

July 2007 Regional Fruit Grower Newsletter

CALENDAR OF EVENTS

- 7/6 **Wine Grape “First Friday” IPM Meeting**
Peninsula Cellars, Old Mission Peninsula
- 7/12 **Sweet Cherry Variety Showcase**
Coloma, MI
- 7/9-13 **Cherry Connection**
NWMHRS
- 7/10 **MAEAP Recognition**
Cherry Connection Industry Day
- 7/16 **Ag Expo Free Water Quality Testing Collection**
MSU Extension offices
- 7/25 **Viticulture Field Day**
SW MI Research & Extension Center
Benton Harbor, MI
- 7/26 **HHW/Clean Sweep Collection**
Grand Traverse Co. – Call for appointment
- 8/3 **Wine Grape “First Friday” IPM**
Leorie Vineyards, Old Mission Peninsula
- 8/23 **NWMHRS Open House & Equipment Show**

WINE GRAPE “FIRST FRIDAY” IPM MEETINGS CONTINUE—

Duke Elsner and Nikki Rothwell

We have two more “First Friday” wine grape IPM meetings scheduled for 2007. The turn out for our June meeting at Shady Lane Vineyards was great. We hope to see you at the next sessions:

Friday, July 6, 3:00 – 5:00 PM

Peninsula Cellars vineyard site on Kroupa Road, Old Mission Peninsula.

This site is on the north side of Kroupa Road, about 0.6 miles west of Peninsula Drive. This vineyard was established with black plastic laid in-row for weed management and is now approaching bearing age. It will be a great opportunity to discuss vineyard floor management. Current pest and disease pressures will be on the agenda, as usual.

Friday, August 3, 3:00 – 5:00 PM

Leorie Vineyard, Old Mission Peninsula.

The entrance to this vineyard site is on Peninsula Drive about one mile north of the “Y” intersection with Center Road. Look for a set of diagonal concrete slabs at the side of the driveway. This will be a very important meeting, with MSU research and extension staff from campus in attendance. We are expecting Rufus Isaacs from the Department of Entomology, Annemiek Schilder from Plant Pathology, and Mike Brewer, the coordinator of IPM programs.

CHEERS TO CHERRY PRODUCERS!

Roberta Dow, Michigan Groundwater Stewardship Program, MSUE

On **July 10th** we are honoring cherry producers who have gone the extra mile to become MAEAP verified. The Michigan Agricultural Environmental Assurance Program (MAEAP) assesses livestock, farmstead, or cropping system for compliance with agricultural-related laws and regulations as well as environmental good management practices. Cherry producers have been leading the way in farmstead verifications. They have been proactive in environmental protection, demonstrating good stewardship of the land. Thirty-two farms with cherries have received Farmstead Verification. Twenty percent of the farmstead verifications in the state have been conducted with cherry farmers. Three cherry producers have also received Cropping Verification. Come join us at Industry Day at the Cherry Connection, **July 10th, 1:30 – 2:30 pm** at the Horticulture Research Station to recognize the special efforts of these MAEAP verified farmers.

SWEET CHERRY VARIETY SHOWCASE

International Plant Management, Inc., in cooperation with MSU Cooperative Extension, is sponsoring a Sweet Cherry Variety Showcase on **Thursday July 12, at 4:30** in the afternoon. The showcase will be held at the International Plant Management sweet cherry test block at **Fruit Acres Farms in Coloma, MI.**

The IPM cherry test block has more that 85 different sweet cherry varieties planted with most of them fruiting this year. There is a large group of the NY test varieties from New York State Agricultural Experiment Station in Geneva, NY and more than 10 varieties from the University of Bologna, Bologna, Italy. Also planted are varieties from the Washington State University, Michigan State University, the Summerland, BC program in Canada and many of the industry standard varieties. This block also features trees on 8 different standard and dwarfing rootstocks.

Wally Heuser of International Plant Management remarks, "I believe this block closely resembles a typical grower's production block. We've made mistakes and fixed them, tried training systems that didn't work and forgotten to do things that should have been taken care of. Currently the entire block is trained in our version of a central leader with modifications. We hope that our experiences and mistakes will help growers avoid and solve problems with their own dwarfing sweet cherry blocks.

Growers are invited to come and sample everything in the block. We have some numbered selections from New York and Italy that we are very excited about. Especially interesting are some very early selections from both programs."

On display will be cherry samples from research stations and growers throughout Michigan and New York. Featured guests and speakers include Dr. Susan Brown, stone fruit and apple breeder from Cornell, Dr. Greg Lang and Dr. Bill Shane of MSU, Wallace Heuser of International Plant Management, Inc, and many other university and extension professionals. All growers, extension and university personnel and their employees are invited to attend. Refreshments will be provided. Fruit Acres Farms is located in Coloma, MI, 1 mile south of I-94 exit 39, on Friday Road. The test block is ¼ mile east of Fruit Acres Farms on Carmody Road. Registration is not required. For more information call International Plant Management at 800-424-2765.

Project justification/statement of challenge: Balaton® is a relatively new tart cherry with fruit quality characteristics that are expected to create new value added market opportunities for Michigan growers. Growers have planted large acreages in the past few years. Unfortunately, fruit set and yield has been disappointing in years with cool conditions during bloom. The Balaton Marketing Committee identified crop yield as an issue that must be improved if growers are to succeed with this variety. In 2005, growers funded a study to explore practical alternatives to improve Balaton yields. The 2006 project has been built on 2005 results in order to complete this study and communicate the results to the industry.

Objectives:

1. Determine if a bee attractant applied during bloom will increase yield.
2. Determine if Balaton yields differ based upon proximity to sweet cherry and/or Montmorency pollenizing varieties.
3. Determine if supplemental pollen supplied to Balaton will improve fruit set.
4. Determine if nutrition is a factor contributing to poor Balaton fruit set.
5. Determine if gibberellic acid applied to Balaton trees will enhance spur and shoot production, which will subsequently increase flower bud production and improve yield.

Accomplishments by Objective

Objective 1: Determine if a bee attractant applied during bloom will increase yield.

Bee-Scent® is an attractant based on pheromones that encourages specific foraging behavior in honeybees. The product is intended to attract and concentrate bee foraging activity for an increase in pollen transfer. Hence, increase fruit set and ultimately yield.

In 2005, a Balaton block in Northport, MI was divided in half: one half of the orchard was sprayed with two applications of Bee-Scent® at the recommended rate, while the other half was left unsprayed. Results showed that the Bee-Scent® half of the orchard produced 27% more cherries than the unsprayed half. In 2006, we used the same block for the study but reversed the treated and untreated areas. Two additional blocks were added to the study, each with a treated half compared to a non-treated half. However, we were only able to collect data from one farm due to hail damage. Yields were compared between treated and untreated area, and there were no differences in yields where Bee-Scent® was and was not used.

Objective 2: Determine if Balaton yields differ based upon proximity to sweet cherry and/or Montmorency pollenizing varieties.

In 2005, we collected Balaton yield data from six orchards that had Balaton planted adjacent to sweet cherries or Montmorency tart cherries. Yields were taken from Balaton trees in the first two rows next to the sweet cherry or Montmorency plantings. Yields were also collected from the center of the Balaton planting; these rows served as controls because the alternative pollen would not likely be transferred such a distance. Results from 2005 showed that other cherry cultivars adjacent to Balaton positively influence Balaton yield in four of the six orchards. In 2006, yield data was again collected from five Balaton orchards planted adjacent to non-Balaton cherries. The same methods were used as mentioned above. We observed similar results in both 2005 and 2006: Balaton yields were higher when trees were planted adjacent to alternate pollen sources (Figure 1).

Objective 3: Determine if supplemental pollen supplied to Balaton will improve fruit set.

1. Commercially available sweet cherry pollen was blown into Balaton test trees. Two and a half acres received supplemental pollen while two and a half acres were not sprayed with pollen. The mixture of supplemental pollen contained 45% Sweetheart, 45% Chelan, and 10% Black Tartarian. The first pollen application was put on at 10% bloom at 50g/acre. The pollen was applied with a dispenser and a "carrier", which was a germination stimulator. We found that

the carrier was too fluffy and would not move down through the dispenser, so instead the pollen was fed into an air blast sprayer by hand. A second application was applied at 50% bloom at 50g/acre without the carrier. A third application was applied at 80% bloom at 50 g/acre. The third application was additional because the grower felt the first application did not apply the pollen sufficiently due to mechanic difficulties with the dispenser. Overall, supplemental sweet cherry pollen applied by an air blast sprayer did not result in an increase in percent fruit set. We were not able to repeat the experiment in 2006 due to a shortage in pollen.

2. Pollen inserts were tested in two Balaton blocks to investigate if alternative pollen would increase Balaton yield. Two blocks were divided in half with an equal number of honeybee hives on each side of the orchard. Pollen inserts containing Rainer, Van, and Tartian pollen were added to beehives on one half of the block; the hives in the other half of the block did not contain inserts. A pollen insert is a device that forces bees leaving the hive to crawl through a shallow tray containing pollen from a desired pollinator.

Yields from the block near the pollen supplemented hives were compared to yields from the non-treated hives. In orchard A, average percent fruit set for Balaton was similar between the insert and non-insert control. However, in orchard B, percent fruit set was significantly lower in the insert treatment versus the control. We concluded that frost damage influenced these results. Therefore, we cannot conclude whether pollen inserts influence Balaton yield.

3. Bouquets provide a supplemental source of pollen that may increase yield, so we tested their influence on Balaton yield at one block in Northport, MI. Bouquets are also readily available to growers at a much lower cost than purchased pollen. Bouquets of non-Balaton cherry blossoms were placed in a portion of a Balaton orchard during bloom. Ten to fifteen blooming Gold cherry branches (3 ft. in length) were placed into a five gallon bucket with water, and the bucket was half buried into the ground. One bucket was placed every ten trees down one row in the Balaton block. Average percent fruit set was significantly increased where the bouquets were compared to the areas without bouquets.

Objective 4: Determine if nutrition is a factor contributing to poor Balaton fruit set.

We compared leaf nutrient status of Balaton orchards in Michigan that have previously had generally high yields with those blocks that have had generally poor yields. Growers and processors aided in identifying the best and worst yielding blocks. Results are listed in Table 1.

Based on the 2006 analyses, we cannot draw definite conclusions about nutrient deficiencies that would indicate if a Balaton block is a 'good' yielder or a 'poor' yielder. Most nutrients fall in the appropriate ranges for healthy Montmorency trees, but we do not currently know if Balaton trees require different quantities of nutrients than Montmorency; the differences between these tart cherries may be reflected in the nutrient requirements. Based on the above averages, we do observe significant differences in two nutrients: copper (Cu) and manganese (Mn). The differences in Cu are based on disease control strategies at one farm. This particular grower uses Cu as a cherry leaf spot fungicide, which would account for the high Cu value in orchard A, hence the overall Cu average for 'good' yielding blocks. We cannot explain the differences in Mn at this time. Good yielding orchards had significantly higher Mn, ~77ppm compared to poorer yielding blocks that had only 40ppm. We need to further investigate the role Mn plays in Balaton.

Objective 5: Determine if gibberellic acid applied to Balaton trees will enhance spur and shoot production, which will subsequently increase flower bud production and improve yield.

Gibberellic acid was applied at three different rates to Balaton trees at the NWMHRS in 2005: 10ppm, 20ppm, 30ppm and an untreated control. The same treatments were applied to the same trees in 2006. After the first year of GA application, we can conclude that GA does increase the number of terminal buds on Balaton shoots, and although all treatments were significantly greater than the untreated check, the higher the rate of GA, the more buds. When GA was applied at 30 ppm, we had an increase of buds by 1.5x the untreated check (Figure 2).

Summary

At this time, we recommend GA at 30ppm to increase the shoot numbers on Balaton trees as well as to add supplemental bouquets to orchards to increase yields.

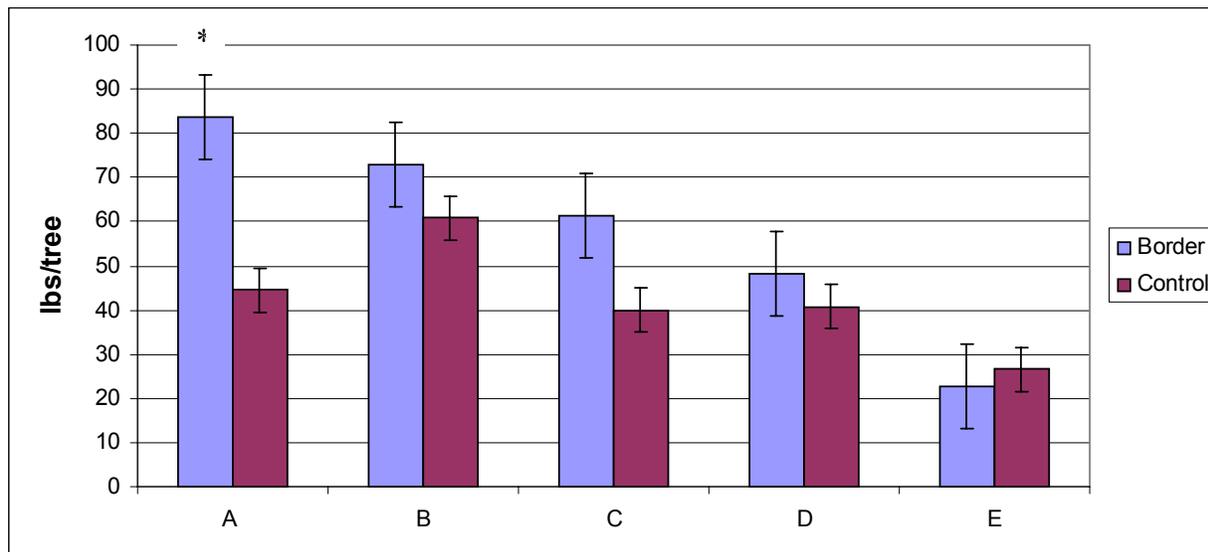


Figure 1. Comparison of Balaton yields in 2006 with and without alternate neighboring pollen sources. Orchards A and D have sweet cherry in the border rows while orchards B, C and E have Montmorency tart cherry.

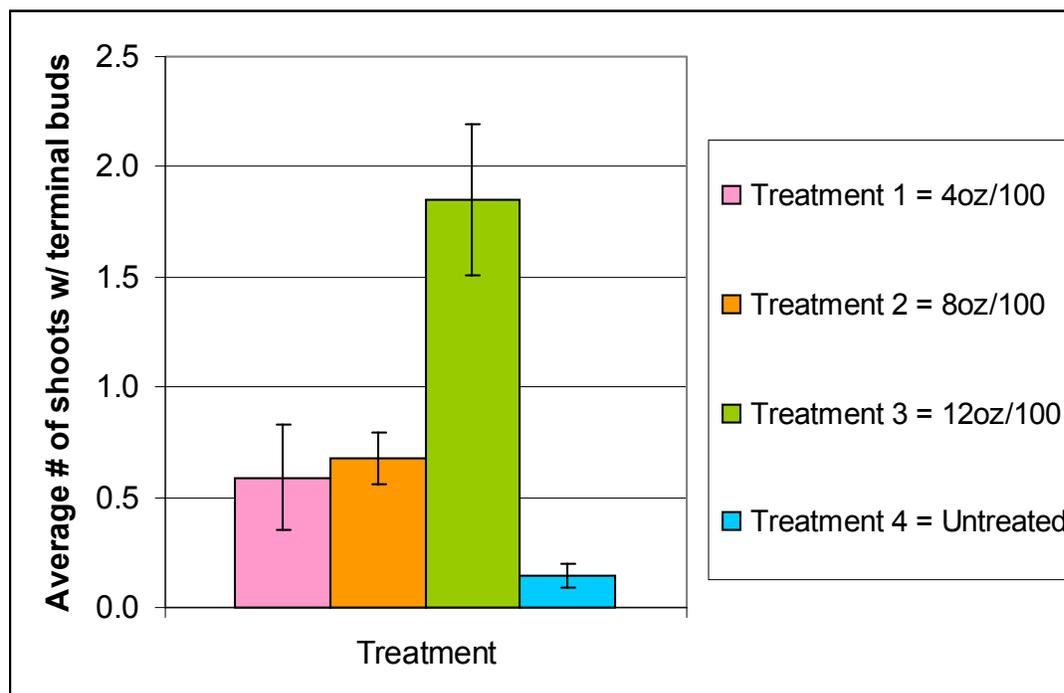


Figure 2. Average number of shoots on 2006 growth for all treatments.

Table 1. Nutrient analysis results from seven Balaton blocks, three with a history of good yields and four with poor yields. Analyses performed by A & L Laboratories, Inc.

<i>Good Yield Orchards</i>	N (%)	P (%)	K (%)	Mg (%)	Ca (%)	Boron ppm	Zinc ppm	Maganese ppm	Iron ppm	Copper ppm	Aluminum ppm
A	1.66	0.29	2.36	0.52	2.2	34	19	109	79	98	26
B	1.24	0.17	2.14	0.49	1.94	33	43	77	85	25	68
C	1.66	0.19	1.74	0.42	1.54	32	17	44	108	31	46
Average	1.52	0.22	2.08	0.48	1.89	33.00	26.33	76.67	90.67	51.33	46.67

<i>Poor Yield Orchards</i>	N (%)	P (%)	K (%)	Mg (%)	Ca (%)	Boron ppm	Zinc ppm	Maganese ppm	Iron ppm	Copper ppm	Aluminum ppm
D	1.6	0.19	1.66	0.54	1.55	40	15	54	66	14	26
E	1.65	0.19	1.8	0.51	1.38	38	14	34	70	15	20
F	1.41	0.22	2	0.59	2.22	48	35	32	72	11	28
G	2.06	0.22	2.06	0.5	1.61	44	138	39	96	11	31
Average	1.68	0.205	1.88	0.535	1.69	42.5	50.5	39.75	76	12.75	26.25

CHERRY INDUSTRY DAY AT THE NWMHRS DURING THE CHERRY CONNECTION

Growers are invited to attend the 2007 Cherry Industry Day (**July 10 at 1:30**) at the Northwest Michigan Horticultural Research Station. Industry Day is part of the week-long *Cherry Connection*, a program that invites the public to come to the research station to learn about the cherry industry. This year's program has been titled "Cheers to Cherry Producers", and the focus of the day will be to commend Michigan cherry growers on their commitment to environmental stewardship.

WATER QUALITY TESTING

The Michigan Groundwater Stewardship Program along with Michigan State University Extension are sponsoring a Free Drinking Water Screening **July 16th** for nitrates, nitrites and triazine pesticides. Sampling bottles and instructions are now available at local MSU Extension offices. People can also bring samples in clean glass jars (like baby food or jelly jars) and then download the instructions from the Grand Traverse MSUE website by going to www.msue.edu/grandtraverse and then clicking on the Michigan Groundwater Stewardship Program. Samples should be returned to local MSUE offices on July 16th between **8-4 pm** for Grand Traverse County and by **2 pm** for neighboring counties. Contact local MSU Extension offices for more information. The free screening is conducted annually in conjunction with Michigan State University's Ag Expo, Michigan's largest agricultural equipment exposition scheduled for July 17-19th at Michigan State University's campus.

LEELANAU COUNTY EXTENSION HAS NEW DIRECTOR

EAST LANSING, Mich. -- Robert J. Serrine has been appointed county director for the Leelanau County Michigan State University (MSU) Extension office, effective **August 1**.

Serrine will provide leadership for the MSU Extension office and strengthen its community and economic development efforts, especially those related to agriculture. "We are incredibly fortunate to have someone with Robert's combination of experience, education and enthusiasm move into this role," says Patrick Cudney, MSU North regional director. "He'll do an outstanding job serving the needs of Leelanau County residents."

A Traverse City native, Sirrinc received his bachelor's degree in resource ecology and management from the University of Michigan and his doctoral degree in environmental studies from the University of California, Santa Cruz (UCSC).

Sirrinc comes to MSU Extension from the UCSC, where he was an instructor. He also worked with the U. S. Department of Agriculture's Natural Resources Conservation Service as a soil conservation aide and was a teaching fellow at UCSC.

MSU Extension helps people improve their lives through an educational process that applies knowledge to critical needs, issues and opportunities. The organization serves all 83 Michigan counties. The Leelanau County MSU Extension office is located at 201 Chandler Street, Leland. The phone number is 231-256-9888, and the e-mail address is msue.leelanau@county.msu.edu.

MEET OUR 2007 NWMHRS SUMMER CREW

Karen Powers, Research Technician

Once again the station is filled with seasonal research technicians dedicated to helping assist our NW station team and campus researchers with many exciting new and ongoing research projects. This year we have our largest summer crew ever, consisting of five, bright young women. You may have already seen them out in your orchard or vineyard, diligently counting blossoms, checking traps, measuring fruit, damage rating or one of many other tasks. They have all been such a tremendous asset to our team working tirelessly on all the hot June days. There is still much more work to be done with harvest upon the horizon, so expect to see them around and feel free to ask them questions! Please read on to learn more about each one of them and the projects they have been working on.

Renae Tuller is currently attending Lake Superior State University, and pursuing a BS degree in Environmental Science that includes two minors in Chemistry and Biology. This is the second year Renae has been working for the NWMHRS as a research technician. One experiment that she is working on is pheromone mating disruption of the Codling Moth (CM) on Old Mission Peninsula in Traverse City. This experiment is using more natural means of controlling CM by using a synthetic female CM pheromone to distract male moths from mating with potential females. She also contributes time to other research projects such as RAMP insect and disease scouting, vineyard scouting, plum curculio migration, deer repellent, horn-faced bees, and potato leafhopper chemigation.



working on apple scab.

A graduate from Elk Rapids High School, **Kacie Scholl**, graduated from Michigan Technological University with a BS degree in Biological Sciences and a minor in Microbiology. At the station she is working on the horn-faced bee project, plum curculio migration, plum curculio trap trees, the stem-on-sweet-cherries project, RAMP scouting, the potato leafhopper chemigation trial, scouting in vineyards, and the potato leaf hopper Admire trial. This fall, after her work at the station, Kacie will be attending Purdue University to obtain her MS degree in Plant Pathology and Botany; she will be

Kathryn Lepera recently moved to Traverse City and the research technician position at the NWMHRS has been an excellent opportunity for her to get to know the area and learn about the local horticultural industry. The crew travels around the area to scout for insect and disease damage in the local orchards as part of an integrated pest management program and grant funded research projects. Kathryn will also be working on a project to determine whether powdery mildew in grapes have developed a resistance to commonly used fungicides. Kathryn is a graduate of Michigan Technological University with a B.S. in Applied Ecology and Environmental Sciences, a M.S. in Rhetoric and Technical Communication and looks forward to living in Traverse City and pursuing a career in environmental research and resource conservation.



Lisa Talbot enthusiastically arrives back to the station! She completed her degree, History Philosophy and Sociology of Science, last December from Michigan State University. She played a role in the Balaton project in 2006 and now collaborates among the other technicians in such projects as RAMP, Horn-faced bees, deer repellent, vine scouting, sweet cherry variety trials and potato leafhopper chemigation. Lisa hopes to continue her work in Extension and contribute to the Michigan fruit industry.

Ele Nugent is back! After recently finishing her Bachelor's degree in Environmental Studies and Applications at Michigan State University, Ele has returned for her fourth summer at the NWMHRS. She is now researching crop load in Honeycrisp apples and, as always, is working on the soft cherry project for Dr. Nikki Rothwell and Dr. Jim Flore. Her project contributions also include working with RAMP insect and disease scouting, the sweet variety trial, plum curculio migration, deer repellent, vineyard scouting, and horn-face bees. Ele likes nothing more than a good cherry pie.



NWMHRS OPEN HOUSE & EQUIPMENT SHOW

The Northwest Michigan Horticultural Research Station Open House will be held on **August 23, 2007**. This year the Leelanau Horticultural Society will be hosting an equipment show at the Open House, which will begin at **1:00 pm**. We will have equipment demonstrations starting at 2:00 pm, and the educational sessions will be held at 3:30. We will have a wine and juice tasting at 5:15, and dinner will be served at 6:00 pm. The cost for the dinner is **\$12**, and tickets can be purchased prior to the event at the Leelanau County Extension office. Contact Annette at 256-9888 for your tickets. We hope to see all of you there this year!