

Berry Notes

Prepared by the University of Massachusetts Fruit Team

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Massachusetts Berry Notes Underwriters:



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UPCOMING MEETINGS

STRAWBERRY

Fall Foliar Nitrogen Fertilization in Strawberries

Lori Bushway, Cornell University

Applying nutrients to the foliage is widely practiced in many fruit crop production systems. Nutrient foliar sprays have been proven effective in correcting deficiencies of micronutrients such as zinc. Macronutrients such as nitrogen applied to the tree fruits' foliage have received mixed reviews.

Foliar urea fertilization has been reported to have no measured benefit or increase in leaf nitrogen levels in peaches and grapes. However, foliar urea fertilization is practiced in apples and citrus where once urea is absorbed, the nitrogen derived from it has effectively increased nitrogen reserves and positively impacted yield.

In regard to berry crops, Cornell University researchers Laura Acuna-Maldonado and Marvin Pritts recent preliminary results indicate that foliar applications of urea can be of value in strawberry plantings. They found that foliar application of urea to strawberries in September of planting year:

- Increases nitrogen reserves
- Increases vegetative growth of strawberry plants the following spring
- Increases fruit yields the following June

These increases were reflected not only on nitrogen deficient strawberry plants but also in sufficient and high nitrogen strawberry plants. However, additional spring application of nitrogen did not improve growth or yield. In strawberry plantings, fall foliar application of urea may be used to complement summer nitrogen applications and effectively increase future nitrogen reserves and productivity. (*Source: New York Berry News, Vol. 3, No. 8, Sept. 21, 2004*)

2007 North American Berry Conference along with the 6th North American Strawberry Symposium "NASGA Innovation and NASS Research in a Market Driven Strawberry Industry"

Explore the ever-changing face of strawberry research and development across North America on **Feb. 9-12, 2007 in Ventura, CA**. The Program Committee is committed to "Making this a world-class research conference for growers and scientists," and we eagerly look forward to seeing you in this lovely seaside area of Southern California next February.

There will be a very special banquet in honor of the remarkable strawberry breeding careers of Dr. Royce Bringham, and Dr. Gene Galletta.

Our hotel location* will make it possible for us to tour the nearly 12,000 acre Oxnard strawberry district (which will be in full production) on Monday, February 12, following the research presentations, poster sessions and special events planned at the conference site over the weekend of February 10-11.

As an added bonus the World Ag Expo in Tulare, California will take place Feb 13-15. So it will be possible for you to attend both events.

Registration info will be mailed and emailed to all members and also be posted on the nasga website as soon as it is completed.

* Hotel - Crown Plaza Ventura Beach - 1-800-842-0800 You can make your reservation any time. Please make sure to mention that you are registering with the NASGA block to receive our discounted rate.

Contact Information: email: steve@poltersberryfarm.com , web: <http://www.nasga.org>

RASPBERRY

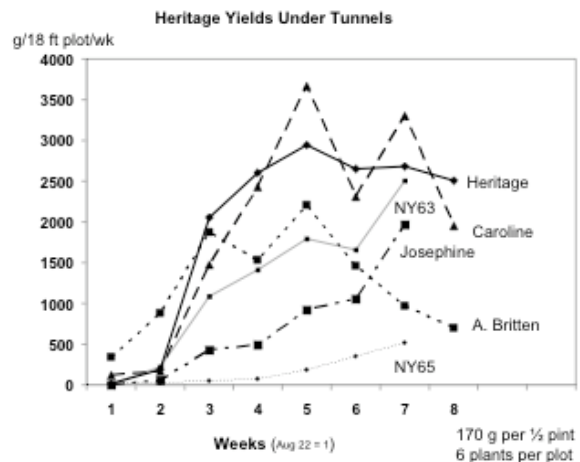
Using High Tunnels to Extend the Raspberry Season into Late Fall

Marvin Pritts, Cornell University

Season extension is a method of increasing value and income because crops usually can be sold at a higher price. The use of high tunnels is a technology that can be implemented just about anywhere for a modest cost, and can be used to bring crops on earlier or extend them later in the season. Researchers at Penn State University have demonstrated that many crops can be grown under tunnels. Our objective was to take one of the most promising crops and push the limits of season extension.

Raspberries are a high value crop that, in season, sell for more than \$3.00/lb. In the middle of winter, raspberries can sell for more than \$10.00/lb. Our goal was to produce raspberries in October and November, after the field season ends from frost and rain, and when the selling price of raspberries jumps. Our project examined primocane-fruiting varieties and methods of managing plants to delay their production beyond the normal late August-September season.

Primocane-fruiting raspberries were planted in April of 2004 in 4 rows spaced 7 ft apart. All canes were mowed to the ground in the fall of 2004 after summer's growth. In spring of 2005, we installed the framework for a tunnel over the planting. The tunnel was covered with plastic on September 13, 2005, just prior to harvest. This high tunnel measures 96 ft long x 30 ft wide. Materials costs were over \$5,000 and labor added another \$1,000.



During the summer, prior to covering, plants were treated in various ways to delay flowering and fruiting. Typically, one would prefer that these fall-bearing types fruit early to avoid frost. Our objective was to delay fruiting until late in the fall when the availability of fresh raspberries is low and the price is high.

Our raspberry study had two parts. The first was to monitor the growth and productivity of several promising late varieties that typically fruit too late for the New York climate. The second set of treatments manipulated 'Heritage' so that it fruits later than the normal September season. The five treatments were an unmanipulated control,

applying straw over plots in late February at the rate of 6 tons/acre after a period of cold weather, mowing canes to the ground in early June shortly after they emerge, pinching primocanes (removing the top 4 – 6 inches) when they reach a height of about 21/2 ft., and pinching when canes were 3 1/2 ft. tall. Each of these 4 treatments delayed flowering and shifted production to

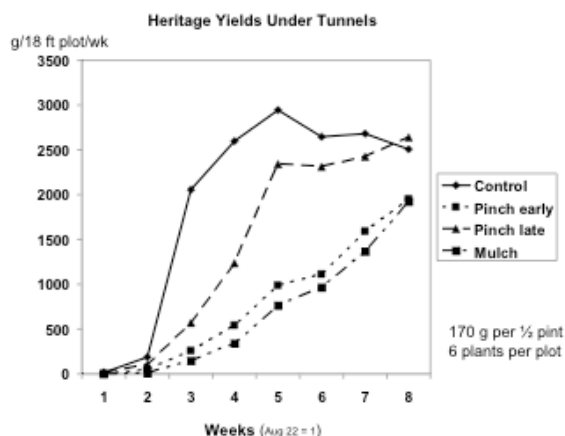
later in the season.

The second part of the experiment examined several high quality varieties that often cannot be completely harvested due to frost. These varieties were Heritage, Caroline, Josephine, Autumn Britten, NY01.63, NY01.64, and NY01.65. The numbered selections were made by fruit breeder Courtney Weber who suspects that they may have traits that allow them to perform well in high tunnels.

Native bumble bees were attracted to the house in large numbers, without adding a hive. Fruit appearance was excellent, although sugar content fell during 3 weeks of continuously rainy weather in October. Yields were high; we averaged nearly 2 lbs. per ft. of row in control plots of Heritage. We sold our fruit at the Cornell orchard store for \$5.00/pint (\$6.70/lb).

The following are data collected through the first 8 weeks of the season, beginning on Aug. 22. Raspberries were harvested for a total of 13 weeks. Final yields and costs will be presented.

(Source: New York State Berry Growers' Association Research Reports:
www.hort.cornell.edu/grower/nybga/reports/)



Black Raspberry Potential, Pitfalls and Progress

Courtney Weber, Cornell University, NYSAES

Black raspberries (*Rubus occidentalis*) have the potential to be a highly profitable crop for growers in the north central and northeastern states in a diversified production system. They are a high value crop with a gross revenue potential of \$12,000 per acre or more (retail) in peak production seasons. However, establishment costs are high and budget projections indicate the breakeven point to come in the second production season, some 26 months after planting. Unfortunately, productivity in currently available cultivars can begin to decline after two production seasons due to pest pressure. Typical yields in the region range from 1 to 3 tons per acre compared to 3 to 7 tons per acre for red raspberry, with fruit size generally less than 2.5 grams per berry. Thus, higher demand and prices and/or more productive, disease resistant cultivars are needed for the black raspberry to be a viable crop for most growers.

Black raspberries are recognized as an especially good source of phytochemicals and antioxidants, vitamins, minerals and fiber while being naturally low in calories, and fat free. Recent medical research has fueled renewed interest in the black raspberry for its potential health benefits, and the flavor of the berries maintains interest in consumers. Laboratory studies have shown black raspberries to have extremely high levels of antioxidants, especially anthocyanins and other flavonoids. Tests in rats have shown reductions in cancerous tumor formation and cholesterol levels as

well as possible antiaging properties possibly due to the tremendous antioxidant capacity of black raspberries. Human trials have begun with black raspberry formulations on pre-cancerous oral lesions, esophageal cancer and other cancers of the digestive tract.

Black raspberry production in the eastern U.S. has a long history but has declined due to low yielding, disease susceptible cultivars. Production was centered in New York in the early 1920's, but market conditions, along with production problems have reduced the eastern industry to a few hundred acres across the region. The vast majority of production today is centered in Oregon and is based on one cultivar, 'Munger', which was introduced in 1897. However, black raspberry is suited for the northeast because it is the center of origin for the species, thus climatic conditions in the region are well suited for its production. Many cultivars that are currently available were developed in New York or are derived from germplasm from the region.

Two major diseases contributed to the stagnation of black raspberry production in the northeastern U.S. in recent years due in large part to low yields and short planting life spans (commonly referred to as "Raspberry run-out"). Wilt, caused by the fungus *Verticillium albo-atrum*, and the Raspberry Mosaic Disease Complex, caused by Blackberry Necrosis, Rubus Yellow Net and/or Raspberry Leaf Spot-like viruses, are significant impediments to long term productivity of plantings.

Verticillium or bluestem wilt, cannot be controlled through chemical or cultural practices. Furthermore, once established, Verticillium has the ability to persist in soils for long periods. The best means for control is through genetic resistance, which is lacking in most commercial cultivars. Bluestem wilt reduces yields by wilting, stunting, and eventually killing fruiting canes or entire plants. It is prevalent in poorly drained soils and is especially problematic following cool, wet springs that are common in the northeastern U.S. Although resistance in commercial cultivars is generally lacking, resistance may reside in related species, in a recessive state or in uncharacterized germplasm.

Raspberry mosaic disease complex, associated with the 3 viruses mentioned above, causes great reduction in growth, vigor, and fruit yield through a progressive reduction of vigor over the life of the planting. This disease is spread by the larger currant aphid (*Amphorophora agathonica*) and possibly by the black raspberry aphid (*Amphorophora sensorata*). Avoidance of the mosaic disease complex is commonly achieved through resistance to aphid colonization.

Obtaining high quality planting stock is an important step in developing a successful black raspberry planting; poor plant material guarantees a poor planting. Plants should be ordered from a reputable source, preferably a nursery that sells plants from “certified” virus-free stock. Certification is an assurance that the plants have been tested by indexing and found free of common viruses. Virus-free plants have the best growth and productivity and will generally live longer and be highly profitable. Tissue culture plug plants are most likely to be virus free. Field-grown nursery stock has a greater chance of being infected with disease than plants grown from tissue culture.

The rise of regional marketing programs has increased the demand for locally produced fruit to meet labeling requirements. Increased demand for locally grown fruit for fruit wine production and fresh consumption may raise local prices and increase the viability of black raspberry production. Further work in breeding for increased yields and superior disease resistance will lead to new cultivars with improved market potential. Unfortunately, federal and state researchers have not been in a position to provide support to growers interested in black raspberry production. In the past 25 years, most publicly funded breeding programs for black raspberries were discontinued. Only three new cultivars were introduced during this 25 -year period, while in comparison, hundreds of red raspberry, strawberry, and blueberry cultivars were developed. Renewed efforts on this crop are critical to once again make black raspberry a viable option for growers in N.Y. and the northeastern U.S.

Recently, a research project was funded in support of this effort. The project, based at Cornell University’s New York State Agricultural Experiment Station at Geneva, N.Y., brings together expertise in plant breeding, plant pathology, and entomology, to address current black raspberry production problems and develop longterm solutions to those problems. Collaborators on the project include Dr. Greg EnglishLoeb, small fruit entomologist, Catherine Heidenreich, plant pathologist, and Dr. Juliet Carroll, Fruit IPM Coordinator from Geneva, and Dr. Robert Martin, Research leader/plant pathologist, from USDA-ARS Horticultural Research Unit, Corvallis, Oregon. The Hatch Initiative Program using Federal Formula Funds for the Station is providing funding for the project.

A replicated trial of nine commercial black raspberry cultivars including ‘Jewel’, ‘Bristol’, ‘Munger’, ‘Haut’, ‘Mac Black’, ‘Allen’, ‘Huron’, ‘Black Hawk’, and ‘New Logan’ and two advanced selections (one black and one purple raspberry) from the Cornell breeding program was established at Geneva in 2005. Most of these cultivars are not familiar to N.Y. growers. This trial will be used to demonstrate the potential and suitability of black raspberry production in N.Y., and to determine which existing cultivars are best suited for N.Y. production. Total yield, average fruit weight and marketable fruit will be assessed; marketable fruit will be classified as fresh market or processing.

Pest resistance will also be evaluated in multiple ways over the course of the 3season project. Already, efforts are underway to identify and utilize a wide range of raspberry germplasm to: 1) increase resistance to major diseases, 2) increase fruit yields and quality and 3) identify sources of resistance to the 2 aphids that transmit mosaic virus complex. Initial crosses were screened for resistance to Verticillium wilt in 2005.

A field day will be conducted when the plots are mature to allow growers to compare the different commercially available cultivars and evaluate advanced selections from the Cornell breeding program. These field days will allow side-by-side comparisons of fruit and plant characteristics.

Black Raspberry Cultivars

Allen (Bristol x Cumberland) From New York. Fruit ripens very uniformly so the harvest period is short. Plants are vigorous and moderately hardy.

Black Hawk (Quillen x Black Pearl) From Iowa. Fruit is medium-large and glossy with good firmness. Plants are vigorous, relatively hardy, and resistant to anthracnose.

Bristol (Watson Prolific x Honeysweet) From New York. Fruit is medium to large and firm, with excellent flavor. Plants are vigorous, high yielding and hardy. It is susceptible to anthracnose and tolerant to powdery mildew.

Haut [Manteo x (Bristol x Bristol)] From Maryland. Medium sized, firm fruit ripens over a long period. Plants are vigorous with good productivity.

Huron (Rachel x Dundee) From New York. Medium sized fruit is firm and glossy. Canes are vigorous moderately hardy and moderately resistant to anthracnose.

Jewel [(Bristol x Dundee) x Dundee] From New York. The fruit is firm, glossy, and flavorful. Plants are vigorous, erect, hardy, and productive. This cultivar appears to be more disease resistant than others including resistance to anthracnose.

Mac Black (parentage unknown) From Michigan. Ripens medium large berries 7-10 days later than most

cultivars. Fruit is somewhat soft. Canes are vigorous, erect, and hardy.

Munger (Shaffer o.p.) From Ohio. Shiny black fruit is medium to large with good firmness and flavor. It is moderately vigorous with adequate cold hardiness.

New Logan (unknown wild parentage) From Illinois. Fruit ripens uniformly so the harvest period is short. It is resistant to leaf curl virus but susceptible to anthracnose. (**Source:** *New York State Berry Growers' Association Research Reports:* www.hort.cornell.edu/grower/nybga/reports/)

NABGA's 2007 Conference

The National Bramble Conference, will be held on January 15-17, 2007 in Columbus, Ohio, in association with the Ohio Fruit and Vegetable Congress. The Congress also includes sessions on tree fruit, other small fruit, vegetables, direct marketing, and a large trade show, all of which are also open to bramble growers who register for the conference. Registration is being handled by the Ohio organization, and complete information will be available later this fall.

The conference will be at the Greater Columbus Convention Center in downtown Columbus. The Hampton Inn and Suites, the headquarters hotel for the 2007 Growers Congress, is located directly across the

street from the conference. A block of rooms has been reserved for participants at a special room rate of \$99/night + tax (standard king or double bed for one person). Call 614-559-2000 or visit their website at www.hamptoninn.com. The Drury Inn and Suites (614-221-7008) and Crowne Plaza (614-461-4100) will also be offering special conference rates. Information is at www.ohiofruit.org, with more to come – we will also be posting information on our own website (<http://www.raspberrylackberry.com/>). To find out about the Columbus area, visit www.columbusconventions.com. Mark your calendar and plan to register soon!

BLUEBERRY

Eliminate Troublesome Weeds in Blueberries in Late Summer and Fall

Eric Hanson, Michigan State University

Late summer and fall are good times to assess your weed control program and work on eliminating some troublesome perennial weeds. If you are not familiar with weed species, an excellent reference book is "Weeds of the Northeast," by Uva, Neal and DeTomaso (Cornell University Press).

First, walk the rows and note where annual weed control was inadequate. Identify the primary weeds and consider why your spring-applied pre-emergent herbicides may have failed. Did you choose the best materials and apply them at the right time and rate? If the primary annual weeds are late-season grasses such as crabgrass and fall panicum, consider using a stronger grass herbicide next spring, such as Sinbar, Solicam or Surflan. If one of these materials was used last spring with poor results, perhaps it was applied too early and lost strength by the time the grasses germinated in July.

Identify the broadleaf weeds so you can choose the proper herbicides next spring. If marestalk (*conyza canadensis*) is a problem, Sinbar is relatively effective. If pigweeds (*amaranthus* sp.) are widespread, Karmex and Princep may be good choices next spring.

Consider other reasons for poor annual weed control. Higher rates of pre-emergent herbicides are generally needed to control weeds on heavier soils higher in organic matter; consider increasing rates in these areas. If you are using off-center (OC) nozzles, herbicides may not be applied uniformly under the bushes. Note whether weeds grew in certain areas under the row that may indicate irregular spray pattern. In some cases, spray deposition may have been disrupted by old weed stalks and plant debris, causing poor control in some areas.

We have found populations of marestalk and ladythumb (*polygonum persicaria*) in Michigan blueberries that are resistant to triazine herbicides such as Princep. Triazine resistant pigweed and lambsquarters have been found in other Michigan crops. These weeds will not respond to Princep and may be more tolerant of some other herbicides. If you suspect herbicide resistance, specimens can be tested at Michigan State University (contact your local Extension Office).

Late summer and fall are excellent times to control hard-to-kill perennial weeds that infest many plantings. Perennial weeds have underground parts that sustain them from year

to year. When these weeds are treated with glyphosate in late summer or early fall, the herbicide moves into the below ground parts to kill the whole plant. If you sprayed brambles with glyphosate in June, you may have found that the canes are injured, but they grow back. Treatment in August or September can kill the entire plant. Of course, blueberry bushes are also perennials, so it is also easy to kill blueberries at this time of year. Be very careful to avoid coming in contact with blueberry leaves or green bark. Glyphosate can be absorbed directly by the green bark on one-year-old shoots. Some of the most troublesome perennials in Michigan blueberries and optimum times for glyphosate treatment are listed in the chart.

After harvest, walk the rows and carefully treat weeds with spot applications of glyphosate. Spray shields can be purchased or fabricated to control drift. Several glyphosate products are labeled for use on blueberries. Use two- to four- percent solutions for spot treating with a backpack sprayer, or 20% to 30% solutions for wiper applications. Addition of ammonium sulfate (one to two ounces per gallon) or a nonionic surfactants labeled for use with herbicides may improve penetration and control. Dyes that are registered for

agricultural sprays may help show where spray droplets land. If weeds grow up into blueberry bushes, pull them down so they can be safely treated.

A particularly troublesome perennial is Virginia creeper, or five-leaved ivy. This woody vine covers the ground beneath bushes and grows up into to bushes. I have found that spot spraying one-foot swaths between bushes with glyphosate provides effective control. The herbicide is translocated beyond the treated areas and controls much of the vine in the bushes. Virginia creeper drops its leaves early in the fall, so treat vines before they develop fall color. Other vines, such as wild grape (*vitis* sp.), greenbriar and bindweed are best controlled by pulling portions out of the bush and treating them on the ground. Absorbed herbicide moves from the treated leaves into the rest of the plant. This technique also works for most tree seedlings such as sassafrass.

Walking rows and spot spraying perennial weeds takes time, but it should be a routine task when harvest is done. There is no better way to control many of these species. It is much easier to prevent them from becoming established than to clean up heavy infestations. (*Source: Blueberry Bulletin Vol. XX, Vol. 21*)

GRAPE

Pennsylvania Vintage Update

Mark Chien, Penn State University

This season feels distinctly like Oregon with very unpredictable weather. We just can't seem to catch a streak of sun and dry. I was out in vineyard last week and here are a few observations.... it's important for grape growers not to think that you are the only one being affected by the plague no matter what form it appears to be. In this case, powdery mildew, botrytis, ripe rot, birds or whatever is going on out there I assure you.... YOU ARE NOT ALONE!!! Granted, disease control varies according to site and grower skill but everyone is in the same fight. It is easy to feel isolated in your vineyard oasis, especially at crunch time. I suggest you take a break and visit your neighbor.

Chardonnay appears to be consistently a problem variety this season with powdery mildew and bunch rots taking down fruit. I have heard of similar chard troubles from other regions. I think we need to consider this problem as an industry this winter and figure out what went wrong and how to fix it. Yes, the world has too much Chardonnay but no individual vineyard wants to lose too much. Where I saw improvement in Chardonnay conditions were in vineyard with exceptional canopy management. Okay, here is where the broken record starts - as Dr. Travis said so succinctly - spray programs are a supplement to good canopy management practices. I think we all know that

but so many things get in the way of execution from labor and cash shortages to ill-timed vacations. We also learned at the walk around that spray programs - timing, rates, coverage, material choice, etc. are all incredibly important to successful disease management in a year like this one. It just is.

Ernesto was bad but Florence was the real disappointment to me. What was advertised as a brief passing storm stood still over Lancaster for 36 hrs and dumped warm, steady tropical rain. We have had some gorgeous sunny, dry and breezy days but not enough. It is amazing how quickly these conditions can arrest the development of rots. Sun is the silver bullet. But we haven't had quite enough of it.

Again, canopy and fruit zone open. As the days cool down temperature around the fruit becomes more critical (see Enology Notes #118, just out) and exposing berries to sunlight warms them dramatically. They need every ray of sun and associated heat to push enzyme activity needed to develop critical secondary metabolites responsible for color and phenolics, especially in red varieties (in Oregon, in a year like this, the fruit zone gets stripped of leaves late). This helps with disease control as well. Grapes are ripening at lower sugars this season, typical for cool and rainy vintages. Don't expect 24 brix in any of the reds. But flavors are good and sugar can always be adjusted. Watch

the flavors most intently, they are your guide this year. The trick is to balance flavor development with level of disease.

At some point you either lose the ability to make a good wine from diseased grapes or you have lost so much fruit it kills the economics of making wine. This is a delicate balance and only you can decide where the balance point on the fulcrum lies. Fortunately, we have some tough varieties as the mainstays of our industry including Chambourcin and Vidal. They both looked pretty good on the vines but Chambourcin, in particular, has a long way to go. I was mostly getting sugars from 17-19.

Crop thinning, early, was a definite benefit this year. Crop thinning now - unripe berries, will still yield benefits to wines - as will sorting grapes. Sort however,

whenever and wherever - in the field and on the crush pad. Sorting will likely define this vintage. Those who do have a chance at pretty nice wines. Those who don't, well, talk to any wine grower in Burgundy or Bordeaux - our closest climate cousins, for the answer. Do what you can.

Birds. Don't just look at them. Chase them! As I approached one vineyard I heard the birds from a half mile away. There must be a strategy to deal with them. Why work for 7-8 months and let it all go away in the week before harvest?

We need indian summer now. I couldn't help but note the irony of the lead article in the recent Wine Spectator about the effects of global warming on viticulture. It's the topic du jour. Well, it's not here yet so we have to deal with the traditional challenges. (*Source: PA Wine Grape Newsletter, Oct. 2, 2006*)

Long Island Grape Update

Alice Wise, Cornell Cooperative Extension

Downy mildew can be found at the top of the canopy. In the majority of blocks, this is inconsequential as only young leaves can be infected. Leaves are only susceptible for about a week after they unfold and thus the majority of the canopy is now immune to new DM infections. PM can be found on canopies, not unusual for this time of year. Minor amounts are not important; more than that will compromise the ability of the canopy to ripen fruit through the fall. If choosing to treat for PM, shut off the nozzles in the cluster zone as PM control is not necessary for fruit at this time of year. Minimizing residue on fruit, particularly of sulfur, is also important. Cluster rots are much less serious than expected. Periodic heavy rains over the last 3 weeks or so were ideal for starting up cluster rot. In visiting vineyards and evaluating research vineyard fruit, there are small amounts of surprisingly pristine Botrytis infections and small amounts of sour rot. The progression of these infections depends entirely on the weather. Right now, the weather looks reasonable.

After a chance of showers on 9-23, predictions are for sunny, cool weather. Vineyard managers should be closely evaluating any cluster rot. We'd be very interested in seeing any unusual symptoms. Other eastern grape regions - including southern New England - have found ripe rot to be an issue in their vineyards in the period prior to harvest. *"Rotted berries turn uniformly dark brown over part or all of the berry and have pink or orange spore masses on the surface. As infected fruit mature, lesions first appear as slightly sunken or flattened rotted areas. Tiny black fruiting bodies (acervuli) develop within the lesion in a circular arrangement. Rotting fruit are characteristically covered with masses of sticky, pink or salmon-colored spores. As lesions expand, the entire grape eventually rots, and may drop or become shriveled or mummified as it decays."* From: www.umass.edu/fruitadvisory/factsheets/RipeRotFactSheet.pdf. (*Source: Long Island Fruit & Vegetable Update, No. 28, September 22, 2006*)

Fungicide Option for Ice Wine Production

Mike Ellis, Ohio Agricultural Research and Development Center

For grapes being held in the vineyard for ice wine production it may be useful to make an application of Pristine fungicide about the time you would conduct normal harvest or a bit later. We are having abnormally high temperatures and ripe grapes hanging under these conditions may face problems with berry rots caused by fungi. With the premium price we can get for good ice wine, the cost of the spray should be more than justified.

Pristine is a very broad spectrum fungicide and should be helpful in protecting berries from attack by several fungi. These fungi should not be a problem after some good killing frosts and as winter starts to set in. Pristine can be applied at the rate of 6 to 10.5 ounces per acre. I would recommend the high rate. (*Source: Ohio Grape Electronic Newsletter, Oct. 14, 2005*)

General

Passing of Ray Pestle, Vermont Extension Agent

Vern Grubinger, Univ. of Vermont

Ray Irving Pestle Jr., the long time County Agent for Windham County, died peacefully in Brattleboro Memorial Hospital on Sunday, Sept. 3, 2006. Ray was born June 22, 1921, grew up in Waitsfield, Vt., received his bachelor of science degree in dairy husbandry from the University of Vermont cum laude in 1943 and his masters degree in animal nutrition in 1945 from Rutgers University in N.J.

In May of 1945, Ray came to Brattleboro as the county agricultural extension agent for Windham County, and married Annette Lilley, of Bakersfield, VT. They lived in the same house on Southern Avenue from 1951 until recently. Ray continued as county agent until 1976, and served as a small fruit specialist for many other counties. During his career he saw major changes in agriculture in Windham County and surrounding areas, such as a decrease in the number of dairy farms in the county from over 600 fulltime farms to under 200, and the end of tobacco growing in the county. As county agent, he helped introduce grass silage, electronic farm accounting and artificial cattle breeding to the county and promoted direct sales by farmers to consumers. At

the time of his retirement from the UVM Extension Service, he was the longest serving extension agent in Windham County and the second longest in Vermont, a little over 31 years.

During his entire career, Ray was a strong believer in educating the public on agricultural matters. He wrote for the Brattleboro Reformer, had weekly radio programs and arranged many publicity events, such as a milking contest between innings at a Brattleboro High School baseball game.

From 1976 until his death he was an agricultural consultant working with farmers and fruit and vegetable growers in Vermont and New Hampshire. He was still doing this work during the 2006 field season, at age 85.

Ray touched the lives and careers of many farmers, Extension agents, and others in his community and in New England. We will miss him.

There was a memorial service for Ray in Brattleboro on Saturday, Sept. 9. Gifts in Ray's memory may be sent to the Memorial Fund of Centre Congregational Church, 193 Main Street, Brattleboro, Vt. 05301.

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.

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.

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.

The New England Greenhouse Conference

November 1-3, 2006

DCU Center in Worcester, Massachusetts

To receive the 2006 New England Greenhouse Conference Program or for more information, **contact: Cindy Delaney, Phone: 802-655-7769 Email: delaney@sover.net** . **The complete program and registration information is also available on our web site: www.negreenhouse.org.**

New Grape Grower Workshop

November 2nd, 2006

8:00am to 5:00pm

Zorvino Vineyards in Sandown, NH.

This workshop has been presented to eager audiences up and down the east coast and received high praise. It is fine opportunity to learn from experienced eastern viticulture specialists, local specialists, and to compare notes with other start-up (up-start?) grape enthusiasts! Information provided will focus on suitable wine grape varieties for New England including V. vinifera and Hybrid varieties. **Cost** is \$100 per person with a reduced rate of \$50 for a second registration from the same farm or family (Checks made out to UMass can be brought to the meeting). This price includes many handouts and resource materials, as well as lunch and refreshments. Many thanks to Zorvino Vineyards for hosting this exciting event. Registration payable with mailed in registration or at the door.. **For registration or information**, please contact Sonia Schloemann at 413-545-4347 or sgs@umext.umass.edu or go to www.umass.edu/fruitadvisor .

Cider Makers Short Course

December 5-8, 2006

New York Ag Experiment Station, Geneva, NY. More information: Ian Merwin im13@cornell.edu or Padilla-Zakour oipl@cornell.edu.

Massachusetts Berry Notes is a publication of the University of Massachusetts Extension Fruit Program which provides research based information on integrated management of soils, crops, pests and marketing on Massachusetts Farms. No product endorsements of products mentioned in this newsletter over like products are intended or implied.

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