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THE OHIO STATE UNIVERSITY Newsletter Extension

Fruit ICM News

Volume 8, No. 2
January 14, 2004

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Calendar

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. For more information contact Tom Sachs at Ohio Fruit Growers, 614-246-8292, e-mail growohio@ofbf.org. Check out the web site at http://www.ohiofruit.org.

January 26: Beginners Apple Growing Workshop, Adam's Mark Hotel and Conference Center, Indianapolis, IN. 9:00 a..m. to 5:00 p.m. This is held in conjunction with the Indiana Horticulture Congress. Contact Peter Hirst (765) 494-1323 or e-mail hirst@hort.purdue.edu

January 26-28: Indiana Horticultural Congress, Adam's Mark Hotel, 2544 Executive Drive, Indianapolis, IN. Includes a Winery Start-uo Workshop, Beginners Grape Growing, Indiana Wine Grape Symposium, Fruit Program, Speciality Crops/Organics sessions and many more. The complete program can be found at: http://www.hort.purdue.edu/hort/ext/hortcongress Contact Peter Hirst (765) 494-1323 or e-mail hirst@hort.purdue.edu

February 15-17: Ohio Grape Wine Short Course Area vintners are invited to The Lodge at Sawmill Creek Resort in Huron, Ohio for the Ohio Grape Wine Short Course, offered February 15-17, 2004. There is also a special marketing session for new and potential wineries on Saturday, February 14. The program features six speakers, including Elizabeth Slater, marketing consultant to the California wine industry. The topics to be covered include ice wine production and technical subjects, such as managing the Asian Lady Beetle. Registration cost is $175 for the first attendee and $160 for each additional registrant. The event is sponsored by The Ohio Grape Industries Committee, The Ohio Wine Producers Association, and The Ohio State University. For a brochure or more information, call Terry Beck at Ohio State University Extension, Wayne County (330-264-8722), or go to the OWPA website at: http://www.ohiowines.org.

February 26, 2004: Ohio Fruit Growers Society Committee Meetings, (Tree Fruit, Small Fruit, Program, Forward Phase, Juice, & Public Affairs), Best Western, Wooster, Ohio. Contact Tom Sachs at 614-246-8292, growohio@ofbf.org, or http://www.ohiofruit.org.

February 26, 2004: Ohio Apple Operating Committee Meeting, Best Western, Wooster, Ohio. Contact Tom Sachs at 614-246-8292, growohio@ofbf.org, or http://www.ohioapples.org.

Ohio Growers Congress Presents Diverse General Sessions

Source: Tom Sachs, Conference Coordinator

The 2004 Ohio Fruit & Vegetable Growers Congress at the Toledo SeaGate Convention Centre and Radisson Hotel, January 21 to 23, has scheduled many interesting general sessions that will be of value to most growers or marketers. The Growers Congress is presented in cooperation with the Ohio Direct Marketing Association, Ohio Christmas Tree Association, and The Ohio State University. In addition to general sessions, the Congress sponsors sessions on small fruit, processing vegetable crops, tree fruit (apples, cider, stone fruit), greenhouse vegetable hydroponics, potatoes, direct marketing, Christmas trees, and truck crops.

General sessions kick-off on January 21 at 10 a.m. in the Radisson Hotel with a session titled "Safety Affects Your Bottom Line" presented by John Wargowsky, Executive Director, Mid American Ag and Hort Services. Wargowsky will review adult learning and tailgate training techniques as well as safety measures that lead to OSHA compliance. The sharing of successful safety training methods will help farm employers design successful on-farm safety programs and procedures. The session qualifies for Ohio Farm Bureau Workers' Compensation Program required safety training.

Sarah Fogleman, Extension Agricultural Economist, Kansas State University, is a keynote presenter with her first session titled "Keys to Workplace Communication." Fogleman is a leading expert on human resource management for production agriculture and will address implementing effective communication methods that create a more successful work environment. Her second presentation, "Creative Compensation," will review three basic principles all employers, large or small, should consider when establishing a compensation package to attract and keep a competent workforce:

1) Send the right message,
2) It's not about money, and
3) Use the right carrots.

Audience questions and discussion will allow participants to apply information to their individual businesses. Funding for the "Workplace Communication" and the "Creative Compensation" sessions was provided by the United States Department of Agriculture's Risk Management Agency through a partnership agreement with Mid American Ag and Hort Services.

Don Nugent of Graceland Fruit in Frankfort, Michigan, will discuss his value-added agriculture enterprise. Nugent has been a pioneer in food manufacturing and the tart cherry industry since 1973 and expanded Graceland Fruit into an international business that is now the largest processor of infused fruit in the world. Graceland also has increased research and development of other fruits and vegetables like blueberries, strawberries, apples, peaches, carrots, and more. He is an entertaining speaker who will discuss how and why he directed his farm toward a higher value-added business.

The Growers Congress is presenting more general sessions in the trade show to allow for more

interaction among growers, marketers, and exhibitors. One session will be presented during the January 21 opening reception and is titled "Weather Prediction Technologies and Weather Forecasting." Christa Quinn, a weathercaster with WTVG-ABC 13, will describe weather forecasting technologies and how forecasts are developed. More in-trade show session titles are: "Produce Food Safety: What Have We Learned and Where Are We Going?"; "Weed Control in Pumpkins: Using Rye Mulch and Herbicides"; "Grower Recommendations for Fruit and Vegetable Research"; "The Need and Potential for Biorational Controls of Tomato Anthracnose"; "Engaging Producers in Conservation Planning: A New Environmental Self-Assessment Tool"; "NE-183 Apple Varieties: What Looks Promising?"; "Hot Water Treatment of Tomato Seeds for Bacterial Disease Management"; "Hot New Varieties for Retail Market Sales"; "Food Safety Demonstrations: See Why Produce Buyers Care About Food Safety"; "To Market, To Market: An Interactive Program for Economics Education"; "Creating Revenue From Your Surplus and Unmarketable Products."

These general sessions offer increased educational value and are great additions to the traditional direct marketing, fruit, vegetable, and Christmas tree sessions. Detailed conference information may be found by visiting the Ohio Fruit Growers Society and Ohio Vegetable and Potato Growers Association Web sites at http://www.ohiofruit.org or http://www.ohiovegetables.org, by calling 614-246-8292 or by e-mailing growohio@ofbf.org.

Ohio Direct Marketing Conference Presents High Powered Workshop

The Ohio Direct Marketing Conference will feature Jane Eckert of Eckert AgriMarketing at the Toledo SeaGate Convention Centre and Radisson Hotel on Wednesday, January 21. The conference will be held in conjunction with the Ohio Fruit & Vegetable Growers Congress and the Ohio Christmas Tree Association Winter Meeting. The workshop is from 9 a.m. to 4 p.m. with a catered lunch. Cost is $50.00 per person plus Growers Congress registration.

Eckert works with farmers who want to become better direct marketers to grow profits on their farms. Using innovative ideas, she helped transform her family's fruit farm into a sophisticated retail operation of diverse profit centers and a venue for special events that attracts more than 300,000 guests annually. She is passionate about saving the family farm and believes future success depends on the family's ability to profitably market the products they grow.

Today's family farmers have to know much more than how to achieve success in planting and cultivating crops. With the problems they face in commodity pricing and co-op sales, successful farmers realize they must sell what they produce directly to consumers. But most farmers have not been educated about marketing and the particular savvy it takes to sell farm products to sophisticated consumers. Whether they're selling at a farmers' market, a roadside stand, or a deluxe retail building on their property, all farmers have to develop marketing tools and strategies.

Eckert is an expert on farm marketing. As vice president of marketing for her family farm, she increased revenue by more than 300 percent through a special approach called The Eckert Farm Marketing Plan. In working with hundreds of farmers through her consulting business and speeches, she knows that too often they waste their very limited funds for advertising, which is rarely effective on a small budget. Instead, Eckert teaches marketing strategies that use creativity more than dollars for a high return in revenue. Her winning approach to promotions, customer communications, publicity, and sales techniques is designed to increase revenues, even with a minimum marketing budget. After attending her seminars, family farmers are empowered to make easy and immediate changes for positive financial results. Whether novice or advanced marketers, everyone will learn key strategies to help them grow,

thrive, and survive for future generations.

Funding for the "Developing a Farm Marketing Plan" was provided by the United States Department of Agriculture's Risk Management Agency through a partnership agreement with Mid American Ag and Hort Services.

In addition to the one-day workshop, Growers Congress registration provides extra direct marketing education value on January 22 and 23 with featured speakers Charlie Touchette, North American Farmers' Direct Marketing Association, and Brent Warner, British Columbia Ministry of Agriculture. Their first session is titled "Agritourism Ventures that Increase Family Farm Profitability." Agritourism is a general term often used to describe non-traditional income streams on farms. In this presentation they will detail more than 40 different activities employed by conventional farmers that have diversified their farm businesses in ways that effectively increased profitability. Many of the ventures can be adapted from no-till pumpkin farms to dwarf tree apple orchards to organic grain farms to conventional cattle ranches.

Another session title is "Farmers' Markets: Tightening-up the Nuts and Bolts." This is about meeting up with consumers closer to their urban settings, a strategy to increase sales without committing to increased capital investment or unknown liabilities on the farm. Farmers' markets are an ideal way to accomplish these goals. This presentation will provide farmers and groups who have an understanding of farmers' markets and Community Supported Agriculture (CSA's) an opportunity to expand on their development and efficiency. Touchette and Warner wrap up their presentations with a session titled "Starting and Advancing Associations and Your Own Farms." Agritourism, farmers' markets and on-farm retailing are intensive ways to make a living. This session focuses on steps toward developing associations and keeping them running. Participants will learn how becoming board members and volunteering for association activities are among the best kept secrets to advancing your farm operations.

Complete workshop, direct marketing, fruit, vegetable, and Christmas tree session information may be found by visiting the Ohio Vegetable and Potato Growers Association and Ohio Fruit Growers Society web sites at http://www.ohiovegetables.org or http://www.ohiofruit.org by calling 614-246-8292 or by e-mailing growohio@ofbf.org.

Strawberry Production Systems Plasticulture Economics

Source: Richard C. Funt, PhD, Ohio State University, Columbus, OH 43210-1096

Planting, harvesting and marketing of strawberries in Ohio is an expensive business venture. Growers who plan to profit from the sale of strawberries need to make many decisions for reducing the financial risk inherent to a crop, which can be producing berries over several years. Recently an annual system of strawberry production using black plastic, day neutral strawberry cultivars typically grown in California or Florida, raised beds, microirrigation (drip), and row covers for winter protection has been tried in the eastern U.S. Growers usually refer to this as the plasticulture production system.

The plasticulture strawberry production system requires a different set of equipment and a higher level of management skills than the matted row system, which has had a long history in Ohio. It also requires more input costs and labor than the matted row. In any system, the management of soil/water, fertility, pest control, frost control, and timely harvest require a large amount of time.

In a recent report, pre-plant operations were estimated to be $4,400 per acre or 33% of the total cost.

Harvest cost was $3,262/acre or 24.1% of all costs. Material costs accounted for $6,750 of expenses and labor accounted for $5,100/acre. Total harvest, marketing, and production costs were estimated to be $13,540/acre.

If a price of $0.65/lb for pick your own (PYO) berries is combined with a price of $1.20/lb for pre-picked berries, growers need to sell 15,041 lb/acre to cover the expenses. With a higher price of $0.30 more per lb. for each system, only 10,622 lbs/A would be needed. With 15,041 lbs/acre, the number of sales would need to be 1,572 and for 10,622 the number of sales would need to be 1,110 to break even. All of these factors assume 2/3 of sales as PYO and 1/3 sold as pre-picked. Yields are expressed as berries sold. Growers need to consider an 8 to 10% minimal loss to cull fruit that are not sold.

The conclusions with regards to a plasticulture system as described are that high yields harvested over a six-week period of time are required and that a strong marketing program needs to be in place. Eleven thousand to 15,000 lbs/acre need to be harvested, with 1,100 to 1,572 sales/acre just to break even. Growers need to locate their sales near metropolitan areas and adjust sales to meet their customers changing requirements.

Reference: Safley, C.D., E.B. Poling, M.K. Wolgenant, and R.F. Williams. 2004. Producing and marketing strawberries for direct market operations. HortTechnology 14(1) 124-135.

2002-2003 Matted-Row Strawberry Cultivar Trial Notes

Source: Kathy Demchak, Dept. of Horticulture, Fruit Times Volume 23, No. 1, January 6, 2004

Twenty-eight cultivars or advanced selections of June-bearing strawberries were planted in the spring of 2002 at Penn State's Horticulture Research Farm, and harvested for the first time in 2003. Twenty-four of these were relatively new, while four, 'Earliglow', 'Honeoye', 'Allstar' and 'Jewel', were included as standards for comparison. Plants were grown according to standard recommendations, except that insecticide and fungicide sprays were minimal. The peak harvest season was delayed by 7-10 days from 'normal' and was sometimes different than that expected Cultivars and selections included, grouped according to their peak harvest season in 2003 were:

Early season (peak yield June 16-23): ByV1, Earliglow, Evangeline, MNUS 138, and Sable.

Early-mid season (peak yield June 20-30): Bish, Chambly, Honeoye, Mira, MNUS 694, and Primetime.

Mid-season (peak yield June 23 to July 2): Allstar, Brunswick, Darselect, L'Authentique Orléans and Mesabi.

Mid-late season (peak yield June 25 to July 5): Cabot, Eros, Jewel, L'Acadie, St. Pierre, and Winona.

Late season (peak yield June 30 to July 9): Idea, Ovation, St. Laurent d'Orltans and Yamaska.

L'Amour and Clancy were included, but due to small original plant size and a late start on establishment, yield data will be compared to other cultivars only in 2004.

A final grouping will be decided after a second harvest season in 2004, and may be different from that presented here. All yields presented below are marketable yields. For reference, marketable yields for the entire experiment ranged from a low of 6,726 for Yamaska to 20,793 for Honeoye. Percent marketable fruit ranged from 70.9% for L'Acadie to 84.8% for Yamaska. Mean berry weight over the

entire season ranged from 8.5g for Sable to 18.3g for Cabot.

Results

Since 2003 was only the first harvest year, results are somewhat preliminary. However, growers may be interested in these results as they make decisions concerning cultivars to try this spring. Out of the 5 early season cultivars tested, Earliglow had the next-to-lowest marketable yields (11,493 lb/a), and berry size was small (9.6 g/berry average over the season), but considering flavor, color, and firmness, it's still difficult to recommend any others over it. ByV1 was bred for plasticulture, and came out of dormancy too early, resulting in low yields. Evangeline yields and berry size were similar to that of Earliglow. Evangeline's berries were small, but attractive, with a rich color, consistent size and shape, and flawless caps. MNUS 138 produced the highest yields (19,634 lb/a), yielded for a longer time than most, and had large berries for an early cultivar (12.1 g), but they were soft and the flavor was a bit flat. Sable was second highest in yields (16,383 lb/a), but the berries were the smallest for all of the early-season cultivars(8.5 g), and were sweet but missing complexity. Sable plants hug the ground closely.

Among the early-mid season cultivars, Bish had excellent flavor, but like ByV1, was bred for plasticulture and came out of dormany too early resulting in low yields. However, in this environment, it runnered and filled in the rows as well as matted-row cultivars. Chambly was average and Mira did not perform well. Honeoye produced the highest marketable yields for this category and the entire experiment (20,793 lb/a), and had good flavor and size, but berries became too dark later in the season. MNUS 694 produced the second highest yields (17,535 lb/a), and like MNUS 138, produced over a long season and had large berries that were a bit flat. Primetime was a surprise. Growers had been disappointed with its yields, but here it produced well (16,367 lb/a marketable fruit), and had the largest berries for the group (12.8 g/berry) with good flavor. Maybe it just needs a lot of water, or a lot of snow cover.

In the mid-season category, Mesabi was the highest producer of marketable yields (20,766 lb/a). Negatives are that it tends to develop a very dark color, is a bit soft, and is quite susceptible to sunscald. Allstar and Brunswick produced similarly (14,115 and 15,722 lb/a respectively), but berry quality and flavor was not notable for either one. Darselect yields were on the low side (12,021 lb/a), but size and flavor were the best for the category. It was also susceptible to leaf diseases and leafhoppers, though these were easily controlled. L'Authentique Orléans yields were low.

There was a narrow range of yields among the 6 mid-late season cultivars tested, ranging from a low of 12,096 for St. Pierre to a high of 16,092 lb/a for Cabot. Cabot was the most interesting. Its first fruit averaged 40 g (the size of a small peach), and were oddly-shaped. However, fruit quickly became normal in appearance, though large. Cabot produced very few runners, so might be worth trying in plasticulture. Flavor and firmness was good. Marketable yields of Eros were good (14,712), berries were large (14.0 g) but soft, and had a light color, making it difficult to judge when they were ripe. Berries started ripening at the tip, and often remained white near the cap. Jewel, the standard, was average with sour-tasting berries. L'Acadie was the highest producer of total yields for the category, but many fruit were unmarketable due to the bottoms of the fruit splitting open. St. Pierre has Chandler and Jewel for parents, and was a favorite for flavor. However, its fruit is light when ripe, being somewhat peach-colored. The fruit has a nice shape, and gorgeous light green caps that complement the fruit color perfectly, making it amazingly attractive for a light berry. Winona produced its berries on short pedicels, so fruit tended to hug the ground. The pedicels (stems) on the berries broke off at the plant end rather than the cap end, so many stems remained attached.

Late-season cultivars extended the season beyond that normally considered late. All were low-yielding, so apparently high yields are sacrificed for season-extension. Idea, while producing the highest yields in

this category (12, 346 lb/a), had berries that were light, soft, and oddly shaped, though flavor was good. Ovation had the best flavor and appearance for the group, though yields were on the low side (9,185 lb/a), especially considering the amount of foliage it produced. St. Laurent d'Orltans produced decent yields, but bottoms of fruit tended to split open. Yamaska produced low yields and was not well-adapted to this climate.

A sincere thanks to the Pennsylvania Vegetable Growers Association for funding this research. MNUS 138 and MNUS 694 were provided by Dr. Jim Luby from the University of Minnesota. Dr. Courtney Weber from Cornell University at the NY State Agricultural Experiment Station at Geneva provided L'Amour and Clancy, Dr. Harry Swartz of the Univ. of MD as part of Cooperative MD/NJ/VA/WI breeding program provided ByV1, and Dr. Jim Ballington of North Carolina State University provided Bish. Dr. Shahrokh Khanizadah of Agriculture and Agri-Food Canada and McGill Univ., Quebec provided Chambly, L'Authentique Orléans, L'Acadie, St. Pierre, St. Laurent d'Orltans, and Yamaska. All other cultivars were obtained from Nourse Farms of Whately, MA.

Proposed Collection; Comment Request; Hazard Analysis and Critical Control Point; Procedures for the Safe and Sanitary Processing and Importing of Juice (Docket No. 2003N - 0525)

Source: James R. Cranney, Jr., USApple

The Food and Drug Administration (FDA) is announcing an opportunity for public comment on the proposed collection of certain information by the agency. Under the Paperwork Reduction Act of 1995 (the PRA), Federal agencies are required to publish notice in the Federal Register concerning each proposed collection of information, including each proposed extension of an existing collection of information, and to allow 60 days for public comment in response to the notice. This notice solicits comments on recordkeeping requirements for applying hazard analysis and critical control point (HAACP) procedures for safe and sanitary processing for processors of fruit and vegetable juice.

DATES: Submit written or electronic comments on the collection of information by February 6, 2004.

ADDRESSES: Submit electronic comments on the collection of information to: *http://www.fda.gov/dockets/ecomments*. Submit written comments on the collection of information to the Division of Dockets Management (HFA305), Food and Drug Administration, 5630 Fishers Lane, rm.1061, Rockville, MD 20852. All comments should be identified with the docket number found in brackets in the heading of this document. For furtherinformation contact Peggy Robbins, Office of Management Programs (HFA250), Food and Drug Administration, 5600 Fishers Lane, Rockville, MD 20857, 3018271223.

SUPPLEMENTARY INFORMATION: Under the PRA (44 U.S.C. 35013520), Federal agencies must obtain approval from the Office of Management and Budget (OMB) for each collection of information they conduct or sponsor. "Collection of information" is defined in 44 U.S.C. 3502(3) and 5 CFR 1320.3 (c) and includes agency requests or requirements that members of the public submit reports, keep records, or provide information to a third party. Section 3506(c)(2)(A) of the PRA (44 U.S.C. 3506(c)(2)(A)) requires Federal agencies to provide a 60-day notice in the **Federal Register** concerning each proposed collection of information, including each proposed extension of an existing collection of information, before submitting the collection to OMB for approval. To comply with this requirement, FDA is publishing notice of the proposed collection set forth in this document.

With respect to the following collection of information, FDA invites comments on these topics:

(1) Whether the proposed collection of information is necessary for the proper performance of FDA's functions, including whether the information will have practical utility;

(2) the accuracy of FDA's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;

(3) ways to enhance the quality, utility, and clarity of the information to be collected;

(4) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques, when appropriate, and other forms of information technology.

Hazard Analysis and Critical Control Point (HAACP); Procedures for the Safe and Sanitary Processing and Importing of Juice (OMB Control Number 09100466)--Extension

These regulations mandate the application of HACCP procedures to fruit and vegetable juice processing. HACCP is a preventative system of hazard control that can be used by all food processors to ensure the safety of their products to consumers. A HACCP system of preventive controls is the most effective and efficient way to ensure that these food products are safe.

FDA's mandate to ensure the safety of the nation's food supply is derived principally from the Federal Food, Drug, and Cosmetic Act (the act) (21 U.S.C. 321 *et seq.*). Under the act, FDA has authority to ensure that all foods in interstate commerce, or that have been shipped in interstate commerce, are not contaminated or otherwise adulterated, are produced and held under sanitary conditions, and are not misbranded or deceptively packaged; under 21 U.S.C. 371, the act authorizes the agency to issue regulations for its efficient enforcement. The agency also hasauthority under the Public Health Service Act (42 U.S.C. 264) to issue and enforce regulations to prevent the introduction, transmission, or spread of communicable diseases from one State to another other State.

Information development and recordkeeping are essential parts of any HACCP system. The information collection requirements are narrowly tailored to focus on the development of appropriate controls and document those aspects of processing that are critical to food safety. Through these regulations, FDA is implementing its authority under section 402(a)(4) of the act (21 U.S.C. 342(a)(4)).

Table 1 provides a breakdown of the total estimated annual recordkeeping burden. The estimates in this table have been reviewed by the agency's HACCP experts, who have practical experience in observing various processing operations and related recordkeeping activities. The burden estimates in Table 1 are based on an estimate of the total number of juice manufacturing plants (i.e., 2,300) affected by the regulations.

Included in this total are 850 plants currently identified in FDA's official establishment inventory plus 1,220 very small apple juice manufacturers and 230 very small orange juice manufacturers. The total burden hours are derived by estimating the number of plants affected by each portion of this final rule and multiplying the corresponding number by the number of records required annually and the hours needed to complete the record. These numbers were obtained from the agency's final regulatory impact analysis prepared for these regulations. Moreover, these estimates assume that every processor will prepare sanitary standard operating procedures and a HACCP plan and maintain the associated monitoring records and that every importer will require product safety specifications. In fact, there are likely to be some small number of juice processors that, based upon their hazard analysis, determine that

they are not required to have a HACCP plan under these regulations.

The entire Final Rule for the Hazard Analysis and Critical Control Point (HAACP): Procedures for the Safe and Sanitary Processing and Importing of Juice can be found at
http://vm.cfsan.fda.gov/~lrd/fr01119a.html

Table1. Estimated Annual Record-Keeping Burden*

21 CFR Section	No. of Record-keepers	Annual Frequency/Record-keeping	Total Annual Records	Hours per Record	Total Hours
120.6(c) and 120.12(a)(1) and (b)	1,875	365	684,375	0.1	68,438
120.7, 120.10(a), and 120.12(a)(2), (b), and (c)	2,300	1.1	2,530	20.0	50,600
120.8(b)(7) and 120.12(a)(4)(i) and (b)	1,450	14,600	21,170,000	0.01	211,700
120.10(c) and 120.12(a)(4)(ii) and (b)	1,840	12	22,080	0.1	2,208
120.11(a)(1)(iv), 120.11(a)(2), and 120.12(a)(5)	1,840	52	95,680	0.1	9,568
120.11(b) and 120.12(a)(5) and (b)	1,840	1	1,840	4.0	7,360
120.11(c) and 120.12(a)(5) and (b)	1,840	1	1,840	4.0	7,360
120.14(a)(2), (c), and (d)	308	1	308	4.0	1,232
				Total Hours	358,466

* There are no capital costs or operating and maintenance costs associated with this collection of information

Winter/Spring Bramble Chores 2004

Source: Dr. Gina Fernandez, Associate Professor/Small Fruit Specialist, North Carolina State University via Sandy Kuhns, OSU Berry Coordinator

PRUNING: Fall Bearing Raspberries: Fall bearing (actually mid to late summer for most of NC) raspberries fruit at the top of the current season's canes ("primocanes"). The simplest way to manage these varieties is to mow them off at ground level during the dormant season. Be sure to mow them off close to the ground so that new shoots come from the roots and not from lateral buds on cane stumps.

Blackberries and summer fruiting raspberries: These types of brambles bear fruit on second year canes. During the winter prune out the spent floricanes from the previous season. The remaining primocanes are thinned 3 to 4 per sq. ft.

HERBICIDES: Apply preemergent herbicide in spring if not applied in fall. There are several chemicals that are labeled for use in NC depending on age of plating and time of application, see your state's agricultural chemical recommendations. Apply post emergent herbicides as needed. Be sure that the chemical you are using is labeled for bearing plants, many herbicides cannot be used beyond the first

year.

INSECT AND DISEASE CONTROL PREBLOOM: Apply liquid lime sulphur or Bordeaux for control of anthracnose in late winter or early spring before new buds are less than ½ inches long.

Crown borers can be a problem in the early spring, as well as aphids, thrips, Japanese beetle, fruitworm, rose chafer, stink bugs and psyllids. Catch these early with a prebloom spray. See your state's agricultural chemical manual for recommended control tactics.

BLOOM: Double blossom (AKA rosette). Primocanes are infected in the spring or early summer, but disease symptoms are not evident until the following year when new growth begins on the fruiting canes. The best thing to do is to remove the infected floricanes to disrupt the cycle. With the loss of Benlate, chemical control of double blossom with that compound is no longer possible. Botrytis: Apply fungicides at early bloom and repeat at full bloom.

EPA has approved use of Savey 50DF for control of mites on caneberries, including black and red raspberries and blackberries. The preharvest restrictions are 3 days for caneberries (blackberries and raspberries). Please note that it is only effective on eggs. If you need a copy of the supplemental label, contact your Gowan distributor.

IRRIGATION: Plan for the irrigation season. Bramble plants need about 1 to 2 inches of water per week applied to the soil. We have found that overhead irrigation during fruiting prevents loss of fruit due to sunscald.

TRELLISES: Now is the time for trellis repair. Our experience with an "annual²" ice storm in North Carolina has indicated that blackberries benefit from a sturdy trellis. Make sure posts are firmly in the ground and wires are securely attached to the posts.

FERTILIZER: Place nitrogenous fertilizers in row before new canes emerge in spring.

Raspberries: Apply 500 to 800 lbs of 10-10-10 per acre in split applications. Apply half in Feb-March and the remainder in April-May. Spread uniformly across the row or side dress with half on each side of row in a 3-foot wide band.

Blackberries: In established plantings apply 60 to 80 lb/acre N. Nitrogen can be applied in split or single applications. If using a split application, apply the first portion at bud break and the remainder just after harvest. Ammonium nitrate is the most common form of N used on blackberries. The incorporation of P and K should be based on soil test recommendations.

Drip: many growers are now using their drip irrigation system for fertilization. We do not have any experience with rates and timing. However, use of the above amounts applied at regular intervals from Feb-May should suffice.

PLANTING: Order plants from nurseries in late fall early winter to ensure that what you want is available. Bare root dormant nursery plants are usually available from November to March. Be sure to get clean and healthy plants. New stock should be purchased from nurseries that have grown plants on fumigated land well isolated from other brambles, have been sprayed regularly for insect and disease control, are virus tested and have inspected by state officials.

Prepare land for spring planting. The land should be plowed thoroughly before for planting. NC

recommendations suggest that land preparation should be done in mid- to late-February in the coastal plain region and during March in the mountains. Fumigation is recommended to give newly set blackberry plants an advantage by killing most weed seeds and soil pathogens. Optimal row orientation is north - south to minimize sunscald on fruit.

Planting: Early spring planting of dormant stock is best. Plants set late in the spring can be adversely affected by drought or drying winds. Make sure irrigation is available. Some nurseries sell erect blackberry root pieces as planting stock. These are usually cheaper but, you will need more root pieces to fill your row. Root cuttings should be placed 2 to 3 feet apart in a row. Tissue culture plants should be set after the last frost in spring.

ORDER HARVEST SUPPLIES: Determine your needs and order you supplies now. If you are picking into clamshell containers, a "low profile" container is best, you are limited in the amount of berries that you stack on one another.

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

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