



Cornell University
Cooperative Extension

Capital District Vegetable & Small Fruit Program

Weekly Update

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Early Season Strawberry Care

As new leaves slowly emerge from the crown of the strawberry plant, keep track of how they appear. Are they deformed and twisted? Cyclamen mites continue to appear in strawberry plantings across the state. Cyclamen mites are extremely small – 1/100th on an inch – and are a shiny pinkish-orange color when mature. Individual mites cannot be seen without the help of a dissecting scope, but sometimes you can see the egg masses along the mid-veins of newly emerging leaves with just the help of a strong hand lens.

The mite feeding occurs in the crown of the plant, so that the leaves are stunted and deformed when they emerge. Later in the season the mites will also feed on blossoms causing berry malformation. The thought was that cyclamen mites tended to build-up in plantings and could be avoided if you rotated your plants judiciously after about 5 years, but a field study last summer by Molly Shaw, CCE educator in the Southern Tier of NY, indicated that many new

plantings were infested. For the full results of that field evaluation, go to page 24 at this link: <http://www.fruit.cornell.edu/nybn/newslettpepdfs/2011/nybn1002.pdf>.

The big problem with cyclamen mites is that they are REALLY hard to get rid of. Thionex shows the best efficacy as it kills mites and eggs, but it is a tough chemical. There is a 2(ee) label for Portal but that is a contact miticide that may stop feeding and egg laying but does not kill mites outright.

For organic growers cultural controls including avoiding infested stock and susceptible varieties such as ‘Cabot’. Azahar (Azadirachtin), Saf-T-Side (petroleum oil), Suff oil x (petroleum oil) and Trilogy (Neem oil) are labeled for cyclamen mites in strawberries but limited efficacy data is available. See the Cornell Organic Guide for Strawberries for more information http://www.nysipm.cornell.edu/organic_guide/strawberry.pdf.



Cyclamen mite damage



Cyclamen mites and eggs

Photos courtesy of the Cornell Berry Diagnostic Tool, <http://www.fruit.cornell.edu/berrytool/>.

Another mite pest that can be a problem in strawberries is Two-spotted mite. This mite is much more common to growers and because it is larger, it is easy to see. It will be found on the underside of leaves and can cause small yellow spots on the upper leaf

surface. The action threshold is 5mites/leaf or 15 out of 60 mature (fully expanded) leaflets infested with 1 or more mites. Regular leaf monitoring is necessary for assessing population growth. If the population is heavy, the leaf will develop a bronze (Continued on page 3)

“Serving the research and educational needs of vegetable and small fruit growers in Albany, Columbia, Fulton, Greene, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, & Washington Counties”

Spring garlic care

Cool weather has slowed garlic down compared to last year, but growers across the region still see 3-5 leaves on most garlic. So far annual weeds aren't germinating, but warm weather in the long term forecast should change that soon.

Fertility: Ideally, you should start your fertilization planning with a soil test rather than adding maintenance levels of nutrients each year. Soil should have a pH of 6.8-7.2, although garlic can perform well down to a pH of 6 under some conditions. Relatively high organic matter content will generally benefit garlic, and increasing organic matter may be a management goal when considering crop rotation and amendments. Assuming these factors have been accounted for in the fall during planting, spring fertility is now the key to good yields.

Garlic should be fertilized quite early in the spring. In fact, by the time you are reading this half of your fertilizing should have already been completed. The general fertilizer recommendations developed by Michigan State Extension are for spring applications of nitrogen at a rate of 40 pounds/A applied in March or early April when the garlic starts to grow. If you didn't do your application of fertilizer early, you can still do an application of 40 lb/A very early in May if bulbing hasn't been initiated yet. Right now, everyone should be OK to make this application. After bulbing begins, adding nitrogen can inhibit bulb formation in favor of more leaves.

Season-long recommendations: In the fall phosphorus can be applied at 150 pounds/A and potassium at 100 pounds/A applied and incorporated before planting, and no additional phosphorus or potassium is needed during the spring. If soil tests indicate other amounts, use the soil test numbers. Phosphorus and Potassium requirements for garlic are similar to requirements for onion.

Weed control: Once weeds are allowed to establish in a garlic field, garlic is virtually unable to compete for water, nutrients and light. The key to weed control is to take care of weeds early. There are a few chemical controls available (Table 1). Clean, weed-free mulch is often applied in the fall after the ground freezes and may be left on through the growing season. This will suppress germination of annual weeds. Perennial weeds should be controlled physically or chemically prior to planting in the fall, because they are nearly impossible to control during the growing season. Surface cultivation between rows to control seedlings is effective, but in-row mechanical cultivation is quite disruptive. Flame weeding of seedlings between rows is also effective if no hay mulch is being used. –CLS

Sources:

Garlic: Organic Production: Bachman and Hinman. ATTRA, revised 2008

Producing Garlic in Michigan: Goldy. Michigan State University, 2000

Table 1: Herbicides labeled in NY for garlic. Most products have a 45 day PHI, so be careful not to spray too late.

Product	Rate	Notes
Prowl 3.3 EC Prowl H ₂ O	1.8-3.6 pts/A 1.5-3.0 pts/A	Rate based on soil type. Pre-emergent weed control. OK to overspray garlic with 1-5 leaves
Outlook	12-21 fl. oz/A	Garlic must have 2+ leaves. Pre-emergent
Goal 2XL & Goal-Tender	2-4 oz/A 1-2 oz/A	Garlic must have 3+ leaves. Weeds 2-4 inches tall and actively growing.
Select Max	9-32 oz/A	Controls annual and perennial grasses. Higher rates on perennials. Add a .25% v/v NIS.

Websites of Interest

Diagnose pest and disease problems using color pictures: <http://vegetablemdonline.ppath.cornell.edu/>

Cornell *Guidelines* for fruit and vegetables: <http://www.nysaes.cals.cornell.edu/recommends/>

Cucurbit Downy Mildew forecast: <http://www.ces.ncsu.edu/depts/pp/cucurbit/>

USDA Fruit and Vegetable Market News: www.marketnews.usda.gov/portal/fv

Organic Prices: <http://rodaleinstitute.org/Organic-Price-Report> or <http://www.ers.usda.gov/Data/OrganicPrices/dd>

Garlic bloat nematode update

During a series of winter meetings garlic growers were able to share the impact of garlic bloat nematode with fellow growers, the NYS Certified Seed Program, and USDA APHIS inspectors. Based on these meetings and discussion with industry experts, APHIS is planning to inspect garlic at the border to Canada. The NYS certified seed program is still considering certification as an option. We will alert growers when a decision about this issue is made. -CLS

Berry Updates

(Continued from page 1)

appearance, and become very dry and brittle. Two-spotted mites can be a problem in new or fruiting plantings. There are a number of products that are effective including Brigade, Danitol and Agri-Mek. Organic JMS Stylet Oil at the rate of 3-6 qts./100 gal can also be used. Make sure that the sprayer PSI is above 200 to ensure decent coverage.

The last early season pest of strawberries is Bud Weevil aka Strawberry Clipper. This insect is responsible for the strawberry buds that appear hanging by a thread before they simply drop to the ground. The adult weevil punctures the bud while feeding in the spring. New research suggests that plants can sustain a fairly high damage if that damage is to the tertiary buds. The new threshold is >1 cut bud per truss/linear foot of row IF the buds are primary or secondary buds. If the buds are tertiary, you can stand at least 2 damaged buds per truss per row foot.

If you have experienced heavy weevil pressure in the past, and are surrounded by hedgerows and other overwintering sites, plan to spray for the insect when temperatures are near 65°F just as first blossom buds become visible in the crown. Brigade and Danitol are both labeled. Azahar and AzaMax are labeled as organic control materials, but

efficacy data is not available.

For more information about organic strawberry culture, please refer to the [2011 Production Guide for Organic Strawberries](#).

Click here to view [the 2011 Cornell Pest Management Guidelines for Berry Crops](#). -LGM

Bud Weevil damage – photo courtesy of C. Heidenreich



Berry Phenology

Up until this bit of warm, moist weather moved in, the Growing Degree Day accumulation is running 3 to 16 days behind the season average and much more compared to last year. Still, this is just about when we want to see most of our berry crops – phenologically speaking: currants and gooseberries are just about at bud burst in most areas in our region. Strawberries have some slight movement of new leaves from the crown – more from row-covered berries - and blueberries in the south are at bud break, but up north they are still just swollen.

Right: Red currant at bud burst to grape stage.



C.. Heidenreich

Weekly and Seasonal Weather Information

	Growing Degree Information Base 50° F			Rainfall Accumulations		
Site	Weekly Total 4/18—4/24/11	Season Total 4/1 - 4/24/11	2010 Total 4/1—4/24/10	2011 Weekly Rainfall 4/18—4/24(inches)	2011 Season Rainfall 4/1—4/24 (inches)	2010 Total Rainfall 4/1—4/24 (inches)
Albany	6.0	33.5	77.0	0.94	3.37	0.88
Bennington, VT	4.5	27.6	69.0	0.58	2.50	1.08
Clifton Park	4.0	24.5	89.5	1.20	3.58	1.30
Glens Falls	2.5	23.5	55.5	1.0	2.58	1.24
Guilderland	2.0	26.5	100.5	0.91	3.21	0.94
Hudson	8.5	32.0	105.5	0.72	3.98	0.97
Valatie	8.0	31.8	105.5	NA	3.14	NA

Late blight found in WI seed potatoes

From Sandy Mendasha, Long Island Update:

Plant pathologist Amanda Gevens confirmed the late blight pathogen, *Phytophthora infestans*, in potato seed grown in Wisconsin on April 12, 2011. Dr. Gevens says “Given the sampling method and size, it is not known how widespread or with what incidence this disease risk may be. Additionally, our testing methods are highly sensitive and our levels of detection were weakly positive, indicating low quantity of pathogen. This notification is to make potato

seed and production growers aware of the potential risk of late blight in the 2011 crop. Infected seed may result in a poor stand or delayed emergence, and can initiate an epidemic when disease spreads from seed piece to sprout and foliage.”

Given the above information, growers on Long Island and elsewhere should be watchful this season inspecting crops on a regular basis and adhering to spray schedules when risk of disease infection and/or spread is high. (SM)”

Cornell Cooperative Extension and the staff assume no liability for the effectiveness of results of any chemicals for pesticide use. No endorsement of any products is made or implied. Every effort has been made to provide correct, complete, and current pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly and human errors are still possible. These recommendations are not substitutes for pesticide labeling. Please read the label before applying any pesticide. Where trade names are used, no discrimination is intended and no endorsement is implied by Cornell Cooperative Extension.

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