

January, 2000

Dear Agricultural Producer,

A new year has begun, and with it comes a sense of optimism. You are a member of an elite team – the American Farmer. Worldwide competition is increasing but you are still the most productive farmers in the world. Your main challenge in the new millennium will be to become more profitable and not necessarily more productive. Farmers across the United States are finding more profitable business opportunities each day. Processing raw commodities into finished products and growing certified organic crops are two examples. The key to future success in agriculture lies in identifying exactly what the consumer wants and delivering this as efficiently as possible. Participating in the program on “Value-Adding Farmer Alliances” will be an excellent way to begin becoming more profitable.

Sincerely,

Joanne Davidhizar
County Extension Director

Mike Staton
Extension ANR Agent



Jon Clements
Extension ANR Agent

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enc.

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Upcoming Events

January 6, 13, 20, 27: - Greenhouse Grower Career Development Certificate Program (in Spanish), Byron Center. Contact: Jerry Draheim, 616-383-8830, draheimg@msue.msu.edu

January 10-12 - Michigan Agribusiness Association Conference, Lansing. Contact: Jim Byrum at 517-336-0223.

January 11-12: - MSU Strawberry School, Kellogg Biological Station, Hickory Corners. Contact: Bob Tritten, 810-732-2177, tritten@msue.msu.edu

January 11-12: - Greenhouse Grower Career Development Certificate Program, E. Lansing. Contact: Jerry Draheim, 616-383-8830, draheimg@msue.msu.edu

January 15 - Master Gardener Program begins, Fernwood Botanic Gardens, Niles. Deadline for registering: January 10. Contact: Joanne Davidhizar, 616-944-4126; davidhiz@msue.msu.edu

January 18-20 - Great Lakes Vegetable Growers & Direct Marketers Convention, Grand Rapids, Michigan. Contact: Ron Goldy, 616-944-1477, goldyr@msue.msu.edu

January 20, 27 & February 3 – New Economic Realities, Niles Area Campus, Southwestern Michigan College. See enclosed flyer. Contact: Mike Staton, 616-944-4126, staton@msue.msu.edu

January 25 – Value-Adding Farmer Alliances. See enclosed info on page 3.

January 28 - Ag Action Day, Kalamazoo Valley Community College, Oshtemo. Contact: Mike Staton, 616-944-4126, staton@msue.msu.edu See enclosed flyer.

January 31 – Weed, Insect & Disease Control Update for Field Crop Producers & Agri-Business, 9:00 a.m.. – 3:30 p.m. See enclosed flyer.

February 2-3 - Southwest Michigan Horticulture Days, Lake Michigan College, Benton Harbor. Contact: Mark Longstroth, 616-657-7745, longstro@msue.msu.edu

February 7-9 – MSU Tree Fruit IPM School, Kellogg Biological Station, Hickory Corners, Michigan.

March 8 - Michigan Produce Marketing Conference, Hilton Inn Airport, Grand Rapids MI. Contact Don Ricks, (517) 355-0145

March 28 – 2000 Fruit Spray Calendar Update, Southwest Michigan Research and Extension Center, Benton Harbor MI. Contact Bill Shane, (616) 944-1477, shane@msue.msu.edu; or Jon Clements, (616) 944-4126, clementj@msue.msu.edu

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NOTICE: Effective November 1, 1999, the price for soil tests increased to \$9.00 per sample when brought into the Berrien County Extension Office for analysis by the MSU Soils Testing Lab. Late fall is an excellent time to collect a soil sample for analysis. Results will help you put together a fertilizer program for the next growing season.

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Fruit Spray Calendars

The Y2K (Year 2000) Fruit Spraying Calendars For Commercial Fruit Growers have arrived at the Berrien County Extension office. Spray and pesticide recommendations have been updated to reflect new research and label changes, and there are expanded sections on fungicides and insecticides for small fruit. The cost is \$9.00 if you pick it up at the Extension office, or \$12 if we mail it to you.

Also, an early heads-up that District Fruit Agents will host a review of changes for the 2000 Fruit Spraying Calendar at the Southwest Michigan Research and Extension Center on March 28th in the evening. The 2000 Fruit Spraying Calendars will be available to purchase at that meeting..

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Farmers Join Forces To Add Value And Capture Profits

Overheard at the coffee shop ---

“I’m just one farmer. How can I make any difference in a marketplace dominated by huge corporations?”

“I know that marketing and adding value are important, but I can’t sell my crops at a roadside market. What options do I have?”

“I’ve heard about new Michigan farmer-owned cooperatives. How are they doing?”

“What’s going on in other states with cooperatives and farmer-owned processing?”

“What commitment do I need to make to get involved in some of this value-added work?”

“What are the big food industry trends that are likely to influence how I can market my products and what prices I can get?”

“There must be some way for farms to increase our share of the consumers’ food dollar!”

“What makes these new cooperatives different?”

Farmers across Michigan are asking questions like these. Many farm families have seen their share of the food dollar decline while they see consumer food expenditures steady and rising.

What’s the answer? One important strategy is to find ways that farmers can add value to their farm products. Some may add value through on-farm processing or selling direct to consumers, but that’s not feasible for everyone. Another avenue for farmers to add value is by forming a cooperative to process and sell their products.

MSU Extension has scheduled meetings in seven Michigan locations on January 24, 25 and 26, 2000, to focus on opportunities, risks, and potential rewards of “Value-Adding Farmer Alliances.” (See below for the location nearest Berrien County.) Topics to be addressed include food industry trends,

the value of farmer alliances, farmer alliances across the Midwest, Michigan Innovative Farmer accomplishments to date, benefits of a state-wide group, and how to get involved. Featured speakers will include Jim LeCureux, MSU Extension value-added agent and Innovative Farmer coordinator; Rudy Radke, High value crops specialist, North Dakota State University; Dr. Brent Sorenson, Red River Valley Trade Council; and Michigan Innovative Farmer members. In addition to the planned presentations, time will be scheduled to address questions to this experienced and knowledgeable group. These sessions are supported by MSU Extension, the Michigan Department of Agriculture and the Michigan Innovative Farmers.

Here is the time, location and contact person for the Value-Added Farmer Alliances session closest to Berrien County.

Tuesday, January 25, 2000; 9:00-11:00 a.m.;;
Marshall Moonraker
South US 27, Marshall
Natalie Rector, rector@msue.msu.edu, 616-781-0784

Farmers and other interested people are invited to attend any of these sessions.

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Responding to Low Commodity Prices

Many people have mistakenly ranked the declining demand for genetically modified crops as the most important issue facing field crop producers. While this is a strong contender, the most important issue continues to be the extremely low commodity prices. The depressed Asian economy, the rising value of the dollar, and record high production levels worldwide all contribute to the low prices. Expanding worldwide production is the single most important factor, so we are likely to see low prices for the next couple of years.

Because of this, grain producers need to explore all of their options for increasing farm income and maintaining their cash flow. Economists at Purdue University recommend the following methods.

- Control business costs aggressively – the first thing that comes to mind here are input costs such as seed, fertilizer and pesticides. While reducing these costs is important, they only account for about 40% of your total production costs, so also concentrate your efforts on reducing capital costs.
- Renegotiate cash rents.
- Repair rather than replace equipment if possible.
- Reduce family living expenses such as vacations and cars.
- Increase non-farm income with an off-farm job. Employment opportunities have never been better.
- Make sure that all capital assets are fully utilized. Rent unused storage space and perform custom machinery work.
- Make sure that you understand the government programs. These accounted for half of all of the profits from grain farms in 1999 and will continue to be essential in the next two years.

These are only a few ideas. The MSU Field Crops Team compiled many more and summarized them in an article entitled “Efficient Management Practices for Crop Producers”. This information is available free of charge from all extension offices.

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Selecting Corn Hybrids and Soybean Varieties

Selecting the best-adapted corn hybrids and soybean varieties for your farm is one of the most important decisions you will make. Each year Michigan State University conducts corn and soybean performance trials across the state to assist you with this decision. The varieties and hybrids are evaluated for yield, lodging and disease resistance. This information is summarized in the Michigan Soybean Performance Report and the Michigan Corn Performance Report. The reports can be accessed in several ways. They can be downloaded from the World Wide Web using the following address www.css.msu.edu/varietytrials. Farm Bureau members will receive a copy of the soybean report in the December edition of the Michigan Farm News and a copy of the corn report will be

included in the January edition. The reports are also available at no charge from our office.

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Should You Plant Genetically Modified Seed or Non-Genetically Modified Seed in 2000?

This is a complex issue and there are no easy answers. Like many decisions, not all the information you need is available. Dr. Robert Wisner, Ag Economist from Iowa State University provided 35 local grain farmers with the following recommendations on December 8, 1999:

- Base your seed buying decisions on the evolving market and not the current situation.
- Carefully evaluate the agronomic and economic aspects of producing GM or non-GM seed.
- Maintain as much flexibility as possible. Lock in non-GM seed now and exchange it for GM seed if this market looks stable. Non-GM seed will be almost impossible to find if GM markets do not stabilize.
- There are three key events to watch before planting, as they will have a major impact on the market for GM crops: 1.) The European Union’s feed labeling policy; 2.) Food labeling policy in the United States; and 3.) The recommendations from the International Bio-safety Protocol Conference.

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Direct Marketing Assistance For Michigan Farmers Underway

In June of this year, the East Lansing-based Michigan Integrated Food and Farming Systems organization (MIFFS) was awarded a \$60,000 U.S.D.A. Rural Business Enterprise Grant to support technical assistance efforts linking small and medium-sized buyers of agricultural products with Michigan farmers in a ten county area of lower Michigan. Titled “Marketline,” this pilot project specifically targets the counties of Berrien, Genessee, Gratiot, Lake, Lenawee, Montcalm, Muskegon, Newaygo, Tuscola, and Van Buren. However, MIFFS Executive Director, Tom Guthrie,

added that, "Interest from other Michigan counties is also welcome."

MIFFS also received a state "Grown in Michigan" grant, which will allow for expansion of direct marketing activities into the metropolitan areas of Lansing, Grand Rapids and Ann Arbor, and their surrounding counties. This addition will enable "Marketline" to take advantage of increasing urban interest in obtaining locally grown farm products directly from farmers, and indirectly from local retailers.

The project was officially launched with the recent hiring of a Project Director, Dr. Sandra Nordmark, who will oversee daily "Marketline" operations as well as work with farmers and potential product buyers in the designated counties to establish new market links. Dr. Nordmark is a long-time farmer and direct marketer from Calhoun County.

One of the "Marketline" objectives is to develop its own searchable web site, which will host a comprehensive directory of Michigan farms with agricultural products to sell, and food businesses seeking specific Michigan grown agricultural items. Buyers could include grocery stores, restaurants, caterers, farm markets, processors, and other value-added enterprises. Growers who offer on-farm sales of their products or services to individual consumers will be able to list their business opportunities on the web site as well.

Additionally, a staffed, toll-free hotline will be available later next year to further assist anyone needing other information about production or purchase of Michigan-grown agricultural products and on-farm tourism offerings.

According to U.S.D.A., the number of small farms is growing, contrary to the overall decline in the numbers of farms nationwide. Product sourcing information is critical to helping small and emerging farm and rural businesses, including locally owned and managed cooperatives, take advantage of value-added and direct marketing options in their area. "Marketline" will enable appropriately sized food businesses to access local raw farm products more efficiently, encouraging the likelihood that consumers will prefer locally supplied items. The ultimate outcome should be

expanded farm awareness of new market opportunities and an increase in profitability. To facilitate this objective, market skill building and networking workshops will be held for interested buyers and sellers in the target counties, probably in late February of next year. "We hope to have our web site operable before the end of the year," said Nordmark. "That way, we can post information about upcoming workshops and other news of interest to our target audiences even before the directory is completed and on-line."

MIFFS is a non-profit organization whose purpose is to promote diverse community efforts to sustain food and agricultural systems that improve economic, ecological and social well being. Its efforts focus on farming practices, marketing, farmland protection, education and community organizing. A seven person Advisory Committee consisting of representatives from farming and food businesses, and agriculturally based agencies and organizations, including MIFFS, will guide and direct the project. The Michigan Department of Agriculture is also providing valuable in-kind staff support to help ensure the success of the "Marketline" pilot project.

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Hort Show Highlights

For those of you that missed the Michigan State Horticultural Society's Educational Program and Trade Show (a.k.a 'Hort Show') last December, you should know the Educational Program was very good, with numerous topics and excellent speakers (including myself!) to choose from.

In particular, Dr. David Feree presented twice, including the 'Jerome Hull, Jr. Distinguished Lecture.' His topics were 'Factors to Improve Fruit Size and Fruit Firmness.' Dr. Feree is a concise, down-to-earth presenter, and I was able to take some good notes on both his talks that I would like to share with you.

(continued on page 6)

On Factors to Improve Fruit Size:

Physiological factors:

- *Cell division* contributes to fruit size from 0-35 Days After Full Bloom. During this time *spur leaves* support this growth, therefore, good healthy spurs and leaves are important at this time. Note that spur development and fruitfulness is largely determined the year(s) preceding the current crop.
- *Cell expansion* is most important beyond 35 DAFB and is supported by *bourse and terminal shoots*; therefore, good lateral shoot extension and healthy foliage is important for contributing to fruit cell expansion.

Genetic factors:

- *Varieties* are genetically predisposed to produce fruit of different sizes, large (GingerGold, for example) or small (Jonathan). Of course there is a whole range in-between too. But, the relation of King to lateral flower size also has an impact -- for example, Delicious has a large King flower and it makes a difference in final fruit size whether the fruit originates from a King or lateral, whereas Gala flowers are of similar size and it does not appear to make a bit of difference from which flower the fruit develops.
- *Rootstock* also plays a genetic role in fruit size - - for example, apples grown on M.9 or M.26 are larger than fruit from trees on M.27 rootstock. (I believe M.9 and M.26 have been shown to generally produce larger apples than most other rootstocks, all other things being equal.)

Environmental factors:

- *Temperature* during the cell division phase (< 35 DAFB) has an impact on final fruit size. Cool temperatures during this period slow the cell division process, hence, there are fewer cells to expand, and the effect carries through the remainder of the growing season. (Sorry, you have little control over this except perhaps to move to Washington or New Zealand where

there are warmer springs, hence one reason they are superior apple growing regions.)

- *Light* plays an extremely important role in fruit size -- *more light equals larger fruit*. Orienting tree rows in a North-South direction improves orchard light interception by 15%; use of intensive orchard systems by another 20% or so. But by far the most important factor is *canopy light distribution*. Research has shown that a minimum of 30% of available full sunlight falling on all parts of the orchard canopy is necessary for good spur development and fruiting the following season. This level is easy to maintain in the upper portion of the tree canopy, but only in *well-pruned (both winter and summer) and dwarf trees* do you get 30% sunlight in the lower canopy. Pruning and training needs to focus on achieving this level of sunlight penetration in all portions of the tree canopy, as well as elimination of older, weak, 'light-starved' fruit spurs in favor of younger, larger spurs with good light exposure.

Cultural components:

- The benefits of early and adequate *thinning* are well established, and a grower's thinning spray may be one of the most important spray decisions they make during the growing season. Evaluate your potential crop closely, and don't be afraid to make multiple thinning applications if warranted.
- Of course the previous years *crop load* will likely have an impact on the thinning requirements of this year's crop. But it can also effect the current season's fruit size -- there is evidence that fruit in the year following a heavy crop will have fewer cell numbers, but increased cell size, with the overall effect being to reduce fruit size. (But a lot depends on crop load too.) Keep this in mind when estimating the potential crop load and final fruit size at harvest for two years following a heavy crop.
- Inadequate *pollination* results in reduced seed count and fruit size, and misshapen fruit. Making sure there are sufficient bee hives and perhaps using supplemental pollen or bee scent

is good insurance for maximizing potential fruit size.

On Factors That Effect Fruit Firmness:

Physiological factors:

- *Ripening* -- well of course, we all know that the physiological ripening process causes a degradation in fruit firmness.
- *Pectins and calcium* in the fruit flesh determine how well cells are bound together and how resistant they are to rupture, which of course ultimately affects fruit firmness.
- *Cell size, shape and packing* -- did you know that apples are 25% free space? How this space is arranged can affect fruit firmness, and depends on such factors as cultivar, maturity, and growing season conditions.
- *Fruit size* -- all other things being equal, larger fruit are softer than smaller fruit. This is kind of a 'Catch-22' situation with the current markets emphasis on larger fruit, therefore, you need to be sure you are doing all you can to improve the firmness of these larger fruit by looking at pre- and post-harvest factors that affect fruit firmness.

Pre-harvest factors:

- Some *cultivars* are *genetically* predisposed to be firmer (Rome) than others (McIntosh); strain and rootstock also play a role, but to a lesser degree than cultivar.
- *Nutrition* plays a role. High nitrogen content results in larger fruit which are less firm. Boron and phosphorous apparently have little effect on firmness. Calcium has long been implicated in affecting fruit firmness (and quality), however, supplemental calcium application often results in little difference in fruit firmness at harvest. Still, fruit with higher calcium flesh levels are firmer than those with lower levels, particularly in fruit coming out of storage. (You make your own inference, but I would not give up or reduce those Ca sprays!)

- *Plant Growth Regulators* certainly have an impact on fruit firmness -- remember the effect of Alar? Now, be aware that ethephon will reduce fruit firmness; NAA has little immediate effect; and a ReTain application can improve firmness, particularly for headed for CA storage.

Post-harvest factors:

- *Harvest date* -- as mentioned, fruit soften with advancing maturity. Therefore, earlier harvest dates will result in firmer fruit. There is of course a trade-off between sugar content, susceptibility to scald, color development, etc., and firmness when looking at harvest date. You must take these into consideration too.
- *Calcium* dips have been shown to reduce firmness loss during storage, but Ca uptake varies by cultivar, orchard, and maturity.
- *Temperature* is the single most important post-harvest factor that affects fruit firmness. Rapid cooling, whether fruit is destined for regular or CA storage is critical if you expect to maintain decent fruit firmness during storage. In fact, it can mean fruit that are 3-4 pounds firmer coming out of storage for fruit that were rapidly cooled upon harvest vs. those that took several days to get down to proper storage temperature.

Summing up, Feree says some of the more important factors you need to consider when trying to improve fruit size are *cultivar selection, canopy light environment, and thinning*. For fruit firmness look at *flesh calcium content and rapid cooling upon harvest*. Paying close attention to these factors will pay-off with larger, higher quality fruit which ought to return more dollars to the grower.

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