

In this issue of **Vegetable Notes**, we are providing updates to vegetable pest management recommendations for 2002. Please refer to the 2002-2003 New England Vegetable Management Guide as well as the product labels for more and complete information about these new or modified uses. Consult one of us in Extension if any questions remain. New labels provide growers with more options for pest management and they represent, in most cases, products that are lower in risk than products already on the market. Growers should limit their use of new products, however, until they gain some experience with the product and understand how the product can fit into or replace current practices. New products can also help avoid the potential for resistance development by the pest. If products with different chemistries are alternated, resistance can be delayed or avoided. All pest management decisions should be made with a correct identification of the pest, monitoring to determine its population or potential population in a field, its expected impact on yield and quality of the crop, the cost of the control, the ability of the control to work, and any potential risks to workers or the environment. A good integrated pest management plan includes this knowledge as well as knowledge of all other means, including cultural and mechanical, which may be available. Making good pest management decisions helps the grower, the consumer, and the environment. Choose wisely.

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## Insecticides for Vegetables in 2002

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**T**he 2002–2003 edition of the *New England Vegetable Management Guide* will include quite a few insecticides that have new or expanded registrations since the last edition. Many of these were discussed in our insecticide update in *Vegetable Notes* for spring 2001. This article will provide a brief overview of materials to watch for and situations where new options exist. There are also products that have been cancelled for vegetable crop uses — most notably, diazinon.

New pesticides tend to be registered for broader

“crop groups,” that include a wide range of individual crops within a group. Groups may be defined by botanical families (for example, cucurbits; head and stem brassicas; leafy brassicas; or fruiting vegetables, which includes tomato, pepper, eggplant and related crops). Or a crop group may be defined by the plant part that is harvested (such as “potato and other tuberous and corm vegetables” or “leafy vegetables,” each of which include a long list of non-related crops). For registration, residue testing can be done on selected crops within a

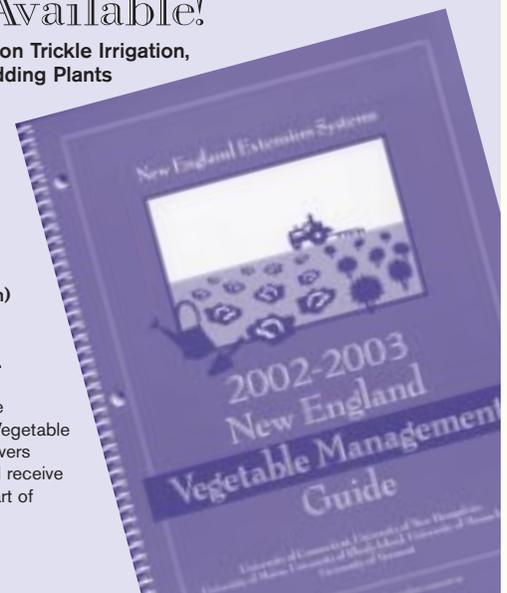
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crop group, and does not have to be done on every single crop within the group. This greatly simplifies the registration process, and it also greatly simplifies the task of the diversified vegetable grower who grows, for instance, many types of brassica greens or many types of leafy greens.

### **Synthetic pyrethroids**

There continues to be a large choice of synthetic pyrethroid products available. The advantages of these products tend to include low cost, short days-to-harvest and re-entry intervals, rapid knockdown, and a very broad-spectrum pest activity that includes many pest groups and many crops. This broad-spectrum action has the disadvantage that insecticides in this class are very hard on beneficial insects, which often results in outbreaks of pests such as aphids, that are naturally held in check by beneficial insects. This can happen in tomato, pepper, eggplant, corn, potato, and crucifers — any crop that has an aphid species that feeds on it. Most synthetic pyrethroids are restricted-use products that pose a significant risk to handlers.

One new product in this category is **Baythroid 2** (cyflurin). The label includes a broad range of crops and pests. In sweet corn, Baythroid 2 is labeled in sweet corn for fall armyworm, corn earworm, European corn borer, cutworms (as a broadcast or banded application), and stalk borer. Like many other pyrethroids, this product has a short days-to-harvest restriction (0 DH, REI 12 h). And, one should heed the same cautions as for other synthetic pyrethroids. Avoid eye or skin exposure (acute dermal toxicity is high). As it is highly toxic to bees and to fish, avoid sprays when bees are foraging or will forage within a few hours and avoid risk of surface runoff into ponds or streams.

**Warrior T:** this new formulation uses a technique for “micro-encapsulation,” in which the active ingredient is surrounded by a polymer membrane which breaks down only after the spray dries. By itself, the active ingredient is not water soluble, but the encapsulation allows it to dissolve in water. The new formulation is also supposed to cause less skin irritation and be less

flammable than the previous formulation which was in a petroleum-based carrier. Label uses are approximately the same as before.

### **Aphids**

In cucurbits, pepper, tomato, potato, and eggplant, a new product for aphid control is **Fulfill (pymetozine)**. EPA granted “reduced risk” status to the active ingredient, which affects the nerves that control feeding, especially for aphids, whiteflies, and other sucking insects. Aphid feeding and plant damage stop shortly after insects come in contact with the material, although aphids may be visible on the plants for several days. Fulfill has trans-laminar and systemic activity, enters leaf tissue and remains present in the leaf for up to two weeks. Restricted entry interval is 12 hours, with a 14-day pre-harvest interval. This limits its use after harvest begins in any fruiting crop, but it can be used in situations where aphids numbers are rising and harvest is more than two weeks away. Impact on beneficial insects is low, thus this material will not cause secondary outbreaks of other pests which are suppressed by natural enemies, and will conserve aphid predators. It can be used during pollination, but do not apply directly to bees foraging in the field.

A newly registered insecticide in the neo-nicotinoid class (a systemic in the same class as imidacloprid, Provado/Admire) is **thiamethoxam**. This includes **Actara** for foliar applications, and **Platinum** for soil application. These are labeled for aphids, flea beetles, and whiteflies in all cucurbit vegetables. In fruiting vegetables, the label also includes Colorado potato beetle. In tuberous and corm vegetables (including potato, sweet potato, and many others), the label includes all of the above, plus potato leafhopper. According to the manufacturer, cross-resistance with Admire-resistant insects is low. Platinum can be used through trickle irrigation, as a furrow, surface-banded, transplant, or post-seeding drench.

**Provado (imidacloprid)** has been added to the options for aphid control in lettuce, endive and escarole, spinach, and crucifers. This registration is not new this year, but is newly listed in the guide.

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**Dimethoate 4EC** has been added to the options for aphid control in potato and pepper.

The **Warrior T** label includes corn leaf aphid, but “for suppression only.” If aphids are a perennial problem in your corn, try pushing a bit less nitrogen (aphids thrive on high-N tissue) and selecting insecticides that conserve natural enemies of aphids — especially early in the season.

In the greenhouse, **Botanigard 22WP** (*Beauvaria bassiana*) provides a biorational option for both aphid and thrips control in tomato; avoid the ES formulation which causes serious injury to tomato foliage.

### Caterpillar controls

The number of effective caterpillar controls that are easy on applicators, natural enemies, and on the environment has increased a lot in the past several years. These include **Spintor 2SC** (spinosad), **Avaunt** (indoxycarb), and **Confirm 2F** (tebufenozide). All of these tend to be excellent against the full spectrum of crucifer caterpillars (imported cabbageworm, cabbage looper, and diamondback moth). Avaunt is labeled for sweet corn as a whorl application against common and fall armyworms and European corn borer. We used it in our sweet corn plots last season to control an outbreak of armyworm at the whorl stage. Avaunt is also labeled for beet armyworm in crucifers, and beet armyworm and tomato fruitworm in peppers and tomatoes.

**Spintor** is labeled for control of the caterpillar complex in sweet corn, and is particularly good against European corn borer. It will control low to moderate levels of corn earworm (e.g. trap counts that call for a four-, five-, or six-day schedule). For ECB in early season corn, or in late season where corn earworm pressure is low in the late season, growers now have an excellent choice that is easy on natural enemies and safer for the person on the sprayer. The cost at the rate for sweet corn (3 to 4.5 oz per acre) should run around \$12 to \$18 per acre, which represents an additional cost of \$5 to \$10 per acre compared to broad-spectrum pyrethroids or carbamates.

Growers are rightfully cautious about testing new materials in sweet corn. New products can be

compared to one’s usual standard on a small scale by dividing a single block in half and spraying each half with a different product. It’s always wise to start small and gain experience and confidence in new products over time.

Spintor is also labeled for European corn borer in pepper and cabbage looper and imported cabbageworm in brassicas.

**Proclaim** (emamectin benzoate) is a selective insecticide for caterpillars in crucifers, derived from a metabolite of a bacteria (*Streptomyces avermitilis*), hence one of the general category called *avermectins*. This is a restricted-use product and is active against some of the more difficult-to-control caterpillars and those that have developed resistance to other products such as beet and fall armyworm, cabbage loopers, and diamondback moth. Proclaim is labeled for head and stem brassicas (not brassica leafy greens), head lettuce, and celery.

**Cutworms:** Cutworms are on the label for several products that were not previously listed for this pest, including Warrior T (tomato, sweet corn), Confirm 2F (brassicas, eggplant, pepper), Ammo 2.5 EC (brassicas), and Baythroid 2 (sweet corn)

**Watch for the cross-striped cabbageworm.** While we’re on the subject of what’s new in the world of caterpillars, a “new” pest was observed in southeastern Massachusetts and in Connecticut in 2001, and will be found in the guide. This is the cross-striped cabbageworm which feeds in crucifer crops. It’s range has apparently extended northward from Long Island and the mid-Atlantic states. With the warm winter of 2001–2002, we can expect it may find its way further northward this season. The yellow patches and striped pattern clearly distinguish this caterpillar from others.

### Leafminers

**Spintor 2SC** (spinosad) is labeled for leafminer control in many crops, including swiss chard, beets, spinach, brassicas, tuberous and corm vegetables, and all leafy vegetables. **Agri-Mek 0.15EC** (Abamectin) is an alternative for leafminer control, in head lettuce only. On Swiss chard and lettuce, **Trigard** (cyromazine) is registered for leafminer.

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## Mites

Agri-mek (Abamectin) has been available for several years. **Capture 2EC** (bifenthrin) has been added to the options for mites in cucurbits and eggplant.

## Beetles

**Sap or picnic beetles:** Often I get questions on what will work on these beetles. The only change is the loss of diazinon. Sevin, Asana, Warrior T, Malathion, and Lannate SP list these beetles on the label, but growers are not always satisfied with their results. These beetles are attracted to decaying plant material including previously damaged corn ears or rotting fruit and vegetable matter anywhere in the environment — look around the farm to see where they might be thriving. Choosing corn varieties with good tip coverage is also helpful.

**Flea beetles:** In sweet corn, imidacloprid seed treatments (known as **Gaucha**) are available. This also provides protection from wireworms and other seed-eating insects. **Warrior T** has been added to the list of products available for foliar or banded application against flea beetle. **Kryocide** (cryolite) is labeled for flea beetle and Colorado potato beetle in eggplant and potato.

**Colorado potato beetle: Actara and Platinum** (thiamethoxam) just received approval for use in Massachusetts, in fruiting and tuber vegetables (see aphids, above).

## Leafhopper

For lettuce, Warrior T has been added to a list that includes Sevin XLR Plus, Dimethoate 4EC, M-Pede, Maltahion 57 EC, and Ambush.

## Thrips

In onions, there is an additional synthetic pyrethroid, **Fury 1.5 EC** (zeta-cypermethrin) for use against thrips. Kaolin clay (**Surround WP**) provides another option; good coverage of leaf surfaces is essential as it works primarily as a repellent and irritant. **Spintor 2SC** is labeled for thrips in brassicas, beets, carrot, celeriac, chicory, parsnip, radish, and turnip — but *not* onion. Warrior, Mustang, and Ammo are labeled in crucifers. The use of resistant/tolerant cabbage varieties is

recommended if thrips are a perennial problem. These include Rio Verde, Ruby Perfection, Brutus, Green Cup, Roundup, Superette, Vantage Point, and Zerlina. Avoid planting Supergreen, Market Prize, Piness Charmant, and Solid Blue 690.

**Stink bugs in tomato** have been added to the guide. These can be worse in a dry year. Scouting for damage to green fruit is more effective than scouting for the bugs themselves. Baythroid 2 and Warrior are both labeled for this use.

**White fly** can be a problem in field tomatoes. Baythroid 2 and Fulfill have been added to the list of options. In pepper, **Knack + Orthene 97** (pyriproxyfen + acephate) includes an insect growth regulator (Knack) which provides long-term control by killing eggs and immature whitefly, with acephate for quick knockdown of adults.

**Cabbage root maggot fly and onion maggot fly.** Diazinon is no longer registered for use. This leaves only one product, **Lorsban 4E** (chlorpyrifos). Crop rotation, scouting, and good timing of a soil drench will be particularly important now, as the label restricts Lorsban to one application per crop per season. The future holds promise of new materials for use as a seed treatment and furrow drench, but no alternatives are available at this time. New products or new uses for existing insecticides usually have to go through the IR-4 registration process for minor crops, which can be slow. However, this is a situation for which the need for alternatives to the organophosphate insecticides is widely recognized.

## New products for organic growers

**Pyrethrin**, which is extracted from one species in the chrysanthemum family and was the chemical model for the synthetic pyrethroids, can be used by organic growers. In recent years it has been difficult to obtain pyrethrin from its sources in Africa, and several products that are on the market have lost organic approval due to prohibited inert components. Currently there is one formulated product that has approval for organic certification, **PyGanic EC 5.0**. This has a very broad label in terms of both pests (which include many beetles, caterpillars and thrips) and crops (40 of them).

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Pyrethrin is particularly important to organic growers for those pests for which there is no other alternative, such as leafhopper in potato. Trials conducted by UMass last year indicated that efficacy of this product against flea beetle in crucifers is limited.

**Surround WP**, composed of kaolin-clay particles, is labeled for suppression of striped cucumber beetle in cucurbits, flea beetle in eggplant, tomato and pepper, thrips in onion, and leafhopper in grapes. Kaolin acts primarily as a repellent, preventing insects from recognizing the host plant, and an irritant, because it sticks to their bodies. Leaves and fruit turn white as if sprayed with paint, but photosynthesis and growth are not inhibited. It is unlikely that the residue could be washed off of leaves or soft fruit like summer squash. However, is not a problem when used against insects that attack during early stages, before fruit is formed. UMass trials indicated good efficacy in preventing beetle feeding and reducing transmission of bacterial wilt by striped cucumber beetle in pumpkin.

In sweet corn, the **Zea-later** oil applicator is now commercially available from Johnny's Selected Seeds, to be used with corn oil or with soybean oil (**Golden Natural Spray Oil**) for control of tip-invading caterpillars. This may be mixed with *Bacillus thuringiensis* (e.g. **Dipel DF**) for improved control.

**Spinosad**, the active ingredient in Spintor 2SC, is being reviewed by the National Organic Standards Board for organic certification. This is a naturally derived product which has the potential for approval. The manufacturer is developing a formulation that will meet organic guidelines. While this process will most likely not be completed this season, if or when it does occur, it could open up new options for Colorado potato beetle adults and larvae, thrips, leafminer, and caterpillars for organic growers.

*Note: This article is based on our best available knowledge at the time of publication. No endorsement is implied by inclusion in this article, nor is lack of endorsement from non-inclusion. Always read and follow the label before using a pesticide; if the label disagrees with the above information, follow the label.*

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## 2002 Vegetable & Berry Weed Management Update

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### **Bladex 4L (cyanazine) in sweet corn**

2002 is the last year for all uses of this product. This also includes CyPro which is a dry premix of atrazine and Bladex. Growers should make every effort to use these products on sweet corn or field corn this year. The label as well as the food tolerance for this product will be withdrawn after December 31, 2002.

### **New sweet corn registrations**

Prior writings have discussed two

new herbicides registered for sweet corn. These include Permit 75WSG (halosulfuron) and Prowl 3.3 EC (pendimethalin). The *2002-2003 New England Vegetable Management Guide* will contain recommendations for these products. In brief, Permit can be used for postemergence control of yellow nutsedge, velvetleaf, common ragweed, and many other problem weeds in sweet corn. Sandea 75WSG also contains halosulfuron. It is marketed by a different company but has the same sweet corn label as Permit. Prowl, is applied to the soil surface after seeding and will provide good to excellent activity on triazine-resistant lambsquarters.

### **Select 2E (clethodim) in many crops**

This is a postemergence grass herbicide which is similar in activity to Poast (sethoxydim). Growers should see improved activity on cool season grasses such as annual bluegrass and on perennial grasses as well. Registered crops include potato, tomato, pepper, eggplant, celery, carrot, radish, summer squash, winter squash, pumpkin, cucumber, melon, watermelon, and strawberry. The label as well as the *2002-2003 New England Vegetable Management Guide* contain pre-harvest intervals for all registered crops. A crop oil concentrate at a rate of one quart per 100 gallons spray mix must be used. Do not

spray on hot and humid days as crop injury can result. See label for other precautions.

### **Assure 0.88 EC (quizalofop) in beans and dry beans**

This is a postemergence grass herbicide which is similar in activity to Poast (sethoxydim). Growers should see improved activity on cool season grasses such as annual bluegrass and on perennial grasses as well. Registered crops include succulent beans and dry beans. The label as well as the *2002–2003 New England Vegetable Management Guide* contain pre-harvest intervals for these crops. A crop oil concentrate at a rate of one gallon per 100 gallons spray mix or a nonionic surfactant at a rate of one quart per 100 gallons spray mix must be used. Do not spray on hot and humid days as crop injury can result. See label for other precautions.

### **2,4-D Formulation Change**

Amine 4 is the new formulation of 2,4-D amine (salt) available for use in asparagus, sweet corn, and strawberry. Formula 40 will no longer be available. There are many ester and low-volatile ester formulations on the market for other uses of 2,4-D. Be certain to NEVER use ester or low-volatile ester formulation of 2,4-D on vegetable or fruit crops. Both ester and low-volatile ester formulations of 2,4-D can move from the target area after application during warm weather or low humidity. They have the potential to damage crops far from the site of application and their movement is unpredictable.

### **Gramoxone (paraquat) formulation change**

Gramoxone Max 3S is the new formulation replacing Gramoxone Extra for all uses. Label rates are generally lower than the old formulation since Gramoxone Max contains more active ingredient per gallon. As with the old formulation, the use of a nonionic surfactant is still required. With Gramoxone, always remember that better weed coverage through the use of more water per acre will result in better weed kill.

### **Dacthal 75WP (DCPA) is available**

Dacthal herbicide is back on the market with all the previous labeling. The price of this product has more than doubled, however, rising to approximately \$14 per pound. Critical uses of this product are on newly transplanted strawberry and on direct-seeded onions. Check the *2002–2003 New England Vegetable Management Guide* for suggestions on possible replacements for Dacthal in other crops.

### **Strategy (ethalfluralin + clomazone) receives EPA approval**

Although the US EPA has approved this product, it is not registered for use in New England as of this writing. This label will be granted state by state, so check with your dealer for a label. Strategy is a premix of Curbit (ethalfluralin) and Command (clomazone). It is intended for preemergence control of annual grasses and many broadleaf weeds

in cucumber, melon, pumpkin, summer squash, winter squash, and watermelon. Broadleaf weeds that are controlled include common lambsquarters, pigweed, common purslane, velvetleaf, common ragweed, and Pennsylvania smartweed. This product may be applied to the soil surface after direct seeding on bare ground. It may also be banded between plastic for both direct-seeded and transplanted crops. The formulation of Command contained in this product is the ME (micro-encapsulated) formulation which does not need to be incorporated. There are many precautions on the label including some replant precautions. For squash and pumpkin, this product will be the treatment of choice since it controls so many weed species. In cucumber and melon, however, Curbit tank-mixed with Alanap (naptalam) may still be a good option since most of the same weeds are controlled but the carry-over concerns with clomazone are not present.

### **Sandea 75WSG (halosulfuron) in cucumber, winter squash, and pumpkin (MASSACHUSETTS ONLY)**

A 24c state label has been approved in Massachusetts for the use of Sandea on direct-seeded cucumber, winter squash, and pumpkin. Sandea is also registered nationally for postemergence control of broadleaf weeds and nutsedge in sweet corn. Sandea provides preemergence and postemergence control of many weeds including yellow nutsedge,

velvetleaf, and common ragweed. Preemergence applications must be applied after seeding and before the crop begins to emerge. Postemergence applications can be made after the crop has two true leaves and before the crop has five true leaves. Postemergence applications require the use of a non-ionic surfactant at a rate of one quart per 100 gallons spray mix. Sandea can also be banded between plastic mulch with either a direct-seeded or transplanted

crop. There is the potential for crop stunting and a slight maturity delay with the use of Sandea over the top of the crop. There are also some carry-over issues with Sandea that will limit its use. Growers should limit their use of Sandea initially to gain experience. Perhaps the best fit for this product is for postemergence control after preemergence use of another product (Curbit, Alanap, Strategy, Prefar, Command) depending on which crop is grown. Sandea will

provide postemergence control of yellow nutsedge, redroot pigweed, velvetleaf, common ragweed, and many other broadleaf weeds. A complete label is available from dealers. Please read the label entirely regarding application directions and precautions. Accurate measurement and application is essential to minimize crop stunting and delay. A plastic measuring cup is included with the herbicide container.

## Fungicide Update for Vegetables

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### Strobilurins

Strobilurins are a new class of fungicides that have a relatively broad spectrum of activity. They would be a

good choice for early blight. Late blight and powdery mildew are on several of the labels. Some are excellent for powdery mildew. Resistance development is a problem. If you use strobilurins, make sure you rotate with chemicals outside of this class.

CLASS	TRADE NAME	COMMON NAME	MAJOR USES
<b>Strobilurin</b>	Quadris	azoxystrobin	Many vegetables, wide range of pathogens
	Sovran	kresoxim-methyl	Tree fruits
	Flint	trifloxystrobin	Cucurbits, tree fruits
	Cabrio	pyraclostrobin	Cucurbits, tomato
	Headline	pyraclostrobin	Potato

### Miscellaneous chemistry

CLASS	TRADE NAME	COMMON NAME	MAJOR USES
<b>Phenylpyrroles</b>	Maxim	fludioxonil	Vegetables, leaf spots/blights, root rot
<b>Sterol Inhibitors</b>	Nova	myclobutanil	Vegetables, tree and small fruits, powdery mildew
	Tilt	propiconazole	Corn, celery
<b>Acetimide</b>	Curzate	cymoxanil	Potato, late blight
<b>Carbamate</b>	Previcur	propamocarb	Potato, late blight
<b>Cinnamic acid (A mixture)</b>	Acrobat	dimethomorph	Potato, late blight
	Switch	cyprodinil + fludioxonil	Botrytis, onions, and strawberries

### Novel chemistry/biologicals

**Actigard** (common name: acibenzolar-s-methyl) is a synthetic analogue of salicylic acid (active ingredient of aspirin). It is not toxic to microorganisms but it causes an induction of resistance in the plant. Currently the label is very short but it does include bacterial spot and

speck of tomato, and downy mildew and white rust of spinach. Its use possibly results in reduced tomato yield and yellowing in spinach.

**Messenger** (common name: harpin), like Actigard, stimulates defense mechanisms in plants. Messenger is a

protein produced by a bacterium. There are a number of vegetable crops on the label. In addition to disease control the product is supposed to increase yield.

**Serenade** is the trade name for a formulation of the bacterium *Bacillus subtilis*. Serenade has several vegetables on the label but has a short list of diseases (powdery mildew, downy mildew, and bacterial spot of tomato).

**Sonata**, *Bacillus pumilus*, is produced by the same company that makes Serenade and has a similar spectrum of activity.

**T-22** is a formulated product of the fungus *Trichoderma harzianum*. *Trichoderma* is a common, soil-inhabiting fungus that is relatively antagonistic toward plant pathogens. In addition to vegetables, it has herbs on the label. It is compatible with a number of common fungicides. T-22 is for the control of root diseases.

### Fungicide resistance management in vegetable crops for both old and new materials

Fungicide selection is important. Above all, you must know what pathogen you are trying to control. Next, you must select a material that will adequately control the pathogen. If you anticipate making several

applications of a fungicide that may result in pathogen resistance, you should have one or two appropriate fungicides for rotation. The following is a table of fungicides which tend to result in resistance. Avoid applying them twice in a row. You can rotate from class to class but do not rotate within the same class.

CLASS	TRADE NAME	COMMON NAME
<b>Sterol Inhibitors</b>	Folicur	tebuconazole
	Nova	myclobutanil
	Strike	triadimefon
	Tilt	propiconazole
<b>Benzimidazoles</b>	Benlate	benomyl
	Topsin-M	thiophanate methyl
<b>Dicarboximides</b>	Ronilan	vinclozolin
	Rovral	iprodione
<b>Strobilurins</b>	Flint	trifloxystrobin
	Quadris	azoxystrobin
	Sovran	kresoxim-methyl
	Cabrio	pyraclostrobin
	Headline	pyraclostrobin
<b>Phenylamides</b>	Ridomil Gold	mefenoxam*

\*earlier formulations of Ridomil (metalaxyl) are chemically related to mefenoxam and should not be rotated with each other. However, combination products such as Ridomil/Bravo do not tend to result in resistance.

The following fungicides do not tend to result in resistance. They make good rotational partners for the above fungicides.

CLASS	TRADE NAME	COMMON NAME
<b>Dithiocarbamates</b>	Maneb	maneb
	Mancozeb	mancozeb
	Penncozeb	mancozeb
<b>Inorganics</b>	Champ	copper hydroxide
	Basicop	basic copper sulfate
	Kocide	cupric hydroxide
<b>Substituted benzenes</b>	Bravo	chlorothalonil
	Daconil	chlorothalonil

## GREENHOUSE GROWER PESTICIDE TRAINING March 19, 2002

The UMass Floriculture Extension Program is sponsoring a **Pesticide Training** for growers of greenhouse crops on March 19, 2002. The training will be held in two locations concurrently – in Amherst at the Mass Venture Building in Hadley and at Bridgewater State College in Bridgewater from 9:00 am to 1:00 pm.

The training will concentrate on the subjects of insect and disease control for greenhouse crops. The featured speaker will be Dr. Kevin Heniz, Assistant Professor of Entomology from Texas A&M University. Dr. Heniz will make his presentation via a video conference from College Station, Texas.

For more information contact Paul Lopes at 508-295-2212 x24 or Tina Smith at 413-545-5306. Pesticide recertification credits will be available in all Private Categories.

**Vegetable Notes** is a publication of the University of Massachusetts Extension Vegetable Program which provides research-based information on integrated management of soils, crops, pests, and marketing on Massachusetts farms.

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