



# Newsletter Extension

## Fruit ICM News

Volume 7, No. 41  
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## Calendar

**November 13-14: Beginning Commercial Stone Fruit Production for Direct Marketers**, Central Ohio Technical College/OSU Newark Campus. A workshop for persons interested in beginning commercial stone fruit production and marketing; meeting times are 6 to 9 p.m. on November 13 and 8:30 a.m. to 3 p.m. on November 14. Cost of the workshop is \$50 for the first person and \$12 for each additional person. Included in the cost is a resource notebook, snacks, and noon meal. Enrollment is limited to 50 individuals. Contact Licking County Extension at 740-349-6900 for additional information.

**November 20, 2003: Food Safety Workshop II- Managing Liability for Fruit and Vegetable Growers**, Marriott North Hotel, Columbus, Ohio. Sponsored by the Ohio Specialty Crop Food Safety Initiative. The workshop will focus on managing liability for fruit and vegetable growers, packers, and shippers to increase the marketability and safety of their produce. Contact Jennifer Hungerford at 614-246-8289, [maahs@ofbf.org](mailto:maahs@ofbf.org), or <http://www.midamservices.org>, click "projects."

**January 21-23, 2004: Ohio Fruit & Vegetable Growers Congress, Ohio Roadside Marketing Conference, & Ohio Christmas Tree Association Winter Meeting**, SeaGate Convention Centre and Radisson Hotel, 410 Jefferson Avenue, Toledo. See following article.

**February 21-22: The North American Bramble Growers Association National Meeting**, Tampa, FL. See the web site <http://www.nabga> for details.

**[Fruit & Vegetable Growers Congress Direct Agricultural Marketing Christmas Tree Association Meeting](#)**

The Ohio Fruit Growers Society (OFGS), the Ohio Vegetable and Potato Growers Association (OVPGA), Direct Agricultural Marketing Association (DAMA), Ohio Christmas Tree Association (OCTA) and The Ohio State University (OSU) are once again sponsoring the combined conference in 2004. The conference provides a forum for allied industry representatives and university researchers to interact with growers and marketers in over 125 education sessions and an outstanding trade show.

Jane Eckert, Eckert AgriMarketing, kicks off the conference with a one-day "Developing a Farm Market Plan Workshop" on Wednesday. This workshop is designed to develop a marketing plan, strategies, and budgets and discuss customer service and research. Also on Wednesday are many excellent general sessions. These presentations begin with their customary safety session that qualifies for the Ohio Farm Bureau Workers' Compensation Program required safety training.

Sarah L. Fogleman of Kansas State University will have several presentations about workplace communications and creative employee compensation. An applied value-added session has Don Nugent of Graceland Fruit Farm, Frankfort, Michigan discussing how he grew his fruit production into an international business that is now the largest processor of infused fruit in the world. Wednesday's final session presents Christa Quinn, a weather caster for WTVG-ABC 13, who will describe weather forecasting technologies and how forecasts are developed.

The trade show will open Wednesday at 1:00 p.m. with a reception, and prize drawings begin at 4:00 p.m. On Thursday the trade show will be open from 8:00 a.m. to 5:30 p.m., with free morning coffee and pastry. An ice cream social is planned for 4:00 p.m. Friday's trade show hours will be 8:30 a.m. to 1:30 p.m., with free morning coffee and pastry once again. There will be educational sessions presented at the trade show throughout the conference, with topics covering food safety, retail market sales, production practices, environmental self-assessment, research needs, and more. An Exhibitors' Breakfast will be served Thursday at 7:00 a.m. in the trade show.

Ohio State University education advisors have once again assembled a superb educational program for growers of tree fruit (apples, cider, and stone fruit), processing vegetables, Christmas trees, small fruit, potatoes, greenhouse vegetables and hydroponics, truck crops, and direct marketing. Session topics and schedules are found on the association web sites at <http://www.ohiovegetables.org> or <http://www.ohiofruit.org>.

Thursday evening's special events begin with a Dave Ferree Recognition Dinner at the Radisson. Following the dinner, the associations are introducing a Presidents' Networking Reception for growers, marketers, speakers, educators, and trade show representatives. Concurrent with the reception will be a card party for informal socializing. Other special events for the conference include the Friday Awards Breakfast, where the associations will present their Distinguished Service Awards. In addition, Cider Contest Blue Ribbon Awards will be announced and OVPGA and OFGS scholarship recipients will be recognized. Association annual meetings will follow the breakfast.

The 2004 conference will be another outstanding opportunity for industry interaction. Growers and marketers should check out the pre-registration savings and register today. Exhibit space, sponsorships, and show special opportunities are still available for companies wishing quality access to growers and marketers. Contact Rachel Rittinger at 614-246-8292 or [growohio@ofbf.org](mailto:growohio@ofbf.org) or access our web site listed above for more information on exhibiting or becoming a sponsor.

For more information, contact Tom Sachs at 614-246-8290, email: [tsachs@ofbf.org](mailto:tsachs@ofbf.org) or Rachel Rittinger at 614-246-8292, email: [rittinger@ofbf.org](mailto:rittinger@ofbf.org), or Two Nationwide Plaza, P.O. Box 182383, Columbus, Ohio 43218-2383.

# Pesticide Regulations

*Source: Farm Chemicals Handbook*

Various Federal and State laws, regulations, and policies governing the pesticide industry impact the manufacturer, importer, formulator, distributor, dealer/applicator, and farmer. Violations of any Federal or State regulations regarding registration, use, transport, export, worker safety, hazard communication, or spill or disposal of pesticides can result in fines and/or penalties.

**Prior to September 11, 2001**, the following Regulations and Acts were part of governmental involvement with pesticides:

- Agricultural Biotechnology Regulations: Microbial pesticides are regulated by EPA. APHIS (Animal and Plant Health Inspection Service) regulates microbial pesticides depending on their source and potential to be a pest. The FDA (Food & Drug Administration) is responsible for food safety. That responsibility now includes genetically modified organisms (GMOs) created with pest resistance for insects and/or diseases or tolerance to certain herbicides.
- Clean Air Act sets standards of emission performance of fertilizer and pesticide plants, and sets standards to prevent, detect, and respond to accidental releases including anhydrous ammonia. Also has the potential to regulate spray drift.
- Clean Water Act has as its objectives the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters through the prohibition of the discharge of toxic pollutants into the navigable waters of the United States.
- Comprehensive Environmental Response Compensation and Liability Act gave the EPA authority to enforce or carry out cleanups of releases or threatened releases of "Hazardous Substances," pollutants, and contaminants resulting from chemical spills when there is an imminent and substantial danger to public health.
- Coastal Zone Management Act affects farm chemical users by concentration on non-point source pollution control for pesticides and fertilizers.
- Commercial Motor Vehicle Safety Act provided for the establishment the Commercial Driver's License (CDL). Some pesticide industry drivers are required to pass various tests for the CDL and certain endorsements.
- Endangered Species Act was established to prevent harm to endangered species from the use of pesticides.
- Federal Food, Drug, and Cosmetic Act (FFDCA) is administered by the FDA, which maintains responsibility for monitoring pesticide residues and enforcing the tolerances set by the EPA. The 1996 Food Quality Protection Act (FQPA) amended FFDCA and FIFRA (Federal Insecticide, Fungicide and Rodenticide Act) in the way that pesticides are regulated.
- Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) has long been responsible for the regulation of distribution, sale, and use of pesticides.
- Hazardous Materials Transportation Act (as amended by: Hazardous Materials Transportation Uniform Safety Act (HMTUSA) of 1990) regulates the shipment of hazardous materials as well as requirements for anhydrous nurse tanks.
- National Environmental Policy Act (NEPA) required that all Federal agencies file an environmental impact statement for any actions which significantly affect the quality of the environment. Courts have generally supported the concept that FIFRA is an adequate substitute for NEPA.
- Occupational Safety and Health Act (OSHA) was established "... to assure as far as possible every working man and women in the nation safe and healthful working conditions and to preserve our human resources..." The OSHA Hazard Communication Standard ensures that the hazards of all

chemicals produced or imported are evaluated and that information concerning their hazards is transmitted to employers and employees. This is the so-called "Right-To-Know" law. The hazard communication program includes labels, Material Safety Data Sheets (MSDSs), training, and access to written records.

- Resource Conservation and Recovery Act regulates the generation, treatment, storage, transportation, and disposal of solid wastes. Examples of pesticide wastes are discarded (unused) pesticides considered as hazardous, discarded residue or rinsate, or pesticide residues consisting of contaminated soil, water, or other debris resulting from the cleanup of a spilled pesticide.
- Safe Drinking Water Act sets national standards for levels of contamination found in drinking water.
- Superfund Amendments and Reauthorization Act (SARA) amended the Comprehensive Environmental Response Compensation and Liability Act. One part of the new SARA provisions was Title III, the Emergency Planning and Community Right-To-Know Act of 1986. This Act established new lists of "Extremely Hazardous Substances" and "Toxic Chemicals" for new notification and reporting requirements.
- Toxic Substances Control Act was enacted to ensure that data are developed on the effects of chemical substances on health and the environment; regulate the production, distribution, use, and disposal of those chemicals deemed to present an unreasonable risk of injury to health or the environment; and provide authority to the EPA to take action on those chemicals which present an "imminent hazard."
- Various U.S. Department of Agriculture Farm Bills have included various programs promoting soil and water conservation. Pesticide record keeping requirements for dealer/applicators and farmers were finalized in 1993 as a provision of the 1990 Farm Bill.

*Sources for the following include: The Ohio Emergency Management Agency (EMA); Joanne Kick-Raack, OSU Pesticide Applicator Training Coordinator; and John Wargowsky, Ohio Farm Bureau Director of Labor Services.*

**Since September 11, 2001** the Patriot Act has joined all of the above Regulations and Acts. Some of the provisions of the Patriot Act which could affect the way that farmers do business include:

- "State Homeland Security Assessment and Strategy Program" to give particular attention to the risk and vulnerability of agriculture to Weapons of Mass Destruction (WMD) attacks and government's response capability in that area.
- Tighten regulations involving the movement of fertilizer and pesticides from dealers to farm by farmers or their employees.
- Regulating farm markets to assure food safety. Here are comments from John Wargowsky:

The U.S. Food and Drug Administration (FDA) announced a proposed regulation that would require domestic and foreign food facilities that manufacture, process, pack, or hold food for human or animal consumption in the United States to register with the agency by December 12, 2003. The proposal is one of the keystones in implementing the Public Health Security and Bioterrorism Preparedness and Response Act of 2002. This act provided FDA new authority in protecting the nation's food supply against terrorist acts and other threats.

Under the proposal, all domestic food facilities would be required to register whether or not food from the facility enters interstate commerce. Except for specific exemptions, the new regulation would apply to all facilities for all foods and animal feed products regulated by FDA, including dietary supplements, infant formula, beverages (including alcoholic beverages), and food additives.

The proposed regulation would require the owner, operator, or agent in charge of a domestic or foreign

facility to submit a registration to FDA, including the name and address of each facility at which, and trade names under which, the registrant conducts business, and the categories of food the facility handles. For a foreign facility, the registration must include the name of the U.S. agent for the facility. The U.S. agent may register a foreign facility if it is authorized to do so by the facility. The proposal also would require facilities to update any changes to the information previously submitted within 30 days of the change.

The proposal specifically excludes farms, restaurants, other retail food establishments, nonprofit food establishments in which food is prepared for or served directly to the consumer, certain fishing vessels, and facilities (such as meat and poultry slaughterhouses) that are regulated exclusively by the U.S. Department of Agriculture.

The law requires FDA to notify the registrant of receipt of registration and to assign each facility a unique registration number. The registration may be electronic, via the Internet, or by paper through surface mail. FDA strongly encourages electronic registration, however, as the Internet system FDA plans will be able to accept electronic registration from anywhere in the world 24 hours a day, 7 days a week. A registering facility also would receive confirmation of electronic registration and its registration number instantaneously once all the required fields on the registration screen are completed. There is no fee associated with registration.

Under the Bioterrorism Act, facilities must register by December 12, 2003, even if FDA has not issued final regulations. In the proposed rule, FDA offered the public 60 days to comment on the proposed rule. FDA planned to issue a final rule by October 12, 2003, after considering the comments it receives. FDA also planned to have its registration system operational by October 12, 2003, to accept early registrations. Under the Bioterrorism Act, it is a prohibited act for a facility to not be registered by December 12, 2003.

If a firm does not register by the deadline, the United States can bring a civil action in federal court to enjoin persons who commit a prohibited act; or it can bring a criminal action in federal court to prosecute persons who commit a prohibited act. The Bioterrorism Act also requires food from unregistered foreign facilities to be held at the port of entry unless the FDA directs that the food be moved to a secure location.

Please note that the farm exemption noted in this article is not yet well defined. Ohio Farm Bureau is communicating with FDA to gain a proper definition of this farm and will work with the Ohio Fruit Growers Society and Ohio Vegetable and Potato Growers Association. We plan to post updated information at <http://www.ohiofruit.org/> and <http://www.ohiovegetables.org/>. More information is also available at: <http://www.fda.gov/oc/bioterrorism/bioact.html>. Stay tuned for further comments and clarifications for these last three measures in this newsletter.

## **Strawberry Winter Mulching**

*Patrick Byers, University of Missouri via UMass Berry Notes, October 15, 2003*

Fall is here, and an important fall job in a strawberry planting is mulching. While commercial strawberry production extends into colder climates, such as the northern US and Canada, the strawberry plant is actually vulnerable to cold injury at relatively warm temperatures. The key to consistent production in cold climates is mulching. Research in Ohio and elsewhere has shown that the crowns of non-mulched strawberry plants can suffer damage after winter temperatures below 12°F. Unprotected strawberry plants are also vulnerable to desiccation damage from drying winter winds. The disease black root rot is

more severe in non-mulched plantings.

Winter mulch offers several benefits for a strawberry planting. The mulch protects plants from severe cold. Desiccation is a problem, especially after winter temperature fluctuations, and mulch will protect plants from drying out. Mulches will also protect plants from injury caused by soil heaving, which results from freezing/ thawing cycles during the winter.

When should the strawberry grower plan to apply mulch? Research from Illinois suggests that a good guide is to apply mulch after three consecutive days with a soil temperature of 40°F. This soil temperature usually occurs after several frosts, and the plants have slowed growth in response to cooler temperatures. Apply mulches before the soil freezes. In Missouri, mulches are usually applied in late November.

Production systems for strawberries in Missouri are undergoing changes that affect mulching. Plants on raised beds, for example, are more vulnerable to cold injury than plants in level plantings. Annual production systems, such as fall planted plasticulture, may utilize less hardy or disease susceptible cultivars. As we will see, mulching practices must adapt to these new systems.

The traditional mulching material for strawberries in Missouri is straw. Straws from wheat, rice, oats, or Sudan grass work well. Straws coarser than Sudan grass are not recommended. A good straw source will deliver straw that is clean, free from weed seed, and contains a minimum of grain seed. Strawberry growers can produce their own mulch, often cutting the straw before the grain seed is viable. Store straw for mulching in a dry area. Occasionally, grain seedlings can become a weed problem the following spring; an application of sethoxydim will give good control.

A traditional, level matted row planting will require 2.5 to 3 tons of straw per acre for a 2 to 3 inch deep mulch. This equates to about 300 small bales of average weight. Raised bed plantings may require twice this amount for adequate coverage. Smaller plantings may be mulched by hand. Larger plantings often use bale choppers to break up the straw bales and distribute the straw over the bed. Choppers are available for both small bales and large round bales. Plasticulture plantings of cultivars such as Chandler are usually not mulched with straw.

A recent development of great interest to strawberry producers concerns floating row covers. These covers are composed of a plastic such as polypropylene, spun-bonded into a fabric that is permeable to light, air, and water.

Research and growers' experiences demonstrate that these covers are useful for winter protection of strawberry plantings. While floating row covers are available in several weights, only the heavier weights are recommended for winter protection. At present, a widely available weight recommended for winter strawberry protection is 1.25 oz/yd<sup>2</sup> (42 g/m<sup>2</sup>). A variety of fabric widths is available, with common widths ranging from 15 feet to 60 feet. This material currently costs about 4 cents per square foot. With proper care, this heavier fabric should last 3-4 seasons.

Floating row covers are widely used to protect annual plasticulture plantings. Row covers are best applied on still days. Be sure to line up sufficient labor to place the row cover. If possible, use wider widths for more efficient application. The row cover edges must be anchored, as must areas where two covers overlap. A variety of methods are used to anchor the edges. Edges may be anchored with posts, rocks, or tube sand. The edges may also be covered with soil.

Once the mulch is in place, the job is not done for the winter. Monitor the planting frequently. If straw

has blown off areas, replace at once. Watch the edges of row covers, and adjust anchors if needed. Repair any rips or holes as soon as possible. (*Original Source: The Berry Basket, Vol. 4, No. 3, Fall 2001*)

## Blueberry pH, pH and pH

*Source: Gary C. Pavlis, Rutgers University, via UMass Berry Notes, October 15, 2003*

Those who know me have heard me say that the three most important things you need to know to grow blueberries are pH, pH and pH. This year I have analyzed blueberry soil samples and come up with a pH range of 2.4 to 8.2. That's right, 2.4 and 8.2. Neither of these was from New Jersey, where blueberries tend to be on low pH soils. However, a 7.2 pH was in New Jersey. The 8.2 soil was due to the use of mushroom soil incorporated into the planting hole. The 2.4 soil, I believe, was due to an extremely large sulfur application. In both cases the plants were still alive! As I have mentioned many times, the optimum range for the pH blueberry soils is 4.5-4.8. When the pH is not in this range, the availability of nutrients is affected, i.e. the plants may take up too much or too little of a particular nutrient.

At first, you might think that the best pH is 6.0 to 7.0 because most nutrients are most available within that range. However, the blueberry is unique and cannot efficiently take up nutrients within that range. Research has shown that iron chlorosis often develops in soils with a pH above 5.2. Iron at high pH's becomes chemically bound and unavailable to the plant. Phosphorus uptake is most efficient in a pH range of 4.0 and 5.0. Nitrogen in the leaves increases as soil pH increases from 4.5 to 5.0 but decreases above 5.0. In soils at a pH of 5.2, nitrogen is converted from the useful acidifying ammonium form to the less useful nitrate form. In soil having a pH below 3.5, aluminum and manganese become very soluble and toxic to the plant. The bottom line: check your pH often, every year on soils that are not naturally around 4.5. If the pH must be lowered, the fall is the best time because it takes months for the pH to drop. An April application will take to late June at best to bring the soil to the optimum range. That's too late and plants will become stunted. (*Original Source: The Blueberry Bulletin, September 16, 2003 Vol. XIX, No. 21*)

## Blueberry Mulching

*Source: George Perry, Penn State Cooperative Extension, via UMass Berry Notes, October 15, 2003*

Mulch plays a very important role in blueberry production in Pennsylvania. The Highbush blueberry plant is grown on upland soils in most locations of Pennsylvania. Highbush blueberry is naturally adapted to a lowland, acid soil, so amendments must be made to the soil for a successful planting on upland locations. Highbush blueberry roots thrive in an open, porous soil which is high in organic matter, well drained, and supplied with adequate moisture. Blueberry roots are in the upper 18 inches of the soil. Upland soils are generally drier, higher pH, and lower organic content than lowland soils. It is important to maintain a constant moisture content near the surface of the soil and optimum soil acidity, one of the most successful ways is using mulch. Annual mulching has been found to reduce weed growth, lower soil temperatures in summer, help maintain uniform soil moisture and develop a better soil structure, prevent heaving and subsequent root injury, control soil erosion, and reduce the costs of cultivation.

The following research material is from *Blueberry Science* by Paul Eck. The favored mulching material is sawdust, preferably a well-composted softwood sawdust (Moore and Pavlis, 1979). Pinebark is also excellent and compacts less than sawdust. Four to six inches of mulch are needed initially, with annual



additions of one inch of sawdust to maintain the depth. If fresh sawdust is used, an additional 50 to 100 percent N may be necessary for the first few years to compensate for increased microbial activity. Well-composted sawdust requires less supplemental nitrogen. Other organic materials that have been used, not as effective as sawdust, include corncobs, straw, and leaves. Manure and stable bedding must be well composted before they are safe to use, and even then are not as desirable as sawdust, since they may increase soil pH.

In a long term experiment on a commercial Highbush blueberry planting in Arkansas, (Moore and Pavlis, 1979) found that plants continuously mulched with sawdust outyielded plants mulched only for the first year, first two years, or first three years after planting. They also observed that straw mulch was effective, but deteriorated more rapidly than sawdust. The incorporation of peat moss in the soil at planting also resulted in higher yields in following years.

In addition to its use as a mulch, composted sawdust has been found beneficial when applied in the planting hole, particularly in conjunction with the mulch (Brooks, 1972).

In these studies fertilizer applications had to be increased threefold to produce vigorous growth. (Cummings, 1981) was able to overcome the harmful effects of high pH by incorporating sawdust into the soil in which Rabbiteye blueberries were grown. Black plastic has been successfully used as a mulching material in establishing plantings (Bell and Kroon, 1979). Care must be taken when fertilizing under black plastic, since fertilizer placed close to the plant crown can cause severe burning. It is probably preferable to work the required fertilizer into the soil before laying the plastic. (Mainland and Lilly, 1984) concluded that black plastic mulch offers a practical method for controlling weeds and encouraging fruiting at an earlier age. They found that a single application of 925 Kg/ha of a 10-10-10 fertilizer incorporated into the soil before laying the plastic provided adequate nutrition for two years, the effective life of the plastic.

A blueberry mulch research plot was conducted over five years by the Extension agent in Southeast Pennsylvania. The plot was replicated three times with three mulches: corn cobs, wood chips, and sawdust. The plot had four cultivars: Bluejay, Bluecrop, Patriot, and Spartan. After five years it was determined there was no significant yield difference. The best mulch of the three is the one you can obtain at the lowest cost.

Remember, **sawdust or wood chips from red maple and beech should not be used.** Sawdust or wood chips from those two trees may injure or retard blueberry plant growth. (*Original Source: Vegetable & Small Fruit Gazette, Vol. 7, No. 5, May 2003*)

## Terminal Market Wholesale Fruit Prices October 22, 2003

Source: Chicago [http://www.ams.usda.gov/mnreports/HX\\_FV010.txt](http://www.ams.usda.gov/mnreports/HX_FV010.txt)

Detroit [http://www.ams.usda.gov/mnreports/DU\\_FV010.txt](http://www.ams.usda.gov/mnreports/DU_FV010.txt)

Pittsburgh [http://www.ams.usda.gov/mnreports/PS\\_FV010.txt](http://www.ams.usda.gov/mnreports/PS_FV010.txt)

### Apples

Cartons cell-pack

U.S. ExFcy Empire

MI 96s 20-20.50

Terminal Market

Detroit



U.S. ExFcy Empire	NY 80s & 100s 24.00	Detroit
U.S. ExFcy McIntosh	MI 96s 20.00	Detroit
U.S. ExFcy McIntosh	NY 80s & 100s 23.00, 120s 20.50-21	Detroit
U.S. ExFcy McIntosh	NY 80s 19.00, 100s 17.50, 120s 16.00	Pittsburgh

Cartons tray-pack

U.S. ExFcy Red Delicious	PA 113s, 125s & 138s 15.00	Pittsburgh
U.S. ExFcy Red Rome	PA 80s 17.00-22.00	Pittsburgh
Comb U.S. ExFcy-U.S. Fcy Red Delicious	WV 88s 21.50 & 100s 20.50	Pittsburgh
	WV 125s & 138s 16.50	Pittsburgh
U.S. Fancy Jonathan	PA 88s 18.00	Pittsburgh

Cartons tray/cellpack

U.S. ExFcy McIntosh	WI 96s 21.00	Chicago
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12 3-lb filmbags

U.S. ExFcy Empire	MI 2 ½" min 11.50- 13.50	Detroit
U.S. ExFcy Gala	MI 2 ½" min 11.50- 14.50	Detroit
U.S. ExFcy Golden Delicious	MI 2 ½" min 11.50- 12.00	Detroit
U.S. ExFcy Idared	MI 2 ½" min 11.50- 12.00	Detroit
U.S. ExFcy Jonathan	MI 2 ½" min 11.50- 13.00	Detroit
U.S. ExFcy McIntosh	MI 2 ½" min 11.50- 12.50	Detroit
U.S. ExFcy McIntosh	NY 2 ¼" min 12.00- 13.75	Pittsburgh
U.S. ExFcy Paula Red	MI 2 ½" min 8.00-8.50	Detroit
U.S. ExFcy Paula Red	MI 2 ½" min 14.50	Pittsburgh
U.S. ExFcy Red Delicious	MI 2 ½" min 11.50- 12.00	Detroit
U.S. ExFcy Rome	MI 2 ½" min 11.50- 12.00	Detroit
U.S. ExFcy Red Rome	PA 2 ½" min 14.50- 15.75	Pittsburgh
Comb U.S. ExFcy-U.S. Fcy Cortland	NY 2 ¼" min 12.50	Pittsburgh

Comb U.S. ExFcy-U.S. Fcy Jonathan	PA 2 ¼" min 15.00	Pittsburgh
Comb U.S. ExFcy-U.S. Fcy Red Delicious	MI 2 ¼" min 16.50	Pittsburgh
U.S. Fcy Gala	MI 2 ¼" min/up 12-13.00	Chicago
U.S. Fcy Gala	MI 2 ¼" min 11.00	Detroit
U.S. Fcy Golden Delicious	IL 2 ¼" min/up 11.00	Chicago
U.S. Fcy Golden Delicious	MI 2 ¼" min/up 12-13.00	Chicago
U.S. Fcy Golden Delicious	MI 2 ¼" min 11.00	Detroit
U.S. Fcy Jonamac	MI 2 ¼" min/up 10.50-11.50	Chicago
U.S. Fcy Jonathan	IL 2 ¼" min/up 10.00	Chicago
U.S. Fcy McIntosh	IL 2 ¼" min/up 14.00	Chicago
U.S. Fcy McIntosh	MI 2 ¼" min/up 10-11.00	Chicago
U.S. Fcy McIntosh	MI 2 ¼" min 11.00	Detroit
U.S. Fcy McIntosh	NY 2 ½" min 12-13.50	Pittsburgh
U.S. Fcy Paula Red	MI 2 ¼" min/up 8.50-10.50	Chicago
U.S. Fcy Royal Gala	MI 2 ¼" min 19.00	Pittsburgh
U.S. Fcy Red Delicious	IL 2 ¼" min/up 11.00	Chicago
U.S. Fcy Red Delicious	MI 2 ¼" min/up 10-12.00	Chicago
U.S. Fcy Red Delicious	MI 2 ¼" min 11.00	Detroit
U.S. Fcy Rome	MI 2 ¼" min/up 10.00	Chicago

Bushel cartons loose

U.S. Fcy Cortland	MI 2 ¾" up 12.00	Detroit
U.S. Fcy Empire	MI 2 ¾" up & 2 ½" up 12.00	Detroit
U.S. Fcy Empire	MI 2 ¼" up 10.00	Detroit
U.S. Fcy Gala	MI 2 ¾" up 12.00	Detroit
U.S. Fcy Golden Delicious	MI 3" min 12.00	Detroit
	MI 2 ¾" up 12.00	Detroit
U.S. Fcy Jonagold	MI 3" min & 2 ¾" up 12.00	Detroit
U.S. McIntosh	MI 3" min 12.00	Detroit
U.S. McIntosh	MI 2 ¾" up min 12.00	Detroit
U.S. McIntosh	MI 2 ½" up min 12.00	Detroit
U.S. Fcy Red Delicious	MI 3" min 12.00	Detroit
U.S. Fcy Red Delicious	MI 2 ¾" up 12.00	Detroit

U.S. Fcy Red Delicious	MI 2 ½" up 12.00	Detroit
U.S. Fcy Red Delicious	MI 2 ¼" up 10.00	Detroit

Bushel cartons loose

No grade marks, No size marks		
Golden Delicious	MI 16.50	Pittsburgh
Red Delicious	MI 16.50	Pittsburgh
Royal Gala	MI 19.00	Pittsburgh

Bins per 5# bag

U.S. ExFcy McIntosh	PA 2 ½" min 1.67	Pittsburgh
U.S. ExFcy Rome	PA 2 ½" min 2.17	Pittsburgh

**Michigan Processing Apple Price**

*Source: The Fruit Growers News*  
<http://www.fruitgrowersnews.com>

The Michigan Processing Apple Growers Marketing Committee has negotiated the following minimum prices for processing apples in Michigan for the 2003-2004 apple crop:

Golden Delicious	(2 ½" up)	\$8.75/cwt
Hard varieties	(2 ½" up including Rome & Empire)	8.25/cwt
Ida Red	(2 ½" up)	9.25/cwt
Jonathan	(2 ½" up)	10.25/cwt
Soft varieties & tablesorts	(2 ½" up)	7.25/cwt
Straight loads of juice apples	(under 2 ½" in Peeler Loads)	4.25/cwt

**Blueberries**

Flats 12 4.4 oz. cups with lids	MI med 17.00	Detroit
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**Grapes**

Cartons 3 8-qt baskets, Concord	PA 21-23.00 mostly 21.00	Pittsburgh
Niagara	PA 21-23.00 mostly 21.00	Pittsburgh

Ctns 16 1-lb cnts with lids,

U.S. One Concord	MI med-lge 16-17.00	Detroit
Ctns 12 1-qt bkts, Concord	MI 16.00-16.50	Chicago

**Peaches**

25 lb cartons loose

No grade marks, var. yellow flesh varieties	NJ 2 ¾" up 9.00	Chicago
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NJ 3" up 10.00-12.00 Chicago

½ bu cartons

U.S. ExOne, various yellow flesh varieties NJ 2 ¾" up 11.50-12.00 Detroit

The intent of listing terminal market prices is to provide information available in the public domain. It is not intended for price setting, only to assist growers in evaluating the value of their crops. Producers need to remember that the prices listed are gross, and consideration must be given to marketing costs, including commission, handling charge, gate fees, and possible lumper fees.

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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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