

Berry Notes

Prepared by the University of Massachusetts Fruit Team

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Massachusetts Berry Notes Underwriters:



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GENERAL INFORMATION

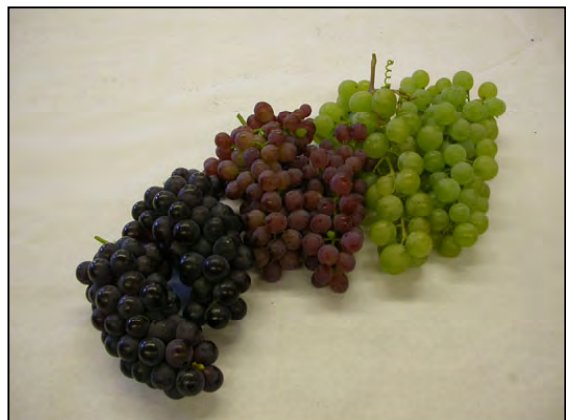
UPCOMING MEETINGS

vineyards thoroughly and take corrective measures for these problems before veraison.

Wine grape harvest is still relatively far off, but early table grapes will be ripening by the end of August. Have your harvest materials and market plans in place before harvest begins.

Current Conditions:

Strawberry renovation is complete. Keep renovated fields as well as new plantings regularly irrigated. Pull blossoms and set runners on new plantings. Also, check new fields for evidence of potato leafhopper burn and evaluate older fields for the level of foliar diseases, especially powdery mildew. **Highbush Blueberry** harvest is underway. Yields are variable with some growers reporting poor fruitset, possibly due to poor pollination. Leaf samples can be taken for tissue analysis from now to mid August to determine nutrient status of the bushes. This is especially important for blueberries since soil tests are not a reliable check on adequate nutrition. Also, be sure to keep young blueberries well watered during the coming weeks to help bushes sustain their fruit-load and go into the winter free from water stress. **Summer raspberry** harvest is winding down. Scout for Japanese Beetle which can cause fruit damage as well as foliar feeding. Sap beetles can be a serious problem in ripe raspberries. Malathion and pyrethrin-type (Evergreen and Pyganic) insecticides provide some control of sap beetles and have short pre-harvest intervals. White patches on fruit may be due to sunscald. **Grape** clusters are sizing up. Powdery and Downy mildew are common this year. Grape Berry Moth activity is increasing. Scout



'Mars', 'Vanessa', 'Marquis' in early September 2006

ENVIRONMENTAL DATA

The following growing-degree-day (GDD) and precipitation data was collected for a oneweek period, July 12, 2007 through July 25, 2007. Soil temperature and phenological indicators were observed on or about July 25, 2007. Accumulated GDDs represent the heating units above a 50° F baseline temperature collected via our instruments from the beginning of the current calendar year. This information is intended for use as a guide for monitoring the develop strategies accordingly.

Region/Location	2007 GROWING DEGREE DAYS		Soil Temp (°F at 4" depth)	Precipitation (2-Week Gain)
	2-Week Gain	Total accumulation for 2007		
Cape Cod	312	1,398	78°F	0.87"
Southeast	352	1,457	79°F	0.80"
East	290	1,464	70°F	0.35"
Metro West	313	1,453	74°F	0.48"
Central	277	1,303	65°F	0.55"
Pioneer Valley	265	1,402	67°F	2.19"
Berkshires	287	1,341	78°F	3.82"
AVERAGE	299	1,403	73°F	1.30"

n/a = information not available

(Source: UMass Extension 2007 Landscape Message #20, July 27, 2007)

STRAWBERRY

Tarnished Plant Bug: Up Close and Personal

Cynthia Rougoor, University of Guelph

Introduction:

Tarnished plant bugs are a major pest of strawberries, and are found worldwide in a variety of crops. Their ability to feed on a wide range of hosts and have multiple generations per year make them an extraordinary and resilient pest. Tarnished plant bugs can quickly migrate into a strawberry field from another crop such as an alfalfa field. Monitoring to identify nymphs is critical to reduce damage, but nymphs can be difficult to find due to their size, colour and speed. The only key symptoms of tarnished plant bug infestation are damaged fruit.

Description:

There are a few species of plant bug; the species that causes damage to strawberry fruit is *Lygus lineolaris* (Palisot de Beauvois). Most species have a stink gland that secretes allomones, a defense chemical with a foul smell that is released when the insect is disturbed to repel potential predators.

Adults:

- Tarnished colour appearance, ranging from black to dull brown colour (Figure 1)
- 6-7mm in length and are 2.5 mm wide and oval in shape

- Able to fly; the back half of the forewings are membranous and are bent on a downward angle
- Distinct yellow triangle on the dorsal side

Nymphs:

- Small in size, range 1-5 mm in length depending on the instar
- Green in colour and darken as they mature
- Typically the third instar stage has five black dorsal spots and being to develop wing pads (Figure 7).

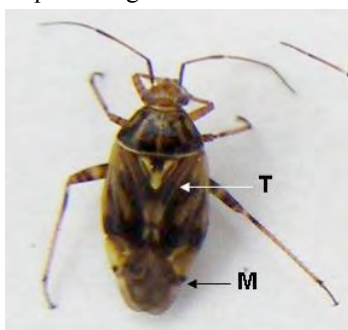


Figure 1. Tarnished plant bug adult.

Early tarnished plant bug instars are easily confused with aphids because of their light green appearance. Tarnished plant bug nymphs lack cornicles or "tailpipes", structures on the posterior end of the aphid; they also tend to move more quickly than

aphids (Figure 8).

Life History:

Tarnished plant bug adults emerge in the spring, feeding on new buds and shoots and lay eggs on plant material once the temperature becomes 20°C or higher. Depending on the temperature the nymphs will hatch in 7-10 days. Nymphs are usually seen on strawberries during bloom and generally emerge in mid May, feeding on the developing fruit. Adults and nymphs can both be present in a crop at the same time

as a result of overlapping generations, having between three to five generations per year. From fall to winter only adults are present as they prepare to overwinter in dead weeds, leaf litter and under tree bark. Adults emerge in the spring when the temperature reaches 8oC to start the life cycle over again.

Damage:

Tarnished plant bugs have a wide range of hosts, including over 350 plant species. They feed on approximately 50 commercial crops including apples, celery, raspberries, tomatoes, peaches, plums, pears, cotton, alfalfa, and beans.

These pests feed on the reproductive organs of the plants, probing the tissue repeatedly causing mechanical damage. Nymphs take a test bite to determine whether the plant is a good food source, if it is suitable it will continue puncturing and release digestive enzymes into the tissue. Feeding causes a number of problems including fruit malformation, abnormal growth, cell death, abscission of fruiting structures and damage to seeds.



Figure 7. All life stages of tarnished plant bug.

Both adults and nymphs feed on strawberry structures, but the nymphal stage causes the most economic damage, feeding on the achenes and tissue of the strawberry fruit.

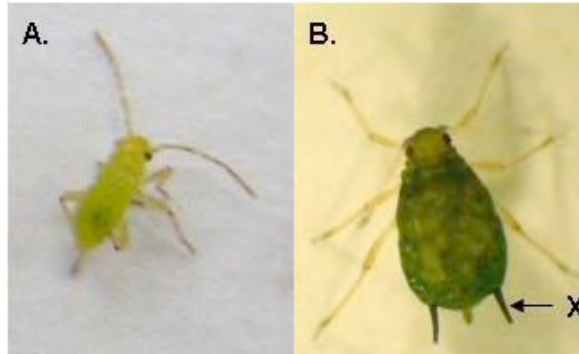


Figure 8. Comparison of tarnished plant bug and aphid morphology.

As the fruit develops the seeds remain clustered together preventing normal development called apical seediness or cat facing (Figure 9A). Generally berries are susceptible to apical seediness before seed separation. Fruit malformation from tarnished plant bug can be confused with the symptoms of poor pollination and although they look similar, each is distinct. Tarnished plant bug damage can be identified by observing the shape of the achenes since they are of equal size while

poor pollination is identified if achenes are of varying sizes in the damaged area (Figure 9).

Control:

Many growers use strawberry scouts to monitor and estimate the population density of tarnished plant bugs in a crop, Monitoring is used with thresholds to coordinate sprays and spray timings. Monitoring begins in the spring at first bloom to find young developing nymphs and typically takes place once a week. Monitoring is completed by cultivar, since some varieties blossom early and will have high population numbers sooner than other varieties.

Photographs taken by Cynthia Rougoor, copyright

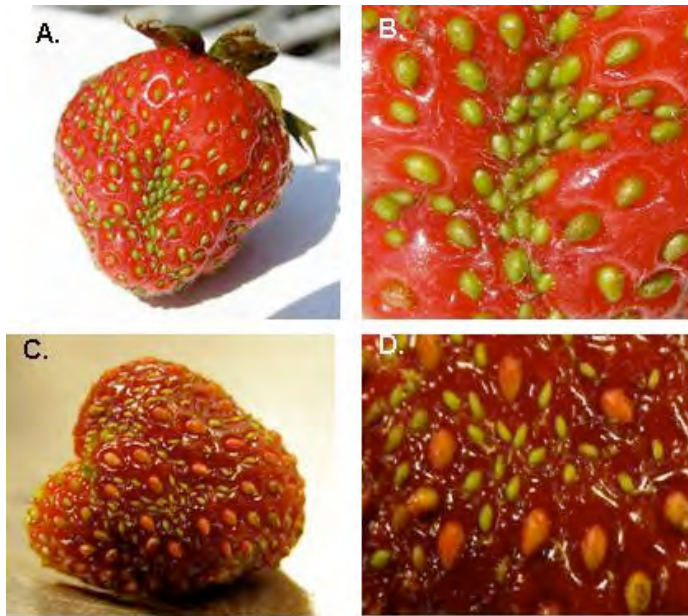


Figure 9. Fruit deformation. A) Full view of tarnished plant bug damage on strawberry fruit, B) Close up of apical seediness caused by plant bug, C) Full view of poor pollination, D) Close up of malformation caused by poor pollination.

2006.

(Source: Ontario Berry Grower, July 2006)

RASPBERRY

Raspberry Variety Review: Old Reliable and New Potential

Courtney Weber, Cornell University

Raspberry varieties are classified as floricanes (summer) or primocanes (fall) bearing. (A few weak primocane bearing types are described as everbearing, which produce a small fall crop and can be managed in a double cropping system.) Raspberries are naturally biennial with a perennial crown. Primocanes grow the first year, go dormant in fall, get chilled in winter, and fruit the following summer (the primocanes are now called floricanes, which die after fruiting). New primocanes are growing as the floricanes fruit.

Floricanes varieties must be pruned in the spring to thin the fruiting canes and remove dead canes for better disease management and fruit size. There are red (*Rubus idaeus*), black (*Rubus occidentalis*), and purple (red x black hybrid) raspberry varieties suitable for production in Northeastern states.

Primocane varieties fruit on the first year's growth in the fall of the year. Currently, only red varieties are available of this type although developments in black and purple raspberries include primocane fruiting. The strength of fruiting in primocane types varies widely from tips only on some floricanes varieties to nearly the whole cane in varieties such as 'Autumn Bliss' and 'Polana'. Later primocane varieties such as 'Ruby' and 'Heritage' can have yield reductions from early frosts in more northern growing regions. Pruning in primocane varieties is done by mowing spent canes to the ground before primocanes emerge in early spring.

Currently available black and purple raspberry varieties are floricanes bearing with most developed in New York or derived from germplasm from the region. Black raspberries have the potential to be a highly profitable crop for growers in Midwestern states in a diversified production system. 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 varieties 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 varieties are needed for the black raspberry to be a viable crop for most growers. Purple raspberries have limited market potential at this time, mainly for u-pick operations and processing.

New raspberry varieties are actively being developed in about 11 public breeding programs around the world with the majority suitable for production in the

Midwestern U.S. coming from Cornell University ('Heritage', 'Encore', 'Prelude', 'Titan', 'Ruby', 'Taylor'), University of Maryland ('Caroline', 'Anne', 'Jaclyn') and Ag Canada in Nova Scotia ('Nova', K81- 6). Increasingly, new varieties from European programs are being introduced in to the U.S. ('Autumn Bliss', 'Autumn Britten', 'Polana' and others). New varieties are released all the time, but the vast majority of them fail to catch on for various reasons including poor adaptability to diverse growing regions, unforeseen disease or insect susceptibility, or fruit characteristics that are unacceptable to the buying public. No variety will work well in all locations, soil types, and production systems, but many have proven useful in many different situations. This list is by no means complete but should address most situations. By planting a series of varieties, it is now possible to have fruit from mid to late June until fall frost (or longer with protection) in much of the Midwestern U.S. with only a short late-summer lag in production.

Obtaining high quality planting stock is an important step in developing a successful bramble 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. Field-grown nursery stock has a greater chance of being infected with disease such as crown gall, *Phytophthora*, *Verticillium* or viruses than tissue culture plugs or stock grown from tissue culture.

RED RASPBERRIES

Early Season

Boyne and **Killarney** (sibling varieties from Manitoba) perform very similarly. Both have early season with small to medium sized fruit with good eating and freezing quality but can be somewhat dark and soft. The plants are spiny and produce many suckers. They have excellent winter hardiness but are susceptible to anthracnose. Boyne is moderately resistant to late yellow rust and tolerant to *Phytophthora* root rot and crown gall, but is susceptible to raspberry fireblight. Killarney is moderately resistant to *Phytophthora* root rot and is susceptible to mildew.

Prelude (Cornell University-NYSAES, Plant Patent #11,747) is the earliest summer fruiting variety available. The fruit is medium sized, round, and firm with good flavor. It is very resistant to *Phytophthora* root rot and has good cold hardiness. A moderate fall crop is large enough to

warrant double cropping. It is the best early season variety available for the northeast.

Mid Season

Canby (Oregon) canes are tall, nearly spineless, and moderately productive. The fruit ripens mid season, is medium to large in size, firm, and bright red with excellent flavor. It has moderate to poor cold hardiness, and buds may winter kill in cold climates. It is susceptible to *Phytophthora* root rot.

Nova (Nova Scotia) is vigorous and upright with long, fruiting laterals. The canes have very few spines. The fruit ripens in mid-season and is medium sized, bright red, firm, and somewhat acidic in taste. It is considered to have better than average shelf life. The plants are very hardy and appear to resist most common cane diseases, including rust. It will set a late fall crop.

Titan (Cornell University-NYSAES, Plant patent # 5404) produces large canes with very few spines with suckers that emerge mostly from the crown, so it is slow to spread. It is susceptible to crown gall and *Phytophthora* root rot but is extremely productive. Fruits ripen mid to late season and are extremely large and dull red, with mild flavor. Berries are difficult to pick unless fully ripe. With only fair hardiness, Titan is for moderate climates. It is resistant to the raspberry aphid vector of mosaic virus complex.

Late Season

Encore (Cornell University-NYSAES, Plant patent # 11,746) is one of the latest summer fruiting raspberry varieties available. It produces large, firm, slightly conical berries with very good, sweet flavor. The fruit quality is considered very good. It is moderately susceptible to *Phytophthora* root rot and has good cold hardiness.

K81-6 (Nova Scotia) produces canes that are medium tall with spines only at the base. The fruit is very large with good flavor that ripens very late summer with average firmness. It is resistant to late yellow rust but is susceptible to leaf curl virus and raspberry fire blight. Hardiness is judged adequate for most areas.

Fall Bearing

Autumn Bliss (Great Britain, Plant Patent #6597) is an early ripening raspberry with large, highly flavored fruit. It ripens 10 to 14 days before Heritage. Much of the crop is produced within the first two weeks of harvest, which is an advantage in northern climates. It produces short canes with few spines. The fruit is somewhat dark fruit. It is susceptible to raspberry bushy dwarf virus.

Autumn Britten (Great Britain, Patent Pending) is early ripening with large, firm, good flavored fruit. It is taller than Autumn Bliss with better fruit quality but

slightly lower yields. It is a day or two later than Autumn Bliss.

Caroline (University of Maryland, Plant patent # 10,412) is a large, good flavored, conical fruit. It produces tall upright canes. The short fruiting laterals can be challenging to pick, but yields are very good for the fall. It has moderate to good resistance to *Phytophthora* root rot.

Dinkum (Australia, Plant patent # 9477) is produces early, good flavored, firm fruit. Shelf life can be extended with early picking. Canes are spineless, stout and strongly erect. It is moderately resistant to late yellow rust and susceptible to *Phytophthora* root rot and raspberry bushy dwarf virus.

Heritage (Cornell University-NYSAES) is considered the standard for fall bearing varieties. These tall, rugged canes have prominent thorns and are very high yielding. The primocane crop ripens relatively late. Fruit is medium-sized and has good color and flavor, firmness, and good freezing quality. It is resistant to most diseases. Due to its late ripening, this variety is not recommended for regions with cool summers or a short growing season with frost before September 30.

Jaelyn (University of Maryland, Plant Patent #15647) is an early season variety with large firm berries ripening 2 weeks before Heritage. Plants are vigorous and erect but susceptible to yellow leaf rust. Fruit is dark red and adheres tightly until fully ripe.

Polana (Poland, Patent Pending) is a very early season variety that ripens 2 weeks before Heritage. It produces short productive canes with multiple laterals per node. The fruit is medium sized fruit with good flavor. It is susceptible to *Verticillium* wilt and *Phytophthora* root rot. It needs extra nitrogen to perform well.

Ruby (Cornell University-NYSAES, Plant patent # 7067) is moderately vigorous with good productivity. The primocane crop ripens slightly ahead of Heritage. The fruit is large with a mild flavor. Ruby is susceptible to *Phytophthora* root rot. The variety is suggested for fresh market or shipping in areas with longer growing seasons. It is susceptible to mosaic virus complex and resistant to late yellow rust and powdery mildew.

Greenhouse Production

Tulameen (British Columbia) has been shown to be superior for greenhouse production. It produces very large fruit, and high yields. The fruit is glossy and firm. It is resistant to aphid vector of mosaic virus complex. Plants are not adequately hardy for field production in the Northeast but may be suitable for warmer regions in the Midwest.

YELLOW RASPBERRIES

Anne (University of Maryland, Plant patent # 10,411) produces large, conic, pale yellow fruit that ripen mid- to late season. It has very good flavor and texture. Tall upright canes sucker sparsely requiring higher planting density. It is

resistant to Phytophthora root rot but susceptible to leaf hoppers and rust.

Fallgold (University of New Hampshire) fruit is medium-sized, yellow with a pink blush, and soft, but has excellent flavor. It is poor for freezing or processing. Canes are very vigorous and produce many suckers. The primocane crop ripens relatively early.

Golden Harvest (New York) produces a firm yellow berry with good flavor. The fruit is small and yield potential is moderate. It fruits in the late autumn season similar to Heritage and has good plant vigor.

Kiwigold (New Zealand, Plant patent # 11,313) and **Goldie** (cv. Graton Gold) (California, Plant Patent #7,625) are amber sports of Heritage, similar in all characteristics except fruit color. Fruit blushes pink when overripe with Goldie slightly darker. The fruit is medium-sized and has good flavor and firmness and ripens relatively late. They are resistant to most diseases.

BLACK RASPBERRIES

Allen (Cornell University-NYSAES) ripens very uniformly so the harvest period is short. Plants are vigorous and moderately hardy. The fruit is firm and good flavored and mediums in size for a black raspberry.

Black Hawk (Iowa State University) fruit is small and numerous. This early season variety has fruit that is glossy with good firmness. Plants are vigorous, relatively hardy, and resistant to anthracnose.

Bristol (Cornell University-NYSAES) fruit is medium to large and firm, with excellent flavor. Plants are vigorous, moderate yielding and hardy. It is susceptible to anthracnose and tolerant to powdery mildew.

Haut (USDA-ARS, Maryland) fruit is medium large and ripens over a long period. The fruit is dark black and very attractive with good size but somewhat soft. The plants are vigorous with very good productivity.

Huron (Cornell University-NYSAES) produces medium large fruit that is firm and glossy. The eating quality is very good. Canes are vigorous moderately hardy and moderately resistant to anthracnose.

Jewel (Cornell University-NYSAES) fruit is large, firm, glossy and flavorful. Plants are vigorous, erect, hardy, and productive. This variety appears to be more disease resistant than others including resistance to anthracnose. The yield is as good as any other variety.

Mac Black (Michigan) ripens medium large berries 7-10 days later than most varieties. The fruit is medium large and firm with good quality. Canes are vigorous, erect, and hardy.

Munger (Ohio) produces shiny black fruit that is medium to large with good firmness and flavor. It is moderately vigorous with poor cold hardiness.

New Logan (Illinois) fruit ripens uniformly so the harvest period is short. The fruit size is relatively small but larger than Black Hawk for the early season. It is resistant to leaf curl virus but susceptible to anthracnose.

PURPLE RASPBERRIES

Brandywine (Cornell University-NYSAES) ripens later than most red varieties and are large, reddish-purple, and quite tart. Berries are best used for processing. This is a high yielding variety. Canes are very tall with prominent thorns, and suckers grow only from the crown so the plant will not spread. It is susceptible to crown gall but partially resistant to many other diseases.

Royalty (Cornell University-NYSAES, Plant patent # 5405) is the most widely planted purple variety. Fruit ripen late and are large and reddish-purple to dull purple when fully ripe. Berries tend to be soft but sweet and flavorful when eaten fresh. It is excellent for processing and can be harvested when fruit is red for fresh eating. Canes are tall and vigorous, with thorns, and are extremely productive. Royalty is immune to the large raspberry aphid, which decreases the probability of mosaic virus infection, but is susceptible to crown gall.

On The Horizon

There are many new named varieties that are being tested but are not yet available yet from most commercial nurseries.

Summer varieties include ‘Emily’, ‘Esta’ and ‘Claudia’ from Maryland and ‘Moutere’ from New Zealand. Fall bearers include ‘Josephine’ from Maryland, the early season ‘Polka’ from Poland, and ‘Himbo Top’ from Switzerland. Many varieties are available from the west coast programs but have not been tested widely in the east. Most of these have insufficient cold hardiness for much of the east but may work in more southern sections. As always, experiment with new varieties on a small scale first to judge suitability in individual situations.

Claudia (University of Maryland, Patent pending) fruit is large and conical with moderate firmness and good flavor, and ripens mid to late season. A late fall crop is common. Produces stout, upright canes but suckers sparingly. It has acceptable cold hardiness for most areas.

Emily (University of Maryland, Plant Patent #12,350) has large mid-season fruit with good yield potential. Firm fruit is large with a narrow cavity and mild flavor. It is susceptible to Phytophthora root rot. It has a low chilling requirement and susceptible to fluctuating spring temperatures and is only moderately cold hardy.

Esta (University of Maryland, Patent pending) has large conical fruit with a sweet, intense flavor ripen in the early

season. Fruit can become soft in hot weather. Needs trellising for ease of picking. Has poor cold hardiness but tolerant to fluctuating spring temperatures. It is resistant to leaf hoppers but susceptible to Phytophthora root rot.

Himbo Top (Switzerland) produces good quality, large fruit on primocanes. The fruit is bright red with good flavor. Plants are vigorous and upright and medium in height that will benefit from trellising. Reported to be resistant to Phytophthora root rot.

Josephine (University of Maryland, Plant Patent #12,173) fruit is large with average flavor ripening mid-

season. Berries are firm and cohesive. Plants are upright and vigorous needing little containment trellising. It is resistant to leaf hopper and Phytophthora root rot.

Moutere (New Zealand) is an early mid-season floricanic fruiting (summer) type. Fruit is medium to large with medium red color and good shelf life. Plants are vigorous and upright with moderate hardiness. It is resistant to raspberry bushy dwarf virus (RBDV).

Polka (Poland) has medium large primocane fruit that ripen in the early season. Widely grown in Europe, it is reported to have good fruit quality and good yields. (*Source: New York Berry News, Vol. 6, No. 7, July 2007*)

BLUEBERRY

At a Glance...Insect and Disease Problems that Should be Considered This Week

Gary Pavlis, Rutgers University

PEST/DISEASE	WEEK OF JULY 23	WEEK OF JULY 30
Anthracnose Consider a post harvest application	In fields where anthracnose levels were high or have been problematic in the past two years a post-harvest application will be beneficial. Please consult your IPM agent regarding selection of materials	
Stem Blight	Avoid use of N-fertilizer on young Duke plantings.	
Aphids 1st choice: Provado, Actara 2nd choice: Diazinon, Lannate	Continue to monitor shoot tips, but probably not a problem except on Elliott.	Continue to monitor late varieties.
Oriental Beetle Admire	Treat if high populations present prior to the end of July	Treatments should be finished.
Blueberry maggot Asana, Danitol, Imidan, Lannate, Provado, Sevin, Diazinon	Treat if 1 or greater on a trap or on a calendar schedule.	Continue to monitor only on Elliott or other very late varieties.
Japanese Beetle Provado, Sevin, Danitol	May be present at very low levels.	Treatments probably not needed

(*Source: The Blueberry Bulletin, Vol. 23, No. 18, July 23, 2007*)

GRAPE

Identifying Insect Damage in Grapes

Tim Weigle, Cornell University

This is the week you should all be out looking for grape berry moth in low and intermediate risk vineyards using the Grape Berry Moth Risk Assessment Protocol (to view the protocol follow this link <http://nysipm.cornell.edu/publications/grapeman/files/ri-sk.pdf>). Vineyards that have been classified as being high risk for grape berry moth damage would typically

have an insecticide applied in the last week of July/first week of August time frame without any scouting. However, with the limited amount of damage we are seeing this year, you might want to take the time to complete the scouting routine in your high risk blocks as well. Vineyards that have been categorized as extremely high risk (not in the GBM RA protocol but a category we have come up with to

describe vineyards, or areas of vineyards that are ravaged by GBM each year) can be scouted but will probably still need an insecticide applied.



Figure 1. Banded grape bug

vineyard blocks that appear clean at this time. Our pheromone trap catches dropped significantly indicating a lull between generations a few weeks ago and we have not seen an notable increase in trap catches to indicate the next generation is upon us. We are also doing damage assessments and are finding very little



Figure 3. Hail damage in

damage (below the third week of July 6% damaged cluster threshold of the GBMRA) in the high risk vineyards we are checking.

When scouting be sure you are documenting grape berry moth damage and not any of the other types of berry damage we are seeing this time of year. During a recent scouting outing we found banded grape bug (Figure 1) which usually is identifiable as black spots which are starting to slough off at this time of year, thrips which leaves rough looking tannish spots, streaks or blobs (Figure 2), hail damage which should be starting to callous off by now (Figure 3) or black rot which we are seeing a bit of old infections just starting up in vineyards. The new infections from black rot that

I saw yesterday (from infection periods at least 2-3 weeks ago) have typically not enveloped the entire berry yet. One way to assist in identifying it as black rot is to look for a whitish dot (the initial infection spot) with purplish/brown discoloration around it



Figure 4. Black rot infection

Grape berry moth damage

(Figure 4). You may also be able to see small black dots starting around the white spot which are the pycnidia that will house the newly formed spores/inoculum.

Grape berry moth damage is fairly easy to spot this time of year as you should be able to find a small entrance hole where the larvae began feeding surrounded by a purple discoloration.

Sometimes, if the feeding took place early enough, the berry will start to split. You may also be able to see black tunnels just under the surface of the berry where the larva has been moving through the berry while feeding.

If you have any questions on determining just what is damaging your berries, please give me a call and I would be happy to assist you.

(Source: Lake Erie Regional Grape Update, 7/26/07)



Figure 2. Thrips

Upcoming Meetings:

- August 2, 2007.** *High Tunnel Small Fruit Tour*, Ithaca, NY. Black raspberries, Blackberries, Cornell University College of Agriculture and Life Sciences. For more information contact Kathy Heidenreich at mcm4@nysaes.cornell.edu.
- August 8, 2007** - 4-7 pm Golonka Farm Hatfield, MA UMASS VEGETABLE IPM FIELD SCHOOL. Cost \$20. For more information, go to http://www.umassvegetable.org/ed_programs/meetings/winter_meetings.html or call Ruth Hazzard at 413-545-3696 or email rhazzard@umext.umass.edu.
- August 9, 2007** - 4:30 to 6:30 pm, Four Star Farms Northfield, MA. UMass Extension Aquaculture Twilight Meeting, Farm Pond and Recirculating Systems. For more information contact Craig Hollingsworth at chollingsworth@umext.umass.edu.
- August 10-12, 2007** - NORTHEAST ORGANIC FARMING ASSOCIATION (NOFA) 33 rd ANNUAL SUMMER CONFERENCE – “A CELEBRATION OF SUSTAINABLE LIVING” at Hampshire College in Amherst, MA. For the full schedule of activities and further information go to www.nofamass.org, or contact Julie Rawson at (978) 355-2853 or julie@nofamass.org.
- August 14-15, 2007.** *NASGA Summer Tour*, Niagara Falls Canada and Niagara region of New York. See news brief below or for more information contact Kevin Schooley at kconsult@allstream.net or visit www.nasga.org.
- August 15, 2007** 4-7 pm Paradise Hill Farm Westport, MA UMASS VEGETABLE IPM FIELD SCHOOL. Cost \$20. For more information, go to http://www.umassvegetable.org/ed_programs/meetings/winter_meetings.html or call Ruth Hazzard at 413-545-3696 or email rhazzard@umext.umass.edu
- August 21, 2007** - AGRICULTURE RESEARCH DAY - 4-7 pm UMass Crops Research and Education Center, South Deerfield, MA. Hear about the latest research on a wide range of topics in vegetable crops, cover crops and crops for fuel! Join us to celebrate the new equipment workshop being built by the College of Natural Resources & the Environment to support research at South Deerfield. Bring disease samples to a free onsite diagnostic clinic! Registration: \$20 per person (3 or more per farm, \$15 per person). Refreshments will be served. Pesticide recertification credit has been requested. For more information contact Ruth Hazzard (545-3696) rhazzard@umext.umass.edu or Steve Herbert (545-2250) sherbert@umext.umass.edu.
- August 21, 2007** - ANNUAL MEETING of the CAPE COD GROWERS' CRANBERRY ASSOCIATION 9am - 1pm - UMass Cranberry Experiment Station, Wareham, MA. In addition to the business meeting, there will be a tradeshow, lunch, and a tour and ribbon-cutting ceremony for the newly renovated State Bog. Lunch tickets must be purchased in advance. For further information contact CCCGA at 508-759-1041 or e-mail info@cranberries.org
- August 29, 2007** - Vermont Grape Workshop and Vineyard Tour. The Workshop will begin in the morning at the University of Vermont Horticultural Research Center (HRC) with classroom presentations and a tour of the small vineyard that was planted this spring at the HRC. We will have a catered lunch at the HRC and then head to Lincoln Peak Vineyard in New Haven to tour the vineyard and continue discussions. Dr. Paul Domoto of Iowa State University is the featured guest speaker. Dr. Domoto, a viticulturalist, has been conducting research on many of the cultivars being planted in Vermont and will be sharing his knowledge and insights with us. The Workshop and Tour are being sponsored by the University of Vermont, the University of New Hampshire Extension System, EPA Pesticide Environmental Stewardship Grant, and by the USDA Risk Management Agency. For more information contact Lorraine Berkett at Lorraine.Berkett@uvm.edu.

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