesticides Play in an Integrated Pest Management Program?

group plans to add a feature that will allow visitors to search for pesticides by brand name. You can access the PAN Pesticide Database on the web at the following URL: <http://www.pesticideinfo.org/databaseParent.html>.

Checklist for Cleaning Up the Pesticide Toolbox

Despite the desire and best efforts by many to reduce reliance on chemical options, pesticides are likely to continue as important components of IPM. This checklist is aimed at helping you ensure optimum, least-risk use of pesticides in your IPM program.

✓ Identify resources.

Extension advisors, crop consultants and industry technical representatives may be able to visit with you and look over your operation. Pest management guides, fact sheets and web sites are also sources of great information.

✓ **Examine the decision-making process.** Once the need to act against pests has been confirmed, how are control choices made? We're all creatures of habit; not all of those habits are worth keeping. A fresh look can often turn up effective alternatives, steps or parties to incorporate to improve bottom-line results and reduce impacts on health and the environment.

✓ Implement prevention and avoidance strategies.

What can be done to reduce the need for intervention in the future? Which are your key pests, key crops or key locations that incur the greatest pest damage and control costs? How might you prevent or avoid these losses and expenses? Can the rotation be adjusted, or crops or varieties changed?

✓ Tune up the application process.

When chemical control remains the best option, what can be done to minimize rates and costs? Are application methods and equipment optimum, or might a small investment in training or hardware generate large returns over time? Is your pesticide bill in line with neighboring operations, or are there opportunities to learn from others?

✓ Take it slow.

Before you implement major changes, try them out on a portion of your acreage. Learning by doing is ideal, but make sure mistakes along the learning curve are small ones.

(Source: *IPM Solutions*, June 2001, produced by GEMPLER'S, Inc., web site: <http://www.ipmalmanac.com>.)

The Role Pesticides Play in IPM: A Comparison of IPM Practices to Non - IPM Practices

IPM Practice	Non-IPM Practice
Ask "Is the invader really a pest?" Identify it.	Assume that the invader must be controlled.
Proactive: look for pests; set lures; exclude pests with barriers.	Reactive: use chemical controls after problem is discovered.
Multiple tools: sanitation, prevention, proper plant selection, cultivation, biological control.	Primary tool: chemical pesticides.
When no other methods work, treat pests during their most vulnerable stage with pesticides.	Scheduled or "calendar" treatments with pesticides are possible.
Specific pesticides that are least toxic to humans should target pests and conserve beneficials.	Use of broad spectrum pesticides can kill many different kinds of organisms.
Spot treatments in specific areas means less pesticide is applied.	Large areas can be sprayed - broadcast treatments.

Department of Agriculture and Cooperative Extension Contacts

Vermont Department of Agriculture Plant Industry Division Pesticide Contacts - Call 828-2431

<http://www.state.vt.us/agric/pid.htm>

☎ **Phil Benedict** - Division Director

- ☎ **Wendy Anderson** - Pesticide Certification and Training
- ☎ **Jeff Comstock** - Soil Scientist
- ☎ **Cary Giguere** - Pesticide Research and Information Specialist
- ☎ **Dominique Golliot** - Plant Industry Field Agent - Southwestern VT
- ☎ **Douglas Johnstone** - Plant Industry Field Agent - Southeastern VT
- ☎ **Jim Leland** - Agrichemical Program Supervisor
- ☎ **Annie MacMillan** - Agrichemical Toxicologist, Worker Protection Standards Program Coordinator
- ☎ **Scott Pfister** - Plant Pathologist
- ☎ **Andy Squires** - Plant Industry Field Agent - Northwestern VT
- ☎ **John Stein** - Enforcement Officer
- ☎ **David Tremblay** - Plant Industry Field Agent - Northeastern VT
- ☎ **Jon Turmel** - State Entomologist

UVM Extension Contacts

<http://ctr.uvm.edu/ctr/white.htm>

This is a partial list. For information about specialists in your region, call 656-2630,
or check the Extension on-line directory at the above web address.

☎ **MASTER GARDENER HOTLINE - 800-639-2230**

- | | |
|---|----------|
| ☎ Lorraine Berkett , IPM Specialist | 656-2630 |
| ☎ Sid Bosworth , Agronomist | 656-0478 |
| ☎ Jeff Carter , Field and Forage Specialist | 388-4969 |
| ☎ Elena Garcia , Tree Fruit Specialist | 656-2824 |
| ☎ Willie Gibson , Agriculture Specialist | 223-2389 |
| ☎ Alan Gottlieb , Plant Pathologist | 656-0474 |
| ☎ Vern Grubinger , Berries and Vegetables Specialist | 257-7967 |
| ☎ Ann Hazelrigg , Plant Diagnostic Clinic, PAT | 656-0493 |
| ☎ Jurij Homziak , Watershed Mgmt. Specialist | 656-0682 |
| ☎ Bill Jokela , Soils Specialist | 656-0480 |
| ☎ Rick LeVitre , Dairy Specialist | 773-3349 |
| ☎ Leonard Perry , Greenhouse and Nursery Specialist | 656-0479 |
| ☎ Margaret Skinner , Entomologist | 656-5440 |

Home Study Quiz - July 2001

What Role do Pesticides Play in an Integrated Pest Management Program?

The following set of questions pertain to the *What Role do Pesticides Play in an Integrated Pest Management Program?* article on pages 7-9, and the *Pest Resistance Checklist* on Page 4. Mail the completed quiz back to the Department to receive one pesticide recertification credit. Include extra sheets of paper for answers if needed. Remember to fill out the form on the back of the quiz!

1. Define the term "integrated pest management".
2. How can the use of pesticides lead to the development of resistance in pests?
3. List four ways in which you can prevent or manage the development of a pest's resistance to a pesticide.
4. When using a pesticide as part of your IPM program, would you select a broad-spectrum or selective pesticide? Why?
5. What are some of the factors that can affect a non-target organism's exposure to pesticides?
6. Check the choice that **best** describes the practice of integrated pest management:

a. ____ Identify the pest and determine if a control measure is necessary.	OR	____ Treat the pest immediately.
b. ____ Attempt to prevent pest problems by employing non-chemical methods such as crop rotation and cultivation.	OR	____ Wait until a pest problem has become established, then treat with a pesticide.
c. ____ Use broadcast treatments to cover large areas.	OR	____ Spot treat in specific areas.
d. ____ If chemical treatment is necessary, choose the least toxic pesticide available.	OR	____ Choose a pesticide without checking the signal word.
e. ____ Pesticides applications should be made according to a predetermined schedule.	OR	____ Pesticide applications should be made during the most vulnerable stage in the pest's life cycle.

Fill out the following form and send it, and the answer sheet, to the Department of
Agriculture to receive one pesticide applicator recertification credit.

Name : _____

Certificate Number: _____

Address: _____

Company/Farm: _____

Vermont Department of Agriculture, Food and Markets
Plant Industry Division
116 State Street, Drawer 20
Montpelier, VT 05620-2901

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