

**NW Michigan Regional Fruit Grower Newsletter
August 2005**

CALENDAR OF EVENTS

- 8/25 NWMHRS Open House & Equipment Show
- 9/24 Pesticide Collection
- 9/27 Trevor Nichols Fields Day
1-5 p.m., Fennville
- 12/6-8 Great Lakes Fruit, Vegetable and Farm Market Expo
DeVos Convention Center, Amway Plaza
Grand Rapids

NWMHRS OPEN HOUSE & EQUIPMENT SHOW

Jim Nugent, Nikki Rothwell and Jim Bardenhagen

The Northwest Michigan Horticultural Research Station Open House and Equipment Show will take place on **Thursday, August 25, 2005**. Afternoon activities will include an educational session with four concurrent topics, during which MSU researchers will present their latest findings and discuss future plans for orchard and vineyard management. This will be followed by equipment demonstrations, a social hour, and dinner sponsored by the Leelanau Horticultural Society. The Paul and Frances Johnson Foundation have donated a pig from the 4-H fair auction. The dinner will be catered by *Ethnic Garden Catering*. The cost for the dinner is \$10 if purchased in advance or reserved by **Monday, August 22**, or \$15 at the door. Tickets can be purchased by completing the form below and mailing it in with payment, or reserved by calling the Leelanau Extension office (256-9888) or NWMHRS (946-1510). We hope you can join us!

Open House activities:

- 1:00 Equipment and vendor displays open for the afternoon
- 2:00-3:00 Concurrent educational programs.
1. **Tart cherry** – Tart Cherry Integrated Orchard Management Project (RAMP) with Mark Whalon, Larry Gut, Andrea Biasi Coombs, Dave Epstein and Nikki Rothwell
 2. **Cherry** – New Concepts for High Density Cherry Production & Mechanical Harvesting with Dick Ledebuhr, Greg Lang, Jim Flore and Jim Nugent
 3. **Apples** – Rootstocks for Northern Michigan with Ron Perry and Steve Fouch
 4. **Grapes** – Training Styles, Canopy Management, Summer Hedging and Variety Trials with Tom Zabadal and Duke Elsner
- 3:00-4:30 Equipment demonstrations
- 4:00-5:00 Wagon tours of station
- 4:30-5:15 Visit vendor display area
- 5:15-6:00 Social time with hors d'oeuvres and wine/juice tasting
- 6:00- ? Dinner followed by Leelanau Horticultural Society annual meeting

Open House sponsors include the Michigan Agricultural Experiment Station, MSU Extension, the Northwest Michigan Horticultural Research Foundation, and the Leelanau Horticultural Society.

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Dinner Tickets Form -- NW MI Hort Research Station Open House & Equipment Show

Name: _____ Phone: _____

Tickets x \$10 = _____ (Prepaid tickets will be available for pick up at the door). Please make checks payable to: **Leelanau Horticultural Society** and mail to: P.O. Box 987, Leland, MI 49654

MANAGING DROUGHT STRESSED TREES

Jim Nugent, District Horticulturist, MSUE

The drought of 2005 has been a bad one, and in many areas of NW Michigan, this drought is worse than either 1988 and 2001. This article will discuss some observations about managing fruit trees and vines during a severe drought.

Drought Symptoms

This summer we have seen trees with many drought induced symptoms. Vegetative symptoms include wilt, leaf yellowing and drop, "firing", and (in the extreme) tree collapse and death. Fruit size is of course affected by the drought, but this is only the second year (along with 1988) when I observed fruit actually visibly shrinking on some of the most drought stressed trees. This occurred in some sweet cherries during the days just before the July 4 rain. Fruit shrinks because the tree uses the fruit moisture to meet its need for transpiration when the roots cannot deliver enough water.

"Firing" is a condition of cherry (usually Montmorency) where the leaves on a branch suddenly turn brown and die; it results from severe moisture stress, and often is associated with high mite levels (either spider mites or plum nursery mites). However, mites are not required if the drought is severe. I believe mites compound the drought stress either by the active removal of moisture from leaves or by puncturing leaf cells that allow moisture leakage. In other words, drought stress, not mites, is the requirement for firing, but high mite levels will cause trees to fire more quickly as drought conditions worsen.

This drought has been accompanied by exceptional heat. This increases moisture evaporation from soils and increases transpiration from plants. It also made the ethephon much more active. Unfortunately, in many cases the highly active ethephon combined with drought stressed trees to cause leaf yellowing and drop, plus ethephon induced gummosis. In some cases, the leaf drop was severe.

Future

Drought stressed trees will be going into winter in a weaker than normal condition. Trees that had high levels of leaf drop will be entering winter in particularly stressed condition. The extent of this year's drought and ethephon damage will not be known until next season because winter conditions will greatly affect the severity of tree dieback.

How to Manage Drought Stressed Trees

Three things come to mind to help trees (or young vines) through a drought.

1. **Add water where feasible** – With really young trees and vines, this may become a requirement to keep plants alive. Normally older trees and vines will survive if other points below are considered, but it is obviously possible for drought to kill even larger trees. The most susceptible older trees are either bearing trees carrying heavy crops that have a shallow root system (often caused by root loss from previous excessive moisture inducing phytophthora root rot death of lower root area) or young bearing trees growing in particularly sandy soils.

A drip irrigation system designed with one emitter per tree can provide adequate moisture to keep trees alive and usually works fine to supplement rainfall, but may have inadequate moisture distribution when trying to meet the entire water needs to adequately size the fruit. Much better designs for severe drought conditions will have multiple emitters per tree or micro-sprinklers; either of these designs will improve water distribution and plant uptake.

2. **Conserve moisture** – The best water conservation tool is to maintain good weed control. The threshold for weeds drops considerably when moisture supplies become limited. If need be during a drought, widen the weed spray strip and retreat emerging weeds while they are small. Applying mulch can also provide much improved moisture retention. Additionally, organic mulches help improve the soil's water holding capacity.
3. **Keep trees as free from additional plant stressors as possible**

- a. Mite thresholds drop well below normal when trees are under drought stress. Therefore, managing mites carefully becomes a priority. For example, post harvest mite thresholds on cherries decreases from 20-30/leaf to 8-12/leaf in a severe drought. Actively scouting for mites early and throughout the droughty season will help with management decisions.
- b. Be extra careful to keep trees from defoliating early due to disease, such as cherry leaf spot.
- c. For bearing cherries, reduce rates or eliminate the use of ethephon to minimize the likelihood of increasing leaf drop or inducing gummosis.
- d. Correct any potential nutrient deficiencies. Drought will reduce the uptake and/or availability to the plant of nitrogen, potassium, boron and calcium. Expect greater problems during a drought season with boron and calcium disorders in apples.
- e. Avoid summer pruning cherry trees that significantly defoliated during the drought to retain as much leaf area as possible to build storage reserves.

PESTICIDE COLLECTION

Grand Traverse County/Clean Sweep has set **September 24, 2005** for pesticide collection. Farmers and individual Michigan residents may drop off potentially harmful pesticides at our Clean Sweep site where they will be collected, packaged for shipping, and disposed of properly and safely. There is **no charge** for this service. Those interested in participating in the program may contact 941-5555 to set up an appointment or for more information. This service may not always be free of charge, so you may want to take advantage of the fall collection.

APPLE MATURITY PROGRAM

This year the NWMHRS will again be collecting apples for maturity testing. We will also test samples collected by growers and delivered to the Station. Results will be sent via fax and email to the FruitNet list and to past apple maturity list subscribers. Results will also be put on the pome fruit section of the code-a-phone (947-3063). The maturity newsletter and code-a-phone will be updated weekly on Wednesdays. If you have not received this information previously and wish to subscribe, please contact the NWMHRS (946-1510, 888/749-3019) or nwmihort@msu.edu.

PREDICTED HARVEST DATES 2005

Philip Schwallier, District Horticulturist, CHES Coordinator

Apple maturity for 2005 is expected to be normal to ahead of normal in the state. Most of the state experienced an early end of winter and very warm temperatures. As a result, bud growth developed simultaneous from the south to the north. Bloom developed concurrently and was compressed from the south up to about the Hart area when cold weather set in and slowed the northern area bloom. Bloom was a few days early in the south to normal in the north.

Early bloom and cool weather give us predicted harvest dates roughly a few days early to normal (Table 1) These predicted harvest dates are for the center or peak harvest of these varieties for CA storage. This year the 2005 predicted harvest dates are compared to the rough normal harvest dates and last year's predicted harvest dates. This year the state will harvest apples roughly a few days early and roughly one week behind last year (Table 2).

Hot temperatures experienced during July will hasten the maturity of some varieties. Gala is notorious for ripening early when late summer temperatures are above normal. Other varieties are less prone to hot temperatures advancing fall maturity. Still other varieties ripen when cold temperatures occur at near harvest time.

Table 1. 2005 predicted peak harvest dates.							
Full bloom date				Predicted harvest date			
Station	McIntosh	Jons	Reds	McIntosh	Jons	Reds	Observer
SWMREC	5-2	5-5	5-6	9-4	9-20	9-26	Shane
Deerfield	5-8	5-9	5-10	9-8	9-27	10-4	Tritten
Flint	5-8	5-9	5-10	9-9	9-28	10-5	Tritten
Peach Ridge	5-7	5-8	5-9	9-8	9-25	10-2	Schwallier
Ludington	5-8	5-10	5-11	9-10	9-30	10-8	Danilovich
NWMHRS	5-20	5-22	5-23	9-14	10-6	10-13	Nugent

Table 2. 2005 predicted peak harvest dates compared to normal and last year.						
Days ahead of normal				Days behind last year		
Station	McIntosh	Jons	Reds	McIntosh	Jons	Reds
SWMREC	3	1	4	5	5	3
Deerfield	0	-3	-4	7	10	10
Flint	1	-3	-3	6	7	8
Peach Ridge	4	3	3	2	0	1
Ludington	6	5	0	2	-2	3
NWMHRS	6	3	2	6	-3	2

DEFORMED APPLES

Jim Nugent, District Horticulturist, MSUE

Some apples this season have developed miss-shapen fruit, i.e., flatten or even sunken areas on the apples. Cutting into the flesh reveals brown, corky tissue that extends quite deep into the flesh. Sometimes the corky areas have a hollow center. The symptom is caused by severe **boron (B) deficiency**. Boron is exceptionally deficient this year because it is so strongly affected by the drought. I have seen this symptom once prior to this year (likely during the drought year of 1988), but the extent of damage appears much more extensive this year. From lack of response from colleagues on this week's crop advisory team call, I believe this condition is limited to NW Michigan. This is probably because the sandy soils in this area of the state are naturally the lowest in B of any area of Michigan. Secondly, the drought conditions have been more severe here than in areas further south.

The symptom occurs most commonly in areas of sandy soil and varies by variety. Northern spy is particularly susceptible. I expect this fruit to store poorly.

I doubt that any good would come from a B application at this time. But by knowing the cause, maybe the next time conditions are looking like an early season drought is in the works, we'll know to apply some solubor in an early cover spray.

NEW MITICIDE REGISTRATION

Nikki Rothwell, District Fruit IPM Educator

Bayer CropScience recently announced the registration of a new miticide, Envidor 2SC, for use in grapes, pome fruits, and stone fruits. It is labeled for control of European red mite, two-spotted spider mite, apple rust mite, and pear rust mite. The active ingredient, spirodiclofen, controls mites by inhibiting lipid synthesis, and is active by contact to all life stages. Envidor has a novel mode of action and is not known to have risk of cross-resistance with other currently registered miticides. Envidor 2SC has a rate range of 16 – 18 fluid oz per acre, 7-day pre-harvest interval for pome and stone fruits (14 days in grapes) and is restricted to one application per acre per season for all labeled fruit crops.

FRUIT AND VEGETABLE INDUSTRY SCHOLARSHIPS AVAILABLE

The Michigan State Horticultural Society and the Michigan Vegetable Council, Inc., have announced the availability of scholarships for students who intend to pursue careers in the Midwest fruit or vegetable industry, respectively. The awards are made available by these organizations, with the generous support of industry sponsors.

The target amount per scholarship is \$1,000, but it could be more or less at the discretion of the selection committee. Applications should be submitted by **September 30, 2005**.

To receive more information or an application contact:

Fruit scholarships: Available on the MSHS web site at <http://www.mihortsociety.org/> phone: 269/424-3990, or email MIHortSociety@aol.com

Vegetable scholarships: Phone: 734/848-8899 or email mivegcouncil@charter.net

MIGRANT HOUSING GRANTS

Dr. Vira Bitsch, Dept of Ag Economics, MSU

The Michigan Dept of Agriculture will receive funding from the U.S. Dept of Labor to assist growers in the construction of new migrant housing. Michigan growers may receive up to \$15,000. Please contact MDA for more details.