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Eastern NY Commercial Horticulture Program

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Berry News

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Berry "To Do" List:

All crops

- Keep working at managing voles – there were a TON of them this year!
- Weed management will help control voles – so keep after that.

Blueberries

- Blueberries all at green tip with southern regions at pink bud.
- Fair amount of winter injury at tips of branches.
- More sightings of blueberry stem gall wasp and also several farms reporting Gibbera twig blight – neither are 'expected' problems.
- Spray for mummyberry now if this has been a problem in the past. Abound, Captevate, Switch – many other fungicides labelled. A second application will be needed and if bloom is delayed perhaps a third. Rotate chemistries when repeating applications. Control is improved greatly simply by disturbing the soil under the bushes just prior to bud break. This disturbs the fungal fruiting body and prevents spore dispersal.
- Botrytis blossom and twig blight can be controlled at pink. Many of the same fungicides labelled for mummyberry will control botrytis. Anthracnose fruit rot is best controlled by a fungicide application right at bloom.
- Prepare to bring in bees at 10% bloom (see article in this newsletter).

Ribes

- Currants at bud swell in the Hudson Valley
- Scout for currant aphid which is most common on red and white currant and sometimes on gooseberry. The leaves get very distorted and the aphids produce a lot of honeydew. Spray when you see them – there are no thresholds.
- While scouting keep an eye out for currant stem girdler. These sawfly insects emerge in late April and lay eggs in young shoots which cause the shoots to die. You will need to prune off the affected shoot to prevent the eggs from hatching and increasing population.

Currant aphid damage on Ribes. Photo courtesy of W. Cranshaw, Colorado State University, and Bugwood.org.

Raspberries/Blackberries

- Bud break on summer floricane raspberries remains sporadic up and down the cane.
- Many growers trying to get primocane berries to fruit earlier this season – we'll see if the effort is worth it.

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- Control anthracnose, spur blight and cane blight by using fungicides at bud break until ½" green. Lime sulfur and/or copper sulfate can be used for all of these diseases. Organic growers can use copper hydroxide products.

Strawberries

- Chandlers are blooming lightly north and with more conviction in the Hudson Valley. June bearing strawberry growth looks quite good. Some reports that DN's look a little weaker – particularly Albion, but I feel like they will be ok. Growers that were trialing silver mulch vs. black plastic report small difference in growth between same varieties with plants on silver looking weaker and not as vigorous.
- Buds are in the crown now so scouting for bud weevil should begin.
- If you have had problems with leaf diseases consider an early spray to control them. Copper hydroxide is available for organic growers, and conventional growers could also use copper or Topsin-M, but keep in mind that leaf Spot has many more options for control than do the other leaf disease pathogens – except that Topsin-M is NOT labelled for leaf spot – just leaf blight and leaf scorch.

Weed Management in Berry Crops

Witten by Andy Senesac, CCE
Source: LI Fruit & Vegetable Update April 16, 2015

This is the time of year to be cleaning up weeds that have overwintered and applying pre-emergent herbicides to control annual grasses and broadleaf weeds. Even though new growth may have begun on raspberries, pre-emergence herbicides like Oryzalin or Devrinol can be applied – primarily for annual grassy weed control. Broadleaf weed control with either Simazine or Sinbar should be applied before budbreak or directed to avoid damage to emerging foliage. Callisto is now labeled on blueberry, currant, raspberry and blackberry. It should be applied post-directed and prior to bloom. Callisto can control some difficult weeds like eastern black nightshade, ragweed and galinsoga.

Spring germinating broadleaf weeds and grasses are a major challenge to strawberry production. The choice of residual pre-emergence herbicides that can be applied at this me of year is very limited. Napropamide (Devrinol) can be applied to established and newly transplanted berries. A new formulation, Devrinol DF-XT, is now registered even for Long Island. Devrinol needs either irrigation or rainfall after application to activate it and move it into the zone where the weed seeds are beginning to germinate. Devrinol can be applied until bloom begins. Pendimethalin (Prowl H2O) can also be applied banded to row middles at this time of year to both established and new plantings. Pre-emergence control of annual grasses and some key annual broadleaf weeds can be expected. In general, Devrinol and Prowl control a similar spectrum of weeds. Post-emergence control of established grass weeds can be achieved with either sethoxydim (Poast) or clethodim (Select). Both are systemic and grasses are fairly slow to show symptoms, but the active ingredient actually enters the grasses quickly and stops new growth within hours. A repeat application may be needed for perennial grasses or new flushes of grass weeds.

SAVE the DATE!!

July 14th – High Tunnel Raspberry Field Day, Geneva, NY. More details to follow

July 21st – Blueberry Variety Review Field Day, Winney's Farm, Schuylerville, NY. More details to follow.

Tips for Hiring Youth in Agriculture

Editors' note: this is the first in a 3-part series written by Maire Ullrich re: hiring youth. Please read it closely and if you have any questions, give Maire a call or refer to the labor websites included in the article.

Part 1: Who is an Agricultural Youth Employee?

For Federal DOL purposes Agriculture is defined as*: farming in all its branches when performed by a farmer or on a farm as an incident to or in conjunction with such farming operations.* This includes working at farm markets or farm stands. However, if you are selling product from other producers or vendors, labor exceptions for agriculture do not apply. Selling others products are commercial.

States may differ from the federal regulations. The more protective rule is what must be abided by. See: http://www.dol.gov/whd/state/agriemp2.htm for a map and chart that outlines additional state requirements. Regulations do not apply to youth working on the farms owned or operated by parents or legal guardians. Do utilize websites as that is where the most up-to-date information can be found.

Age:

- Agriculture workers 16 and over are is no longer subject to the Federal agricultural youth employment provisions, whereas for non-ag jobs, it is 18.
- 14 and 15 Years of Age 14- and 15-year-olds may work outside of school hours in any agricultural occupation except those declared hazardous by the Secretary of Labor. You will need to refer to this list for all of those below and you can find that list here:
- 12- and 13-year-olds may work outside of school hours in any non-hazardous agricultural job with written parental consent or on a farm that also employs their parent(s) or person standing in place of the parent(s).
- 12 is generally the minimum age with a few exceptions such as employment on Small Farms. Youth under 12 years of age may be employed on small farms outside of school hours in any non-hazardous agricultural job, with parental consent. Small farms are defined as those that did not utilize more than 500 "man days" of agricultural labor in any calendar quarter of the preceding calendar year. A "man day" is defined as any day during which an employee performs agricultural work for at least one hour.

Students may be able to work outside of their normal age range should they have certificates from 4-H and/or vocational programs.

Gibbera twig blight

Gibbera twig blight is caused by the fungus *Gibbera vacciniicola.* We saw this disease heavily infesting a planting recently but it was also brought to our attention by another grower in the same Delaware county region. This disease appears to be limited to the northeastern United States and eastern Canada and is reported to be common in New Hampshire.

Symptoms. The most characteristic symptom is black, raised, cushion-shaped fruiting bodies (stromata) on twigs and canes (Figure 1). Stromata can occur singly or in clusters and are usually bordered by a distinct red margin. Fruit yield may be reduced, and infected twigs appear to be predisposed to winter injury. Heavily infected twigs are often killed when fruit-ing bodies form girdling cankers (Figure 2).
Disease incidence can be as high as 40 percent of the twigs infected. Cultivars Berkeley and Herbert are susceptible and Northland is highly susceptible.

Disease cycle. The fungus overwinters in stromata on infected twigs and canes. Ascospores are released during rainy periods from mid-April to late June, with peak release occurring in May, and infect young twigs and canes. The appearance of tiny, black fruiting bodies on one-year old twigs in early fall is the first evidence of infection.

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Fig. 1 Gibbera twig blight fruiting bodies. Photos courtesy of C. Smith, UNH

Management. Remove and destroy infected twigs and canes; avoid susceptible cultivars; apply fungicides starting just prior to bloom.

Fig. 2 Fruiting bodies form girdling cankers. Photo courtesy of C. Smith, UNH

Blueberry pollination season: Top 10 things to do now for optimal pollination

Written by Rufus Isaacs, Michigan State University Extension

The recent, warm weather and predicted scorching May conditions predict a super-fast start to bloom this year. It is time again to review blueberry pollination by reading "Invest in pollination for success with high-bush blueberries" by MSU Extension.

Here are 10 top important take-home messages from the article.

1. Blueberry pollen is moved by bees, not wind, so high numbers of bees are needed to set a blueberry crop.
2. Cultivars vary in their benefit from getting cross pollen versus self-pollen, so field design and stocking should take account of this.
3. Honey bees, bumble bees and wild bees contribute to pollination.
4. Flowers are receptive to pollen for just a few days. In the hot weather their receptive period is likely to be shorter.
5. Stocking recommendations vary by cultivar from lowest (Rubel at 0.5 hives per acre) to highest (Jersey at 2.5 hives per acre), so adjust by cultivar.
6. Stock with more bees for higher yielding fields and to increase the chance of full pollination.
7. Bumble bee colonies can complement honey bees to improve pollination.
8. Wild bees provide significant pollination in some settings, and can perform when honey bees don't.
9. Conserve wild bees by setting aside some farm habitat for their nesting and food after blueberry bloom.
10. Minimize pesticide risk to bees by avoiding spraying and bee toxic pesticides during bloom, or apply only late in the day, and follow the label restrictions.

The weather will cool down next week, so if the rain holds off we can hope for a good pollination season to bring large berries in July and August.

Things to look for when interpreting soil test results for berry crops

Written by Dr. Marvin Pritts, Cornell University

Editors' note: This article has been edited from a chapter in the brand new resource *Berry Soil and Nutrient Management – A Guide for Educators and Growers*. You can find this information, along with a helpful example of an actual soil test result, plus a few more "examples" of berry soil tests, that may help you understand the complexities of proper nutrient management. Visit this link for that resource: http://www.fruit.cornell.edu/berry/production/soilnutrientmgmt/index.html. The example below works off the Agro One soil test format.

- **Soil pH**. The desired pH for strawberries 6.0 to 6.8 (this is not true for all berry crops – especially blueberries!). Check the fertilizer recommendations at the bottom of the soil test report. Note buffer pH may also be listed. Buffer pH is used to estimate CEC; greater the difference between pH and buffer pH, the greater the CEC capacity, and the more difficult to modify the pH. Buffer pH is not listed when the pH is above 7.0.

- **Organic matter content** - 2% or higher most desirable for berry crops; OM. If OM is 2% or less, cover crops or compost applications should be implemented to boost OM prior to planting.

- **Macronutrient levels** (P, K, Ca, and Mg). These are generally reported in either parts per million (PPM) or pounds per acre (lb/A). PPM x 2 equals pounds per acre so it is easy to convert between the two values. The Agro One soil test gives relative levels of soil nutrients which vary according to the type of soil listed. We have found that there are a few soil types, particularly in the Adirondack region, that are NOT recognized by the Agro One lab. This results in no relative levels being reported. "High" is considered a sufficient level and may not generate a fertilizer recommendation. "Medium" is considered adequate for the short term but may generate a recommendation to maintain and/or build levels for the future.

- **Soil fertilizer recommendations**: Recommendations refer to pounds of actual nutrient, not pounds of fertilizer. For example, an N-P-K fertilizer such as 10-10-10 is only 10% P2O5 by weight, so to apply 25 lb P you would need 25/0.1 or 250 lbs of fertilizer. Note at the same time you would also be applying 25 lb/ac of N and K.

- **Nitrogen**: Nitrogen is not usually reported in soil test results as the amount in soil at any given time changes rapidly due to cycling between the various forms of N (NO3, NO2, NH4, and organic N), weather changes, and leaching. Use foliar nitrogen test results to adjust this rate accordingly.

- **Micronutrient levels** (ICP analysis): Aluminum, zinc, manganese, and iron values are reported here; these levels are not generally used for recommendations as foliar analysis is a better indicator of the status of these micronutrients. Thus it is good to review both soil and leaf analysis results together. When test results indicate micronutrients are present in soil but foliar tests indicate deficiencies, it may indicate either pH is not in the desired range, or other root issues exist that are affecting micronutrient uptake. That said these values may require some consideration in evaluating possible toxicities. One example of this is aluminum; soil aluminum levels above 300 PPM are considered toxic to blueberries. The same levels are not necessarily toxic to strawberries and raspberries, as the higher the pH the less available aluminum becomes in soil.

Since boron also has an impact on plant growth, particularly in strawberries and raspberries, request boron testing if it is not included in the standard soil test you are using. Recommended boron levels may vary slightly from lab to lab but in general boron levels of < 0.35 PPM (multiply by 2 for lb/A) are considered low for berry crops; soils with 0.35 to 0.75 PPM are considered medium and soils with > 0.75 PPM are considered high.

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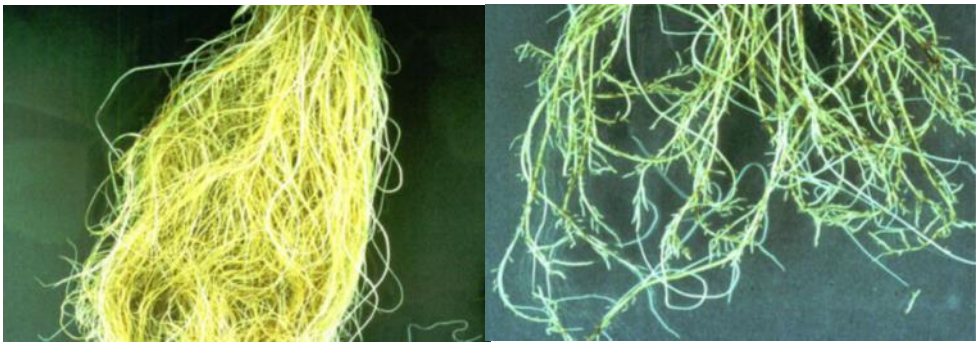

Figure 1. *Comparison of strawberry roots grown in complete nutrient solution including boron (left) and nutrient solution minus boron (right). Note sparse, stubby roots of boron deficient plant. Photos courtesy: M. Pritts.*

- Soil boron is very prone to leaching, especially in soils with low organic matter content, so it is one of the most commonly observed micronutrient deficiencies in berry plantings. Boron deficiencies lead to poor root growth (Figure 1), which in turn causes deficiencies of other nutrients due to poor uptake. This sometimes manifests itself when leaf analyses indicate micronutrient deficiencies, even though the soil pH is in range and soil test results indicate sufficient levels of the nutrient(s). Note that poor root growth from other causes may have the same effect. Boron is also important in fruit set. Boron is highly mobile in soil and may be applied any time of year, making a boron deficiency fairly easy to correct. If boron is required apply no more than 2 lb actual boron/A (i.e. 10lb/A Solubor) in any one year.

You must have confidence in recommendations provided by your lab. The best analysis in the world is useless without a good recommendation; many analytical labs provide "general plant recommendations for field crops" without fine-tuning to the needs of specific crops i.e. a blueberry recommendation that looks like one for corn.

2015 Weekly and Seasonal Weather Information

	Growing Degree Information Base 50^{O} F			Rainfall Accumulations		
Site	2015 Weekly Total 4/27 - 5/03	2015 Season Total 3/1 - 5/03	2014 Season Total 3/1 - 5/03	2015 Weekly Rainfall 4/27 - 5/03 (inches)	2015 Season Rainfall 3/1 –5/03 (inches)	2014 Total Rainfall 3/1 - 5/03 (inches)
Albany	49.7	93.7	73.0	0.02	2.45	4.54
Castleton	45.7	90.0	72.5	0.01	2.35	4.34
Clifton Park	50.6	92.6	55.7	0.02	1.68	5.15
Clintondale	54.0	125.1	96.0	0	2.07	8.02
Fishkill	42.4	101.6	Na[1]	0	2.68	Na[1]
Glens Falls	25.5	42.9	69.0	0.01	1.44	8.30
Guilderland	35.5	66.5	54.0	0	2.68	0.43
Highland	54.0	125.1	92.3	0	4.59	8.13
Hudson	47.9	104.8	83.0	0.02	3.39	5.45
Marlboro	45.4	105.9	74.8	0	3.80	7.30
Montgomery	54.4	115.9	75.0	0	4.12	7.63
Monticello	24.3	42.5	41.0	0	0.02[2]	4.06
Peru	29.9	55.2	48.7	0.08	1.97	4.86
Red Hook	42.2	96.2	95.0	0.01	4.53	0.40
Shoreham, VT	31.7	57.4	49.7	0.03	2.32	4.96
Wilsboro	21.8	43.4	40.3	0.14	2.39	3.20

Na[2]: The Monticello station is not properly recording data at this time.

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