



Healthy Fruit

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Prepared by the University of Massachusetts Fruit Team

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Cornell Fruit Field Day

The Cornell University Fruit Team is inviting fruit growers from throughout the Northeast and Canada to tour six fruit farms in and around Lake Ontario, for the Cornell 2002 Fruit Field Day on Thursday, August 1, from 8:15 a.m.-4:30 p.m. During the tour, two new sweet cherries, 'BlackGold'TM and 'WhiteGold'[®], will be released by Cornell University stone fruit breeder Bob Andersen. The two cherries are the first of four new cherry varieties and two new plum varieties that Andersen expects to release within the next six months. "Fruit growers are looking for new options to diversify operations by expanding their plantings of stone fruits," says Andersen. "We have new and improved varieties of stone fruits and have developed management techniques that improve quality and yield." Other topics covered by Cornell researchers and fruit extension educators and consultants during the Fruit Field Day tour will include new rootstocks, producing big 'Gala' apples, thinning trial results using new thinners, strategies for preventing apple russet, planting systems for apples and peaches, new insecticides, mating disruption strategies, on-farm propagation of trees, promising new apple varieties, storage tips, on-farm equipment demonstrations, and more. A link to the complete schedule and a tour map is available on the Cornell fruit home page at <http://www.cornellfruit.com>. (Pre-register by July 25)

Leaf Analysis Time

Jon Clements, *Extension Tree Fruit Specialist*
Win Cowgill, *Rutgers Cooperative Extension*

NOW (July 15 – August 15) is the ideal time to collect leaf samples for foliar nutrient analysis. Leaf analysis is the most accurate way to assess the individual nutritional needs of tree fruit crops on a block-by-block basis. (Soil samples should also be used to get a complete picture of orchard fertility and soil pH.) Foliar analysis can also be useful in diagnosing abnormal growth when paired samples (one from problem block or trees and one from normal growth) are submitted for analysis. Otherwise, blocks of apples, pears, peaches, and cherries should be sampled every 3-4 years on a rotation basis. Samples should be taken from the same age

tree, the same cultivar, and with leaves from the middle of the current season's terminal growth. Important benefits of leaf analysis include: optimize yields; protect environment from excess fertilization; aid in diagnosis of nutrient deficiency; and save money. And leaf analysis is certainly an important part of an integrated fruit production program! Enclosed is a 'Plant Tissue Analysis Questionnaire' and form with directions for submitting your sample(s) to the UMass Soil and Plant Tissue Testing Laboratory. (You can also get the form at www.umass.edu/plsoils/soiltest/services1.htm.) The cost is \$15 per sample, which includes nitrogen (recommended). Other options for submitting leaf analysis samples are the Agricultural Analytical Services Laboratory at Penn State (<http://www.aasl.psu.edu>), and A&L laboratories (<http://www.al-labs.com>) offers 24-hour turn-around on leaf analysis, which is particularly useful if trying to diagnose and correct a deficiency problem.

Apple Maggot

Trap captures have increased, but not dramatically, since last week, with a handful of orchards reaching the treatment threshold of 1-2 flies per unbaited sphere. Now is the time that monitoring pays off, since there is considerable variation from one orchard to another. Keep an eye on traps in susceptible varieties particularly.

Potato Leafhoppers

Continue to monitor young trees for renewed feeding; new flights of leafhoppers are continually moving into orchards. As mentioned in previous methods, since these leafhoppers prefer new, vigorously growing tissue, repeated sprays are often necessary to cover new growth.

Fall Webworm

A few nests of fall webworm have begun to show up in low-spray orchards. It is easier to control these insects with organophosphates before the webbing has become extensive. One grower reported very good results with Avaunt on fall webworm last year even after the webbing had become extensive.

Mites

Watch 'em. Populations can build up rapidly when weather is hot.

San Jose Scale

Crawlers are beginning to settle onto fruit at this time. It is still possible to achieve some control of scale crawlers on fruit with Esteem at the 4 or 5 oz per acre rate; the manufacturer suggests using a spreader/sticker and going relatively dilute, since adequate coverage in the tops and interiors of trees is important.

Have You Seen Flyspeck Yet on Apples?

Turner Sutton, at North Carolina State University, developed a model for predicting when a season's first flyspeck would appear. The model calculates the accumulation of hours that leaves (and fruit) have been wet (from rain and heavy dew) in the apple canopies, starting with the first rainfall that occurs 10 days after petal fall. This time coincides with the beginning of spring ascospore release, and occurs approximately a month earlier in NC than in central New England. As flyspeck only grows when the relative humidity is above 94%, and it takes a while to "turn-on" the growth mechanisms, leaf wetness events are only counted if they exceed 3 hours duration.

The model is being tested at the UMASS Cold Spring Orchard in Belchertown, and at a few commercial sites that have weather stations continuously recording leaf wetness and ambient temperature. At the Belchertown site, the leaf wetness accumulation reached the magic number (270 hours) that signals the beginning of flyspeck appearance on July 15. At the Sterling site, the accumulation was only at 195 hours on July 14, and at the Hawley site it had reached 220 hours on the 12th. So far we have not seen any flyspeck. The Sutton model usually predicts appearance somewhat earlier than actual appearance in this region. New England plant pathologists believe this is due primarily to different temperature levels and patterns during the flyspeck development months in the 2 regions.

Based on recommendations by Glen Koehler of UMAINE Extension, we have been adjusting the leaf wetness accumulations so that hours of wetness occurring at and near the most favorable temperature for development (68°F), are weighted more heavily than hours at higher or lower temperatures. Using this approach, which more accurately predicted flyspeck first incidence in 2001, the Sterling site had 45 fewer hours accumulated (150) than with the Sutton model (195), and the Hawley site had 70 fewer hours of wetness (151 as compared to 220 hours). Belchertown numbers are still being calculated, but will be similarly lower.

As stated last week, many factors point to a relatively light year for summer diseases. Considering the relative dryness and heat of the season and these wetness accumulation numbers, we don't expect to see early flyspeck or particularly severe flyspeck this year.

Bag #:

Plant Tissue Analysis Questionnaire

Please READ the instructions on the reverse side of this questionnaire.
TAPE QUESTIONNAIRE TO PAPER SAMPLE BAG.
See instructions for PAYMENT on Reverse Side.

(1) _____ (2) _____
Name of Sender Name of Farm/Orchard/Vineyard

(3) _____ (4) _____
Street Address City & State

(5) _____ (6) _____
Zip Code Telephone #

(7) _____ (8) _____ (9) _____
Crop Variety Rootstock (if applicable)

(10) _____ (11) _____ (12) _____
Date Sampled Sample Collected by Soil Type (if known)

(13) Customer Sample ID (block, field name, location, etc.): _____

(13) Stage of growth: (1) Early (2) Mid (3) Mature

(14) Soil Moisture Level: (1) Very Dry (2) Dry (3) Moist (4) Wet

(15) Anticipated Yield: (1) Light (2) Moderate (3) High

(15) Plant Vigor: (1) Weak (2) Moderate (3) Vigorous

(17) Pruning: (1) None (2) Light (3) Moderate (4) Heavy

(18) Plant Age: _____ (19) Plant Spacing: _____

(20) Fertilizer applied last year: _____

(21) Fertilizer applied this year: _____

(22) Purpose of sample: Normal Nutrient Check Problem

(23) Comments: _____

HOW AND WHEN TO SAMPLE: Samples should be taken from the specific plant part, at a specific location on the plant, at a specific stage of growth for which research data has been evaluated. In other words, to assess the nutritional status of your plant tissue one must have data from comparable plants of known nutritional status. Generally the most recently developed mature leaves are sampled, and timing is often critical. See the list below for guidelines for typical crops.

- Apples (Pears): sample fully expanded leaves from midshoot of current growth during late July or August
- Strawberries: sample from the first fully expanded new leaves after renovation.
- Blueberries: sample healthy leaves during July or August
- Raspberries: sample healthy leaves on non-fruiting canes in early to mid-August
- Grapes: sample **petioles** from most recently matured leaves on shoots at beginning of veraison in mid-August

PROCEDURE:

1. When there is a plant growth problem, always attempt to sample the problem areas and then take a second sample from the same variety showing satisfactory growth. Send these two samples in separate containers with separate payments.
2. When no plant growth problem exists, but there is interest in assessing the nutritional status, your results will be compared with those in the scientific literature or from previously sampled crops.
3. Remove leaves (or selected plant part) from a representative area. For example, remove leaves from 10-20 plants scattered through the area to be sampled (rather than 10-20 plants from one end of the planting).
4. Make certain management practices have been uniform within the sampling area. If soil characteristics vary significantly over the area, sampling should be refined to reflect these differences.
5. Take 10-50 leaves (or selected plant part), depending on crop, rinse thoroughly with tap water to remove any chemicals, foliar applied fertilizer, and soil particles. Place them on clean paper to air-dry.
6. Once air-dried, carefully place tissue (avoiding contamination with foreign material) in a paper bag (using the one provided if you have a UMass Tissue Kit). Please PRINT (do not write)
7. Answer all questions on the reverse side of this sheet, and enclose questionnaire in an envelope along with your sample to the Soil and Plant Tissue Testing Lab.

PAYMENT PROCEDURE	FEES: Tissue Analysis without Nitrogen	\$12.00
	Tissue Analysis including Nitrogen	\$18.00
Enclose CHECK made PAYABLE to University of Massachusetts along with completed questionnaire. Please DO NOT send cash. If more than one sample is being submitted, please indicate which sample contains payment for the group.		

 (Cut at dotted line and save bottom for your records)

Bag #: _____ Your Sample ID: _____ Date Sent: ____ / ____ / ____.