

Just Picked

Newsletter of the
Upper Midwest Organic
Tree Fruit Network
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Deirdre Birmingham, Network Coordinator
7258 Kelly Rd
Mineral Point, WI 53565
608-967-2362
deirdreb@mindspring.com
www.mosesorganic.org/treefruit/intro.htm
Newsletter layout by Jody Padgham of MOSES

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Welcome to the fifth edition of *Just Picked*, the newsletter of the Upper Midwest Organic Tree Fruit Growers Network. This will be our last edition for the year. Our next edition will be in January for a total of four editions in 2006.

In this issue you will read about Michigan State University's Organic Apple Orchard Project, and the Network's trip to visit that research site as well as Jim Koan's Al-Mar Orchard, near Flushing, MI. Also included are information on controlling codling moth via granulosis virus by Larry Gut of Michigan State University, and by Maury Wills' on-farm research project using Entrust. Maury Wills and others have used SARE Farmer/Researcher Grants to generate answers to problems. Maury also expands on a problem encountered while conducting his research in his Review of Products, Part III. This is something every grower needs to avoid. The calendar has upcoming learning events during the winter season.

Please note that the research feature of our webpage was added this summer. Please visit www.mosesorganic.org/treefruit/research.htm and check out the various projects. If you are running a project or completed a project, please provide us with updates, reports, or links to your own webpage. Growers like to know what is going on.

I hope your harvests are going well! -- Deirdre Birmingham, Network Coordinator

The Network Trip to Michigan by Deirdre Birmingham and trip participants

On September 7th Network members visited the Organic Apple Project at the Michigan State University Clarksville Horticulture Experiment Station and the Al-Mar Orchard owned and operated by Jim Koan near Flushing, MI. Network members able to spring themselves free during harvest season were Harry Hoch of Minnesota, his intern from Moldova, Ivan Plescka, Dan Kelly of Missouri, Barbara and James Lindemann from Wisconsin, Tim Moritz, a graduate of Southern Illinois University working for an orchard in Michigan, and myself, from Wisconsin. Debby Williams' article on page 2 provides excellent information on the MSU orchard project

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A project of the Midwest Organic and Sustainable Education Service
Funded by the USDA Risk Management Agency



A Report on the Fifth Annual Field Day Michigan State University Organic Apple Project -Clarksville Horticulture Experiment Station; June 16, 2005

By Debby Williams, Outreach Academic Specialist

“The future of farming is in understanding the ecology of the organisms that exist in a farming system and learning how to minimize crop damage and loss.”

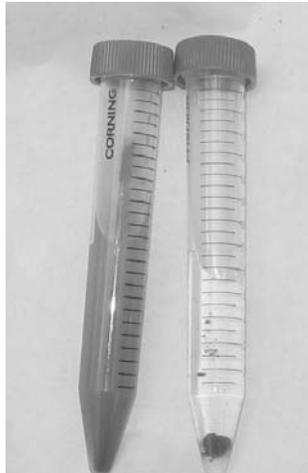
This was the prevalent take home message for those attending the 5th annual field day of the Michigan State University Organic Apple Project. This project was initiated in 1999 as a vehicle for entomologists, horticulturists, soil scientists and growers to further the safest possible methods for apple and tree fruit production. The apple orchard is unique as it was planted from “scratch” as a high-density, 2500 tree orchard on five acres in 2000. Most organic apple orchards are converted from conventional to organic production systems. The orchard is still two years away from peak production. 2004 harvest yields show ‘Gala’ at 216.5 bushels per acre, ‘Golden Delicious’ at 217.3 bushels per acre and ‘Goldrush’ at 418.2 bushels per acre.

The field day focused on four learning goals:

- to see and hear how biological activity in the soil changes over time when using a systems-based approach to feed and cultivate soil biology;
- to see and hear about insect and disease organisms that use the apple leaf or fruit in their life cycle and strategies to manage diversity in the orchard;
- to see and hear how the apple tree and root system can be selected and managed to survive in an orchard system that provides the optimum water and nutrients to favor fruit production; and
- to see and explore how each of these parts fit together to create a sustainable

farming system that requires human knowledge, experience, discipline and patience.

Initial soil preparation began in 1999 with the planting of legumes, grasses and buckwheat as cover crops. This allowed for carbon and nitrogen levels to build up, as well as an increase in soil organic matter. Soil organic matter content should be above 3%. This encourages microbes, bacteria and fungi, which act as decomposers; predacious nematodes, which keep the bacteria under control; *Mycorrhiza fungi*, which help the plant with water and phosphorus uptake; earthworms, which provide aeration and fertility; and protozoa. Trees do best in a fungal-driven soil ecology, which helps them resist disease and insect



Soil Test Results

pressure. A high level of soil organic matter also increases the soil’s water-holding capacity. To demonstrate the difference in soils, Dr. George Bird added a pellet of soil from a conventional corn production field to the water tube on the left. The soil pellet shattered, demonstrating that the soil could not hold water but would be dissipated and possibly washed away. The tube of water on the right had a pellet of soil from the orchard added to it. The soil pellet stayed intact, absorbing surrounding water. This would allow the soil to provide water to the trees over a longer period of time without replenishment. Alfalfa hay mulch, compost and clover are the primary sources of nutrients for most of the orchard. These materials will continue to increase the soil organic matter over time.

Cultivars used in the orchard were chosen for disease resistance and commercial mar-

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(Continued from page 2) MSU Field Day

ketability. Degree-day modeling and the monitoring of specific pest species are used to determine when control measures may be needed. Microbial control measures that were used included sulfur for fungal diseases, lime sulfur for apple scab and powdery mildew, copper as a protectant fungicide and for fire blight control, *Bacillus subtilis* as a fungal and bacterial preventative, and *Streptomycin* for fire blight control.

Insect management is guided by ecosystem management principles. Diversity strips were planted to provide habitat for beneficial insects. Beneficial insects help keep the insect pests, particularly leaf rollers and tussock moths, at levels that the trees can



MSU Diversity Strip

tolerate. The diversity strips were planted on the east and west sides of the orchard. A variety of native plants were selected to provide continuous bloom to attract beneficial insects throughout the growing season. Comfrey, which has a dense root system, is used as an edging to prevent quack grass from entering the plot. Keep in mind that even a diversity strip with native plantings needs to be maintained. Pheromone trapping is used for plum curculio and coddling moth. The traps are placed on the outside rows of the orchard. When population levels reach levels requiring insecticide use, only the two outside rows were sprayed with Pyganic. Throughout the season Surround WP, a kaolin clay-based product, was applied on the fruit to prevent insect damage.

Three root stocks (M.9 NAKB 337, M.9 RN29, Supporter 4) of varying vigor levels combined with three different methods of managing the vegetation competing with the tree roots (mulching, flaming, “Swiss Sandwich System”) generated differences in tree growth and soil fertility. The Swiss Sandwich System allows the tree row and center aisle to have a natural floor to encourage beneficial insects, with a tillage strip in between to reduce root zone competition.



Pheromone trap

Soil organic matter levels for the whole orchard started at approximately 2.45% in 2002. In 2004 the soil organic matter had decreased then stayed at the same lower level with the

Swiss Sandwich and flaming methods, and increased to 2.7% with the mulching method. With the mulching system, leaf nitrogen levels were sufficient to meet the needs of the tree, while the other systems bordered on deficiency. M.9 NAKB 337 root-stock proved to have the highest yields with the mulching system.



Mulch

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Codling moth control using granulosis virus

by Larry Gut, Ph.D., Department of Entomology, Michigan State University

Among the new options available for control of codling moth (CM) is a naturally occurring virus that goes by the scientific name of *Cydia pomonella* granulovirus (CpGV). It is commonly referred to as the codling moth granulosis virus. CpGV is highly specific to the codling moth. It may infect the larvae of a few very closely related species, but it is noninfectious toward beneficial insects, fish, wildlife, livestock, or humans.

Each CpGV particle is contained within a protein occlusion body (OB). Preparing a concentrated suspension of OB's using mass-reared CM larvae infected with CpGV produces commercial formulations of the virus. Viral OB's are very small. Indeed, over a trillion OB's are present in an ounce of formulated product. These tiny particles must be ingested by the CM larva to be effective, but it only takes a few to cause death. Upon ingestion, OB's are dissolved by the insect's alkaline gut lining, releasing the viral particles. The virus replicates itself within the gut cells and rapidly spreads to other organs. Within a few days the larva stops feeding, becomes discolored and swollen, and melts into a mass of billions of viral OB's.

Products - Two CpGV-based biological insecticides are available for use by Michigan apple growers, Cyd-X[®] (Certis USA, L.L.C.) and Virosoft^{CP4} (BioTEPP Inc.). The label recommended application rate for Cyd-X is 1 to 6 fluid ounces per acre. The labeled application rate for Virosoft is 3.2 fluid ounces per acre. Both are organically approved products. They can be applied up until harvest and have a re-entry interval of only four hours. Stored material should be kept refrigerated to ensure stability and potency.

Rate and timing of application - There are many options for incorporating virus into your CM management program. Deciding how much, when, and how often to apply product can be quite confusing. Keep in mind the following factors when trying to sort things out: 1) CpGV must be ingested by the CM larva and may not kill it immediately, 2) the virus breaks down in the environment, thus a spray may only be effective for a week or so, and 3) the virus is highly lethal, a few OB's are all that are required to cause death.



Virus Infected Larvae

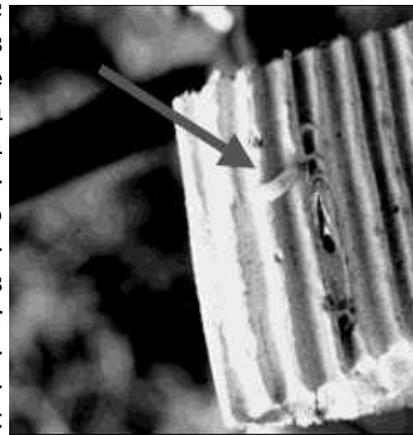
Optimal use of the virus is against young larvae before they penetrate the fruit. The best way to target young larvae is to have the virus present on the surface of the eggs when they begin to hatch. Hatching CM larvae will ingest the virus as they consume their eggshells. If the virus is intended as a primary CM control, the first application should be made at about 250 GDD50 after biofix. At least four applications will be required to cover the egg hatch period. Weekly applications at a low rate are a better approach than high dose sprays applied at wider intervals. In or-

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chards with high CM pressure, this sequence of sprays will need to be repeated beginning at about 1250 GDD post-biofix or 250 GDD after the start of the second-generation flight.

Growers can opt to use the virus as part of a multi-tactic CM control program. Rotating it with chemical insecticides is a good means of combating resistance. We suggest the following approaches to incorporating CM virus into a management program. If you want to restrict your use to a single generation, target the first generation. Some virus-infected larvae will not die immediately, allowing them to cause fruit damage and even complete larval development. Fortunately, stings or deeper entries in small fruits attacked by first generation larvae often fall off the tree or are removed by thinning. Additionally, research conducted in 2003 revealed that less than 4 percent of the individuals that managed to complete larval development survived to pupate and emerge as summer generation adults. Thus, applications against the first generation can greatly reduce the size of the summer generation that will need to be controlled.



Larva collected in cardboard band placed on tree trunk

Regardless of the generation targeted, it is best to make at least two applications. If you want to rotate a CpGV product with other controls, I favor applying a chemical insecticide as the first spray at the start of egg hatch (250 GDD) and the virus as the second spray. This is because more eggs will be present and covered by the virus spray at the later timing. The insecticide and virus could then be rotated again, or the virus could be applied weekly at a low rate for the remainder of the egg hatch period.



Viral Occlusion Bodies

Tank mixing - Codling moth granulosis virus products are compatible with most fungicides and insecticides sprayed in apple orchards. However, they should not be mixed with lime sulfur, Bt products, or copper fungicides. Use of a buffer to neutralize the spray mix is recommended if the pH is above 9 or below 5. Also, I am concerned about tank mixing them with the neonicotinoids, Assail and Calypso. This is because bioassays conducted at the MSU Trevor Nichols Research Complex have indicated that the compounds have anti-feeding properties.

Use of spray adjuvants - A number of adjuvants have been recommended and tried as a means of increasing the longevity or improving the effectiveness of CpGV products. The virus is sensitive to the UV rays in sunlight, thus powdered milk and other adjuvants have been added to limit this effect. Since the virus must be ingested to be effective, feeding stimulants such as molasses are often used in an attempt to increase larval feeding on the spray droplets. Although these options may prove useful, my experience is that applying more virus, rather than adding a spray adjuvant, is the best means of increasing efficacy.

Reprinted from the June 2004 MSU Fruit CAT Alert newsletter.

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that we won't repeat. But in the spirit of this being a Network, trip participants felt it important to share highlights of what struck them most during this quick but very full trip.

In addition, we are prying out of the Michigan State researchers as much information as possible, including photos, that you will find increasingly on our website at www.mosesorganic.org/treefruit/research.htm.

The MSU Organic Apple Project encompasses a host of researchers from entomology, plant pathology, horticulture, soils, and more. We were able to snag a half-day of entomologist Mark Whalon's time to actually see what many of us had been hearing about since this Network started a year and half ago. We hope trips like this will continue. We will continue to post notices of any field days that such projects offer. Mark brought with him a visiting entomologist from Victoria, Australia, David Williams, Ayhan Gokce, a visiting entomologist from Turkey, and Chris Archelangi, a new MSU honors student working with Mark.

David Williams and Mark Whalon remarked how they are able to speed up the research process due to the hemispheric differences. During the Australian winter David can work here while it is summer, and vice versa for Mark. This has been on-going (when grant funds allow), since David and Mark met almost thirty years ago due to their mutual interest in mites. David is working on a virus to attack codling moth as well as attract and kill technologies. Pheromone twist ties were under experimentation in the Clarksville orchard.

Plum curculio (PC) traps were positioned along the edges of the orchard but with the addition of sachets, one containing a plum essence and another with an experimental lure. Ayhan Gokce is looking at a nema-

tode that will attack PC when it is in the soil. David Epstein, who runs MSU's IPM program, later commented to me how Mark and Ayhan are just going ahead and getting the research started. Meanwhile David is trying to get funding to do a full-blown project looking at this concept.

While already yielding a wealth of information, this is the first year that the orchard is yielding a financial profit. Even so, next year is looking grim for the orchard. While a net profit helps to maintain the orchard, it does not cover research costs. Long-term research projects that tree fruits require get the axe when short-term yields are increasingly demanded. (The pressure on publicly traded companies has a corollary in the world of research funding.) Similarly Brian Smith of UW-River Falls is finding that while his Kazakhstan seedling apple trial is finally bearing its first fruits after eight years, lack of funding may bring a bulldozer to the orchard sooner than any apple pickers. I'll be talking more with Brian Smith and Mark Whalon this winter to see how the Network might help to keep valuable research moving forward.

Our trip to Jim Koan's Al-Mar Orchard was still all about experimentation but in the context of a large commercial orchard. Jim is cutting edge. He gave me a piece of his mind to share with others in the van prior to our arrival to make best use of our time there. One is that he is gradually converting all of his 100-acre orchard to organic. He moved from conventional to "super-strong IPM" and then to organic due to the opportunities in the market place and the environmental benefits. He "got religion" along the way, and now would never go back to conventional practices. "Frankly", he quipped, "it would be boring." "I'd quit before I'd go back to conventional," he added. While Jim is learning lots, and seems to thrive on that, he finds that he has far more to learn. He is seeing vivid

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“personality differences” among his apple varieties as they move under organic management. “It is what you cannot see that is the most difficult to fix”, said Jim, alluding primarily to what is going on in the soil and microbial world.

While Jim’s orchard will be completely organic by the end of next year, he is disappointed thus far with the rewards in the market place. He finds, as one might expect, that his business lost money in the transition process. Furthermore, wholesale prices are going down due to the steady conversion of orchards to organic in the Pacific Northwest, where it is far easier to grow apples organically. To counter this “locally grown is our salvation,” proffered Jim. “But,” he added, “the economists haven’t figured it out yet. Meanwhile I have \$16K in insurance to pay annually and kids to put through college.” So Jim is figuring it out and is willing to share what he learns. (In fact, he is helping to plan and will present at the organic sessions of the Great Lakes Fruit and Vegetable Expo to be held Dec. 6-8.)

Jim spoke of everything in terms of dollars and cents, as only an orchardist can do. He is experimenting with new varieties and with in-row spacing, as well as equipment modifications. For example, he finds for his soil, rootstocks, and apple varieties that a three-foot distance on trellis works the best. But he tried two feet and six feet to get to that conclusion. He is currently using lime-sulfur, sulfur and Surround WP as the core of his disease and insect pest control strategy. He is experimenting with guinea fowl to help control plum curculio having noted how they greatly reduced a tick problem in his reindeer herd. Feral cats

and raptors, however, have greatly reduced his flock. He continues to experiment with their housing design using a grant from the Organic Farming Research Foundation.

Jim is bringing the “local market” to him. He has an on-farm store featuring not only his products, but a diversity of packaged organic foods. He allows visitors to mingle among reindeer, geese, turkeys, guinea hens, and his young dog, who avidly closes the gate behind visitors so these critters don’t escape. He hosts educational groups in a large shed that is festively decorated. They come to tour his orchard, juice-pressing facility, and to enjoy not only his apples, but sweet cider and, for those over 21, his fermented, traditional cider, called Misteguay Creek Cider. After enjoying fermented cider served on tap in his store, we were envious of locals who purchase and keep refilling growlers from his tap. At least several of us went home with his fermented cider in champagne-type bottles.



Jim Koan Pulling Cider

And now from others on this tour:

From Dan Kelly: Mark Whalon quickly pulls in to the research station with a small entourage and zooms out to his plot. We follow in a cloud of dust. 'Textbook' is one way to describe the trip through the University's (soon to be past) organic research plot at Clarksville. And what a shame it is! After seven years of preparing and planting this plot and finally, for the first year making a profit, the program loses its funding. Why do you need funding if you are making a profit? I was not handed any statistics on paper and what I recall is a bit fuzzy about the economics of this taxpayer venture. But as I am an apple grower, it sure seemed futile to pull out of the program just when it looks like it might be viable. So much for the 'model'.

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Next leg o' the trip... on to Jim Koan's orchard outside of Flushing, MI. After straightening out worker details in the sales room he focused on his guests for about 3 hours! This is where the rubber meets the road. Innovation is the norm here. Creativity and observation are the night and day. And no lag time waiting for funding those grants either. Jim seems to be constantly reinventing the ways of his orchard through equipment modification, engineering, tree training, planting regimes or training his dog to close gates!

Jim Koan is at break-even with his organic orchard. Between these two worlds might lie an answer. Jim has the true setting for an orchard. Mark Whalon has the research discipline to conduct trials. Coming together would benefit us all.

From Barb & Jim Lindemann: We covered a vast array of topics in our whirlwind tour of Michigan State's organic test orchard and Al-Mar's profitable operating organic orchard. "Push pull" strategies of using attractants and repellants that are OMRI-sanctioned were clearly effective as an organic management strategy. Relying on new cultivars using intense planting on dwarf rootstock with innovative management was clearly profitable.

We concluded the next needed step is to gather the data and information that is available and disseminate it to small growers, such as us.

We chatted extensively on the way there and on the way home. It makes a great deal of sense to continue to build relations with the research community in Michigan, Iowa, Minnesota, and Wisconsin. They are searching for answers on the pests and diseases that threaten our efforts to grow the best possible food without chemicals that will poison us. They are also scrambling for even scarcer research dollars. We need each other. We also need to find avenues to

establish buying, production, and marketing cooperative relationships.

We all face the challenge of producing pure, wholesome food, and selling for a profit. If we allow definitions to divide us, those whose agenda is monolithic control of our food supply will seep into the vacuum we ourselves have created.

The topic of buying local surfaced repeatedly in our group's conversations. We were reminded of efforts to provide security in our food supply. On one hand, buying fruit and milk from a producer you know might seem an elegantly simple way to minimize the risk of deliberate harm to what we consume. But "security" is a mighty two-edged sword. It is equally possible that requiring a massive burden of expensive "safeguards" will neatly wipe the small producer off the field with mandates for proper - and costly - shrink wrap, inspections, and "assurances" (and chemical additives) allowing the mega to prosper and the small organic producer to follow the carrier pigeon to oblivion.

From Tim Moritz:

I recognized that fact that we each came from different states in the Midwest to Michigan to see what was going on there. I was impressed with the need for us to communicate among each other in the region so that together we can improve growing tree fruit organically. It was also interesting for me to see an orchard actually using organic practices and turning a profit. In my horticulture classes we were taught that it was nearly impossible to grow Grade-A tree fruit organically. It was important for me to see all the trial and errors that Jim Koan went through to make organic production work. He had different ways to also use the lower grade apples, like making cider. I also liked the many ways Jim got people to come to his orchard. He had a variety of marketing schemes, like the reindeer that get people there. Then they buy some apples while they are visiting.

Review of Products Allowed For Use in Organic Tree Fruit Production – Part III

By Maury Wills, Iowa Department of Agriculture and Land Stewardship

How to identify allowed organic inputs

There are numerous agricultural and horticultural input products available today. Each product manufacturer claims that their product is the solution to your problem. Deciding on what product to use for the particular challenges that you are facing in your orchard is difficult enough. What's worse is that you can't use just any product out there but only those that are allowed in an organic production situation.

Whether you are transitioning land into organic production or your operation is already organic, you have to make sure that you do not use a product that will negatively impact your organic operation and certification.

First, become familiar with the National Organic Program regulation. Too few producers have spent time reviewing the regulation that they are operating under. A copy of the regulation can be found at www.ams.usda.gov/nop or by contacting an USDA-accredited certifier. An up-to-date list on certifiers is the New Farm Guide to US Organic Certifiers located on the web at <http://www.newfarm.org/ocdbt/>.

So, let's start with an insect or disease problem that you may have in your orchard. You have followed the NOP requirements for dealing with pest problems without success. So now you can turn to a product-based solution. But how do you go about determining if a particular product is permissible in your organic orchard?

Active product ingredients that are synthetic must be listed in the regulation (NOP

205.601). A quick read of the product label will usually tell you what the active ingredient is. You can then take a look at the regulation to see if it is listed there. If it is, then great! You are one step closer to making a decision. If the synthetic active ingredient cannot be found in the regulation, do not use this product if you wish your practice to be certified organic.

Product formulations not only contain active ingredients but may also contain inert ingredients. Product labels not only list the specific active ingredient but also indicate the percent of inert ingredients found within the product. Often the label does not list these specific inert ingredients. There are allowed and prohibited inert ingredients according to the NOP regulation. The wrong inert can be a deal-breaker on whether or not a product can be used in an organic situation.

Inert ingredients are used in products to enhance product shelf life, stabilize product effectiveness in rain or sunlight, or for a number of other reasons. The Environmental Protection Agency (EPA) classifies inerts on Lists 1 through 4. Only EPA List 4 – Inerts of Minimal Concern are allowed in products for organic use. The product label will probably not tell you on which EPA list their inerts are found. In addition, if you contact the product manufacturer they may not tell you which inerts are in their product for proprietary reasons. Nevertheless, you still need to know.

Most certifiers, if they have already reviewed the particular product in which you are interested, will tell you if it can be used or not. If the certifier has not reviewed the

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Evaluating Alternative Pest Management Strategies for Organic Apple Production

Maury Wills of Wills Family Orchard applied for and received a Sustainable Agriculture Research and Education (SARE) Farmer/ Rancher Grant in 2003. His project was to use and evaluate Entrust™ and Last Call™, which are two new products for codling moth control, in his family's organic orchard. The major findings of his research project are described based on Maury's final report. Further information is available on the Network's website at www.mosesorganic.org/treefruit/research.htm

Professor Kathleen Delate of Iowa State University participated in the project design, data collection, sampling and analysis portion of this project in conjunction with the Wills family. Their orchard is located on 32 acres in Dallas County, Iowa, within close proximity to the confluence of Panther Creek and South Raccoon River.

Two orchard blocks covering approximately 2 acres are located on south and west facing slopes. While apple trees were first planted in 1992, many trees were lost in 1993, what they call their flood year. Replacement trees were planted in 1995. A second orchard plot was established in 1996. The orchard has been maintained organically since they started in 1992. Organic certification was sought and obtained in 2000 and has been renewed each year to present. The project was conducted only within the scab immune blocks, which comprise most of the Wills' Orchard.

Codling Moth

Codling moth had become the primary pest of concern in the Wills Family Orchard affecting 50-70% of the organic apple crop prior to this project. Fruit damage by other pests such as green fruit worm and apple fly maggot were managed within commercially

acceptable levels. Plum curculio still represents a significant concern for them.

At the time of the grant proposal the manufacturer of Last Call™ believed that they could formulate their product to comply with National Organic Program regulations for purposes of this project. The product was formulated and shipped to the orchard for use. However, during review of the product formulation for the organic certifier it was learned that while the active ingredient (pyrethrum) in this product is allowed, the inert that was used is not allowed. Only inerts identified on EPA List 4 – *inerts of minimal concern* may be used in organic input formulations. This product contained at least one inert from EPA List 3. Consequently, it was determined that this product would not be used in this project so that the organic certification of the orchard would not be jeopardized. (See "Review of Products" by Maury Wills on page 10 about the importance of checking out inerts.)

Apple damage from codling moth feeding dropped dramatically during this trial period. This decline in codling moth damage to commercially acceptable levels can be associated with the use of the spinosad product, Entrust™. Management of codling moth will help organic growers to provide quality organic apples to their customers.

Conventional growers struggle with codling moth resistance to conventional pesticides; consequently bio-insecticides such as Entrust™ may prove beneficial to them. However, cost of bio-insecticide products and lack of premium prices for conventional apples may make the use of these alternative products cost-prohibitive for conventional growers.

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(Continued from page 10) Evaluating Strategies

Managing Plum Curculio

While disease and other insect damage were identified during this trial, they were not found to be commercially significant except for plum curculio (PC). In fact some PC damage may not be accounted for because many PC damaged apples drop from the trees in June and therefore would not be counted at harvest time. It also appears that specific varieties are more susceptible to PC feeding.

Further research and product development is needed to provide products and methodologies that will successfully manage PC. The use of the kaolin clay product Surround™ to manage PC may prove to be too harsh on beneficial insects to use frequently. It may be better to limit the use of this product to early control of PC and discontinue after the primary egg-laying period is completed. *Since organic management strategies and inputs do not act quickly on organic systems the grower should establish thresholds unlike conventional thresholds for determining action levels whether it be for fertility, insect or disease challenges.* Establishing action-level threshold for organic apple growers should be researched.

Soil Fertility

Leaf analysis indicated some disease and variation in nitrogen content among cultivars. However, neither yield nor quality appeared to be effected by either. Composted poultry manure was applied at the base of each tree in this trial. This provides a slow release of nitrogen and other nutrients to the tree. It would take time before increased nitrogen levels would be seen in a foliar analysis even if a higher nitrogen level would be desired.

Project Impacts

This trial resulted in the production of higher quality fruit due to a dramatic reduction in codling moth damage. This translated into more salable apples. Without such improvements in organic pest management, commercial organic apple production in the Upper Midwest may not be possible. Since bio-insecticides are currently more costly than conventional pest management products, organic producers must receive a premium return on their organic apples to pay for input costs.

Based on Maury Wills' SARE project FNC-469/03 final report.

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product of concern, they may not review it until you apply for certification as it takes staff time to collect pertinent product data before making their decision.

Another good resource to explore before making a purchase decision is the Organic Materials Review Institute (OMRI). OMRI is not a regulatory agency but a non-profit organization started in the early 90s to review products for compliance with organic regulations. Consequently products do not need to be listed with OMRI to be allowed for use in organic operations. However, if OMRI has listed a product as "allowed" it is a very good indicator that it probably can be used. Nevertheless, the final decision maker in this process about what can and cannot be used is your organic certifier. The OMRI website is www.omri.org or call 541-343-7600.

Therefore, it is advisable to ask your certifier to sign off on organic inputs before you use them. You will save the certifier time by submitting product labels, website addresses and additional product information. You may possibly save the organic status of your organic tree fruit operation.

SARE Farmer and Rancher Grant Program : Network Members Fund Valuable Research

Network members should consider applying to the USDA-funded Sustainable Agriculture Research and Education (SARE) program to generate answers to their technical and marketing issues. SARE awards competitive grants to growers for on-farm research, demonstrations, and education projects. There are two types of grants – individual and group. Individual grants cannot exceed \$6,000 and usually cover a one-year project. Group grants cannot exceed \$18,000 (total) for a two-year project.

SARE in the North Central region received 171 proposals in 2004 and funded 51 grants totaling \$391,678. Funding since the program began in 1992 totals \$3,206,075. Most readers of *Just Picked* are in SARE's North Central (NC) region.

Farmer/Rancher (formerly called Producer) Grants have funded a variety of research topics, including pest and disease management, education and outreach, networking, quality of life issues, marketing, soil quality, waste management, water quality, and more.

Applications are due in the winter. Funding for successful proposals is available in the spring.

To request a Farmer Rancher Grant Application, contact Joan Benjamin at 800-529-1342, or jbenjamin2@unl.edu. NCR-SARE's website, www.sare.org/ncrsare, offers a list of resources to help you write your proposal.

YOU should apply. These people did:

David Sliwa of Decorah Iowa received a grant in 2001 for "An Evaluation of Interplanted and Mulched Orchard Rows." Project #FNC01-343.

Dan Kelly of Canton Missouri received a 1995 grant for two years for "Sustainable Plum Curculio Control in Apple Orchards"; Project #FNC 95-116.

Maury Wills of Adel, Iowa received a 2003 grant for "Evaluating Alternative Pest Management Strategies for Organic Apple Production. Project #FNC-469/03.

Check out these projects on the web at www.sare.org/reporting. Use the project # to more quickly find their final reports.

Did you receive a grant and were not listed above? Please let the Network Coordinator know.

We want to list all grower and researcher projects in the Upper Midwest or of relevance to our growers in our region on our website at www.mosesorganic.org/treefruit/research.htm.

Please use these valuable resources.

Calendar

2005

Dec 6-8 Great Lakes Fruit and Vegetable Expo, Grand Rapids MI. www.glexpo.com

Dec 8th features a day-long features a day-long organic program, with a half-day on apples. Want to carpool? Email others on the list-serv.

Dec. 12-16: Hard Cider: From Orchard to Glass; Principles & Practice of Cider Making;

Dec. 17, 9 AM – 5:45 PM: Cider Sensory Evaluation Seminar

Dec. 17 evening: Winter Wassail: A Cider Celebration. All three events will be in Mount Vernon, Washington; Contact: Debra Lancaster, 360-416-7605, dlancast@wsu.edu
<http://learningcenters.wsu.edu/skagit/ciderworkshops.html#info>

2006

January 8-10: Wisconsin Apple Growers Association 2006 Fresh Fruit and Vegetable Conference; Olympia Resort and Conference Center; Oconomowoc, WI; www.waga.org
WAGA and MAGA conferences.

Feb. 23: Organic University, La Crosse, WI; including “Advanced Apple Production” by Michael Phillips.

Feb. 24-25: Upper Midwest Organic Farming Conference, La Crosse, WI; including break-out session with Michael Phillips. Network meeting during one of the lunch breaks.

Mid-April: Grafting workshop by Bob Purvis; Cottage Grove, MN; purvisrc@msn.com 651-769-8473. Bob is also planning a pruning workshop. Watch the January newsletter for more details.

(Continued from page 3) MSU Field Day

The orchard floor management system did not affect tree growth. However, the rootstock performance averaged across all three orchard floor management systems shows Supporter 4 with the most growth and M.9 RN 29 cropping to be the highest.

Dr. Ron Perry offered the following tips for establishing an organic orchard:

- When planting, place soil over the graft union to prevent damage from dogwood borer. After two to three years, remove the soil.
- Suspend drip irrigation approximately two feet above the ground to allow for mulching or flaming the vegetation in the row.
- Use tree guards to prevent rodent damage at ground level.

The Organic Apple Project demonstrates how the use of human knowledge, experience, discipline, and patience can create a successful farming operation. A visit to the orchard clearly illustrates that organic apple production can be done successfully in Michigan.

Debby Williams can be reached at deb@debbywilliams.com or 517-432-0307

Announcements

On February 23rd, 2006 the Network will host a full day classroom session on “Advanced Apple Production” with Michael Phillips. This will be a course offering with the popular MOSES *Organic University*. Michael will also offer a workshop during the Fri-Sat Upper Midwest Organic Farming Conference. Watch for details at www.mosesorganic.org and in upcoming newsletters.

The **Network’s web page** found at www.mosesorganic.org is a valuable resource. One section is titled “Resources.” Under the Resources section is a comprehensive listing of many items that you can find from ATTRA, other web-based resources, or via mail order. Many of these items were included in the Resource Manual provided to participants of the Organic University course on Organic Apple Production.

We are pleased to announce that the Upper Midwest Organic Tree Fruit Network has again received funding from the USDA Risk Management Agency to continue into 2006. Thanks to MOSES for working with us to secure that support. Look for details on 2006 activities in upcoming newsletters.

Don’t Forget: you can join or un-join the Network’s list-serv at anytime. For information, please email the list-serv moderator at deirdreb@mindspring.com

The Upper Midwest Organic Tree Fruit Growers Network was started in 2004 for the purpose of sharing information and encouraging research to improve organic tree fruit production and marketing in the Upper Midwest. The Network is supported by the Midwest Organic and Sustainable Education Services (MOSES) and the Risk Management Agency of the USDA in addition to other event sponsors. This newsletter is produced by MOSES, layout by Jody Padgha of MOSES.

Upper Midwest Organic Tree Fruit Network
c/o MOSES
PO Box 339
Spring Valley WI 54767