



# Newsletter Extension

## Fruit ICM News

Volume 6, No. 4  
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## Calendar

**March 27, 2002: Fruit Crops Breakfast**, Vanson's Restaurant, U.S. Rte. 20 and St. Rte. 99, Monroeville, OH, 8:00 a.m. Guest presenter will be Dr. Dick Funt, who will discuss cultural practices that enhance fruit IPM.

**March 27, 2002: North-Central Ohio Pruning Clinic**, Skitter Brae, 3222 Laylin Road, Norwalk, OH, 1:00 p.m. This session begins with a potluck lunch at noon. Bring a dish to share; tableware and beverage provided. Pruning demonstration on new and abandoned fruit trees presented by Dr. Dick Funt. Two dollar fee is payable at the door. Bring a pair of pruning shears and loppers. Dress appropriately; workshop will be conducted regardless of the weather. For more information, contact Ohio State University Extension, Huron County at 419-668-8219.

## Orange Rust in Brambles

*Source: Michael A. Ellis, OARDC, The Ohio State University, Department of Plant Pathology, Wooster*

**Question:** Orange rust continues to be a problem with our brambles. What is the latest information on prevention or control? Are there any tolerant cultivars?

**Answer from Dr. Mike Ellis, OSU Plant Pathologist:**

Orange rust will probably always be a serious problem on black raspberry and blackberry; however, we do have some new tools that should be helpful if used within an integrated disease management program for orange rust. Some points to consider are:

- Two fungicides are currently available in Ohio for orange rust control. Nova 40 W has a federal label, and Ferbam 76 WDG has a 24C-registration for use in Ohio. To use Ferbam, you must have a copy of the 24C- label in your possession at the time of use. You can obtain a copy from me (Mike Ellis) or the Ohio Department of Agriculture. If used properly, these materials should be beneficial for control of the disease. I have prepared a packet of information on the suggested use of fungicides for orange rust control. Please contact me and I will send you a copy.
- The old standard disease control recommendations for orange rust control are still very important. Plantings need to be scouted in early spring to detect any systemically infected plants before the orange rust spores are produced. Infected plants must be removed (roots and all) and destroyed. It is also important to eradicate wild black raspberries and blackberries from the area surrounding the field. How far away do you need to remove them? I really do not know, but it is safe to say the farther the better. In some areas it is impossible to remove wild berries. In situations such as this, growers need to consider the feasibility of producing black raspberries or black berries on that spot.
- There are no black raspberry varieties that are resistant to orange rust that I am aware of. If someone knows of some, please let me know and I will share the information. Most blackberry varieties are also susceptible. Many of the varieties that were developed in Arkansas are supposed to have some level of resistance to orange rust, but they may not be as winter hardy as we require in Ohio. These are the varieties with American Indian names such as 'Shawnee,' 'Kiowa,' and 'Choctaw.' Purple raspberries appear to be intermediate in susceptibility. They are not immune to the disease, but they don't seem to get it as bad as black raspberry. Red raspberries do not get orange rust, and they may be an alternative in locations where black raspberries cannot be grown due to orange rust. Hopefully, new black raspberry varieties adapted to Ohio with orange rust resistance will be released from various breeding programs in the future.

To obtain a copy of the information I have prepared for orange rust control, contact Mike Ellis at 330-263-3849 or e-mail: [ellis.7@osu.edu](mailto:ellis.7@osu.edu).

## **Using Fungicides for Control of Anthracnose Fruit Rot on Strawberry in Ohio**

*Source: Michael A. Ellis, OARDC, The Ohio State University, Department of Plant Pathology, Wooster*

The incidence of Anthracnose fruit rot on strawberry, caused by the fungus *Colletotrichum acutatum*, appears to be increasing in many plantings across the Midwest. I recently spoke at the Wisconsin berry growers annual conference, and was surprised to hear that several growers had severe anthracnose

outbreaks in northern Wisconsin. Anthracnose is generally considered as a warm weather or "southern" disease. Although anthracnose is not common in most Ohio plantings, when it does occur, it is generally devastating. Of special concern is the increased interest in planting berries on plastic. The disease can spread more quickly on plastic, and some of the varieties used in these plantings (such as 'Chandler') are very susceptible to anthracnose.

The disease is favored by warm temperatures and wet weather. When I see temperatures approaching 80F and above during bloom through harvest, I think "anthracnose," especially if the weather is wet.

The following information is taken from the December 2001 issue of *Berry Times*. It is a newsletter published by the University of Florida, Gulf Coast Research and Education Center at Dover, Florida. Anthracnose is a very serious disease of strawberry in Florida. The newsletter contains some good information related to the introduction and spread of the disease as well as ideas on chemical control.

"Mild to warm weather combined with wet conditions favor the development and spread of anthracnose. The pathogen is most likely introduced into a field on infected transplants, having colonized plants in the nursery, although it can also be moved by contaminated equipment and field workers. The pathogen appears to spread throughout a field by first infecting the foliage of the plant without causing symptoms. The fungus then colonizes and sporulates on this foliage as it dies, and the spores (conidia) are splash dispersed or moved by harvesting operations to flowers and fruit where they cause anthracnose.

"The best way to control anthracnose fruit rot is to prevent the introduction of the pathogen into the field by using pathogen-free transplants. Anthracnose resistant cultivars like 'Sweet Charlie' (and possibly 'Earlibrite') are extremely effective at controlling the disease. Chemical control relies upon preventative applications of a protective fungicide like Captan or Thiram, although Captan appears to be slightly more effective. These regular (weekly) applications prevent or reduce pathogen colonization of the plant and prevent fruit infection. In Florida, epidemics of anthracnose fruit rot typically develop as the weather warms in mid-to-late January, and become serious in February and March. To prevent epidemics of anthracnose in Florida, we recommend supplementing the regular fungicide program with applications of Quadris 2.08F fungicide (azoxystrobin) from late January to March, or when anthracnose fruit rot is observed. Alternate applications of Quadris with Captan or Thiram on a weekly schedule so that Quadris is applied every 14 days. Benzimidazole fungicides like Benlate or Topsin-M are not effective for controlling anthracnose fruit rot."

For Ohio growers that do not have a problem with anthracnose, the standard fungicide program is to apply fungicides during bloom for control of *Botrytis* (gray mold). Very few additional fungicide applications are required. When anthracnose comes into the picture, the fungicide program needs to be increased.

Growers that have had problems with anthracnose fruit rot (especially growers using plastic culture) should consider a fungicide spray program for anthracnose control. Unfortunately, resistance to anthracnose is not available in most of our "Northern" varieties. 'Delmarvel' should be suitable for production in Ohio and has been reported to have good resistance to anthracnose. Prior to the registration of Quadris (azoxystrobin) fungicide, Captan was the main fungicide used for anthracnose control. Quadris provides a higher level of disease control than Captan, and if used properly, should provide a better level of anthracnose control.

The following are my thoughts on a fungicide program for anthracnose control in plantings where the disease is a problem or a high potential threat.

## Suggested Guidelines for an Anthracnose Fungicide Program

Fungicide and (Rate/A)	Comments and (Timing)
Captan 50W (6lb) or Captec 4L (3qt)	When growth starts in the spring through initiation of bloom (7-day interval).
<b>A tank mix containing one of the following products:</b> Topsin-M 70WSB (1lb) Elevate 50WG (1-1.5 lb) Switch 62.5WG (11-14oz) Quadris 2.08F (15oz) <b>plus one of the following products:</b> Captan 50W (4-6lb) Captec 4L (2-3qt)	During bloom (primarily for Botrytis control). Captan and Quadris should aid in preventing anthracnose build up on foliage during this period. Quadris will also provide some level of Botrytis control. Switch is highly effective against Botrytis and has been reported to have good activity against anthracnose. Topsin-M and Elevate have no activity against anthracnose; however, tank mixing Topsin-M and Elevate with Captan should aid in reducing the buildup of anthracnose during this period (7-day interval).
Captan 50W (4-6lb) or Captec 4L (2-3qt) <b>plus or alternated with:</b> Quadris 2.08F (15oz)	End of bloom (green fruit present) through harvest. No more than two sequential sprays of Quadris can be made without alternating to another fungicide, and no more than 4 applications of Quadris can be made per acre per year. Fungicides should be applied on a 7-day interval. Quadris incorporated into every other spray would be applied on a 14-day interval.

The extensive use of Captan in this program could result in problems with visible residues on fruit. This needs to be considered, but under heavy disease pressure for anthracnose this high level of Captan usage is probably required. The Captec 4L (flowable) may result in less visible residue than the Captan 50W (wettable powder). Alternating Captan with Quadris rather than combining Quadris with Captan in every other spray should be helpful in reducing visible residues. The use of Quadris alone in the last spray or two before harvest should aid greatly in reducing visible residues.

In summary, if anthracnose is not a problem, growers should maintain their current disease management program. If anthracnose is a problem, growers can consider the suggestions presented here. **Remember**, these are only suggested guidelines for an anthracnose control program. It is always the grower's responsibility to read and understand the label. For the most current pesticide recommendations in Ohio, growers are referred to Bulletin 506-B *Ohio Commercial Small Fruit and Grape Spray Guide*.

If growers have questions regarding the information covered here, they should contact Mike Ellis at 330-

263-3849 or e-mail: [ellis.7@osu.edu](mailto:ellis.7@osu.edu).

## New Miticide Registered

*Source: Celeste Welty, OSU Extension Entomologist*

Acramite was registered for use on fruit crops in February 2002. Acramite is a general use product (not restricted) made by Crompton/Uniroyal with the active ingredient bifenazate. Bifenazate is also the AI in Floramite which is used in greenhouses. Acramite can be used on apple and pear (7-day pre-harvest interval), plum and peach (3-day PHI), grape (14-day PHI), and strawberry (1-day PHI). The re-entry interval is 12 hours. Acramite kills nymphs and adults of European red mite and two-spotted spider mite but does not kill apple rust mite or predatory mites. Acramite is formulated as a 50WS, which is powder in water soluble bags. Acramite is used at 0.75 to 1 lb per acre. The 0.75 lb rate is adequate for two-spotted spider mite control while the 1 lb rate is needed for European red mite control. Acramite acts by contact and residual action. On apple, Acramite is best used as a summer miticide after mites exceed threshold. For best results, it is important to get good coverage of Acramite in the crop canopy; the minimum spray volume needed is 50 gallons per acre but the manufacturer strongly recommends a spray volume of 75 gallons per acre. Acramite works best when applied with a surfactant. Evaluation of mite control by Acramite should be delayed until 4 days after application because the mites are slow to die from this pesticide.

## Apple Research Cooperators Needed

*Source: Celeste Welty, OSU Extension Entomologist*

Apple growers who have trouble managing European red mite are invited to volunteer a block to be used in one of two biological control projects this summer. This is a chance for orchards that have lacked natural predators to get a predator population started. These projects involve two species of predatory mites that have shown promise for European red mite control in research orchards at Columbus for the past 5 years. For both projects we need commercial apple blocks that have had infestations of European red mites in most years so that miticide has been used in most years. The goal is to get predators established so that miticides are no longer needed. These blocks are most likely to be Red Delicious but they can be other cultivars. We will seed 5 trees in each block with predatory mites taken from research orchards in Columbus. We will sample leaves once per month from the 5 seeded trees plus an additional 5 trees that were not seeded with predatory mites, to see if the predator population becomes established and spreads throughout the orchard. We hope to see establishment but not much spread the first year, and more spread in the second year.

One project is focused on the yellow predatory mite *Zetzellia mali* (family Stigmaeidae). For the *Zetzellia* project, we need 3 commercial blocks that will be seeded at bloom and in mid-summer. The requirement for these blocks is that 4 specific pesticides are not used: Thiodan, Pyramite, Sulfur, and Lime-Sulfur. *Zetzellia* can be found naturally in Ohio orchards. This species was absent from most Ohio orchards surveyed in 1992 but seems to be building up in orchards where Thiodan and Pyramite have not been used. *Zetzellia* is a slow-moving predator that spends most of its time hiding under the midrib of leaves, but it is very effective at eating eggs of European red mite. The other project is focused on the

white predatory mite *Typhlodromus pyri* (family Phytoseiidae). For the pyri project, we need 3 commercial blocks that will be seeded with pyri at early bloom. The requirement for these blocks is that 6 specific pesticides are not used: Dimethoate, Lannate, Vydate, Carzol, Sulfur, and Lime-Sulfur. *T. pyri* does not occur naturally in Ohio orchards as far as we know, but it does occur in New York and Canada as well as in Europe and New Zealand. It has been established and is spreading at two Ohio orchards, one seeded in 1997 and one seeded in 1999. This species is a fast-moving species that feeds on all stages of spider mites. Growers who would like to be part of either of these projects should contact Celeste Welty soon by e-mail [welty.1@osu.edu](mailto:welty.1@osu.edu) or by US mail

OSU Extension Entomology Bldg.,  
1991 Kenny Rd,  
Columbus OH 43210-1000)  
or by phone (614-292-2803) or by fax (614-292-9783).

## SpinTor Insecticide for Strawberries

*Source: Celeste Welty, OSU Extension Entomologist*

A supplemental label for SpinTor 2SC that allows use on strawberries was issued in September 2001. Target pests are caterpillars, including armyworms and strawberry leafroller, and thrips. In Ohio strawberries we do not normally have much trouble with caterpillars, but it will be helpful having a new alternative for thrips control. SpinTor should be applied at 4 to 6 fluid ounces per acre. It has a 1-day pre-harvest interval, a 4-hour re-entry interval, and a limit of 5 applications per year. SpinTor contains the active ingredient spinosad and is a general-use (not restricted-use) product. It is made by Dow AgroSciences.

## Congratulations to Joe Burnham

*Source: Peg Caudill, Fruit Growers Marketing Association as she presented the Distinguished Service award at this year's Fruit Congress awards breakfast.*

"This year's Ohio Fruit Growers Society (OFGS) distinguished service awardee has deep roots in Erie County. The home farm was an original Firelands Land Grant for those in Connecticut whose homes were burned and destroyed during the Revolutionary War. His father had the farm operated as a tenant farm while he worked in Cleveland but had a keen interest in the orchard, especially growing peaches. This year's recipient worked on the farm as a teenager during his high school years. He went on to attend Ohio State, graduated in 1961, and returned home to operate this 5<sup>th</sup> generation farm.

"Today he, along with his wife and son, operates a total of 762 acres, consisting of 180 acres of apples, 32 acres of peaches, and 550 acres of small grain crops. Their apple and peach crops are marketed through a farm retail market, pick-your-own, and wholesale through Fruit Growers Marketing Association (FGMA). He is a quality minded grower and has taken steps to assure quality throughout their operation with such things as modern varieties on a vast assortment of training systems, the only packing line in Ohio with a color sorter, and a modern cider operation with a pasteurizer. His success can be attributed to the fact that he's not afraid to take a chance and has kept up with the changes in this

industry.

"This year's honoree has devoted his life to the fruit growing industry, his community, and his family. He has served on numerous OFGS committees and was president in 1987. He served on the International Dwarf Tree Board from 1995-2001. He has been on the board of directors of FGMA since 1975 and currently is president of that board. He has served on his local school board and was president of the board in 1987. He has been on the Berlin Township Zoning Board for many years, is a Farm Bureau member, and participates in a local council. He attends the First Congregational Church in Berlin Heights and has served in numerous capacities.

"In his spare time he plays with his huge collection of toy tractors. He also collects old farm tractors which I'm told are the wrong color (I'm told green is king, but I may have been brainwashed). He enjoys snowmobiling and spending time in the north woods of Michigan with his lovely wife, Martha, in their recently completed log house. He and Martha are the proud parents of three children, Jennifer, Julia, and Joe IV. It is my humble honor to present this year's OFGS Distinguished Service Award to Joseph P. Burnham, Sr.

## Pruning Brambles

*Source: Ray R. Rothenberger, University of Missouri, Columbia, Agricultural Publication G6000, <http://muextension.missouri.edu/xplor/agguides/hort/g06000.htm>) as printed in Massachusetts Berry Notes, February 2002, Vol. 14, No. 2*

### Pruning Black & Purple Raspberries

Raspberries produce fruit on 2-year-old canes, which die after the crop has matured. The pruning of black and purple raspberries consists of:

- Tipping the new canes when they reach a height of 18 to 20 inches, thus forming a branched cane that is capable of producing more fruit than an unbranched cane. Branched canes are also more able to support the crop off the ground than unbranched canes.
- As the buds break in the spring, the branches on the canes should be shortened to 8 to 12 inches (longer if the plant is supported by stakes or a wire trellis).
- After the crop is harvested, the old fruiting canes should be removed at the soil line. (The removal of the old canes as soon as the crop is harvested is a good disease control practice, since it removes an important source of infection.)

### Pruning Red Raspberries

Red raspberries should be allowed to produce long, unbranched canes rather than branched canes like the black and purple varieties. The new canes are, therefore, unpruned during their first season's growth. At the start of the second season, they are topped to a height that will permit them to support themselves and keep the fruit off the ground. If the plants are supported by stakes or a wire trellis, they can be pruned to permit more fruiting wood.

The old canes die after the crop is matured and they should be removed as early as possible in order to remove sources of disease.

## Pruning Upright Blackberries

Standard American varieties of blackberries are usually able to support themselves without stakes or a trellis. Pruning is similar to that of black and purple raspberries, except the canes grow taller. It consists, therefore, of:

- Tipping the new canes at a height of 24 to 30 inches to form branched canes.
- As growth starts, remove all dead and weak canes or branches and head the branches back to a length of 12 to 15 inches or to the degree that the canes can support the expected crop.
- After the crop is harvested, remove the 2-year-old wood to stimulate the new canes and remove sources of diseases.

## Pruning Trailing Blackberries (Dewberries, Boysenberries, etc.)

Trailing blackberries are not grown extensively in Missouri because of a lack of hardiness and their susceptibility to bramble diseases. Like other brambles, they bear fruit primarily on 2-year-old wood. The one-year wood is usually allowed to grow on the ground, where it can be mulched for winter protection. As growth starts in the spring, these canes can be lifted up and tied to a trellis or stakes for fruiting. Weak canes should be removed as well as all dead wood and the stronger canes shortened to fit the trellis or stakes (usually 36 to 40 inches high). After the crop is harvested, the old fruiting wood is removed, while the new wood is permitted to remain on the ground until the next spring.

## Additional Suggestions

- In tipping the new growth of black and purple raspberries and upright blackberries, each cane should have the growing tip pinched out as it reaches the desired height. If several inches of the cane are removed, the side branches are severely stunted.
- Trailing blackberries and red raspberries should be supported by stakes or a wire trellis to produce maximum crops. The same is true of black and purple raspberries, especially for the first crop (2-year-old plants). These will support themselves fairly satisfactorily after the second year.
- All brambles in Missouri are subject to several serious plant diseases that are difficult to control. As a result, the plantings are usually short-lived and require frequent replacement.
- Upright blackberries are frequently affected with a sterility condition in which the plant blossoms normally but produces no fruit. There is no control for this condition, and such plantings should be removed.
- A thorough spray program will assist in producing satisfactory crops of both raspberries and blackberries.

## Blueberry Pruning Tips

*Source: Vernon Grubinger, University of Vermont, Vermont Vegetable and Berry News, February 1, 2002, reporting on presentation by Eric Hanson, Michigan State University, at the NEVBC*

The goal when pruning young blueberry bushes is to encourage vigorous, upright growth by removal of damaged wood, spindly growth, and prostrate branches from the base of the plant. As bushes approach and reach maturity, pruning goals change to managing bush size, shape, and fruiting capacity. Since the most fruitful canes are 4 to 6 years old, some of the oldest canes should be removed regularly (at least



every second year) to stimulate growth of new replacement canes. This keeps the bush in balance where 15 to 20% of the canes are in the young and old categories, and the rest are productive, intermediate-aged canes. It is often difficult to determine how many older canes to remove, and this varies by variety and location, but it is helpful to remember that branches must receive at least 15% of full sun to initiate flower buds. Bushes need to be open enough to allow sufficient light to penetrate to support flower bud and fruit growth well into the canopy. If bushes produce fruit only in the periphery of the canopy, heavier pruning is needed. More aggressive pruning also tends to increase fruit size, which is important for pick-your-own marketing.

## Retraining Grape Vines

*Source: Mark Chien, PennState University, The Grapevine Newsletter, Fall 2001*

Last spring many late season varieties, especially vinifera, were damaged by winter injury. Most of the vines were killed to the ground and threw numerous suckers this year. What a mess! Retraining vines is not a fun job. You have a large root system feeding a few shoots. Talk about out of balance! Those shoots usually grow from here to Tim Buk Tu.

Many of you saved as many suckers as you could stand to look at through the summer. Good idea. Some of you even trained suckers in a fan shape. Also a good idea. However, I still saw plenty of canes that had foot long internodes and 3/4 inch diameter. These are candidates for cold injury and are not the choice fruiting wood for next year.

As you reestablish your trunks, it's essential to pick the best canes when pruning -- for both your new trunks and fruiting arms. May I suggest training two to three trunks this winter? Pick canes that have internodes in the 4-5 inch range and diameter of 3/8 to 1/2 inch. These would be ideal. Search backwards from here. I have been asked if I would prefer thinner canes over the fat bull canes. I think both are at risk, so my conservative nature would lead me to leave both, and see who survives the winter. If you get past bud break and all looks well, I would remove the bull canes. Any small canes you leave should be at least pencil thickness at the tips. If the canes you have selected have well developed lateral, you can already begin to establish spurs if you are cordon training. Cut these back to one or two buds -- use balanced pruning numbers as your guide for a total bud count. As always, try to develop your trunks as straight as possible. Use a training stake and tie the canes at frequent intervals to the stake. Make sure the gap between canes or cordons as they intersect the wire is as small as possible. You want to fill every inch of trellis.

Remove all the excess canes from the base of the vine. You may choose to leave one 2-bud spur to supply replacement wood for the following winter, just in case. It's vitally important to make your cuts close to the trunk or stump. Don't leave a spur or a large nub. Besides looking bad, you'll have suckers sprouting out the next year which are expensive and a hassle to remove, and a huge clump of stubs makes future pruning difficult. Take the time now to cut clean, it will save you time and money later on.

If you have canes that will fill the trellis and the vine is three years or older, I would feel comfortable cropping it this season. If the vine is younger, treat it as you would any young vine by either reducing the crop or removing all of the clusters in the spring. You will be surprised how quickly a reestablished vine will return a full crop.

Do everything possible to prevent cold injury to your vines. That means practicing sound viticulture,

creating a balanced vine. Do not overcrop, overfertilize, or overirrigate. Keep vines healthy and free of disease. Retraining vines is expensive and hard work, but if you practice sound eastern viticulture, you should reduce your chances of needing to retrain vines.

Final thoughts: In my job I get to travel around a lot; it's one of the perks (I think). Over the past two years I have been all around the eastern vineyard area. From Ontario to southern Virginia, there are pockets of great viticulture and the wines that grow from it. But nowhere in the east is there as fine a culture of grape growing as I witnessed on Long Island. High quality viticulture is no longer really a choice on Long Island, it's an imperative brought about by the expectation and necessity of growing expensive, fine wines. This is demanded by wealthy owners who have paid a king's ransom for land and desire a certain lifestyle that emanates from wine. But they also expect to make great wine and have the wisdom to squeeze the quality from the grapes. My hat is off to the dedicated individuals in the production side of the industry who do such a great job and to my colleague, Alice Wise, who gives them the information they need to grow great grapes. I urge everyone in the Pennsylvania wine and vineyard community to visit Long Island sometime in the near future. Just by driving around, you will learn. Taste the wine, and you will be inspired. It's where we need to go.

## **Cards for Bob Bowers, Jr.**

We have recently been informed of the serious injuries suffered by Bob Bowers, Jr. when he was thrown from a pruning tower. The Bowers' orchard, known as Laurelville Fruit Company, is located in Hocking County.

Bob is presently recovering from a wrist fractured, facial lacerations, and multiple broken ribs and bruised lungs, which has hindered his breathing capacity. He is currently being cared for in the trauma unit, but as he improves, Bob will greatly appreciate cards sent to him at Grant Medical Center, 111 S. Grant Avenue, Columbus, OH 43215.

## **Tribute to Frank Garwood**

We are saddened by the death of Frank Garwood, 74, of Berlin Township, Ohio. Frank was the father of Bonnie Malone of Malone Orchards in Berlin Township.

Garwood was a farmer, a former director of Huron County Landmark, served on the Berlin-Milan Board of Education from 1961 to 1983, and was a Berlin Township Trustee from 1983 to 2000. He was a member and past president of the Erie County Farm Bureau.

He is survived by his wife of 54 years, Doris; sons James and Jerry; daughters Susan and Bonnie; brother, Carey of Sarasota, Florida; and 15 grandchildren.

Memorial contributions may be made to the Berlin Township Fire Department or to Lakeview United Methodist Church, 6 South Street, Berlin Heights, OH 44814.



Cleveland	2.43	2.19	4.64	4.23	42.2	35.0	25.8	19.3	34.0	27.1
Columbus	1.67	2.24	3.59	4.42	45.4	38.0	26.4	21.2	35.9	29.6
Dayton	1.31	2.17	2.83	4.30	44.0	38.0	25.3	20.8	34.7	29.4
Kingsville	2.17	1.80	4.92	3.80	41.9	35.1	25.1	18.9	33.1	27.0
Mansfield	1.71	2.02	3.86	4.00	40.9	35.0	23.6	18.9	32.3	26.9
Norwalk	3.13	1.73	5.32	3.63	na	34.6	na	17.1	na	25.9
Piketon	0.73	2.10	3.15	5.20	48.8	42.2	24.2	23.2	36.3	32.7
Toledo	1.67	1.73	4.34	3.48	43.7	33.4	26.1	17.0	34.9	25.2
Wooster	1.97	1.97	4.79	3.92	44.0	36.9	23.9	19.1	33.7	28.0
Youngstown	2.20	2.12	4.64	4.25	41.6	34.0	23.6	17.9	32.6	25.9

Temperatures in degrees F, Precipitation in inches

*Table created by Ted W. Gastier, OSU Extension from National Weather Service, OARDC & Local Data*

## Ohio Apple Marketing Program

**Ohio Apple Marketing Program  
P.O. Box 479  
Columbus, OH 43216  
614-249-2400 614-249-2200 - FAX**

[growohio@ofbf.org](mailto:growohio@ofbf.org)  
<http://www.ohioapples.org>

*Welcome to Our Apple Farm* Coloring Book by Pyramid Publishing  
2002 Special Order Form for Ohio Apple Growers and Marketers

The Ohio Apple Marketing Program is ordering a special version of this popular 32-page coloring book with the message, "Ohio Apples - Favored for Flavor" and the Ohio Apple web address "www.ohioapples.org", printed on the back cover.

Orders must be prepaid by Friday, March 22, 2002 to the Ohio Apple Marketing Program and mailed to the address above. Orders will be shipped by late April or early May unless a later date is specified.

### **Minimum order:**

One case, which includes 96 coloring books. Coloring book cost is \$28.80/case (unit price = 30 cents). Shipping will be billed by OAMP after delivery.

### **Order by pallet:**

One pallet = 50 cases = 4,800 coloring books for a cost of \$1,296.00 (unit price = 27 cents) and no shipping will be charged. Pallet orders will be shipped direct from Pyramid Publishing.

Customer Information:

Company Name \_\_\_\_\_ Ship To \_\_\_\_\_

Address \_\_\_\_\_ Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_ City/State/Zip \_\_\_\_\_

Contact person/phone \_\_\_\_\_ Contact person/phone \_\_\_\_\_

\_\_\_\_\_ # cases @ \$28.80 = \_\_\_\_\_

\_\_\_\_\_ # pallets @ \$1,296.00 = \_\_\_\_\_

Make check payable to Ohio Apple Marketing Program and mail to address above by 3/22/02.

\_\_\_\_\_ Please ship approximately \_\_\_\_\_ (date) instead of late April / early May.

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The Ohio Fruit ICM News is edited by:

Ted W. Gastier  
Extension Agent, Agriculture  
Tree Fruit Team Coordinator  
Ohio State University Extension Huron County  
180 Milan Avenue  
Norwalk, OH 44857  
Phone: (419)668-8210  
FAX: (419)663-4233  
E-mail: [gastier.1@osu.edu](mailto:gastier.1@osu.edu)

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Information presented above and where trade names are used, they are supplied with the understanding that no discrimination is intended and no endorsement by Ohio State University Extension is implied. Although every attempt is made to produce information that is complete, timely, and accurate, the pesticide user bears responsibility of consulting the pesticide label and adhering to those directions.

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Keith L. Smith, Associate Vice President for Ag. Adm. and Director, OSU Extension.

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