



Berry Notes

Prepared by the University of Massachusetts Fruit Team

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Massachusetts Berry Notes Underwriters:



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Crop Conditions

Strawberry fields remain quiet at this time of year. Dayneutral varieties are still fruiting. Annual production or plasticulture fields are being planted now. Late summer and early fall is a good time to fertilize both new and established strawberry fields. Leaf tissue analysis can help guide fertilizer amounts but typically strawberries will need 20 – 50 pounds of nitrogen at this time of year. Amounts depend on how much was applied at renovation and the organic matter content of the soil. Check new fields for evidence of potato leafhopper burn and evaluate older fields for the level of foliar diseases. **Highbush Blueberry** is winding down. Hot weather earlier this month caused fruit drop in some fields. Survey fields for weak bushes and determine whether or not Blueberry Stunt may be the cause (see more on this below). Only non-nitrogen fertilizer applications should be made this late in the season. Also, be sure to keep you blueberries well watered during the coming weeks. **Summer raspberry** harvest is done. Be on the lookout for Orange Rust on black raspberries and blackberries. **Fall raspberries** is in full swing. Botrytis fruit rot is still a threat, especially during wet weather. Be sure to provide irrigation (drip preferred) so the canes can size up the fruit. Also check for mites and leafhopper damage. **Grapes** are in veraison and nearing harvest for early varieties. Early table grape varieties (e.g., 'Lakemont', 'Himrod', 'Vanessa', 'Reliance', 'Canadice') are being harvested. Midseason varieties will be ready soon. Scouting for disease and insect levels and taking corrective action are still important activities now. Prepare for wine grape harvest by checking fruit ripening parameters regularly. Mite infestations can build up quickly at this time of year. Be sure to check the underside of your leaves.

ENVIRONMENTAL DATA

The following growing-degree-day (GDD) and precipitation data was collected for a two-week period, August 10, 2006 through August 23, 2006. Soil temperature and phenological indicators were observed on August 23, 2006. Accumulated GDDs represent the heating units above a 50° F baseline temperature collected via our instruments since the beginning of the current growing season. This information is intended for use as a guide for monitoring the developmental stages of pests in your location and planning management strategies accordingly.

Region/Location	2006 GROWING DEGREE DAYS		Soil Temp (°F at 4" depth)	Precipitation (2-Week Gain)
	2-Week Gain	Total accumulation for 2006		
Cape Cod	275	2,068	85°F	1.00"
Southeast	246	2,025	72°F	2.50"
East	287	2,166	70°F	1.25"
Central	266	2,018	60°F	1.35"
Pioneer Valley	255	2,070	74°F	1.53"
Berkshires	234	1,893	62°F	1.79"
AVERAGE	261	2,040	71°F	1.57"

n/a = information not available

(Source: UMass Extension 2006 Landscape Message #22, August 25, 2006)

STRAWBERRY

Strawberry Fall Check-List

Sonia Schloemann, UMass Extension

✓ **General:** Flower bud initiation deep in the crown of the plants is happening now, determining next years' yield. So, maintaining good plant health into the fall is important. In addition to keeping up with the fertilizer program, suppressing leaf diseases improves the ability of the plant to carry on photosynthesis and store starch in the crowns. Don't let leaf spot or powdery mildew get ahead of you. Narrow the rows to about 12" and cultivate the alleys in fruiting fields and new plantings for the last time before mulching. Plant winter rye in plowed down fields as soon as possible in order to get good establishment and growth before winter.

✓ **Nutrition:** Nitrogen fertilizer should be applied to bearing beds in early September to bring your seasonal total up to 100-120 lbs/acre. Most growers apply about 70-80 lbs of nitrogen on at renovation. The fall application should provide another 30-50 lbs (more on soils with low organic matter content). This stimulates good root growth in the fall and supplies nitrogen needed for flower bud initiation. New fields need to have a total of 80 - 100 lbs/acre of nitrogen with about 40 lbs applied in the fall. Ammonium nitrate (35% N) is a good fertilizer for the fall application. If your leaf tissue analysis shows deficiencies in magnesium or boron, early fall is a good time for foliar applications of Epsom salts (15lbs/100gal/acre for magnesium) and Solubor (3lbs/100gal/acre) for boron. Don't make these applications on hot humid days, however, or phytotoxicity could result. Read the labels.

✓ **Weeds:** Weed management in the early fall is limited to cultivation and hand weeding/hoeing. The only

herbicide you should consider using is Poast® for controlling grasses. Poast® will only work on relatively small grasses. Big clumps of crabgrass will have to be pulled by hand. However, quackgrass can be knocked down by cultivation or mowing and then treated with Poast® when new growth is less than 6" high. One note of caution; Poast®, which is used with a crop oil surfactant, can injure strawberry foliage in cold weather. I would recommend its use as a spot treatment at this time of year rather than a broadcast treatment of the whole field. Weed management later in the fall can include applications of preemergent materials such as Devrinol® and Sinbar®.

✓ **Diseases:** Clean up severe infections of leaf spot and powdery mildew. Nova® and Pristine® may be a good materials for this use. Healthy leaves are important at this time of year to supply the plant with the energy to produce flower buds for next year's crop and to store energy in the roots for the first flush of growth next spring. Apply Ridomil Gold®, Alliette® or Phostrol® in September or early October in areas where Red Stele has been identified. It is best to apply these materials when the soil is beginning to cool but before heavy fall rains begin. This should not be considered an alternative to good site selection for strawberries.

✓ **Insects:** Check fields for infestations of leafhopper or aphids. Generally, plants can take a fair amount of feeding by these insects, but heavy infestations can be a problem. And, aphids in particular, can vector virus diseases and should not be allowed to build up especially when they are in the winged form and can disperse to other fields.

RASPBERRY

Raspberry Fall Check-List

Sonia Schloemann, UMass Extension

√ **General:** Encourage hardening off of canes in summer bearing varieties of red and black raspberries and blackberries by avoiding nitrogen fertilizers and supplemental watering at this time. Do not remove spent floricanes until later in the winter unless they are significantly infected with disease. Fall bearing raspberries can still benefit from irrigation in dry weather to help maintain fruit size.

√ **Nutrition:** Based on soil and tissue test results, apply non-nitrogen containing fertilizers and lime as needed. For example, Sul-Po-Mag or Epsom Salts can be applied now so that fall rains can help wash it into the root zone for the plants.

√ **Weeds:** Now is a good time to do a weed survey and map of problem areas, so that you can use this information to develop an effective management strategy. A late fall application of Casoron® (dichlobenil) for preemergent control of broadleaf weeds next spring should be made only when temperatures are below 40°F, preferably just before rain or snow.

√ **Diseases:** Fall bearing raspberries can suffer fruit rot problems due to increased moisture present in the planting (more frequent precipitation, longer dew retention, longer nights) late in the growing season. The majority of this fruit-rot is *Botrytis cinerea*, gray mold. Captan 80 WDG is labeled for use on brambles. In addition Elevate®, Switch®, Pristine® are additional

materials available for this use. Frequent harvesting and cull-harvesting are the best practices, but are expensive and impractical in many cases. Thinning canes in dense plantings can also help. Scout summer bearing brambles to look for powdery mildew and treat if necessary. See the *New England Small Fruit Pest Management Guide* for recommended materials and rates. If Phytophthora root rot has been identified in a field, treat the affected area with Ridomil Gold®, Alliette®, or Phostrol® in September or early October. This timing is important to get the material in place in the root zone before the onset of cool wet weather (and soil) in the fall.

√ **Insects:** Now is the time to check plantings for crown borers. Adults of this pest look like very large yellowjacket, but is actually a moth. They are active in the field in August and September laying eggs. Scout the fields for crown borer damage by looking for wilting canes. This symptom can also indicate Phytophthora root rot, so when you find a plant with a wilting cane (or two), dig up the plant and check the roots for brick red discoloration in the core of the roots (phytophthora) or the presence of a crown borer larvae in the crown. Rogue out infested crowns and eliminate wild bramble near the planting, since they will harbor more of this pest.

BLUEBERRY

Highbush Blueberry Fall Check-List

Sonia Schloemann, UMass Extension

√ **General:** Blueberry plants should be encouraged to harden off for the winter. This means no nitrogen fertilizer at this time. Flag bushes that show premature reddening of leaves compared to others of the same variety. This can be an indicator of infection with virus or other pathogens. If you haven't done it already, make some notes on observations from this year that might be helpful in coming years (e.g., variety performance, sections of the field that did well or poorly, how well some practices worked, or didn't, etc.). Relying on memory isn't always accurate enough. Nothing can replace a detailed field history when trying to diagnose problems.

√ **Nutrition:** Hold off on any nitrogen fertilizers. Based on leaf tissue tests and soil tests, sulfur, lime, and some fertilizers can be added now. Apply these before fall rains begin and also before adding any supplemental mulch to the plants.

√ **Weeds:** As with other small fruit crops, now is a good time to do a weed survey and map the weed problems in your planting. This information will be very useful in tailoring your weed management plan so that is effective and not wasteful. A late fall application of Casoron® (dichlobenil) for preemergent control of broadleaf weeds next spring should be made only when temperatures are below 40°F, preferably just before rain or snow.

√ **Diseases:** Weak plants can easily be detected at this time of year because they tend to turn red earlier than healthy bushes. Upon finding weakened bushes, try to determine the reason for weakness. Is the root system damaged? If so, is it likely from a disease infection or root damage by voles or grubs? If the roots are healthy, could a crown borer (Dogwood borer) be the culprit? Or is stunt disease the cause? Or Scorch? Accurate diagnosis is the first step in resolving the problem and avoiding spread. Enlist the help of specialists if you have trouble determining the cause of problems. See factsheet on Blueberry Scorch at www.umass.edu/fruitadvisor for help diagnosing this disease.

√ **Insects:** The main worry now is for sharp-nosed leafhopper which is the vector for stunt disease. If you

have determined that you have bushes infected with stunt disease in your planting, an application of malathion to the infected bushes and any immediately surrounding bushes should be made to control leafhoppers BEFORE removing the infected bushes. Failing to do this will likely cause the spread of the disease to clean bushes even after infected bushes have been removed. More on this below. In eastern areas of the state, growers are concerned about infestations of Winter Moth. Go to http://www.umassgreeninfo.org/fact_sheets/defoliators/wm_id_man.html for more information on this alarming new pest. For now, growers should know that any moths seen flying in their plantings are likely NOT Winter Moth or Canker Worm moths. These moths do emerge and begin flight until November.

Stunt Disease

Gary Pavlis, Rutgers University

The removal of a bush with stunt disease should never be attempted before some effort has been made to control the leafhoppers in it. The removal process could actually facilitate the spreading of the disease. The agitation of the bush will dislodge the leafhoppers, causing them to hop to another healthy bush, thereby transmitting the virus from a diseased bush to a healthy bush. Spray each diseased bush with a garden knapsack sprayer before it is rogued out.

Malathion is safe to use and is effective against all stages of leafhopper. Spraying the entire field is not necessary at this time. In fields severely infected with stunt disease and in nurseries seeking NJ Department of Agriculture Certification, a special spray for leafhopper

adults is needed. The leafhoppers are still in the wingless nymph stage and usually do not start the flight period until late in August.

Stunt Symptoms are described as an overall dwarfing of the bush, hence the name stunt. Small leaves that are cupped downward or puckered are characteristic symptoms. Leaves on infected bushes are often chlorotic, with chlorosis most pronounced among the leaf margins and between lateral veins. Midribs and lateral veins usually retain normal green coloration. Chlorotic areas often turn a brilliant red in the later summer. Stem internodes become shortened, and growth of normally dormant buds caused twiggy branching. (*Source: Blueberry Bulletin, Vol 22, No. 19, August 8, 2006*)

Blueberry Stunt

Pam Fischer, Ontario Ministry of Agriculture and Food

If fall colours show early in your blueberry field, take a close look for blueberry stunt disease. A bright red colour sometimes develops on infected shoots in late summer and early fall.

Blueberry stunt is a serious disease that is seldom observed, or at least diagnosed, in Ontario. It is caused by a mycoplasma, and it can be spread in infected

planting stock, or by the sharp-nosed leafhopper.

Infected plants become stunted (Figure 1, 2), and new leaves are cupped under, small and yellowed at the edges (Figure 3). Sometimes infected bushes show a characteristic bright red colouring on leaves of certain shoots (Figure 4). Control of blueberry stunt is drastic: you must remove infected bushes. (*Source: The Ontario Berry Grower, Sept. 1, 2005*)



Figure 2: Symptoms of blueberry stunt include shortened internodes and a bushy appearance to shoots.



Figure 4: A bright red colour sometimes develops on blueberry shoots infected with stunt.



Figure 1: The blueberry bush in the middle is infected with stunt.



Figure 3: Symptoms of blueberry stunt include downward cupping of leaves and marginal yellowing.

GRAPE

Management of Powdery Mildew on Grape Clusters

Annemiek Schilder, Michigan State University

This summer, powdery mildew, caused by the fungus *Uncinula necator*, has appeared relatively early on clusters of susceptible grape varieties in Michigan, e.g., Chardonnay, Chardonnell, Seyval, Aurore and even Concord grapes. In some vineyards, over 75% of the clusters have powdery mildew on them with over 25% of the berries infected. Such high levels of disease are of concern, as severe powdery mildew infections can cause splitting, rotting and dehydration of berries, resulting in lower juice yield. Grapes with powdery mildew generally mature earlier and are smaller and lighter than healthy grapes. Powdery mildew can also affect wine quality by imparting off-flavors and other undesirable sensory qualities. Even inconspicuous (late-season) infections barely visible can compromise the integrity of the berry skin by creating small dead spots, which can provide entry points for pathogens that cause Botrytis and sour bunch rots.

Symptoms

Symptoms of powdery mildew on clusters include a white to gray powdery coating on the surface of the berry. The coating is made up of fungal threads (mycelium) and spores. On severely infected berries, the skin underneath is gray to brown discolored due to the formation of dead spots where the fungus penetrates the berry skin. Later in the season, small brown-to-black specks become visible on the berries. These are cleistothecia, the overwintering fruiting bodies that cause new infections next spring. The rachis (cluster stem) can also be infected. In some cases, powdery mildew may be mistaken for downy mildew. However, downy mildew tends to be fluffier and less dense than powdery mildew and is never gray. It also tends to be more unevenly spread over the berry and cluster than powdery mildew. 'Chancellor' grapes are the poster child for downy mildew infection of the clusters.

Conditions favoring infection

The likely reason for the early onset and severity of the disease this year is the long rainy period that occurred in May, which would have been beneficial for spore release by the overwintering cleistothecia lodged in the bark, followed by extended dry, warm weather in June and July, which favored further disease development.



Ascospore discharge is initiated in the spring if 0.10 inch or rain occurs at an average temperature of 50°F. Most mature ascospores are discharged within 4 to 8 hours after the onset of wetting and are carried by wind to susceptible plant tissues. They can infect any green surface on the developing vine resulting in primary infections. The fungus then grows on the plant surface and produces a second type of spore (conidia) under high relative humidity. These conidia are windborne and cause secondary infections. Under optimal conditions, the disease can spread rapidly, as the time from infection to production of conidia can be as short as seven days. Unlike other grape pathogens, the fungus does not need free water for infection; moderate to high relative humidity (40 to 100%) is sufficient for germination of conidia. In fact, rainfall is detrimental to survival of conidia as they tend to burst in water. Although infections can occur at temperatures from 59° to 90°F, temperatures between 68° and 77°F are optimal for disease development. Temperatures above 95°F inhibit spore germination, and the fungus may be killed at temperatures above 104°F.

Effect of berry age on susceptibility

Berry age has a marked effect on susceptibility to powdery mildew. Researchers in New York showed that when clusters of 'Chardonnay', 'Riesling', 'Gewürtztraminer', and 'Pinot noir' were inoculated from pre-bloom to six weeks post-bloom, only fruit inoculated within two weeks of bloom developed severe powdery mildew. Berries became substantially resistant to infection by three to four weeks after bloom, resulting in diffuse, non-sporulating colonies on berries and were virtually immune at six to eight weeks after bloom. Also, rachises of 'Chardonnay' and 'Riesling' fruit clusters developed severe powdery mildew when inoculated at bloom, whereas rachises inoculated 31 days after bloom developed only trace levels of powdery mildew. Therefore, early sprays (from immediate pre-bloom until three to four weeks after bloom) are critical for preventing powdery mildew on the clusters. This coincides with critical sprays for black rot. When timing fungicide sprays, it is important to remember that all clusters in the vineyard may not be of the same age. If there is much variation in cluster development, the critical period for applying fungicides should be extended until the youngest clusters have caught up.

Effect of powdery mildew on wine quality

Recent studies have shed more light on the effects of powdery mildew on wine quality. In a study done in Australia, grapes were selected in different infection categories: 0%, 1-5%, 10-30% and 31-100% of the bunch covered with sporulating powdery mildew. Titratable acidity, total phenolic content, hydroxycinnamates, flavonoids and brown pigments in juice and wine increased with increasing infection. Even small amounts of infection (1 to 5% of the bunch infected) resulted in increased oily/viscous mouth feel characters, which was correlated with phenolic content (grapes produce phenolic compounds in response to infection by fungal pathogens).

Wine made from grapes with higher levels of infection (particularly the 31 to 100% category) were also perceived as having fungal, earthy and cooked tomato attributes compared to the control. In another study done in Ontario, grapes were selected based on percent of the berry surface with scarring due to powdery mildew infection: none (0%), Low (1 to 25% of the surface scarred), moderate (26 to 75% of the surface scarred) and severe (100% of the surface scarred). Visually, the pressed juice became darker and more turbid as severity of powdery mildew infection increased. The research showed that a low infection severity (1 to 25% of the berry surface scarred) did not result in detectable differences in wine quality versus the control. However, wines made from moderately to severely infected berries (26 to 100% scarring) had a higher pH and titratable acidity as well as reduced citrus aroma and tropical flavor. In addition, an earthy aroma and flavor and caramel flavor, higher viscosity and bitterness were detected by tasters.

Management

Powdery mildew on the clusters is best controlled by maintaining an open canopy and applying effective fungicides during the critical period (immediate pre-bloom until three to four weeks after bloom), which has now passed. For infection prevention, good fungicide options include sulfur, sterol inhibitors (Nova, Elite, Procure, Rubigan, Bayleton), strobilurins (Pristine, Sovran, Abound, Flint), Endura and Quintec. Remember that some grape varieties are sensitive to sulfur, Pristine or Flint, and that fungicides differ in their pre-harvest intervals. Also, sulfur applied late in

the season may interfere with wine-making so is not advised beyond veraison.

There is some concern about potential fungicide resistance to the sterol inhibitor fungicides as some growers have seen a lack of control. One would first have to rule out poor timing, poor coverage and excessive disease pressure before considering fungicide resistance, but in vineyards that have received sterol inhibitor sprays for many years, resistance is a real possibility. In addition, there appears to be a link between resistance to sterol inhibitors and strobilurins, which is of concern. Alternating fungicides with different modes of action is therefore important. Quintec (quinoxifen), Endura (boscalid) and Sulfur (sulfur) are especially useful in this regard since they have unique chemistries different from the sterol inhibitors or strobilurins (just as a reminder, boscalid is one of the two active ingredients in Pristine). If powdery mildew is already present on the clusters, there are several possible eradicates available: JMS Stylet Oil (paraffinic oil); Armicarb, Kaligreen and MilStop (all potassium bicarbonate salts); and Oxidate (hydrogen peroxide). None of these compounds has been tested specifically for eradicate activity in Michigan, although previous trials have showed JMS Stylet Oil to be more effective than Armicarb or Oxidate for control of powdery mildew when applied on a preventive schedule. Prev-Am (boric acid/citrus extract) may also be an option but, although it is a good surfactant, has not been tested for efficacy as a powdery mildew eradicate. Sulfur can also kill colonies, but would have to be applied at high rates to be effective.

Whatever product is used, thorough coverage of the clusters will be critical, which means using higher spray volumes (at least 50 to 100 gallons per acre) while spraying every row. One concern with JMS Stylet Oil is that it can delay Brix accumulation, so it is best not to use it after veraison. Also, do not apply oil and sulfur within 14 days of each other. While most berries may already have become naturally resistant to infection, a protective fungicide such as Quintec or Pristine may still help protect younger clusters as well as leaves from infection. At the high labeled rate, Quintec provides up to three weeks of protection of sprayed foliage (but not new foliage). Removing leaves in the fruiting zone can also help reduce powdery mildew severity by increasing airflow, light penetration and fungicide penetration and is also advised for control of bunch rots. (*Source: Michigan Fruit Crop Advisory Team Alert, Vol. 21, No. 16, August 22, 2006*)

Harvest and Grape Sampling

Mark Chien, PennState University

When to pick? There is probably no more important question in making good wine. To know when to pick it is important to understand the criteria of fruit maturity. That's why you should definitely read Bruce Zoeklein's article on fruit maturity (go to

<http://www.vtwines.info/> > industry pubs > vintner's corner > Vol 16 No. 1). Once you know what these are, it is up to you to assess them in an objective manner. This involves sampling. This is how I used to sample grapes in Oregon... I would take a small bucket into a field and walk up and

down rows, cutting off clusters on both sides of a vsp canopy, about 50 clusters on a five acre field taken as randomly as possible. Each distinct field or variety should be a distinct sample. Clusters would be thoroughly crushed by hand and 50ml juice sample drawn and taken into the lab (aka kitchen). pH, titratable acidity and degrees brix with refractometer would be taken and recorded. A larger amount of each sample would be taken with a turkey baster and put into a good quality wine glass and each one is evaluated according to sensory attributes - flavors, aromas, color, tannin, acidity, etc. The samples would be left covered in their buckets overnight and the following morning each sample would be analyzed in the exact same fashion and numbers recorded and compared. In particular we noted pH and sugar shifts as a result of the overnight soak. Flavors, color and overall mouth feel were probably the main indices of ripeness. A total analysis of fruit characteristics such as berry turgor, stem and seed color, skin texture and ripeness of tannins, vine appearance, disease, birds, weather forecast, wine maker inputs would all be synthesized into an assessment of maturity and readiness. We would try to make a picking decision two days before the actual harvest, sooner if weather - heat or rain, was an issue. Have the same person doing the sampling all the time so the bias and method will be consistent. Of course, don't just pick the ripe clusters. Reach into the canopy. Be careful of bees. Sample in the morning for a

lower brix reading, afternoon for a higher reading. This, of course, is just one sampling methods of dozens, but it worked for us and would usually get us to with +/- 0-2 brix from the winery crush sample of the harvest fruit.

Harvest was always a particularly stressful time for me as a grower. No matter how well you planned and prepared, it always seemed that a zillion things would go wrong. It is, at best, organized chaos. Between the weather, birds, disease, labor, wine makers, etc. there was not much of chance that you can account for all the potential problems and hazards. However, I can state emphatically that there is a strong correlation between the amount of preparation you do and the efficiency, safety and effectiveness of the harvest. Now is the time to start planning. I cannot stress safety enough, it must always be the first concern of every grower. Harvest is often rushed and the conditions in the field may be wet so there is higher risk of accidents. Try to prepare for hazardous conditions. I wrote an article with my colleague Ed Hellman for Oregon Viticulture when I was a grower trying to explain how I executed the harvest. I have attached a copy for you to read if you want to know the details of how one vineyard's harvest was conducted. (*Source: PA Wine Grape Info, Aug. 23, 2005*)

Currants and Gooseberries

Black Currants: New Crop, New Life for NY Farmer

Curt Rhodes of R.H. Rhodes and Son, Inc., Penn Yan, NY, ended his 40-year career as a fifth-generation vegetable farmer in 2004, but he did not leave farming. Having read about Hudson Valley fruit grower Greg Quinn's successful campaign for the repeal of the ban on growing black currants in New York State, Rhodes applied for a New York Farm Viability Institute (NYFVI) Small Specialty Crops Production Business grant.

In the article Rhodes read, Quinn listed health benefits associated with red and black currants and the potential marketing opportunities. Currants have four times the vitamin C of oranges and twice the antioxidants of blueberries, Quinn said. Rhodes contacted Yates County Cornell Cooperative Extension Educator Judson Reid, who told him about the NYFVI grant program and Rhodes career as a fruit producer began. The New York Farm Viability Institute awarded

Rhodes \$10,000 to plant a one-acre field trial of black currants in 2004.

The first year I only expect 1,000 lbs on the acre, but in the second and following years I am plan on harvesting 2,500 lbs. to 3,000 lbs per acre, Rhodes says. This has been such a successful venture that I recently planted 17 more acres of black currants. The first acre will be harvested by hand. Next year I will have to invest in a mechanical harvester.



The first harvest has been sold to Montezuma Winery in Seneca Falls, NY, for a new variety of fruit wine. Winery owner and winemaker Bill Martin says, We make twenty-three different wines from honey, fruit and grapes. Our winery uses only New York State fruit in its production. The wines include those made from pear, strawberry, blueberry, apricot, apples, raspberries, cherries and rhubarb. The black currants will make an important contribution to our line.

Dr. Olga Padilla-Zakour of the Cornell Food Venture Center has worked with Rhodes to explore new potential products for his black currants.

Once the currants are in full production, we will be developing new beverages, jams and other products. At that time, we will be able to document the levels of beneficial anti-oxidants and vitamins in each product, Padilla-Zakour says.

The federal government had banned the indigenous black currants in 1911 when the burgeoning logging industry put pressure on lawmakers to eliminate currants because they were thought to be an intermediate host of white pine blister rust. New disease resistant varieties of currants were developed and in 1966 the government left it up to the states to lift the ban. Gregg Quinn persuaded New York State legislators to lift the ban in 2003.

New York State was the leading commercial producer of red currants in the U.S. before the ban, says Quinn, who is presently teaching landowners and farmers how to grow currants. It is his desire to see New York return to being the number one producer of currants and set the standard for quality. Quinn has developed 65 new currant products.

R.H. Rhodes & Son Farm has recently adopted the name Fingerlakes Black Currant Company. Rhodes will adorn of all his anticipated products with an historic

label the copyright expired in 1920 - for currants found in an antique store in Canandaigua.

The funds for the NYFVI's Specialty Crop grants program that provided Rhodes with funding for his new enterprise were made available by the New York State Department of Agriculture and Markets from the United States Department of Agriculture (USDA).

With this funding we were able to award seventeen small grants for specialty crops, says New York Farm Bureau President and NYFVI Board Chairman John Lincoln. We are hoping for more of this type of funding from the USDA in the future Farm Bill to replicate these significant results.

The NYFVI is a farmer-led, farmer-driven, independent not-for-profit corporation that funds research, extension and innovative technologies for New York agricultural and horticultural producers. The Institute grants funds for projects that directly benefit producers at the enterprise level across farms of all sizes and all commodity areas. The NYFVI 2006 grantmaking cycle is now in process. In 2005, NYFVI awarded \$2.8 million to 33 agricultural research and educational projects.

For more information, contact Curt Rhodes, Fingerlakes Black Currant Company, 585-526-5628 or R. David Smith, New York Farm Viability Institute, Inc., 159 Dwight Park Circle, Suite 104, Syracuse, NY 13209, 315-453-3823, www.nyfarmviability.org. (*Source: New York Berry News, Vol. 5, No. 8, August 21, 2006*)

General

Fall Cover Crops

Frank Mangan, UMass Extension

Now is the time to think about cover crops for the fall especially if you need to order the seed. Here is some information about some of the more common cover crop choices for Massachusetts:

Non-Legumes

Winter rye is easily the most common cover crop used by growers in Massachusetts, and for good reason. It is inexpensive, easy to get and establish, and can be seeded fairly late into the fall and still take. It consistently overwinters here and will continue to grow in the spring producing lots of organic matter. Some growers find it difficult to incorporate in the spring if it is left to grow into May. Seeding rate: 90 – 120 lbs./acre.

Oats can be seeded in the fall and will come up quickly, similar to winter rye. Unlike winter rye, oats will winterkill here in Massachusetts and will not regrow in the spring. For this reason some growers prefer it over winter rye since it is easier to manage in the spring. It might have to be lightly incorporated into the soil in order to germinate. Enough growth is required in the fall to give adequate cover through the winter and early spring. Try to seed by Sept. 1.

Growers along the coast can plant later. Make sure the oats have not been cooked (used as an animal feed). Seeding rate: 100 lbs./acre.

Ryegrass is used by some growers because of its thick root system that is thought to mop up more nitrogen than winter rye or oat. There are two types: annual and perennial. Despite their names, the annual ryegrass may overwinter and the perennial ryegrass may winterkill depending on when you seed them. If you have not seeded them before and would like to evaluate them, I would recommend that you seed a little of each in order to see their growth habits. I have only used these cover crops in the early spring. The seed is small and light, so specialized equipment will be needed if seeding a large area. Seeding rate: 30 – 40 lbs./acre.

Legumes

Clovers are used by some growers as a nitrogen source. There are several types available. Like ryegrass, I have only used clovers as an early spring cover crop. A clover will have approximately 2.5% nitrogen whereas hairy vetch (see below) averages around 3.5% (this compares to winter rye that is usually below 1%). Clovers are a very small-seeded cover crop that need specialized equipment to establish.

They can be seeded by hand in a small area, but if you want to do several acres, you will need specialized equipment. Seeding rate: 10 – 20 lbs./acre.

Hairy Vetch is an excellent cover crop for Massachusetts. It can be seeded up to mid September and will survive the winter. Growers near the coast or on the cape and islands can seed vetch up till October or even later. When left to grow long enough in the spring, hairy vetch has supplied over 100 lbs./acre of nitrogen. It is very important that the appropriate rhizobia species is used for hairy vetch (the rhizobia for hairy vetch will work for all vetches and peas). Without the rhizobia the vetch will not give the desired effects. We have been recommending you mix the vetch with either winter rye or oat. There are several reasons for this:

1. Both oat and winter rye are very efficient in taking up nitrogen from the soil (remember, the vetch is getting most of its nitrogen from the atmosphere, so it does not need much from the soil). By taking up more nitrogen in the late summer and fall we are reducing the risk of contaminating surface or ground water and the nitrogen is recycled so that it can be used by next years cash crop.

2. The oat and rye can produce tremendous amounts of valuable organic matter if allowed to grow long enough.

3. Both of these cover crops will give better erosion control than vetch alone since they emerge and establish themselves more quickly than vetch. This is especially important when vetch is seeded after September 1.

We have been recommending 40 lbs./acre of oat or rye with 30-40 lbs./acre of hairy vetch. If you are using a grain drill then you can use seeding rates as low as 30 lbs./acre of vetch. If you are spinning the cover crop on and lightly disking it in then a rate of 35 - 40 lbs./acre is suggested.

Many growers prefer the use of oat rather than rye because of the tremendous growth of rye that occurs in the spring. This can be desirable if you are looking for increased organic matter in your soils, however some growers find the amount of biomass created by these two cover crops too much to handle. In addition, we have found that we get much more growth of the vetch in the spring when seeded with oat than when seeded with rye. The rye will compete with the vetch in the spring. (*Source: Massachusetts Vegetable Notes, Volume 17, Number 17, August 24, 2006*)

USDA Designates State of Vermont a Natural Disaster Area:

Berkshire, Franklin counties eligible for assistance

Rick LeBlanc, MDAR

Agriculture Secretary Mike Johanns today announced the designation of the entire State of Vermont as a primary natural disaster area, making all qualified farm operators in the designated areas eligible for low-interest emergency (EM) loans from USDA's Farm Service Agency (FSA). Note: Massachusetts has applied for the entire state and is awaiting its destination.

All 14 counties in Vermont were declared a primary natural disaster area due to severe weather conditions, including excessive rainfall and flooding that occurred from May 1, 2006, and continuing. In addition, also eligible because they are contiguous are the following counties in Massachusetts, New Hampshire and New York:

Massachusetts : Berkshire, Franklin

New Hampshire: Cheshire, Grafton, Coos, Sullivan

New York: Clinton, Rensselaer, Essex, Washington

All counties listed above were designated natural disaster areas on June 23, 2006, making all qualified farm operators in the designated areas eligible for EM loans, provided eligibility requirements are met. Farmers in eligible counties have eight months from the date of the declaration to apply for the loans to help cover part of their actual losses. FSA will consider each loan application on its own merits, taking into account the extent of losses, security available and repayment ability. FSA has a variety of programs available, in addition to the emergency loan program, to help eligible farmers recover from adversity.

USDA has also made other programs available to assist farmers and ranchers, including the Emergency Conservation Program, Federal Crop Insurance and the Noninsured Crop Disaster Assistance Program.

Interested farmers may contact their local USDA Service Centers for further information on eligibility requirements and application procedures for these and other programs. Additional information is also available online at: <http://disaster.fsa.usda.gov>. (*Source: MDAR Farm and Market Report, Vol. 83, No. 4, August / September*)

Upcoming Meetings

Renewable Energy for Farms and Greenhouses - A Series of Twilight Meetings

Sponsored by The University of Massachusetts Extension Agriculture and Landscape Program, Community Involved in Sustaining Agriculture (CISA) and Donald Campbell Associates

We will be exploring renewable energy systems for farms and greenhouses this summer and fall through a series of twilight meetings. Plan to join us for one or all meetings to learn how alternative energy sources might fit into your business. These meetings will provide information on funding opportunities and feature vendors and experts with a wealth of knowledge and experience. For more information, including opportunities for sponsorship, or to pre-register, contact Tina Smith, Extension Floriculture Program, 413-545-5306, tsmith@umext.umass.edu or Ruth Hazzard, Extension Vegetable Program, 413-545-3696, rhazzard@umext.umass.edu.

Wind and Solar Energy

Thursday, September 7, 2006

3:00 PM – 6:00 PM

Lion Spring Farm, 236 Dedham, St. Dover, MA

Host: Bob Loebelenz

Lion Spring is a small diversified farm, now engaged in the breeding of Massachusetts Thoroughbred horses. The farm also grows vegetables and herbs for local gourmet restaurants and have a collection of chickens who supply farm fresh eggs for retail sales. On site there is a 4.8 kilowatt photovoltaic system and 3.1 kilowatt wind turbine all feeding a battery bank.

Additional Speakers:

Henry Dupont, Lorax Energy Systems on licensing and choosing turbines

Warren Leon, Renewable Energy Trust on state funded opportunities for renewable energy

Don Campbell, Consultant, Donald Campbell Associates

Don will talk about the process of fitting a farm's needs to the types of renewable energy systems currently available

Field Corn Biomass for Heating Greenhouses

Wednesday, October 4, 2006

3:00 PM – 6:00 PM

Kosinski Farm, Westfield, MA

Host: Mike Kosinski, Kosinski Farm

Kosinski Farm grows 140 acres of blueberries, apples, grain corn, vegetables and tobacco. Five greenhouses provide flower and vegetable plants for retail sales at their farm stand and use in the field. Blueberries, apples and butternut squash are major wholesale crops.

Mike began heating one greenhouse with his own corn three years ago and has been expanding his use of corn for heat each year. This year he is installing two larger stoves with automated auger stoking systems. Field corn fits well into his vegetable rotation. The corn is dried off-site and trucked back to the farm. His production costs are about \$60-\$65 per ton of corn, which is about one-third of the cost of heating oil (\$2.45 per gal.) based on energy costs per BTU.

Additional Speakers:

Rob Rizzo, Mt. Wachusett Community College - Rob uses a variety of renewable energy sources including wood chips, wind and solar power and has reduced the energy costs at the college by 5%.

Bill Llewelyn, Five Point Farm, Northfield - Bill grows and sells corn for energy use. This season he harvested 1,000 tons of corn.

Christine Serrentino, From Field to Table - Christine will talk about the science and economics of burning corn.

Don Campbell, Consultant, Donald Campbell Associates - Don will talk about the process of fitting a farm's needs to the types of renewable energy systems currently available.

Raspberry High Tunnel Open House

Friday, October 20, 2006,

1:00 to 4:00 PM

Cornell University invites you to attend the second annual Raspberry High Tunnel Open House to observe raspberries

growing and fruiting in late October – well past the time when they are normally in season. Come by Cornell’s East Ithaca farm on Friday October 20 between 1:00 and 4:00 to meet with researchers, taste fruit, study this new technology and market opportunity, and hear results from year 1 of this research and demonstration trial.

The East Ithaca Farm is located on Maple Ave., adjacent to the Cornell Campus. Coming from Rt. 79 east, turn right onto Pine Tree Rd., go through the stop light by East Hill Plaza, and take the next left on to Maple Ave. The research farm is on the right, past the cemetery.

Coming from Rt. 13 north, take Rt. 366 towards Ithaca. Turn left onto Pine Tree Road at the flashing red light, just past Cornell Orchards. Take the next right onto Maple Ave. The farm is on the right, past the cemetery.

Coming west on 79, or south on 96 or 89, take Rt. 79 east through Ithaca and up the hill. Midway up the hill, bear left onto Rt. 366. At the first stoplight, take a soft right onto Maple Ave. (not a hard right). The farm is at the top of the hill on the left. For more information contact Molly Shaw, meh39@cornell.edu, 607-687-4020, or Cathy Heidenreich, mcm4@cornell.edu, 315-787-2367.