Vermont Vegetable and Berry News – July 22, 2008

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Time for Small Fruit Leaf Analysis

Leaf analysis (also called tissue analysis or foliar analysis) is the best way to monitor plant nutrient levels in established perennial fruit crops. While soil tests reveal the quantity of certain nutrients in the soil, leaf analysis shows exactly what the plant has succeeded in taking up. However, soil tests are necessary for determining soil pH and thus lime (or sulfur) recommendations. If nutritional problems are suspected in a given planting, it's a good idea to take both leaf and soil tests.

Leaf analysis helps detect nutrient deficiencies (especially of minor nutrients) before they affect plant health or yield. When sampling berry crops for tissue analysis, select green, healthy, whole leaves; not any leaves with disease, leaf burn, insect or hail damage. Keep leaves in a cool place (insulated chest) or refrigerate before mailing. Avoid recently sprayed fields so the results will not be influenced by nutrient or pesticide applications. A minimum of 50 leaves should be selected from throughout the field for each analysis. Do not mix leaves from fields with very different soil types or management histories. Place samples in sealed paper bags, clearly labeled with field names. Include the order form that the lab provides, or a separate sheet with your complete contact information, name of test requested, and crop and field name.

Strawberry samples should be taken from the first fully expanded new leaves after renovation. Blueberries can be sampled during July or August. Raspberry samples should come from primocanes in early to mid-August. UVM no longer performs plant tissue analysis but here are two nearby labs that do: Univ. Maine Soil Testing Service, 5722 Deering Hall, Orono, ME 04469-5722. Phone (207) 581-3591. Cost is $25 per sample. UMass Soil Testing Lab, 682 North Pleasant Street, Amherst, MA 01003. Phone (413) 545-2311. Cost is $20 per sample. Please ask them to send a copy of the test results to me by e-mail so I can provide you with fertilizer recommendations. You can see the optimal ranges of leaf nutrient content at: www.uvm.edu/vtvegandberry/factsheets/tissuetest.html

Potato Leafhoppers

(adapted from Cornell Extension, Eastern NY IPM News)

At this point in the season, there are plenty of leaf hoppers around. Where alfalfa has been cut the leafhoppers move into potatoes and other nearby crops afterwards. The adults will generally flay away when you touch the plant while the nymphs will stick onto the leaves. The nymphs do more damage than adult leaf hoppers. If you see blackening of the tips of some potato leaves and puckering of the leaf, look on the undersides of the leaves. The nymphs are smaller than the adults but the same bright green color. When you start to see “hopper burn” on leaves you have already lost production. This is a serious problem and you should go out and scout your potatoes.

Organic insecticides normally do not have a residual; they are gone very quickly so this does not give you very much long lasting protection. Pyganic is about the only product that is organic certified that will do the job. It is also very expensive so you want to use it wisely. You will probably need to make more than one application to control the pest. For conventional growers, Phaser and Thionex are the insecticides least toxic to ladybird beetles; this is important for aphid suppression.

Thrips on Onions and Brassicas
(adapted from UMass Extension Vegetable Notes)

Onion thrips are active and may be causing injury in onions or late season Brassicas; they range in color from yellow to black and are 1/16 inch long. Adults spend the winter in crop remnants, alfalfa, wheat, greenhouses and weeds along the border of crop fields. Thrips have rasping mouth parts that tear plant cells. Populations are favored by hot, dry weather. Heavy rain or overhead irrigation can lower populations quickly. For infested crops, bury crop residue immediately after harvest to limit movement to other crops and reduce overwintering survival. Note that products labeled for thrips control are not exactly the same for onions and Brassicas.

In onions feeding occurs in protected areas between the base of leaves. Damage appears as silver lines, white patches, tip dieback and curling, slowed growth, reduced bulb size and even plant death. Plants are most sensitive when bulbs are forming and still small. Healthy vigorous plants can tolerate moderate populations. Lacewing larvae, pirate bugs and predatory thrips are important natural enemies. Do not plant onions near alfalfa or clover as they can host thrips that migrate when these crops are cut.

Scout plants along field margins where infestations build early; you will need a hand lens to look down in between the leaves. Insecticides may be warranted when damage is first noticed or when there are three or more thrips per leaf. Repeat applications every 7 to 10 days. Use a shorter interval in hot weather. Use of a crop oil, methylated seed oil or silicon adjuvant is suggested to improve coverage and control. Apply in early evening, using high pressure and 100 gal water/A for best results. Organic products include Mycotrol O (takes 7 to 10 days after application to see control); Surround WP (suppression only) or Entrust. Broad-spectrum products include numerous synthetic pyrethroids and carbamates; see the 2008-2009 New England Vegetable Management Guide www.nevegetable.org

In Brassicas, thrips are primarily a problem on cabbage where they feed on inner leaves which are difficult to target by spraying. Thrips cause rough, golden or brown scars to form on leaves or produce a discolored layer within cabbage heads. Thrips damage can be confused with edema. Controls must be applied before head formation in order to be effective. In late-season Brassica crops such as broccoli, kale, collard or cabbage, thrips may damage open leaves and cause scarring, rust or yellow-colored areas and general reduced vigor in the plants. Do not plant cabbage or other Brassicas near Alliums, alfalfa, or clover, to avoid thrips migration after harvest.

Onions tend to dry down around the same time that late Brassicas are put out, so close plantings can be a source of thrips. Scout 25 plants per field. If spraying, begin applications (see NE Veg Guide) when damage is first noticed.

If thrips are a perennial problem on cabbage, plant more tolerant varieties (Bobcat, Ducati, Fresco, Little Rock, Matsumo, Rio Verde, Ruby Perfection, Solid Blue 770 or 780, Blue Pack, Ruby Ball, Heads Up, Bravo, Brutus, Green Cup, Roundup, Superette, Vantage Point, and Zerlina). Avoid planting highly susceptible varieties, such as Atlantis, Columbia, Morris, Ramada, Supergreen, Market Prize, Princess, Charmant and Solid Blue 690.

White Rot of Garlic
(adapted from MOFGA Pest Report)

White rot is one of the most destructive diseases that affect the onion family. It may spread fast, and once in a field it can take many years to get rid of. Inspect your crop now, and inspect your crop when you harvest it. Do not use or sell any infected seed. If you have white rot then you should not grow garlic in that field for many years.

Symptoms include premature yellowing and dying of the older leaves and then death of the plant. White, fluffy fungal growth (mycelia) on the root end of the bulb eventually moves around the bulb and inward between the storage leaves of onion and cloves of garlic. Small, black sclerotia (tiny hard, black bodies of dormant mycelia) form in the decaying tissue and throughout the white fluffy mycelia and if it makes contact with a new plant it infects that one. So, the disease quickly spreads down rows of onions and garlic. The pathogen spreads by movement of infested soil on equipment and boots and by planting infected garlic seed, onion sets and transplants. Animals feeding on diseased bulbs can defecate viable sclerotia.

Control is by good sanitation. Use clean seed for garlic and clean sets and transplants. Wash off soil from tools, boots, equipment, etc from infected fields. If the infection is low, which is usually the case the first year it is found on a farm, pull the infected plants and destroy. The fungus that causes white rot is capable of surviving for many years as dry sclerotia on the surfaces of storage crates and bins and on harvesting and tillage equipment.

Surfaces that may have been in contact with the disease, including boots, should be sanitized with a disinfectant. Seed producers should use extra diligence and may want to regularly disinfect any surface in contact with garlic. Equipment, storage bins, etc should be pressure-washed and then disinfected for ten minutes with sodium or calcium hypochlorite, (for example, 1:10 dilution of a household bleach such as Clorox). Then rinse with potable water. Quaternary ammonium products may be used, but organic growers should not use these on apparatus that comes in direct contact with the garlic or onions.

Since chlorine materials will be inactivated by organic matter stuck on boots, quaternary ammonium compounds may be used as boot dips inside storage areas and packing sheds, and before and after leaving fields. Disposal of the dip solution must be in a manner that does not contaminate the soil, water or crop. Note that not all quaternary ammonium products are labeled for boot washes so read the label.

Pesticide names are provided for information purposes only, not endorsement is intended nor is discrimination against products not mentioned. Always read and follow the label.