http://ipm.osu.edu/fruit/index.html

THE OHIO STATE UNIVERSITY Newsletter Extension

Fruit ICM News

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November 7, 2002

In This Issue:

Calendar

Nov. 12-13: Berry Symposium at The Ohio State University, at University Plaza Hotel and Conference Center, Olentangy River Road, Columbus. Registration for the conference is $50 per day. For more information e-mail Sandy Kuhn at kuhn.37@osu.edu or Melissa Fitzpatrick at fitzpatrick.73@osu.edu or call the OSU South Centers at 800-297-2072.

November 13: Ohio Fruit Growers Society Board Meeting, 9:30 am at Dutch Heritage in Bellville, OH

November 26: Ohio Fruit Growers Society Board Committee Meetings at Dutch Heritage in Bellville; Research Committee - 10 am; Extension Education Committee - 1 pm

November 26: Ohio Apple Marketing Program Committee Meeting, 4 pm at Dutch Heritage in Bellville

December 12: Ohio Fruit Growers Society/Ohio Vegetable & Potato Growers Association Policy Development Meeting, noon at Dutch Heritage in Bellville

Jan. 15-17, 2003: Ohio Fruit & Vegetable Growers Congress & Ohio Roadside Marketing Conference, Toledo SeaGate Convention Centre and Radisson Hotel. Contact Jennifer Hungerford at 614-249-2424 for more information.

Jan. 27-29, 2003: Indiana Horticultural Congress; Planning is currently underway for next year's Hort Congress, which will be held January 27-29, 2003 at the Adams Mark Hotel in Indianapolis.

Feb. 7-8, 2003: North American Bramble Growers' Association will meet in Leesburg Virginia. The meeting will be held at the Holiday Inn at the Historic Carradoc Hall. Contact Jason Murray, Commercial Horticulture Agent, for further information, at jamurray@vt.edu or 703-737-8978. You can view the program at http://www.ento.vt.edu/Fruitfiles/NABGAProgram03.pdf

Ohio Fruit and Vegetable Growers Congress

Source: Tom Sachs, OFGS Executive Director

The Ohio Vegetable and Potato Growers Association, the Ohio Fruit Growers Society, Direct Agricultural Marketing Association of Ohio (DAMA), Ohio Christmas Tree Association (OCTA) and the Ohio State University (OSU) are proud to present the 2003 combined conference. Fruit and vegetable growers, direct agricultural marketers, Christmas tree growers, Ohio State University faculty and staff, and allied industry have prepared a package of quality educational sessions and a first-rate trade show. Growers, marketers and exhibitors from Ohio and other states are welcome and are encouraged to attend.

OCTA's Winter Meeting is a major new addition to the conference. Dale Arnold, OCTA Executive Director, states that "This is an exciting opportunity for Christmas tree growers to interact with educators, exhibitors, and a diverse cross section of specialty crop growers. Technical and marketing educational sessions and the trade show are especially appealing!" OCTA's presence will also add new exhibitors for growers to exchange ideas and seek new opportunities.

Over 100 exhibitors will present their latest products and services for attendees. Since the Conference is earlier in the year, some exhibitors have taken the opportunity to offer "Show Specials" on products or services. This will be an extra benefit to growers looking for that special deal to assemble inputs for the upcoming year. These specials are in addition to traditional offerings by an outstanding slate of exhibitors.

Educational programming includes grower and marketer interaction, along with presentations from numerous experts from throughout the country. As usual, a superb program of general sessions is scheduled. Susan Zies of OSU Extension will present Dermascan and how it is used as an educational tool to instruct about sun exposure. Mary Donnell of OSU Extension and John Wargowsky of Mid American Ag & Hort Services will demonstrate how a new program, the Ohio Specialty Crop Food Safety Initiative, will assist Ohio produce growers in staying competitive by utilizing critical food safety procedures. OSU's Carl Zulauf and Ohio Farm Bureau Federation's Constance Jackson will discuss both domestic and international effects of the 2002 Farm Bill. John Wargowsky will also review current farm labor issues, and Bob Devaney of Ohio Department of Agriculture will emphasize the provisions and implementation of the Worker Protection Standards. Another general session will teach producers how to do business with Wal-Mart through Direct Store Delivery and their central warehouse system. OSU's Sally Miller will present a seed quality workshop, and Jerry Hillard of Farmland Insurance will discuss liability insurance issues from an insurer's perspective concerning: production, product and marketing liability.

Christmas Tree Program: James Brown of the Ohio Agricultural Research & Development Center will discuss tree production and plantation management, and David Shetlar of OSU Extension Entomology will present techniques for plantation insect and pest control. Direct Marketing will present a special session on trends and opportunities for Christmas tree marketing. Other educational sessions

will cover media relations and promotions.

Small Fruit Program: Annemiek Schilder, Michigan State University, will discuss disease aspects of strawberries and blueberries, and Eric Hanson, also of MSU, will discuss raspberry variety and fertility issues. Pam Fisher, Berry Crop Specialist, Ministry of Agriculture, Food and Rural Affairs, Ontario will review strawberry variety trials and alternate year raspberry production.

Processing Vegetable Crops Program: On Thursday this program will deal with transplant and herbicide carryover issues as well as specific disease and quality management issues of peppers, cabbage, and tomatoes. Steve Loewen, Plant Breeding, University of Guelph, Ridgetown College, Ontario will discuss the Canadian breeding program. Thursday also contains topics on weather trends, bioweapons concerns, and farm labor documentation. Friday's emphasis will shift to business and financial management for growers.

Tree Fruit Program: Beginning Wednesday evening, Dr. Jim Schupp of Cornell University will forecast orcharding in the 21st century, and Ed Fackler, Midwest Apple Improvement Association, will present an update on evaluation of apple germplasm from Kazakhstan. Thursday has a full day of educational topics concerning cultural practices and marketing. Friday will feature a Cider Session and will also introduce a special Peach Workshop that is designed to provide important information for peach growing "rookies" and for current commercial growers.

Direct Marketing Conference: Bob Cobbledick of Ontario Farm Fresh Marketing Association will present sessions concerning pricing and market layout, and Hugh McPherson of Maize Quest will have presentations on farm promotions and getting started in ag-entertainment. Other marketing topics will deal with tourism, packaging trends, product branding, market newsletters, marketer experiences, the new FarmToMarkets website and more.

Truck Crops: Ron Goldy of Southwest Michigan Research & Extension Center will discuss vegetable fertility, irrigation, and variety selection. Barbara Dartt of Salisbury Management Services, Inc., Eaton Rapids, MI will analyze cost of production of peppers, pumpkins, and sweet corn. Bill Lamont, Department of Horticulture, Penn State University will discuss using mulches, high tunnels, and fertigation. There will also be sessions on controlling wildlife damage, insect trap crops, varieties, and more.

Greenhouse Vegetables: Michele Adams, President, Prism Marketing Communications, will present sessions on understanding consumer behavior and building brand awareness. Rob Lee of Plant Products Company, Ltd will share strategies to detect and diagnose problems in your tomato greenhouse before they become big problems, and Christian Michael, President, American Hydroponics, will teach how to incorporate a water recirculation system into your greenhouse operation.

Potato Session: Don Halseth, Cornell University, will discuss New York potato production, variety selection, quality management, and fertility. Other educational topics concern potato disease management, fungicide efficiencies, and fertility and herbicide management.

All fruit and vegetable growers, direct agricultural marketers, and Christmas Tree growers are welcome to attend. Full details of the conference will appear in the December issue of *Today's Grower* and at http://www.ohiofruit.org and http://www.ohiovegetables.org, the official publication and websites of OFGS and OVPGA. Anyone wanting more information may also contact the Ohio Fruit and Vegetable Growers office at 614-246-8292 or growohio@ofbf.org.

Mid American Ag and Hort Services Launches Website for Employers

Source: John Wargowsky, Executive Director, Mid American Ag and Hort Services, Inc., <labor@ofbf.org>

Agricultural, horticultural, and other small business employers have a new web site http://www.midamservices.org to help them comply with the myriad of state and federal labor laws and regulations. This new employer tool is provided by Mid American Ag and Hort Services, Inc. (MAAHS) and was made possible by financial assistance from Indiana's Office of the Commissioner of Agriculture, USDA Block Grants on Specialty Crops and Promotion of Agriculture, and Ohio State University Extension Ag and Hort Labor Education Program.

The site includes links to the portions of numerous state and federal government sites that tell employers what they need to know. Topics covered include temporary guest worker programs such as H-2A, H-2B and H-1B along with the Migrant and Seasonal Agricultural Worker Protection Act and social/language issues associated with the employment of foreign labor.

Additional topics include minor labor, wage-hour, OSHA, housing, posting, Family Medical Leave Act, immigration, Social Security and tax withholding issues, pesticide safety, Worker Protection Standard, harassment, discrimination, plant closing, transportation, drinking water, workers' compensation, new hire reporting, continuation of health care coverage, affirmative action, and polygraph testing.

According to John Wargowsky, the organization's executive director, MAAHS is a consortium of associations, organizations, and employers organized to meet the educational, regulatory compliance assistance, and labor recruiting needs of agricultural and other employers in Ohio and Indiana. "This web site complements the member services provided by MAAHS," Wargowsky said. "We will continue to add content based upon member needs and requests."

This web site establishes the commitment of MAAHS and its Sponsor Members (Ohio Farm Bureau Federation, Indiana Farm Bureau, Ohio Nursery & Landscape Association, Ohio Florists' Association. Ohio Fruit Growers Society, Ohio Vegetable and Potato Growers Association, Ohio Landscapers Association and Nursery Growers of Lake County Ohio) to meeting the human resource needs of member employers.

As stated in the original grant proposal to the Indiana Office of Commissioner of Agriculture, Indiana and Ohio employers will:

- employ labor with more confidence
- avoid unneeded expense due to violations of labor laws and regulations
- save time and money spent dealing with government investigators/regulators
- save time in finding regulatory compliance information
- increase their capacity to hire employees to diversify or expand their production, processing, and distribution capabilities as a result of this web site.

If you would like more information about MAAHS, contact Wargowsky at P.O. Box 182383, Columbus, Ohio, 43218-2383, or 614-246-8286 (voice) or 614-249-2200 (fax), or e-mail

labor@ofbf.org.

Acid Soils, pH, Lime, and Liming

Source: Robert J. Precheur, Ohio State University Department of Horticulture and Crop Science

What are acid soils? Most people have heard of common acids such as citric, hydrochloric, sulphuric, and nitric acid. To a certain extent and in small quantities, some of these acids may be found in the soil solution. Soil particles of clay and organic matter can adsorb calcium, magnesium, potassium, and sodium, increasing the base status. Hydrogen and aluminum ions can be adsorbed to the soil particle replacing these bases, causing an increase in soil acidity.

How is soil acidity measured? Soil tests show soil acidity as a pH measurement, which is a measure of the strength or degree of the acidity or alkalinity level in the soil. A pH value of 7.0 is neutral. Values above 7.0 are alkaline and below 7.0 are in the acid range. Vegetable growers should remember that the ph scale is a logarithmic scale. A soil with a pH value of 6.0 is 10 times more acid than a soil with a pH of 7.0 and a soil with a pH value of 5.0 is 100 times more acid than a soil with a value of 7.0. Soil pH is not a measure of total acidity, and many soil tests will report a lime test index or buffer pH. This is a measure of active and reserve acidity, and lime recommendations are based on this number.

Do vegetable crops vary in their response to soil pH? Yes. Crops not tolerant of acid soils and requiring a pH range of 6.0 to 6.8 on mineral soils are: asparagus, beet, broccoli, cabbage, cauliflower, leek, lettuce, melons, onions, and spinach. Moderately tolerant crops for a pH range of 5.5 to 6.8 include: beans, carrot, collard, corn, cucumber, eggplant, kale, mustard, parsley, pea, pepper, pumpkin, radish squash, tomato, and turnip. Very tolerant crops of a pH range of 5.0 to 6.8 include: chicory, endive, potato, rhubarb, sweet potato, and watermelon.

What causes acid soils?

- Losses of calcium and magnesium from soils by leaching and erosion are much more rapid under row crop conditions than in natural forests or grasslands. As rain moves through the soil, it absorbs carbon dioxide, present in the soil atmosphere, forming weak carbonic acid. Weak organic acids are also formed when water moving through the soil comes in contact and reacts with humus. These acids remove calcium and magnesium and are replaced by hydrogen and aluminum, making the soil more acid.
- Decomposition of organic matter is an acidifying process. The rate of decomposition, and hence acidification, is much higher in cultivated than in natural soils and more rapid under higher temperatures.
- Fertilizers, particular those containing ammonium (NH4+), acidify soils. When NH4-nitrogen is converted to nitrate (NO3) by nitrification, the net result is the release of free hydrogen into the soil solution, lowering soil pH. For example, it requires 84 lbs of calcium carbonate (lime) to neutralize the acidity produced by 100 lbs of urea and 59 lbs of lime to neutralize acidity produced by 100 lbs of ammonium nitrate. The higher the rate of nitrogen fertilization, the greater the acidification.
- Calcium and magnesium removed by crop plants contributes to depletion from the soil, and thereby promotes acidification. The higher the yields, the greater the removal of calcium and magnesium. Where the whole crop is removed from the ground up, more calcium and magnesium will be removed in comparison to a crop where just part is harvested. Multi-cropping the same

field will also increase the removal of calcium and magnesium. Some vegetables have a higher percentage of calcium and magnesium than other vegetables. For example, kale tops contain 1.8% calcium on a dry matter basis compared to potato tubers with 0.04% calcium. Spinach leaves contain 1.24% magnesium, while beet roots only contain 0.013% magnesium. A 10 ton yield of cabbage will remove 10 pounds of calcium and magnesium per acre. A 400 bushel yield of bulb onions will remove 10 lbs of calcium and 5 lbs of magnesium. A 30 ton/acre yield of tomatoes will remove 11 pounds of calcium and 16 lbs of magnesium per acre.

What about Liming? Soil acidity is corrected by liming, which neutralizes soil acidity. Liming puts the soil in the desirable pH range allowing for maximum availability of required nutrients for crop growth. Most mineral soils should be limed to around a pH of 6.5. How much lime to apply is determined by a soil test using the "lime index" or "buffer pH".

- Soil pH is determined on mineral soils in a 1:1 soil:water suspension. Lime requirement is determined using a buffer to determine reserve acidity. Methods may vary by laboratory, and growers should use laboratories that belong to the North American Proficiency Testing program for soil test labs.
- For organic soils, the Ohio liming recommendations should be made directly from the water pH test. The water pH test measures the H ions in the solution phase and not adsorbed H ions. Lime muck soils only after a pH test. Do not lime unless the soil is below pH 5.3. Soil samples should be taken from the subsoil, below the plow layer, to provide a forewarning of potential pH changes. Sub-soiling or deep plowing may bring some of the subsoil to the surface.

Liming Materials and Solubility: In general, there are four types of liming materials available. Percentages of CaO and MgO may vary by definition.

- **Calcite - Ground Calcium Limestone** (50-56% CaO, and 0.5-4% MgO). This material is relatively more soluble than other types of ground limestone and corrects soil acidity most rapidly. It is particularly useful when soil tests show that adequate amounts of magnesium are present in the soil.
- **High Mag or Magnesian Limestone** (39-42% CaO, and 5-15% MgO). This material is intermediate in solubility between ground limestone and dolomitic limestone. High magnesium limestone supplies calcium and magnesium in approximately the same ratio as that removed from the soil by several crops.
- **Dolomitic Limestone** (30% CaO, and 20% MgO). The high amounts of magnesium supplied in dolomite make it very useful when magnesium is very low. In most cases, high-mag limestone may be substituted for dolomite after soil magnesium levels are increased. Dolomite is not highly soluble and therefore corrects soil acidity more slowly than the other materials.
- **Hydrated Lime** (60% CaO, and 12% MgO). Hydrated lime is made by adding water to burned lime (CaO). It reacts most rapidly, but the effect is only temporary. Hydrated lime is caustic to both people and plants and should be used only in emergency situations where a rapid change in pH is needed to grow a successful crop.

How fine should lime be ground? Fineness of grinding becomes a compromise between effectiveness and price. The finer the limestone until the 60-mesh size is reached, the more quickly it will react with the soil and the higher pH will be raised. But, generally, the finer the limestone, the higher the cost per ton. A study showed that the wisdom of using limestone containing less than 35% of 60 mesh material is questionable. The same study also indicated that 50-60 mesh limestone is practically as effective as 100 mesh material is raising the pH of the soil. When 8-20 mesh limestone was applied at the rate of 3 tons/acre to a soil with a pH of 5.0, there was little change in soil pH after 18 months (Meyer and Volk, Soil Science, Vol. 73, No. 1, 1952). In another study, only 2.3 tons/A of limestone (with 51-60% passing

through a 60 mesh screen) was needed to get the desired crop response. By comparison, 3.8 tons/A (with only 20-30% passing through a 60 mesh screen) were required to get the same crop response (Stanley A. Barber, Purdue University). **Bottom Line: Find out what your dealer is supplying.**

Is There An Upper Limit of Lime? When the lime need is 4 or more tons per acre, apply the lime in split applications, half before plowing, half after plowing.

How should lime be applied for maximum effectiveness? Uniform application and thorough incorporation of agricultural lime in the soil are essential to a good lime program. Incorporation is not usually a problem where conventional or deep tillage is regularly practiced. In no-tillage situations, pH changes may only occur in the upper 1-2 inch zone. Sub surface acidity may not be affected.

What is Fluid Lime? The idea for fluid lime came in response to the need for a liming material capable of reacting with the soil. Finely ground lime applications cause severe dust problems and caused the development of fluid lime or liquid lime formulations. These materials all have similar characteristics:

- One hundred percent of the material should pass through a 100 mesh screen and a minimum of 80 -90 percent though a 200 mesh screen.
- Water is the liquid carrier. Sometime nitrogen solutions are used. Depending on the cropping situation, herbicides and potash may be added to the suspension.
- Some sort of a suspension agent is added to the mixture.

Is this better than other materials? The effectiveness of agricultural limestone also applies to fine lime; in other words, the effective calcium carbonate equivalent of all fine lime materials, whether applied in suspension or dry form, will be determined by the quality of the product used. This quality is determined by the fineness of grind, chemical purity, and the rate at which it is applied.

Lime suspensions do not possess any special capabilities as compared with conventional lime, which contains a high percentage of fast-acting, 60 mesh or finer particle size. Fine lime breaks down and dissipates more rapidly in the soil. The residual effect on soil acidity tends to be of shorter duration than conventional lime. The use of lime suspensions may require more frequent applications to maintain desired soil pH.

What About Pelletized Lime? (From: Michigan State University) Pelletized Lime Reacts More Slowly, East Lansing, MI.

Field tests conducted at Michigan State University show that agricultural lime raises the soil pH notably more quickly than pelletized lime, probably because of the binding agent used in making the pellets.

The tests were conducted by MSU agronomists Darryl Warncke and Francis Pierce beginning in April of 1995 and continuing through fall of 1996. The lime application rates at the test sites were none, 1, 2, 4, or 8 tons per acre. Tests for pH were made at weeks 1, 2, 6, 8 and 16. The dolomitic limestone raised the soil pH more quickly than the pelletized lime (also made of dolomitic or calcitic lime) and the change in pH increased more rapidly and rose higher as the rate of application increased. By contrast, the change in pH where pelletized lime was applied was less and occurred more slowly during the 16 weeks of equilibration. Pelletized lime materials are made by granulating finely ground lime. The lime particles are cemented together with lignosulfonates, which comprise about 9 percent of the pellet content. In order that the lime become reactive, the lignosulfates have to be broken down by solubilization or microbial action, which, under the MSU field studies, retarded the breakdown or dissolution of the lime pellets. The pelletized lime also increased the extractable sulfur in the soil by a

small amount.

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Tribute to Doug Walcher

Source: The Morning Journal, November 4, 2002

Douglas R. Walcher, 41, of North Fairfield, died Sunday, November 3, 2002 at his home, following a four-year illness. Doug was born October 15, 1961 in New London and was a lifelong resident of North Fairfield. He was a vegetable grower and, with his wife Marsha, owned and operated Doug Walcher Farms.

He attended Celeryville Christian Reformed Church and was a member of Farm Bureau and the advisory panel of the Ohio Vegetable and Potato Growers Association. Doug is survived by his wife Marsha; daughters Brooke, Allison, and Lauren; his father Ralph; brothers Allen and James; sisters Nancy Pettit, Carol Tolliver, and Linda Kramb; and nieces, nephews, great-nieces, and great-nephews.

Funeral services were held Wednesday, November 6, with burial in the North Fairfield Cemetery. Memorial contributions may be made to Mayflower Institute, P.O. Box 4673, Thousand Oaks, California 91359.

Terminal Market Wholesale Fruit Prices November 6, 2001

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.

Source: Chicago http://www.ams.usda.gov/mnreports/HX_FV010.txt
Detroit http://www.ams.usda.gov/mnreports/DU_FV010.txt
Pittsburgh http://www.ams.usda.gov/mnreports/PS_FV010.txt

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	Chicago	Detroit	Pittsburgh
Apples, ctns trypk, U.S. ExFcy			
McIntosh Fancy Cortland	**WI** 64s, 72s, 80s 25-26 **WI** 72s 16.00		
Apples, ctns trypk, Comb U.S. ExFcy-U.S. Fancy G. Delicious Red Delicious		:	**WV** 125s 14.50 **WV** 125s 14.00
Apples, ctns celpk, U.S. ExFcy			
Empire		**NY** 100s 25-26.00 120s 21.00	
McIntosh	**NY** 80s 26.00	**NY** 100s 25-26.00 120s 20-21.00	
U.S. Fancy McIntosh	**NY** 96s 26.00 100s 16.50-17.00		**NY** 80s 18.50-20.00 100s 18.50 120s 15.50
Apples, ctns celpk, Comb U.S.ExFcy-U.S. Fancy McIntosh		**MI** 96s 23.50-24.00	
Apples, cartons, 12 3-lb filmbags U.S. ExFcy Empire Golden Delicious Jonamac Jonathan McIntosh Red Delicious Red Rome		**MI** 2½" min 13-14.50 **MI** 2½" min 14.50-15.50 **MI** 2½" min 14-15.50 **MI** 2½"min 16-16.50 **MI** 2½" min 15-15.00 **MI** 2½" min 14.50-15.50 **MI** 2½" min 13.50-14.00	
Apples, cartons, 12 3-lb filmbags			
U.S. Fancy - Empire		**MI** 2½" min 12.00	**WV** 2½" min 12.50
Gala	**MI** 2½" up 16-16.50 2¼" min 15.00	**MI** 2½" up 15.75-16.25 **MI** 2¼" min 12.25-	

		12.75	
Golden Delicious	**MI** 2½" up 15.00 **MI** 2¼" min 12.50	**MI** 2½" min 12.00 2¼" min 11.25-11.75	**WV** 2¼" min 12.50
Idared		**MI** 2½" min 12.00	
Jonathan	**IL** 2½" min 15-16.00 **MI** 2¼" min 15.00	**MI** 2¼" min 11.25-11.75	
McIntosh		**MI** 2½" min 12.00 2¼" min 12.25-12.75	**NY** 2½" min 12.50
Red Delicious	**IL** 2¼" up 15-15.50 **MI** 2 ¼" min 12.50	**MI** 2½" min 12.00 2 ¼" min 11.25-11.75	**WV** 2¼" min 12.50
Red Rome		**MI** 2½" min 12.00	**WV** 2¼" min 12.50
Apples, bu cartons, loose	No Grade Marks	U.S. Fancy	U.S. Extra Fancy
Cortland			**PA** 3" min 12.50-13.00
Empire		**MI** 2¾" up 14-15.00 **MI** 2½" up 12.00	No Grade, no size marks **WV** Empire12.50
Gala	**MI** 2½"min 16.00 2¼" min 13.00		
Golden Delicious	**MI** 2¼" min 12.00	**MI** 2¾" up 14-15.00 2½" up 12.00	No Grade, no size marks **WV** Golden Delic. 12.50
Idared		**MI** 3"min 15.00	
Jonagold		**MI** 2¾" up 14-15.00	
Jonathan	**IL** 2¼" up 14.00	**MI** 2½" up 12.00	
McIntosh		**MI** 2¾" up 14-15.00	
Northern Spy		**MI** 2¾" up 20.00 2½" up 15.00	
Red Delicious	**MI** 2½" up 15.00 2¼" up 12.00	**MI** 2¾" up 14-15.00 2½" up 12.00	No Grade, no size marks **WV** Red Delic.12.50
Red Rome		**MI** 3"min 15.00	
Apples, bins loose Empire, Golden Delicious Red Delicious	:	:	 **WV** $190 **WV** $190

Preliminary Monthly Climatological Data for Selected Ohio Locations, October, 2002

Weather Station Location	Monthly Precip	Normal Monthly Precip	Year-to-Date Precip	Normal Year-to-Date Precip	Avg High	Normal High	Avg Low	Normal Low	Mean Temp.	Normal Mean
Akron-Canton	1.88	2.53	33.41	32.45	57.8	61.1	42.4	42.1	50.0	51.6
Cincinnati	4.51	2.96	38.56	35.86	61.2	66.4	44.6	44.9	53.9	55.6
Cleveland	1.52	2.73	29.03	32.18	59.5	60.7	44.0	43.6	51.8	52.2
Columbus	2.68	2.31	34.44	32.40	61.4	65.4	45.5	44.0	53.5	55.7
Dayton	59.7	2.72	32.85	33.20	59.7	63.5	43.3	43.6	51.5	53.5
Fremont	1.49	2.26	30.06	29.19	60.9	63.6	38.3	40.9	49.6	52.2
Kingsville	3.96	4.30	36.41	33.20	59.0	61.5	42.9	43.2	51.0	52.4
Mansfield	1.81	2.68	31.63	36.31	58.1	61.7	40.9	41.1	49.5	51.5
Norwalk	1.86	2.21	34.83	29.96	58.5	61.5	42.4	40.1	50.4	50.8
Piketon	3.72	2.40	33.05	35.80	63.3	65.8	45.8	41.4	54.5	53.6
Toledo	1.70	2.35	23.82	27.79	60.5	62.1	40.7	41.5	50.6	51.8
Wooster	1.91	2.25	29.14	30.64	59.1	63.8	41.2	40.6	50.1	52.2
Youngstown	2.01	2.46	34.62	31.99	57.7	60.6	40.3	40.9	49.0	50.8

Temperatures in degrees F, Precipitation in inches

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

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basis without regard to race, color, creed, religion, sexual orientation, national origin, gender, age, disability or Vietnam-era veteran status.

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

TDD No. 800-589-8292 (Ohio only) or 614-292-1868

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