UMASS EXTENSION

Vegetable Notes

For Vegetable Farmers in Massachusetts

Volume 19, Number 2 May 15, 2008

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CROP CONDITIONS

Planting seems to be mostly on schedule in spite of cooler weather over the past week. In general, surface soils are dry, while subsoils tend to have ample moisture except in very gravelly land. Last week's hard frost damaged some early sweet corn, but most of the earliest corn under plastic is growing well and some is nearly ready to be cut out. Asparagus is producing well despite losing a few harvest days to frost last week. Spinach, fiddleheads, and early salad greens are also being harvested. Early transplants of onions, cabbage, other Brassicas, and lettuce are in the ground, and direct-seeded cool season crops such as beets, parsnips, sweet corn and carrots are being planted. In Massachusetts, potatoes were reported to be 50% planted by the end of last week. Typical early spring pests are active: seedcorn maggot, cabbage root maggot, wireworms, and flea beetles. Some warmer temperatures would be welcome.

- R. Hazzard, UMass Extension

PERIMETER TRAP CROPPING FOR VINE CROPS

Over the past years, you have probably heard a lot from us about perimeter trap cropping to manage striped cucumber beetle in cucurbit crops. The system has proven itself as an effective, cost-saving method for managing this pest. Systemic or foliar insecticides in the trap crop border are effective in halting the beetles in the border and protecting the main crop.

PTC systems can reduce insecticide use by over 90% if implemented correctly, but this is not the only benefit. By spraying only the border of your crop you're leaving the main part of the field as a refuge for pollinators and natural enemies of insect pests. Leaving the main crop unsprayed may also help to delay the development of insecticide resistance in the striped cucumber beetles – a few beetles will always bypass the border, and thereby escape selection for resistance.

PTC border around butternut

The first trap crop that we looked at was Blue Hubbard, but many growers told us that Blue Hubbard is difficult to market and other border trap crops were needed. In 2006 we evaluated buttercup and kabocha squash as border crops, and they worked just as well as Blue Hubbard. Markets for these crops are strong. Any *Cucurbita maxima* variety is likely to be very attractive. This species includes many giant and specialty pumpkin varieties; the only one we do not recommend as a border crop is Turk's Turban because unlike most *C. maxima* varieties it is highly susceptible to bacterial wilt which is vectored by the beetles. You can even plant a border of mixed *C. maxima* around your butternut squash, acorn squash, and other winter squashes that are *C. pepo* or *C. moschata* types. This will provide you a wide variety of interesting squashes to market. We've tested this system extensively and found that as long as the trap crop border is planted on good land and remains intact the system works remarkably well. In most cases, growers who use this system never need to apply insecticides to their main butternut crop at all.

In Connecticut, they've found the system to work equally well with cucumbers and summer squash. Zucchini tends to be more attractive than summer squash, and some varieties are so attractive that they could be used as a trap crop. We've also seen PTC work well in pumpkin crops, as long as the pumpkins in the main crop are *C. pepo* and not *C. maxima.* Remember, many giant and specialty pumpkins are actually *C. maxima* species, and would make good trap crops.

Mixed cucurbit spp.

On organic farms, growers often treat the main crop with kaolin clay (Surround WP) which serves as a repellent. For transplants, using this before planting is very efficient and lasts for a week or so if there are not heavy rains. Spinosad used in the border will kill striped cucumber beetles in the border; pyrethrin is less effective.

Every year we talk to more growers who adopt this system. The reduction in pesticide costs can be dramatic, and more than offset the small amount of time and care it takes to plant and treat a solid perimeter trap crop. We'd like to see even more growers try this system in their fields, and would be happy to answer any questions or offer any advice that we can. If you would like to try this system and have any questions, or just want to find out more about how it works, please call Andy Cavanagh at 413-577-3976.

For more details on PTC, please consult the UMass Vegetable website section on striped cucumber beetle:
http://www.umassvegetable.org/soil_crop_pest_mgt/insect_mgt/cucumber_beetle_striped.html

-R. Hazzard and Andy Cavanagh, UMass Extension.

FLEA BEETLES IN BRASSICAS

Flea beetles are busy feeding in spring plantings of Brassica crops. Beetles have been moving out of field borders where they spent the winter, and finding young seedlings. Crucifer and striped flea beetles feed on Brassica crops as well as weeds that are in the same family, such as yellow rocket or wild mustard. The crucifer flea beetle is uniformly black and shiny, about 2 mm in length, while the striped flea beetle has two yellow stripes on its back.

Flea beetle adults feed on leaves and stems, resulting in numerous small holes, or 'shot-holes'. Eggs are laid in the soil starting in late May, and beetle larvae feed on roots. The non-waxy type of greens (arugula, bok choi, tatsoi, mustard, Chinese cabbage) are preferred to the waxy cabbage, kale and collard types of Brassicas. In Brassica greens, beetles feed on the whole surface of the leaf, and will continue feeding from the seedling stage until harvest. Waxy crops are most susceptible at the cotyledon and seedling stage and feeding is more limited to leaf margins.

Crucifer flea beetle on cotyledon

To reduce and delay flea beetle invasion of spring crops, move them as far away from the fields that were used for fall Brassica crops as possible. Beetles overwinter in field borders near last year's crop. Planting close by ensures a high population in the spring.

One of the best ways to protect Brassica crops from flea beetles is to place floating row cover over the bed or row. It is critical to seal the edges immediately after seeding, because Brassica seeds germinate quickly and beetles rapidly find the cotyledons. Flea beetles can fit through extremely tiny cracks – not to mention the fist-sized holes and tears that often develop in row cover over time. Edges of the cover must be sealed on all sides using soil, black plastic bags filled with soil, or some other method.

There are a number of synthetic pyrethroids and carbamates which are labeled for flea beetle in Brassicas and which can

give effective control of flea beetles. However, repeated use over multiple generations on the same farm is likely to favor selection for resistance. Two neonicotinoids are labeled, one as a foliar (imidacloprid , Povado 1.6F) and one as a soil drench at planting (thiomethoxam, Platinum) which can provide alternative chemistry.

Thresholds for treatment will vary with Brassica species and the quality demanded by your market. The threshold for greens is obviously much lower than for cabbage. One study in Colorado found that 5 or more flea beetles on seedling broccoli reduced subsequent head size. Cornell and Rutgers Universities recommend a threshold of one flea beetle per plant on seedlings up to the 5 leaf stage, or injury and 1 beetle/plant on 50% of the stand.

Among products that can be used by organic growers, spinosad shows the greatest efficacy in suppressing flea beetles and reducing damage. A supplemental label has been issued in Massachusetts for flea beetle suppression in brassicas; other states may also have this, but in all states the product is labeled for use in brassica crops. Pyrethrin (Pyganic EC 5) showed poor to moderate efficacy in our trials, and has a short residual period.

Perimeter trap cropping can be used to concentrate flea beetles in an attractive border (eg *Brassica rapa* type such as komatsuna or Chinese cabbage) around the waxy *Brassica oleracea* type (cabbage, kale, broccoli). As with the cucurbit system, beetles need to be killed in the border with insecticides, as soon as they appear. It is critical to have complete border that is in place at the same time as or before the main crop, and to spray it in a timely manner. This is not likely to work well when flea beetle populations are very high, but has worked to prevent the need for sprays on the main crop under moderate pressure.

HOW CAN I PREVENT PHYTOPHTHORA BLIGHT THIS YEAR? CHECKLIST FOR FIELD PREPARATION AND PLANTING

Phytophthora blight is the most destructive disease of cucurbits and peppers in the Northeast, and is getting worse each year. Growers' selection of fields for cucurbit and pepper crops is increasingly determined by which fields have a history of or a potential for this disease. Sub-soiling has become a standard practice for field preparation. Growers are looking for more rotation crops which are not susceptible. Vegetable growers' interest in growing grain corn seems to be driven as much by the need for rotation crops as for cheaper fuels for their greenhouses.

No single method will guarantee control of this disease, but cultural practices are essential to reduce the risk of crop loss caused by Phytophthora blight. Now is the time to focus on prevention. There is a lot that you can do while preparing the field and planting the crop.

How it moves around. The pathogen, *Phytophthora capsici*, is soil-borne and will remain in the soil for years, perhaps indefinitely, in the form of long-lasting oospores. It is important to keep track of sites that are contaminated with Phytophthora. Do not rent land for susceptible crops without investigating the history of disease problems (there are other important soil-borne pathogens as well). Phytophthora blight is particularly important during wet weather or after long irrigations. *Phytophthora* can move through the air during windy storms and hurricanes but it is difficult to estimate how far it can move. It is better suited to moving in water and with soil than air. Phytophthora capsici does not appear spontaneously, but the source of contamination on particular fields is difficult to determine. The pathogen tends to be "locally important" on specific fields or farms. Once a site becomes contaminated it will remain so, but nearby fields remain free of the pathogen as long as farm machinery does not bring it in. If contaminated fields drain into an irrigation pond, then irrigation can easily disperse it throughout the crop or onto another field. Rivers and streams can also be sources of inoculum.

This pathogen likes water. The pathogen is dependent on water to initiate disease and to move it from plant to plant. Phytophthora produces zoospores that can swim to susceptible hosts (very short distances). Splashing rain and irrigation water can easily move zoospores from plant to plant. The disease will always begin in low spots or areas that do not drain readily. Improving drainage in fields will prevent the disease from getting started.

Crop Rotation. Wherever possible, avoid planting susceptible crops in contaminated soil. Practice long rotations and do not grow cucurbits, peppers, eggplant or tomato for at least five years after infections occur. Before planting, use a chisel plow to break up any hard pans and to improve drainage.

Growing in Infected Fields: a checklist. The fact is that many vegetable growers have little choice; they have to use fields that have a history of Phytophthora blight. Some growers have found that it is possible, though not easy, to grow susceptible crops in fields infected with Phytophthora without a disease outbreak. The critical point is to manage water so that there is NEVER STANDING WATER FOR LONGER THAN 24 HOURS ANYWHERE IN THE FIELD. If you must grow crops in a field with a past history of Phytophthora blight, there are some management practices that will help reduce disease. Extended periods of rain are very likely to result in significant disease development if the pathogen is present.

1. Use a V-ripper or other sub-soiling tool between rows to break up hardpan and encourage drainage. Use this pre-plant and as needed during the season, especially after a hard rain to speed drainage of water out of the field.

2. Plant non-vining cucurbit crops (i.e. summer squash) and peppers in dome-shaped raised beds of at least 9 inches height. Use a transplanter that does not leave a depression around the base of the plant.

3. Breaks in raised beds—where beds run across the slope, cut breaks to allow water to drain. Don't allow raised beds to become dams that hold water.

4. Clear away soil at the ends of rows. Where raised beds reach the field edge, open up the end of the row to create drainage ditches.

5. Make sure the flow of water from within the field leaves the field – dig ditches if necessary!

6. Don't plant low areas to susceptible crops — plant a cover crop, corn or another non-susceptible crop, or leave it bare. (Better a small loss in yield than a total loss of the crop.)

7. Check your irrigation system for leaks and fix them – don't allow puddles of water to sit near your irrigation pumps or lines.

8. Avoid moving soil from contaminated land to clean fields. Use a power washer to remove soil from tillage and planting equipment and tractor tires.

9. Use farm machinery as little as possible throughout the season, to avoid soil compaction, and never work in fields when the soil is wet.

10. Separate different susceptible crops (if possible) such that there is no opportunity for water to move from one planting to another.

Beware of Contaminated Irrigation Water. Researchers in Michigan have shown that *P. capsici* can move in river water, which is bad news for growers who irrigate out of rivers in MA. Late summer irrigations from rivers with contaminated fields upstream present the risk of contaminating new fields. The pathogen can spread from irrigation ponds that have infected fields draining into them. It is not known if *P. capsici* is able to over winter in ponds or rivers, so the danger of infection from these sources increases later in the season as the disease develops on fields upstream.

Using Resistant Varieties. Pumpkins with hard, gourd-like rinds or shells have been shown to be less susceptible to Phytophthora fruit rot when mature than pumpkins with conventional, softer rinds. These include Apprentice, Lil' Ironsides, Iron Man, Rockafellow, and Cannon Ball.

Among bell peppers, the cultivars Conquest, Paladin, and Emerald Isle have resistance to Phytophthora (however, none of these have resistance to Bacterial leaf spot).

Transplant or furrow drench. Phosphorous acid fungicides (ProPhyt, Phostrol and Fosphite) (Resistance Group 33) are labeled for control of P. capsici on cucurbits, and often used by growers in an attempt to control this disease. These materials have been tested in many states, and while a few trials have shown some efficacy against *P. capsici,* in many trials these materials failed to offer any significant level of control. Of these materials, only ProPhyte is labeled for use as a drench treatment. Research is being conducted on applying ProPhyt through drip irrigation during the season. This is an option that may provide early-season protection for crops grown in infected fields, though the effectiveness of any of these materials remains uncertain.

-- Rob Wick., Bess Dicklow, Andrew Cavanagh and Ruth Hazzard, Dept. of Plant Soil and Insect Science, UMass;
Sources include: Margaret McGrath, Long Island Horticultural Research and Extension Center (LIHREC) of Cornell University
;

CABBAGE AND ONION MAGGOT FLIES

A good indicator of the start of cabbage root maggot flight is blooming of the common roadside weed, yellow rocket. This weed has been blossoming for about two weeks in Massachusetts. Root maggot flies were captured on yellow sticky traps placed in Brassica crops at the UMass Research Farm in South Deerfield, and eggs were found in cabbage fields this week. Onion (*Delia antiqua*) and cabbage maggot (*Delia radicum*) flies look nearly identical but are likely to be found only near their host crop – brassicas, for cabbage maggot, and aliums, (primarily onion) for onion maggot. There is a period of 6-10 days after flight begins before eggs are laid. In degree-day accumulations, the Conn. River Valley is ahead of many areas of the state, but provides a good 'early warning' that wherever your are, it's time to test your eyesight, and begin to scout cabbage and onion fields for root maggot eggs.

Life cycle. Flies spend the winter as small brown pupae in the soil. Adults emerge in spring and adults can travel considerable distance in search of host plants (1/2 to 1 mile). Cabbage root maggot flies are rather delicate, hump-backed gray-brown flies, about 5-7 mm long. Onion maggot flies are very similar. Female flies seek out brassica or onion plants to lay eggs at the base of the stem. Cool, moist soil conditions favor survival of the eggs, and temperatures over 95 F kill them. By mid June, the soil temperatures in the upper ½ to 1 inch are usually so high (>100 degrees F) that soil temperature itself provides control.

Yellow rocket

When eggs hatch, larvae feed on roots and can cause complete destruction of the root system. In Brassica root crops such as turnips, radishes and daikon, feeding tunnels make the root unmarketable. In crops such as broccoli or cauliflower the first sign of a problem is wilting of the plant on sunny days and yellowing of outer leaves. Later, plants collapse, wilt down, and die. If you pull one up you will see the reason it is wilting is the roots are gone. You may still find the little white maggots feeding, or the small brown, oblong pupae.

Monitoring. Flies are attracted to bright yellow color. Yellow sticky cards are inexpensive and easy to use; attach them with small wire stakes (see photo) and place near the soil. Check and change traps twice weekly to record changes in fly activity. In cabbage, flight typically declines after mid-May so that late May or June plantings may not need a soil drench.

Monitoring cabbage for eggs. Note that if you have transplants hardening off in a cold frame or outdoors, flies may find them and lay eggs in the flats. To check for eggs in the field or in flats, look for the 1/8-inch long, torpedo-shaped white eggs that are laid along the stem, or on the soil next to the stem of young transplants. Often eggs are laid in neat rows, or inserted into the soil. They may be under a small clod of dirt near the stem. A pencil point helps stir the soil to look for them. Check 25 or

Monitoring flies on yellow sticky traps

to be a damaging population and a banded soil drench is recommended. Eggs may be more abundant in wetter areas of the field.

Soil Drench. Target the base of the plants and use at least 200 gallons of water per acre to help the insecticide penetrate to the root zone. At present, chlorpyrifos (Lorsban 4E) is the only option. This material does not move readily in soil after the application is made, so it is important to provide adequate water so that the material penetrates several inches into the soil when it is applied. Under dry soil conditions, additional water may be needed to penetrate the soil. See the 2008-2009 New England Vegetable Management Guide for more details. This is also available online at www.nevegetable.org. Re-scout the field five to 7 days after application to note whether eggs have hatched; if there are few maggots active, then the application was effective. Because the materials are quite persistent in the soil, a second application is usually not needed. If you make several plantings, scout each planting (it takes about 15 minutes) to achieve the best timing for a soil drench. You'll be able to apply it when it is needed, and you can save the cost of application when it is not needed.

Cabbage maggot eggs at base of cabbage stem

There is no organically allowed insecticide that has proven effective for this pest.

Floating row covers provide an effective barrier against this pest. Place the cover as soon as the transplants are set. Use in a rotated field, as flies overwinter in soil after late season crucifers and could emerge under the cover if the same field has spring brassicas. Replace cover after weeding operations. As soil temperatures rise, the first flight ends (late May to mid June) and crops grow large, covers can be safely removed. Note that seed corn maggot may emerge under row covers in any field where cover crops were grown or organic matter was incorporated the previous fall or in the spring.

Other cultural practices. Crop rotation contributes to keeping populations low. Fall tillage to bury crop residues and to expose over-wintering pupae is also important. However, if there is healthy growth of the crop, cultivation that brings soil up around the stem may help encourage formation of adventitious roots from the stem, which can help compensate for root loss even if maggots are present. Natural enemies in the soil may also help to suppress the population of maggot eggs and larvae.

-R. Hazzard, UMass Extension

NEW HERBICIDES FOR SWEET CORN

For a long time sweet corn growers have been controlling weeds with far fewer tools than available for field corn. While there are still far fewer herbicides registered for sweet corn, the hard drought in product availability seems to be over. Registration of some long-established field corn herbicides along with several new active ingredients has rounded- up the weed control tool kit. One of the main concerns with these new products is potential hybrid sensitivity. Some have a disclaimer on the label waiving liability if sweet corn is injured. To supplement the information below, this link http://vegnet.osu.edu/library/res07/sweetcornhybridtolerance.pdf will take you to a fact sheet developed by University of Wisconsin, where several years of research on hybrid response to Callisto and Accent are summarized. When looking at the fact sheet note that a hybrid sensitive to Callisto is almost always sensitive to Accent and vice versa. This relationship suggests that a variety sensitive to both of them is more likely to be sensitive to other herbicides as well. Here's what's new along with some guidelines for use.

Accent

What it does: Provides POST control of annual grasses (except crabgrass) and perennial grasses. Foxtails, fall panicum and barnyardgrass are controlled up to 4 inches high, quackgrass up to 10 inches, seedling Johnsongrass up to 12 inches high and rhizome Johnsongrass up to 18 inches high. Some broadleaf weeds are also controlled including burcucumber, morninglories and jimsonweed.

How to use it: Apply 1/3-2/3 oz/A broadcast or with drop-nozzles to corn up to 12 inches high (V5 stage), or with drop-nozzles to corn 12-18 inches high (up to V6 stage). Accent must be applied with NIS (1 qt/ 100 g water) or COC (1 g/ 100 g water). Urea ammonium nitrate (UAN) or ammonium sulfate (AMS) is required for optimum weed control with either adjuvant.

Crop Tolerance: Some sweet corn hybrids are very sensitive to Accent and will not survive treatment and not all hybrids have been tested. If in doubt contact your OSUE Agriculture and Natural Resource Educator, seed company, or herbicide dealer. My next article in VegNet will provide a summary of studies at OSU that have evaluated hybrid response. In the meantime the University of Wisconsin fact sheet provides the best information available http://vegnet.osu.edu/library/res07/sweetcornhybridtolerance.pdf .

Rotational Guidelines: Accent has a complicated set of four guidelines for rotational crops. Read the label and make sure you understand how these guidelines apply on your farm. Several crops can be planted within the year of application. For instance field corn may be replanted anytime after an application and soybeans ½ month after. However, popcorn and sweet corn cannot be planted until at least 10 months after Accent. On soils with pH less than 6.5 all crops for which specific guidelines are not provided can be planted 10 months after Accent, but my personal advice is to be very cautious this soon after Accent!

Degree

What it does: Degree is similar in chemistry and activity to Dual II Magnum and to Outlook/ Frontier. Like them it provides PRE control of most annual grasses except johnsongrass and proso millet. It is a little better on broadleaf weeds than Dual or Outlook, in particular common ragweed. Degree is an encapsulated formulation of acetochlor the active ingredient also found in Harness.

How to use it: Degree can be applied PREPLANT, PPI, or PRE to the crop. Rates vary with soil type ranging from 2.75 to 5.5 pts/A. Emerged weeds are not controlled and ½ to ¾ of an inch of rainfall will be needed for activation with all but PPI applications. Degree can be mixed with atrazine to improve the spectrum of weeds controlled. Atrazine will also improve control of heavy infestations of annual grasses. Ohio research (Dr. Mark Loux) shows that Degree will provide longer lasting annual grass control than Dual or Outlook.

Crop Tolerance: Degree is safer to the crop than Harness. Information on hybrid sensitivity is not available but is unlikely to be a concern.

Rotational Guidelines: If a crop is lost, sweet corn, popcorn, or field corn may be planted immediately. Wheat may be planted 4 months after application and alfalfa, clover and other forage legumes (see label) 9 months after. The following season potatoes, various dry beans and peas may be planted.

/Just In /– Turns out that Monsanto has added sweet corn to most, if not all, of their other acetochlor containing herbicides such as Harness and Harness Extra. There will be lots of products with labels that do not include sweet corn, and these should not be used.

Impact

What it does: Provides POST control of annual broadleaf weeds and grasses (maximum height varies by species). In OSU test plots Impact has been an excellent /emergency /treatment on large weeds.

How to use it: Impact can be applied POST up to 45 days before harvest. To optimize weed control always apply Impact in a tank-mix with atrazine. Apply ¾ fl oz/A of Impact + ¼-1 lb of atrazine a.i./A to actively growing weeds. Impact can be tank-mixed with other herbicides registered on sweet corn, but tank-mixing with mesotrione products (Callisto, Lumax, Camix and Lexar) is not recommended. I think that tank-mixing with Laudis is also unlikely to be a wise choice. Use a reduced rate of ½-¾ fl oz/A when tank-mixed with Accent (this tank-mix has not been tested for safety on sweet corn). Methylated Seed Oil (MSO) or COC at 1-1½ g/ 100 g of water and, either UAN or ammonium phosphate at 1¼ to 2½ g/ 100 g of water are required to obtain optimum weed control. MSO will provide better performance than COC.

Crop Tolerance: We have tested Impact for two years for hybrid sensitivity and so far it has had a clean bill of health. Weed scientists at other universities have reported similar tolerance and there is a consensus that further testing is not warranted.

Rotational Guidelines: In event of a crop failure, any type of corn can be planted immediately after applying Impact. Wheat, barley, oats and rye can be planted 3 months after application, alfalfa, peas, potato, and soybean (south of I-80) nine months after. All other crops, and soybeans north of I-80, can be planted 18 months after Impact.

Laudis

What it does: Provides POST control of annual broadleaf weeds (<6" tall) and grasses (maximum height varies by species). How to use it : Apply at 3 fl oz/A to actively growing weeds from crop emergence up to the V7 stage of corn growth. MSO at 1 g/ 100 g of water must be used if Laudis is applied alone. Tank mixing 3 fl oz of Laudis with atrazine at 0.5 lb a.i./A will improve weed control; however, do not use the tank mix if corn is more than 12 inches tall. COC at 1 g/ 100 gallons of water can be used as an alternative to MSO when Laudis is mixed with atrazine. Addition of UAN or AMS will further improve control when conditions are dry.

Crop Tolerance: Laudis contains a safener that increases crop tolerance. Last year out of 28 hybrids tested in trials in MN, NY, WI and DW, only one was significantly injured by Laudis. That hybrid was Merit, the gold standard for sweet corn se□

hybrids, tolerance of Laudis was excellent, except for 7 hybrids all of which were severely injured. This means that while /almost/ all hybrids are highly tolerant of Laudis; there are a few that are very sensitive and will be severely injured.

Rotational Guidelines: Small grains can be planted 4 months after application; soybean after 8 months; peas, potatoes, tomato, snapbean, canola, alfalfa and sorghum after 10 months; dry beans, cucurbits and all other crops after 18 months.

-by Doug Doohan, Ohio State University Weed Specialist. Reprinted from VegNet Vol. 15, No. 5. May 9, 2008, Ohio State University Extension Vegetable Crops, On the WEB at: http://vegnet.osu.edu

WOMEN IN AGRICULTURE NETWORK SPONSORS BASIC TRACTOR MAINTENANCE WORKSHOP

Please join CISA's Women in Agriculture Network for a workshop on Basic Tractor Maintenance on Thursday May 29th from 5:30-8pm at the Hampshire College Farm Center!

Nancy Hanson, CSA manager at the Hampshire College Farm Center, will walk us through some basic tractor maintenance techniques. Learn to troubleshoot, call parts by their correct names, and most importantly, when to call in the experts! Nancy will also talk about what to look for if you're thinking of purchasing a tractor. This is a great opportunity to learn from another farmer and to get acquainted with one of your most important pieces of machinery.

Dinner will be served, and there will be time to meet and network with other women in agriculture.

When: Thursday, May 29th, 5:30-8pm.

Where: Hampshire Colege Farm Center, 793 West Street, Amherst

How: Please RSVP by Monday, May 26th to Claire at 665-7100 or claire@buylocalfood.com. This is a free workshop.

Funding for the Women in Agriculture Network is provided by The Women's Fund of Western Massachusetts and Farm Aid.

Vegetable Notes, Ruth Hazzard, editor and Amanda Brown & Andrew Cavanagh, assistant editors. Vegetable Notes is published weekly from May to September and at intervals during the off-season, and includes contributions from the faculty and staff of the UMass Extension Vegetable Program, other universities and USDA agencies, growers, and private IPM consultants. Authors of articles are noted; author and photographer is R. Hazzard if none is cited.