THE OHIO STATE UNIVERSITY EXTENSION

# Ohio
# Fruit ICM News

Editor: Ted W. Gastier, Extension Educator, Agriculture
Ohio State University Extension, Huron County
180 Milan Avenue, Norwalk, OH 44857 419-668-8219
FAX: (419) 663-4233 E-mail: gastier.1@osu.edu
Use the following site for a printable web version of this newsletter:

Volume 9, No. 2 January 13, 2005



## Calendar

**January 19: Addressing Regulations for Farmers Direct Marketing Fresh and Value-Added Products**, Ohio Department of Agriculture, Reynoldsburg, OH.
**January 19-21: Ohio Fruit and Vegetable Growers Congress / Ohio Direct Marketing Conference,** Toledo SeaGate Centre. Contact Tom Sachs at 614-246-8292 or e-mail growohio@ofbf.org.

**January 21: Ventures in Agricultural Production and Marketing**, held in conjunction with the Growers Congress. See second article.

**February 1: Second Ohio Ag and Hort Human Resource Managers' Forum** , Hilliard, OH. Contact MAAHS at 614-246-8286, maahs@ofbf.org or <www.midamservices.org> (click on "Events") for more information.

**February 10-12: North American Farmers' Direct Marketing Conference and Trade Show,** Boston Park Plaza Hotel, Boston, MA. Contact 413-529-0386, e-mail info@nafdma.com, or click on <http://www.nafdma.com>.
**February 16: Addressing Regulations for Farmers Direct Marketing Fresh and Value-Added Products**, Ohio Department of Agriculture, Reynoldsburg, OH.

**February 16: Southwest Ohio Fruit & Vegetable School,** Valley Vineyards & Winery, Morrow, OH. Contact Vickie Butler or Gary Gao at Clermont County Extension, 513-732-7070.

**February 22-23: Ohio River Valley Farm Marketing Conference**, Mason, Ohio. Brochure for conference can be viewed on-line at <http://ocdc.osu.edu>.

**February 25: Berry Growers School,** OSU South Centers, Piketon, OH. Details at a later date.

**March 5: Fruit Tree Pruning Clinic**, Rouster's Apple House, Milford, OH. Contact Vickie Butler or Gary Gao at Clermont County Extension, 513-732-7070.

## Revised Midwest Small Fruit Handbook Now Available

*Source: Mike Ellis, OSU Department of Plant Pathology*

The Midwest Small Fruit Handbook has been revised and is now available. The handbook features full-color photos of the major disease symptoms and insect pests. Comprehensive Integrated Pest Management (IPM) recommendations are included for control of insects, diseases, and weeds on strawberry, brambles, blueberry, and grapes. The handbook is truly a bargain at $9.75 and is available at your Extension office in Ohio. It will also be available at the Growers Congress. Stop by the Ohio Fruit Team booth for your copy and for the 2005 Small Fruit and Tree Fruit Spray Guides.

## ODA Addresses Regulations for Farmers Direct Marketing Fresh and Value-Added Products

*Source: John Wargowsky, Director, Labor Services - Ohio Farm Bureau Federation, Inc.*

The Ohio Department of Agriculture (ODA) Division of Food Safety is sponsoring two meetings to address farmers direct marketing fresh and value-added products, farmers market managers, and other interested parties. These meetings will be held 9:00 a.m. to 1:00 p.m. on January 19 and February 16, 2005 at the Ohio Department of Agriculture, 8995 East Main Street, Reynoldsburg, Ohio, in the Bromfield Building. See <http://www.ohioagriculture.gov> for directions. Please call and register with Debra Strait at 614-728-6250. There is no fee.

John Christoph with the ODA Food Safety Division is hosting these meetings so that farmers and small food businesses can openly ask questions, clear up any confusion, and be successful in their enterprises. He will present the program in a Power Point format, answering questions as they arise.

**Topics will include the following:**

- Farm/farmers market definitions
- The market registration
- The market exemptions and what they include
- Non-exempt products at the markets
- What makes a farm market a retail food establishment
- The farmers market and the mobile food vendor
- The farmers market and the temporary food license
- The farm product auction
- The flea market / celebration
- Questions and answers

## New Conference Workshop to Focus on Ag Ventures

*Source: Candace Pollock, Ohio State University News and Media Relations, Section of Communications and Technology*

A new workshop targeted at ventures in agricultural production and marketing will be offered at the Ohio Fruit and Vegetable Growers' Congress, being held January 19-21 at the Toledo Seagate Convention Centre and Radisson Hotel in Toledo, Ohio. The workshop will be from 1 p.m. to 5 p.m. January 21 at the Toledo Radisson Hotel and is sponsored by the Ohio Vegetable and Potato Growers Association (OVPGA), the Ohio Fruit Growers Society (OFGS) and Ohio State University Extension.

The workshop will begin with a discussion on "Building Your Marketing Infrastructure," and will emphasize the need to ask the proper questions and assess the feasibility of a new business venture. A presentation will follow on how to "Build Your Financial Infrastructure," which will illustrate how to build budgets and analyze short and long-term finances for positive cash flow and profitability.

Other aspects of the workshop will include addressing family priorities, how enforcement agencies may impact a new business venture, how to develop procedures to comply with agency rules and regulations, and how to build research knowledge to increase crop production skills, produce higher quality produce, and lower long-term production risks. Additionally, topics on the value of interacting with professional associations to increase legislative influence and to direct industry research and education programs for the mutual benefit of all will also be discussed.

The conference is sponsored by Ohio State University Extension, Ohio Agricultural Research and Development Center, Ohio Vegetable and Potato Growers Association and the Ohio Fruit Growers Society, Ohio Direct Agricultural Marketing Association and the Ohio Christmas Tree Association. For more information visit: <http://www.ohiofruit.org>, <http://www.ohiovegetables.org>, or <http://www.ohiochristmastrees.com>, call (614) 246-8292, or e-mail growohio@ofbf.org.

## Facing Biotech Foods Without the Fear Factor

*Source: Jane E. Brody, New York Times, January 11, 2005 via Joe Kovach, Ohio State University IPM Program*

Almost everywhere food is sold these days, you are likely to find products claiming to contain no genetically modified substances. But unless you are buying wild mushrooms, game, berries, or fish, that statement is untrue.

Nearly every food we eat has been genetically modified, through centuries of crosses, both within and between species, and for most of the last century through mutations induced by bombarding seeds with chemicals or radiation. In each of these techniques, dozens, hundreds, even thousands of genes of unknown function are transferred or modified to produce new food varieties.

Most so-called organic foods are no exception. The claims of no genetic modification really refer to foods that contain no ingredients that are produced through the highly refined technique of gene splicing, in which one or a few genes are transferred to an organism. But alarmist warnings about the possible hazards of gene splicing have made the public extremely wary of this selective form of genetic modification.

Such warnings have so far been groundless. “Americans have consumed more than a trillion servings of foods that contain gene-spliced ingredients,” said Dr. Henry I. Miller, a fellow at the Hoover Institution and author, with Gregory Conko, of *The Frankenfood Myth*, a new book that questions the wisdom of current gene-splicing regulations. “There hasn’t been a single untoward event documented, not a single ecosystem disrupted, or person made ill from these foods,” he said in an interview. “That is not something that can be said about conventional foods, where imprecise methods of genetic modification actually have caused illnesses and deaths.”

**Ignorance vs. Progress**

It is no secret that the public’s understanding of science, and genetics in particular, is low. For example, in a telephone survey of 1,200 Americans released last October by the Food Policy Institute at Rutgers University, 43 percent thought, incorrectly, that ordinary tomatoes did not contain genes, while genetically modified tomatoes did. One-third thought, again incorrectly, that eating genetically modified fruit would change their own genes.

In another telephone survey, in which 1,000 American consumers were questioned last year in research for the Pew Initiative on Food and Biotechnology, 54 percent said they knew little or nothing about genetically modified foods. Still, 89 percent said that no such food should be allowed on the market until the Food and Drug Administration determined that it was safe. What most respondents did not seem to know is that almost none of the foods people eat every day, which contain many introduced genes whose functions are unknown, have ever been subjected to premarketing approval or postmarketing surveillance.

Why should people object to the presence of a single new gene whose function is known when for centuries they have accepted foods containing hundreds of new genes of unknown function?

A junior high school student in Idaho, Nathan Zohner, demonstrated in a 1997 science fair project how easy it was to hoodwink a scientifically uninformed public. As described in *The Frankenfood Myth*, 86 percent of the 50 students he surveyed thought dihydrogen monoxide should be banned after they were told that prolonged exposure to its solid form caused severe tissue damage, that exposure to its gaseous form caused severe burns, and that it had been found in tumors from terminal cancer patients. Only one student recognized the substance as water, $H_2O$.

Without better public understanding and changes in the many arcane rules now thwarting development of new gene-spliced products, we will miss out on major improvements that can result in more healthful foods, a cleaner environment, and a worldwide ability to produce more food on less land -- using less water, fewer chemicals, and less money.

The European Union has, in effect, banned imports of all foods produced through gene splicing, and it has kept many African nations, including those afflicted with widespread malnutrition, from accepting
even donated gene-spliced foods and crops by

threatening to cut off products they export because they might become contaminated with introduced genes. Even more puzzling, Uganda has prohibited the testing of a fungus-resistant banana created through gene splicing, even though the fungus is devastating that nation's most important crop.

In a new report, "Safety of Genetically Engineered Foods," published by the National Academy of Sciences, an expert committee notes that any time genes are mutated or combined, as occurs in almost all breeding methods, there is a possibility of producing a new, potentially hazardous substance. Citing a conventionally bred potato that turned out to contain an unintended toxin, the report says the hazard lies with the toxin's presence, not the breeding method.

Among the foods developed through induced mutations are lettuce, beans, grapefruit, rice, oats, and wheat. None had to undergo stringent testing and federal approval before reaching the market.

Only those foods produced by the specific introduction of one or more genes into the organism's DNA are subject to strict and prolonged premarketing regulations. But as the academy's report points out, gene splicing is only a process, not a product, a process on a continuum of genetic modification of foods that began more than 10,000 years ago when people first crossed two varieties of a crop to improve its characteristics. In fact, gene splicing is the most refined, precise, and predictable method of genetic modification because the function of the transferred gene or genes is known. It is also important to realize that genes are rarely unique to a given organism.

**Regulate by Degree of Risk**

All new crop varieties, whether produced through gene splicing or conventional techniques like cross-breeding or induced mutations, go through a series of tests before commercial introduction. After greenhouse testing for the look and perhaps taste of the crop, it is grown in a small, sequestered field trial and, if it passes that test, in a larger trial to check its commercial viability.

The potential risks associated with genetically modified foods result not so much from the method used to produce them but from the traits being introduced. With gene splicing, only one or two traits at a time are introduced, making it possible to assess beforehand how much testing is needed to assure safety. While such safety tests are important, it is possible to become fixated on hypothetical risks that can never be absolutely discounted.

Indeed, Dr. Miller, once director of the Office of Biotechnology for the Food and Drug Administration, argues that overly stringent regulations can needlessly raise public fears. "People naturally assume that something that is more highly regulated is more dangerous," he said, adding, "Government officials should have done less regulating and more educating." A risk-based protocol for safety evaluation would greatly reduce the time and costs involved in developing most new gene-spliced crops, many of which could raise the standard of living worldwide and better protect the planet from chemical contamination.

## Insect Management Update for Vegetable & Fruit Crops, 2004/2005

*Source: Celeste Welty, Extension Entomologist & Associate Professor, OSU, Columbus*

**New Products:**

- **Decis 1.5EC** (deltamethrin) from Bayer, a new pyrethroid, for bulb vegetables, cucurbits, fruiting vegetables, root vegetables, potato, sweet corn, pome fruit; to control beetles, caterpillars, and other pests; registered November 2004.

- **Kanemite 15SC** (acequinocyl) from Arvesta, for apples, pears, strawberries; to control spider mites; registered September 2004.

- **FujiMite 5EC** (fenpyroximate) from Nichino, for apples, pears, grapes; to control spider mite, rust mite, pear psylla, mealybug, and leafhoppers; registered June 2004.

- **Proaxis (0.5EC)** (gamma-cyhalothrin) from Loveland, a new pyrethroid, for sweet corn, cole crops, fruiting vegetables, legume vegetables, leaf & head lettuce, onions, pome fruit, stone fruit; to control beetles, caterpillars, and other pests; registered March 2004.

- **Discipline 2EC** (bifenthrin; same AI as Capture and Brigade), from Amvac, for pears, caneberries, sweet corn, beans, peas, brassicas, cucurbits, tomato, pepper, eggplant, head lettuce, spinach; for control of beetles, caterpillars, and other pests.

- **Dimilin 25WP** (diflubenzuron) from Crompton/Uniroyal, for peppers to control beet armyworm, and for pears to control pear psylla, pear rust mite, codling moth; registered Sept. 2003.

- **Dimilin 2L** (diflubenzuron) from Crompton/Uniroyal, for peaches & plums to control oriental fruit moth, leafrollers; for pears to control pear psylla, pear rust mite, codling moth; September 2003.

- **Concur** (imidacloprid + metalaxyl, from Agriliance) & **Latitude** (imidacloprid + carboxin + metalaxyl, from Gustafson): hopper box treatments for sweet corn, for flea beetle control to first true leaf; registered 2003.

**New Formulation:**

- **Lorsban 75WG** (chlorpyrifos), made by Dow, marketed by Gowan, for apple, pear, stone fruits, strawberry, grape, asparagus, sweet corn, dry bulb onion, sweet potato, cabbage, broccoli, radish, collards, kale, and Chinese cabbage. Similar to Lorsban 50W but low odor, less phytotoxic, more rainfast; registered October 2003.

**Registration Expanded to Additional Crops:**

- **Provado 1.6F** (imidacloprid from Bayer), for foliar use, new for blueberries, for aphid, leafhopper, thrips, Japanese beetle adult control; registered May 2004.

- **Admire 2F** (imidacloprid from Bayer), for soil use, new for blueberries, for Japanese beetle adult and white grub control; registered May 2004.

- **Capture 2EC** (bifenthrin from FMC), new for grapes for leafhopper, black vine weevil, mite control (April 2004), and pears, for caterpillar, bug control (July 2003). Also revised REIs.

- **Asana XL** (esfenvalerate from DuPont) on caneberries for aphid, caterpillar control; November 2003.

- **Cruiser 5FS** (thiamethoxam from Syngenta,) commercial seed treatment, now for snap bean, controls seed corn maggot, wireworms, bean leaf beetle, aphids, and leafhoppers; October 2003.

- **Courier 70WP** (buprofezin from Nichino) on snap bean to control immature whiteflies; registered October 2003.

- **Acramite 50WS** (bifenazate from Crompton/Uniroyal); for spider mite control, new for tomato, pepper, eggplant, cucurbits, stone fruit, non-bearing berries; registered October 2003.

- Brigade 10WSP (bifenthrin from FMC), new for caneberries for leafhopper, mite control; registered April 2003.

- **Kryocide** (cryolite from Cerexagri), now on pumpkin, for cucumber beetle control.

**Registration Expanded to Additional Pests:**

- **Assail** (acetamiprid from Cerexagri), add Oriental fruit moth, apple maggot, plum curculio, Japanese beetle on apple; mealybug on pears; mealybug, phylloxera, rose chafer, Japanese beetle on grapes; thrips on tomato and cole crops; as per supplemental labels, May 2004.

- **Asana** (esfenvalerate from Dupont) on blueberries, add Japanese beetle, November 2003.

- **Guthion** (azinphos-methyl from Bayer) on brambles, add raspberry crown borer; Aug. 2003.

- **Applaud** (buprofezin from Nichino) on grapes, add mealybug.

**Other:**

- **Nexter 75WP** is new name for **Pyramite 60WP**; active ingredient pyridaben, by BASF/Gowan.

- **Avaunt** (indoxacarb from DuPont), on apple, change PHI from 28 to 14 days; June 2004.

- **Actara** (thiomethoxam from Syngenta) is back for apples east of Mississippi River; March 2004.

- **Dimethoate** canceled on apple, grape, spinach, chard, head lettuce, tomatillo, broccoli raab, fennel; January 2004.

## Summary of Vegetable / Fruit Insecticide Changes, 2001-2004

*Source: Celeste Welty, Extension Entomologist & Associate Professor, OSU, Columbus*

**New Registration:**

**Sweet Corn**

Decis (11/04)
Proaxis (3/04)
Discipline 2EC (2004)
Concur (2003)
Latitude (2003)
Poncho (6/03)
Warrior (2/03-soil use)
Mustang Max (1/03)
Cruiser (10/02)
Intrepid 2F (9/02)

**Cucurbits**

Decis (11/04)
Discipline 2EC (2004)
Acramite 50WS (10/03)
Courier 70WP (1/02)
Platinum 2SC (5/01)

**Tomato, Pepper, & Eggplant**

Decis (11/04)
Proaxis (3/04)
Discipline 2EC (2004)
Acramite 50WS (10/03)
Proclaim (7/03)
Capture 2EC (8/99,12/00,7/03)
Warrior (2/03, 4/95)
Mustang Max (1/03)
Intrepid 2F (9/02)
Assail 70WP (3/02)
Mustang 1.5EW (1/02)
Actara 25WDG (5/01)
Platinum 2SC (5/01)
Avaunt 30DG (12/00, 7/02)

**Tomato**

Courier 70WP (1/02)

**Pepper**

Dimilin 25WP (9/03)

**Beans or Peas**

Proaxis (3/04)
Discipline 2EC (2004)
Cruiser (10/03)
Courier 70WP (10/03)
Warrior (2/03)
Mustang Max (1/03)
Baythroid 2EC (9/02)
Mustang 1.5EW (1/02)
Admire 2F (6/01, 6/03)
Provado 1.6F (6/01, 6/03)

**Potato**

Decis (11/04)
Avaunt 30DG (7/02)
Actara 25WDG (5/01)
Platinum 2SC (5/01)

**Onions**

Decis (11/04)
Proaxis (3/04)
Mustang Max (1/03)

**Radish, Beets, Turnip, Carrot**

Decis (11/04)
Provado (6/03)
Admire 2F (6/03)
SpinTor 2SC (1/02, 9/02)

**Cole Crops**

Proaxis (3/04)
Discipline 2EC (2004)
Mustang Max (1/03)
Intrepid 2F (9/02)
Baythroid 2EC (9/02)
Assail 70WP (3/02)
Fulfill 50WG (3/02)

**Greens (collard, kale, mustard)**

Proclaim (7/03)
Mustang Max (1/03)
Intrepid 2F (9/02)
Baythroid (9/02)- mus. only
Assail 70WP (3/02)
Fulfill 50WG (3/02)

**Lettuces & Leafy Veg.** (endive, spinach, parsley, etc.)
- Proclaim (7/03)
- Intrepid 2F (9/02)
- Assail 70WP (3/02)
- Fulfill 50WG (3/02)
- Mustang 1.5EW (10/01)

**Lettuce, Leaf & Head**
- Proaxis (3/04)
- Baythroid 2EC (9/02)
- Courier 70WP (1/02)

**Head Lettuce**
- Discipline 2EC (2004)
- Mustang Max (1/03)

**Spinach**
- Discipline (2004)
- Capture 2EC (7/03)

**Celery, Swiss Chard**
- Admire (6/03)

**Asparagus**
- SpinTor 2SC (7/01)

**Herbs**
- SpinTor 2SC (9/02)

**Strawberries**
- Kanemite (9/04)
- Zeal (9/03)
- Provado (6/03)
- Admire (6/03)
- Acramite 50WS (2/02)
- SpinTor 2SC (9/01)

**Brambles/Caneberries**
- Discipline 2EC (2004)
- Asana (11/03)
- Brigade (4/03)
- SpinTor 2SC (9/02)
- Capture 2EC (5/02)
- Savey 50WP (4/01)

**Blueberries**
- Provado (5/04)
- Admire (5/04)
- Esteem 35WP (5/03)
- SpinTor 2SC (1/02)
- Asana (4/01)

**Grapes**
- FujiMite (6/04)
- Capture (4/04)
- Intrepid 2F (9/02)
- SpinTor 2SC (9/02)
- Assail 70WSP (5/02)
- Acramite 50WS (2/02)
- Applaud 70WP (1/02)
- Agri-Mek (3/01)

**Apples & Pears**
- Decis (11/04)
- Kanemite (9/04)
- FujiMite (6/04)
- Proaxis (3/04)
- Calypso (9/03)
- Zeal (9/03)
- Warrior (2/03)
- Assail 70WP (3/02)
- Acramite 50WS (2/02)
- Actara 25WDG (5/01; 3/04)

**Pears**
- Discipline 2EC (2004)
- Dimilin 25WP & 2L (9/03)
- Capture 2EC (7/03)
- Brigade 10WSB (4/03)

**Peach, Plum, & Cherry**
- Proaxis (3/04)
- Acramite 50WS (2/02,10/03)
- Provado (6/03)
- Warrior (2/03)
- Esteem 35WP (11/02)
- Intrepid 2F (10/02)

**Peach & Plum**
- Dimilin 2L (9/03)

**Cancellations:**

**Spinach, Swiss Chard**
- dimethoate (1/04)

**Beans, Broccoli, Cabbage, Cauliflower, Celery, Cucumber, Eggplant, Melon, Onion, Pepper, Spinach, Tomato, Grape, Plum, Strawberry**
- Guthion (8/03)

**Cole Crops**
- Monitor 4L

## Fruit Disease Resources at The Ohio State University

*Source: Mike Ellis, OSU Department of Plant Pathology* <http://www.oardc.ohio-state.edu/fruitpathology/>

Dr. Michael Ellis has created a website for Fruit Disease Resources at The Ohio State University. From the homepage you can choose "Organic Small Fruit Disease Management Guidelines," "Disease Management in Home Fruit Plantings," "Disease Management Guidelines for Organic Apple Production in Ohio," "Ohio State University Fruit Disease Fact Sheets," and the homepage for the Department of Plant Pathology.

Following is the Introduction to the Organic Small Fruit Disease Management Guidelines:

Disease management strategies are very similar for both organic and conventional small fruit production systems in the Midwest. In both systems it is important to develop and use an integrated disease management program that integrates as many disease control methods as possible, the more the better. Major components of the disease management program include: **use of specific cultural practices, developing knowledge of the pathogen and disease biology, use of disease resistant cultivars, and timely application of organically approved fungicides or biological control agents or products when needed.** These guidelines have been written for caneberries (raspberry and blackberry), strawberry, blueberry, and grape.

Specific information is provided for each crop in its respective chapter. Most disease control methods or strategies are identical for both conventional and organic production systems. Perhaps the greatest difference between organic and conventional production systems is that organic growers are not permitted to use synthetic "conventional" fungicides. If disease control materials are required in the organic system, growers are limited to the use of "inorganic" fungicides such as sulfur (elemental sulfur and lime-sulfur) or copper fungicides (Bordeaux mixture and fixed copper products). In addition, there are several new "alternative" disease control materials and biological control products that are currently available and are cleared for use in organic production.

There are several problems associated with the use of these inorganic fungicides and "alternative" products in small fruit disease control programs. Among the most important are:

- **Phytoxicity**, which is the potential to cause damage to foliage, fruit set, and fruit finish (this is a concern primarily with copper and sulfur fungicides); and

- **their limited spectrum of fungicide activity**, which means they may not be capable of providing simultaneous control of the wide range of fungal pathogens that can cause economic damage to the crop. For example, sulfur is highly effective for controlling powdery mildew on most fruit crops, but provides little or no control of most other diseases.

In a climate like the Midwest, environmental conditions during the growing season are generally very conducive (warm and wet) to the development of several important diseases, insect pests, and weeds. Limitations in relation to which pesticides may or may not be used present the organic grower with some unique and very demanding challenges. Whereas the use of various cultural practices and disease resistance will be the "backbone" of the organic disease management program, the limited use of organically approved pesticides or biocontrol agents will probably be required at times.

Check out recommendations for specific small fruit crops at <http://www.oardc.ohio-state.edu/fruit pathology/organic/index.html>.

## Summary of New Insecticides for Vegetable or Fruit Crops, 2001-2004

| Product | A.I. | Family | Crops on Initial Label | Crops Added Later |
|---|---|---|---|---|
| Decis 1.5EC | deltamethrin | pyrethroid | fruiting veg., bulb veg., root veg, tubers, cucurbits, sweet corn, pome fruit (11/04) | - |
| Kanemite 15SC | acequinocyl | - | pome fruit, strawberry (9/04) | - |
| FujiMite 5EC | fenpyroximate | - | pome fruit, grapes (6/04) | - |
| Proaxis 0.5EC | gamma-cyhalothrin | pyrethroid | sweet corn, cole crops, fruiting veg., legume veg., leaf & head lettuce, onions, pome fruit, stone fruit (3/04) | - |
| Discipline 2EC | bifenthrin | pyrethroid | sweet corn, legumes, cole crops, cucurbits, fruiting veg, head lettuce, spinach, pear, caneberry (2004) | - |
| Dimilin 25WP | diflubenzuron | IGR[1] | peppers, pears (9/03) | - |
| Dimilin 2L | diflubenzuron | IGR[1] | peaches, plums, pears (9/03) | - |
| Calypso 4F | thiacloprid | neonicotinoid | pome fruit (9/03) | - |
| Zeal 72WDG | etoxazole | - | pome fruit, strawberry (9/03) | - |
| Poncho 600 | clothianidin | neonicotinoid | sweet corn (6/03) | - |
| Mustang Max | zeta-cypermethrin | pyrethroid | cole crops, leafy Brassica greens, onions, sweet corn, fruiting veg., legumes, head lettuce (1/03) | - |
| Concur | imidacloprid | neonicotinoid | sweet corn (2003) | - |
| Latitude | imidacloprid | neonicotinoid | sweet corn (2003) | - |
| Cruiser 5FS | thiamethoxam | neonicotinoid | sweet corn (10/02) | snap bean (10/03) |
| Entrust 80WP | spinosad | spinosyn | most crops (8/02) | - |
| Assail 70WSP | acetamiprid | neonicotinoid | grapes (5/02) | - |
| Assail 70WP | acetamiprid | neonicotinoid | pome fruit, fruiting veg., leafy veg., cole crops, collards, kale, mustard greens (3/02) | - |
| Acramite 50WS | bifenazate | - | apple, pear, plum, peach, grape, strawberry (2/02) | fruiting veg., cucurbits, non-bearing berries (10/03) |
| Courier 70WP | buprofezin | IGR[1] | lettuce, tomato, cucurbits (1/02) | snap bean (10/03) |
| Applaud 70WP | buprofezin | IGR[1] | grapes (1/02) | - |
| Actara 25WDG | thiamethoxam | neonicotinoid | pepper, potato, pome fruit (5/01) | - |
| Platinum 2SC | thiamethoxam | neonicotinoid | cucurbits, fruiting veg., potato (5/01) | - |
| Gaucho 480 (4F) | imidacloprid | neonicotinoid | sweet corn, snap beans (2001) | - |

[1] IGR = insect growth regulator

Celeste Welty, Extension Entomologist, The Ohio State University 12/04

## Recent Additions to Crop Uses of Products Initially Registered Before 2001

| **Product** | **A.I.** | **Family** | **First Year** | **Crops Added Since 2001** |
|---|---|---|---|---|
| Admire 2F | imidacloprid | neonicotinoid | 1994 | blueberries (5/04); root crops (radish, turnip, beet, carrot), peas, celery, Swiss chard, rhubarb, strawberries, greenhouse tomatoes & cucumbers (6/03); beans (6/01) |
| Agri-Mek 0.15EC | abamectin | avermectin | 1995 | grapes (3/01) |
| Asana XL | esfenvalerate | pyrethroid | - | caneberries (11/03), blueberries (4/01) |
| Avaunt 30DG | indoxacarb | - | 2000 | Chinese cabbage (napa), potato, eggplant (7/02) |
| Baythroid 2EC | cyfluthrin | pyrethroid | 1995 | cole crops, mustard greens, leaf & head lettuce, dry & southern peas (9/02) |
| Brigade 10WSP | bifenthrin | pyrethroid | 1996 | caneberries, pears, (4/03) |
| Capture 2EC | bifenthrin | pyrethroid | 1999 | grapes (4/04); tomato, spinach, pears (7/03); caneberries (5/02) |
| Danitol 2.4EC | fenpropathrin | pyrethroid | 1995 | cucurbits (2001) |
| Esteem 35WP | pyriproxyfen | IGR[1] | 1999 | blueberry (5/03); stone fruit (11/02) |
| Fulfill 50WDG | pymetrozine | - | 1999 | cole crops, leafy Brassica greens, leafy veg. (3/02) |
| Intrepid 2F | methoxyfenozide | IGR[1] | 2000 | peaches (10/02); grapes, sweet corn, fruiting veg., cole crops, leafy Brassica greens, leafy veg. (9/02) |
| Mustang 1.5EW | zeta-cypermethrin | pyrethroid | 1995 | fruiting veg., legumes (1/02); sweet corn, leafy veg., leafy Brassica greens, green onion (10/01) |
| Proclaim 5WDG | emamectin benzoate | - | 1999 | fruiting veg., leafy Brassica greens, leafy veg. (7/03) |
| Provado 1.6F | imidacloprid | neonicotinoid | 1994 | blueberries (5/04); root crops (radish, turnip, beet, carrot), peas, strawberry, stone fruit (6/03); beans (6/01) |
| Savey 50DF | hexythiazox | - | 1994 | brambles (4/01) |
| SpinTor 2SC | spinosad | spinosyn | 1998 | brambles, grapes, root crops (radish, turnip, carrot), herbs (10/02); blueberries, beets (1/02); strawberries (9/01); asparagus (7/01) |
| Warrior 1EC | lambda-cyhalothrin | pyrethroid | 1995 | peppers, eggplant, legumes, pome fruit, stone fruit; soil application for sweet corn (2/03) |

[1] IGR = insect growth regulator

Celeste Welty, Extension Entomologist, The Ohio State University 12/04

## Eight Tips for Transitioning to Organic Production

*Source: Elsa Sanchez, Assistant Professor of Horticulture Systems Management, Dept. of Horticulture, Penn State* The transition phase can be difficult for growers transitioning to organic production. During the transition phase, the farming system is undergoing many changes in physical, chemical, and biological properties. This phase is typically accompanied by reduced yields until the farming system reaches a new equilibrium. Further, crops produced during the transition phase cannot be marketed as organic or transition organic. As a result, growers must be prepared to operate with the reduced incomes typically accompanied with reduced yields during this time.

Below are some tips for the transition phase adapted from Zinati (2002). Keep in mind that factors such as location, soil type, pest pressure, and environmental factors can affect the efficacy and implementation of these tips.

- Select land with a high nutrient status, good soil structure, and low pest pressure to transition first. A grower can transition separate fields at different times to organic production. A strategy for transitioning fields, particularly with high pest pressures may be to use a pre-transition phase (See tip 8).

- Include legumes in the crop rotation to supply nitrogen to the soil and reduce pest pressure. Different legumes add different amounts of nitrogen to the soil. The Commercial Production Recommendations Guide for Pennsylvania includes a table with nitrogen values for different legumes used as green manures. Even when the legume is grown as a cash crop, incorporating the plant residue after harvest can add some nitrogen to the soil.

- Start the transition by planting a crop with low nitrogen needs. This strategy will provide more time for adding nitrogen to the soil using other fertility management tools, including green manures, manures, and compost.

- Use green manures, manures, and compost to increase soil organic matter, water infiltration, and reduce soil erosion. Green manures, manures, and compost are already important tools for fertility management in organic systems.

- Alternate cool season crops with warm season crops to break weed cycles. In surveys of organic growers, weeds typically are listed as the biggest pest problem in organic production. This is one strategy for their management.

- Use timely disking and over-seeding as other strategies to manage weeds.

- Experiment on a small scale before adopting a pest management strategy on a large scale. This can reduce risks in the event the pest management strategy fails.

- While a 3-year transition phase is required for certification, a pre-transition phase may help alleviate decreased yields during the transition phase. A pre-transition phase may be useful for fields with high pest pressure. During a pre-transition phase, conventional pest management tactics are used along with organic tactics to reduce pest pressures. Once pest pressures are reduced, organic pest management tactics are used exclusively.