

If you are planting vegetables in a field that corn was grown in last year, be

sure to check out what herbicides were used last year.

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High tunnels can mitigate unfavorable spring weather conditions but proper

ventilation is required to avoid crop injury.

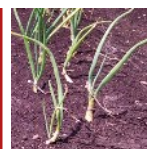
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Several herbicides can be applied in the spring for pre-emergent control of grass and

selected broadleaf weeds in garlic and other alliums.

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When is it too late to plant direct seeded onions? Read more about the concerns

associated with onions that are direct seeded later in the spring.

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VEGEdge

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Cabbage planter
Photo: Chris Smart, Cornell

 **Cornell University**
Cooperative Extension
Cornell Vegetable Program

Carryover Herbicides Can Injure Vegetable Crops

Carol MacNeil, CCE Cornell Vegetable Program

Many vegetable growers plant field corn these days, or may swap land with a neighbor who plants field corn. Before planting your sensitive vegetables, potatoes or dry beans in a field that was corn last year be sure to check out the herbicide(s) that were used last year. Dozens of herbicides are available for use on field corn, and over half can cause problems for some vegetables.

Vegetable growers have been wary of excess atrazine residues for many years, and are familiar with the yellowing and marginal leaf burn that results on the older leaves. Unfortunately, about a dozen corn herbicides contain atrazine as part of a pre-mixed product, supplying from 1 – 2 lbs/acre atrazine active ingredient. According to Robin Bellinder, Cornell, 1 lb/acre atrazine active ingredient is the limit, the year before vegetables, potatoes or dry beans, to avoid damaging residues. Even if this limit was not exceeded, areas where atrazine sprays overlapped last year are likely to show injury on vegetables this year. This limit assumes “normal” conditions of temperature and rainfall after the application, over winter, and this spring. If conditions were cooler or drier than normal a higher level of atrazine residues would likely remain. Moldboard plowing to deeply bury the atrazine will provide more time for the residues to degrade before vegetable roots reach



Atrazine injury on melon.
Photo: Texas A&M University, Horticulture

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VegEdge newsletter is exclusively for enrollees in the Cornell Vegetable Program, a Cornell Cooperative Extension regional agriculture team, serving 11 counties in Western New York.

The newsletter is a service to our enrollees and is intended for educational purposes, strengthening the relationship between our enrollees, the Cornell Vegetable Program team, and Cornell University.

We're interested in your comments. Contact us at:

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Information provided is general and educational in nature. Employees and staff of the Cornell Vegetable Program, Cornell Cooperative Extension, and Cornell University do not endorse or recommend any specific product or service.

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READ THE LABEL BEFORE APPLYING ANY PESTICIDE.

Help us serve you better by telling us what you think. Email us at cce-cvp@cornell.edu or write to us at Cornell Vegetable Program, 480 North Main Street, Canandaigua, NY 14424.



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The next issue of VegEdge will be produced May 28, 2014.

Pesticide Update CORRECTION

Christy Hoepting, CCE Cornell Vegetable Program

REFLEX herbicide: (EPA No. 100-993, a.i. sodium salt of fomesafen, Syngenta). For control of certain weeds in transplanted tomatoes and peppers (Expires 12/31/2018), summer squash, winter squash, pumpkin and succulent peas (expires 12/31/2019). This is a **Special Local Needs Section 24(c) label, NOT** a supplemental label. ●

them. Be sure to check the quantity of atrazine active ingredient/gal in the product used last year (see below). If you also know the amount of product applied/acre last year you can calculate the amount of atrazine active ingredient applied/acre.

Many of the imidazolinone and some of the sulfonyleurea herbicides (both ALS inhibitors) have 18 month rotational restrictions for at least some vegetables. Examples of this group include Basis, Callisto, Permit/(Sandeia), Pursuit and Resolve. While Permit/Sandeia is recommended for use in dry beans and some vegetables it can cause extreme injury on crucifers especially, and other vegetables. The HPPD pigment inhibitors like Lumax, Laudis, and others also have 18 month waiting periods for at least some vegetables. If a product has a 12 month waiting period before planting vegetable crops make sure 12 months have passed since the product was applied to the corn. A lot of corn was planted very late last year.

Symptoms of damaging herbicide residues vary depending on which herbicide was applied and what sensitive plant follows the next year. Symptoms could include stunting, shortened internodes, chlorosis, red, purple or white leaf color, leaf burn, leaf twisting or cupping, or plant death. Because herbicide applications aren't completely even across a field, with narrow overlaps being common, and because tillage can distribute herbicide residues unevenly, damaging symptoms typically vary in severity, from the headland to the rest of the field, or in strips.



Sandeia injury on cabbage causing multiple growing points, from a poorly cleaned spray tank.
Photo: Carol MacNeil, Cornell Vegetable Program

To check the Rotational Crop Restrictions for herbicides used last year go to: <http://pims.psur.cornell.edu/> Click on Product/Label Name, type in the product, and Enter. In the right column Click on "NYS" for the product formulation used. In the left column Click on "View" for the most recent primary label. Scroll down the label to the Rotational Crop Restrictions. If your vegetable crop isn't listed, note that the longest waiting period is usually for "all other crops."

One additional caution: Be sure that spray tanks, pumps, hoses, booms and nozzles are completely emptied, and then rinsed with water, using agitation and spraying, between the application of different herbicides on different crops. Drain the sprayer completely at the lowest point in the system. Then follow the herbicide label instructions for tank cleaning. Depending on the herbicide, either ammonia or a commercial tank cleaner may be required. Rinse thoroughly with water. ●

New Vegetable Crops Specialist Joins the Cornell Vegetable Program

Darcy E.P. Telenko has been hired as the newest Extension Educator for the Cornell Vegetable Program. Joining the five other specialists on the team, Telenko will add additional resources to the regional program which serves the commercial vegetable industry in 11 western NY counties. She begins as a vegetable production specialist, bringing expertise in plant pathology, soil science and weed management. This new team position was identified three years ago due to growth of the program. "After a prolonged search, we are confident that we have hired the right person for the position," said Julie Kikkert, Program Team Coordinator.



Originally from Batavia, Darcy grew up on a dairy and produce farm and managed the planting, harvesting, and sale of fruit and vegetables for Partridge's On the Farm Market. Summers were spent as an IPM scout in western, NY.

She earned her B.S. degree at Cornell University, M.S. at Southern Illinois University in plant and soil science, and Ph.D. in plant pathology and crop science from North Carolina State University. Her post-doctoral research in Vir-

ginia focused on disease management of agronomic crops, including the evaluation of disease resistance in transgenic peanut lines. Most recently she conducted research and extension trials in turfgrass, agronomic, and vegetable crops at the University of Florida, West Florida Research and Education Center.

Darcy will temporarily be residing with family in Batavia with her office at CCE Erie County. Initially she will be working 4 days per week until her family joins her early next year. Darcy's husband, Dominic Telenko, will be retiring from the U.S. military where he is a navy pilot. The couple has 2 children, Sophia and Vincent.

Please help us welcome Darcy to the Cornell Vegetable Team.

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CROP INSIGHTS

BRASSICA GREENS

With severe winters, we usually could count on low numbers of flea beetles making it through and brassica greens would be off to a great start. Unfortunately in a number of fields scouted last week this wasn't the case. Newly set out brassicas were attacked within hours of planting. The worst cases were fields that had late corn in them the previous season. Perhaps the corn stubble provided adequate protection for the flea beetles.

Using row cover can be effective control in areas that are not in corn stubble and should be put on very quickly after planting (or even put it on rows every so often while transplanting out) or cover rows right after seeding.

Spray applications of a number of products (see Cornell Vegetable Guidelines) will be effective if the applications are made in shortly after seedling emergence or right after transplanting. Be mindful that some products have different PHI than for crops like broccoli and cabbage etc.



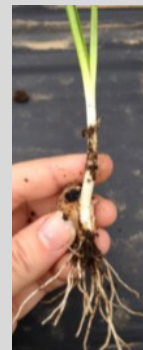
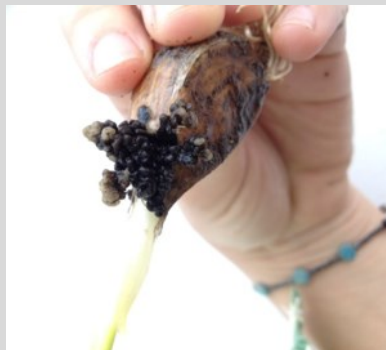
Flea beetle feeding damage on Purple Mustard.
Photo: JoJosephson

GARLIC

Many farmers are still assessing their fields after the rough winter. Winter injury, frost heaving, and wind dessication have killed off many cloves. Wet fields and flooding have set back other plantings as well.

Botrytis has been found in several fields where the conditions have been overly wet. Cornell Extension Specialist Crystal Stewart sent out these pictures of the disease on garlic.

Where the garlic came through the winter, plantings are looking half-way decent. Where the fields were protected and had more snow cover, the cloves have sent up many leaves and are growing.



Botrytis has produced small mushroom-type fruiting bodies on the cloves (left) in fields in the Hudson Valley.

Disease affecting the plant near the base at the soil line (right).

Photos: Crystal Stewart, ENY Commercial Horticulture Program

ONIONS

The prolonged cold, cloudy and wet weather this spring has delayed and dragged out onion planting and growth. Hopefully most growers either finished planting or came really close before it started raining again. Earliest transplanted onions are at the 4-leaf stage and earliest direct seeded onions are at the loop-flag stage. The recent 80 degree weather has really pushed the crop along. Unfortunately, this heat in combination with moist soil has also pushed the weeds along and there are already new flushes of broadleaf weeds at the cotyledon stage showing up in some fields, which will have to be dealt with when the onions are just a little bit bigger – more in next issue. It is a general rule of thumb to have planting of direct seeded onions completed by May 10th – [see article, page 10](#).

It is recommended to kill barley windbreaks when the onions are at the 1-2 leaf stage, although several growers kill their barley when onions are at the flag leaf stage. When barley windbreaks get too aggressive, they can trap air between the rows and increase the chances of seedling burn-off, and the barley can compete for moisture and nutrients, and stunt the onions. Alternatively, killing off barley windbreaks too soon leaves the young onion seedlings vulnerable to wind damage, especially when conditions are dry. Fusilade, Select Max (quicker control than Fusilade by 3-4 days) and Poast work best when the barley is actively growing. If barley has been nipped by frost or wind, it will be stressed, and these herbicides will work better after waiting a few days. Select Max also reportedly works better than Fusilade when barley is stressed.



Onion seedlings protected by barley wind-breaks on the muck. Photo: Christy, Hoepting, CVP

SWEET CORN

Early stands of corn seeded under plastic have emerged with variable stands depending on how much lousy weather was in your particular location. Plantings ranged from seedlings just germinating in the last week to stands that are about 4-5 inches tall. So the race is on for getting that July 4th harvest and at this point it is anyone's guess if we will see corn by that holiday date.

A question I keep hearing from farmers about sweet corn is, "Is there a variety of early corn that actually tastes good?" With less than ideal growing conditions, flavor may definitely be impacted. Cooler temperatures and reduced sunlight can have some influence on the sugar levels. I would greatly appreciate hearing back from farmers on which varieties they think are flavorful that early in the season (rg26@cornell.edu).

Spring High Tunnel Tomato Precautions

Judson Reid, CCE Cornell Vegetable Program

Spring 2014 has been a good season to witness the benefits of high tunnels for tomatoes. Prolonged cold periods, wind and torrential down pours are all mitigated with tunnels. However, weak points of the tunnel system also show up in a spring such as this. Cold outside air temperatures make growers loathe to ventilate. This leads to high relative humidity, often observed with water droplets forming on the edge of leaves in the morning (Fig. 1). This indicates the crop is not able to reach its maximum potential as water and nutrient uptake will be limited by high relative humidity.

Cold nights compel growers to add supplemental heat. When heaters are not properly vented, or if there are leaks in supply plumbing or combustion cham-



The benefits of high tunnels for tomato production are particularly evident during this cool, wet spring. Photo: Judson Reid, CVP



Figure 1. Water droplets on high tunnel tomato due to high relative humidity. Photo: Judson Reid, Cornell Vegetable Program

bers, can poison tomatoes. Symptoms include twisting of foliage, swollen flower buds and/or discoloration (Fig. 2). Our experience has been that occasional nights of emergency heat don't cause significant gas damage to a healthy crop.

The key to the above problems is regular venting. However, drastic venting, such as rolling up both side curtains when foliage is warm and moist in the morning can also be deleterious; 'burning' the moist foliage with cold air (Fig. 3). This is where gable or roof vents can be advantageous. If there are only side curtains for ventilation, open the early in the day, gradually to prevent a temperature spike and drop mid-morning. Better to grow slow in a cool and dry tunnel, than to overstress plants in a hot, humid house. ●

Figure 2. Gas damage on high tunnel tomatoes caused by poor heater ventilation. Photo: Judson Reid, Cornell Vegetable Program



Figure 3. Morning vent damage. Photo: Judson Reid, Cornell Vegetable Program



Reduced Tillage for Vegetables and Dry Beans

Carol MacNeil, CCE Cornell Vegetable Program

Did you use reduced tillage (RT) (zone/strip till, no till, etc) before you seeded or transplanted vegetables or dry beans in 2013 or before? If so, Anu Rangarajan, Cornell, is interested in some info from you, such as how long you've used RT for vegetables, what crops you use it for, and what benefits or challenges you've had. The info you share will guide future research and extension efforts. *Individual grower results will remain confidential.*

If you have not yet taken the online survey, or given me your answers over the phone, please go to: <http://www.surveymonkey.com/s/HBPYGJP> or contact me at 585-313-8796 or crm6@cornell.edu for an alternative method.

RT is recommended for large seeded vegetables and for transplants. Zone tillage ripper shanks require 30 – 35 hp per row to pull in initial years. Cornell has 2-row units to borrow. Herbicides are needed for controlling cover crops and weeds, though Anu is researching organic methods. If you have questions about Reduced Tillage for vegetables or dry beans, please contact Carol MacNeil at: crm6@cornell.edu or 585-313-8796, or Anu Rangarajan at: ar47@cornell.edu or 607-423-2182. ●

Post-Emergence Weed Control in Peas

Julie Kikkert, CCE Cornell Vegetable Program

The earliest planted peas already have several nodes of growth. Scouting and managing weeds in all pea fields is critical until the crop begins flowering. Your best chance for control is when the weeds are young. Fresh market growers have the option of cultivation for weed control, but processing growers must rely on herbicide use. Apply post-emergence herbicides based on the dominant weed species present and the growth stage of your peas. A copy of the [chart on relative effectiveness of herbicides](#) available for peas in NY from is available on the CVP web-site in the pea crop section. The only changes for 2014 are the addition of Dual II Magnum and Reflex as pre-emergence herbicides. The choice of post-emergence herbicides is the same as last year. Note that this chart is only for succulent green (English) peas. If you are growing edible pod or other types of peas, please make sure to look at the product labels carefully.

The application of post-emergence herbicides to succulent peas must be made at certain growth stages. Herbicide labels often refer to peas at a certain number of nodes (point where a leaf meets the stem). In peas, the first two nodes have only scale leaves and are often below the ground (Figure 1). These should be counted in green peas. (Note this is different for dry field peas.) Furthermore, afila (leafless) peas do not have true leaves, rather they have stipules and tendrils.

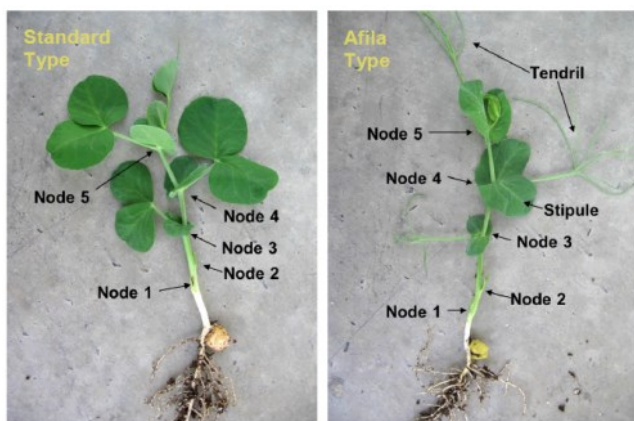


Figure 1. Node count in succulent green peas.
Photo: Julie Kikkert, Cornell Vegetable Program

Basagran and Thistrol don't have any soil residual, so the best time to spray is when the majority of weeds have emerged. Ideally, the first flush of weeds would have one or two leaves and the next flush would be in the cotyledon stage. Keep in mind that rain will stimulate new flushes of weeds. If you have nightshades, pigweed or mustard in your field, a better choice may be Raptor or Pursuit. Basagran will only control hairy nightshade, whereas Raptor and Pursuit will control both hairy and eastern black nightshade. Poast, Assure II/Targa and Select Max all provide good to excellent control of the most prevalent annual grasses in NY.

Although Basagran is labeled for yellow nutsedge, the rate we use in peas (1.0 – 2.0 pt/A) is too low to kill nutsedge, however, you may see suppression of weed growth. That is why on the pea herbicide chart Basagran is given a “poor” rating on yellow nutsedge. In the future, make note that Dual Magnum applied pre-emergence is very effective against nutsedge. Better yet, control nutsedge in fallow fields or rotational crops as a long-range plan for a particular field.

If you have Canada thistle in your fields, you may either hand-pull if there are small patches or apply a spray of Thistrol when the thistle is 4 to 10 inches tall. Use a rate of 3 to 4 pints/acre. This will prevent the thistle from forming flower buds that can contaminate the pea product, but will not kill the thistle. Remember that Thistrol cannot be applied to peas that are later than 3 nodes before flowering. In early peas, those at nodes 9-11, the timing of this postemergence application is critical. Late applications in early peas cause nonuniform flowering, resulting in uneven maturity. Canada thistle management is best done in rotational crops or in the fall. Stinger is the most effective herbicide, because it moves to the roots. Note that there is an 18 month restriction before you can plant peas in a field where Stinger has been applied. Stinger is labeled for field corn, sweet corn, cabbage, beets and spinach, and pasture/forage crops. The optimal time for application is in April and May before the thistle buds open. Later in the season, you can use 2,4-D in labeled crops (not peas). In the fall, Roundup + Banvel can be used. ●

Working Capital Loans Available for Losses from 2013 Storm

Michael Lampton, U.S. Small Business Administration

The U.S. Small Business Administration is reminding businesses in New York that working capital loans are still available to small businesses of all kinds and small agricultural cooperatives affected by the excessive rain and related flooding, winds and hail that began on May 1, 2013. [The loans are available in the Cornell Vegetable Program counties and much of the rest of the state.] The deadline for economic injury applications is **June 2, 2014**.

Economic Injury Disaster Loans (EIDLs) up to \$2 million are available at 4% for small businesses. The loans are intended to pay fixed debts, payroll, accounts payable, and other expenses that could have been paid had the disaster not occurred. Applicants may apply online using the Electronic Loan Application (ELA) via SBA's secure website at <https://disasterloan.sba.gov/ela>

To obtain disaster loan information and application forms, call the SBA's Customer Service Center at 800-659-2955 (800-877-8339 for the deaf and hard-of-hearing) or send an email to disasterservice@sba.gov. Loan application forms can also be downloaded from www.sba.gov. Completed applications should be mailed to: U.S. Small Business Administration, Processing and Disbursement Center, 14925 Kingsport Road, Fort Worth, TX 76155. ●

NYS Vegetable Acres Hold Steady in 2013; Value Down

Steve Reiners, Cornell

New York State vegetable acres were little changed from 2012 with a total of 116,400 acres planted, including 84,000 acres for fresh market and 32,000 for processing. After reaching a record farm gate value in 2012 of more than \$500 million, value was down 10% as average prices received by growers decreased across the board. Fresh market sweet corn was the only crop that saw an increase in price, up 4% from the previous season. The farm gate value of sweet corn was at a record high last season at \$78 million, surpassing the previous record of \$73 million set in 2008. With the exception of cabbage, yields held steady or decreased last year, adding to the overall decline in value.

On the processing side (Table 2), planted acres held steady but value was down significantly. Unfortunately, with the exception of snap beans, individual statistics are no longer provided for processing sweet corn, peas, beets, kraut cabbage, carrots and lima beans. New York is a leading producer of beets and kraut.

In addition to the crops listed above, there are another dozen "minor crops" grown in NY for which no statistics are kept. These include carrots (both fresh market and processing), lettuce, melons, radishes, broccoli, asparagus, Chinese cabbage, garlic, greens, and herbs. These crops would likely add at least another 6,000 acres and \$30 million to the industry totals. Hopefully when the results of the 2012 Ag Census are released later this year, we'll have better estimates for these crops. ●

Table 1. Value and planted acreage of New York fresh market vegetables, 2011-13. (USDA Ag Statistics)

Crop	2013		2012		2011	
	Value (Million \$)	Planted Acres	Value (Million \$)	Planted Acres	Value (Million \$)	Planted Acres
Cabbage	84.2	9,800	106.0	10,900	81.9	10,900
Sweet Corn	78.1	23,500	68.4	21,700	53.6	23,300
Potatoes	72.7	18,000	64.4	17,000	61.6	16,500
Squash	38.0	4,600	41.2	4,600	42.9	4,900
Tomatoes	32.4	2,900	47.1	2,900	36.6	3,000
Onions	31.6	7,000	46.0	10,200	26.7	8,100
Snap Beans	35.1	6,340	33.5	5,400	31.0	5,600
Pumpkins	30.1	6,600	33.0	6,400	23.6	6,800
Cucumbers	16.7	3,200	25.8	3,000	18.6	3,000
Cauliflower	3.2	460	4.3	500	2.4	480
TOTALS	422.1	82,400	469.7	82,600	317.3	66,080
TOTALS¹	438.1	84,500	485.7	84,700	333.3	68,180

¹ Totals with estimates for peppers, eggplant, endive/escarole, spinach

Table 2. Value and acreage of New York processed vegetables, total fresh vegetables, and total of all vegetables, 2011-13. (USDA Ag Statistics)

Crop	2013		2012		2011	
	Value (Million \$)	Planted Acres	Value (Million \$)	Planted Acres	Value (Million \$)	Planted Acres
Snap Beans	20.4	16,434	18.8	19,700	15.2	15,100
TOTAL, Processing²	32.1	31,930	44.9	32,700	27.0	25,200
TOTAL, Fresh¹	438.1	84,500	485.7	84,700	333.3	68,180
TOTAL, All	470.2	116,430	530.6	117,400	421.9	109,880

² Includes peas, corn, beets, kraut, carrots, lima beans, not published to avoid disclosure of individual operations

Table 3. Average yield and marketing year average price for fresh market vegetables in 2011-2013. (USDA Ag Statistics)

Crop	Average Yield (cwt/Acre)				Average Price (\$/cwt)			
	2011	2012	2013	% Change (12-13)	2011	2012	2013	% Change (12-13)
Cabbage	440	420	450	7.1	18.90	25.30	19.70	-22.1
Potatoes	250	285	270	-5.3	15.20	13.70	na	na
Sweet Corn	95	110	110	0	28.80	30.20	31.40	4.0
Squash	190	190	190	0	51.30	48.20	43.90	-8.9
Tomatoes	160	195	165	-15.4	84.80	86.40	72.60	-16.0
Onions	305	310	310	0	16.80	16.90	16.00	-5.3
Snap Beans	61	65	63	-3.1	96.10	97.00	89.80	-7.4
Pumpkins	110	170	160	-5.9	34.10	33.50	31.40	-6.3
Cucumbers	160	210	140	-33.3	40.00	42.40	38.50	-9.2
Cauliflower	115	140	125	-10.7	49.00	65.00	59.80	-8.0

2014 Acreage Reporting

Joann Rogers, Farm Service Agency (FSA) – Ontario County

To comply with FSA program eligibility requirements all producers are encouraged to visit their local FSA office to certify a crop planting report by the deadline. Upcoming reporting deadlines for New York State are:

May 15, 2014: Onions, Spring Forage Seeding

July 15, 2014: Dry Beans, All Other Crops, CRP

August 15, 2014: Cabbage, Fresh Market and Processing Beans

Call before you stop in to request a set of your crop reporting maps. This will assist you in keeping a record of plantings. For the FSA Office Locator go to <http://offices.sc.egov.usda.gov/locator/app?state=ny&agency=fsa> ●

Spring Weed Control in Garlic & Other Alliums: 2013 Cornell Trial Results

Christy Hoepting, CCE Cornell Vegetable Program

Prowl, Outlook and Dual Magnum may be applied in the spring for pre-emergent control of grasses and selected broadleaf weeds. For post-emergent weed control, Goal and Buctril (and generics) may be used to manage broadleaf weeds, while Select, Fusilade and Poast may be used to manage grasses.

In 2013, Outlook 21 fl oz, Prowl H₂O 2 pts and Dual Magnum 1.33 pts were applied when elephant garlic had 2-3 leaves on April 9, 2013 (90 days pre-harvest) for pre-emergent weed control. For post-emergent weed control, Goal 2 XL 4 fl oz and Buctril 2 pts were applied when the garlic had 5 leaves on April 23, 2013 (75 days pre-harvest). The weed species included mostly annual bluegrass, some quack grass and yellow nutsedge, a few mustard species mostly yellow rocket and some patches of purple dead nettle.

In this trial, Outlook performed slightly better than Dual Magnum and Prowl for control of annual grasses, yellow nutsedge and selected broadleaf weeds and for crop tolerance, although Dual Magnum also looked very good. Any weeds that had already emerged at the time of application were not controlled, however. For improved control, these products could be applied following cultivation to eliminate emerged weeds. Also, applications could be made in the fall to reduce the weed density in the spring (also evaluated in this trial – results will be shared in a future article). In this trial, Buctril performed much better than Goal for post-emergent broadleaf weed control, while Select Max 16 fl oz was poor on annual blue grass when used alone. Grass control was improved tremendously when Select Max was tank mixed with Goal 2XL, which also cleaned up emerged broadleaf weeds. Unfortunately, this combination resulted in unacceptable injury to the elephant garlic. In general, grasses were controlled better with the pre-emergent herbicides.

No herbicide treatment provided better weed control than cultivation. Herbicides can be used in garlic to generally reduce weed pressure and/or to substitute for cultivation within the plant rows. Very long pre-harvest entry intervals currently limit the usefulness of some of these herbicides.

PRE-emergent to weeds:

Outlook: a.i. dimethenamid-P. For control of annual grasses, yellow nutsedge, some broadleaves like pigweed, Shepherd's purse and chickweed, suppression of nightshades. Garlic needs to have at least 2 leaves. Adjust rates according to soil type. May be applied as a single or split application 14 days apart. Weed control not as good when soil is dry.

Caution: Stunting is more likely to occur when soil is cold and wet, use lower rates. **PHI:** 30 days (mid-June for a mid-July harvest).

Labeled on other Alliums? Dry bulb onions, shallots, leeks, scallions, Japanese bunching onions, eschalots – crop stage, rate and PHI same as for garlic; labeled on muck and mineral soil. For green onions, tank mixing herbicides and adjuvants may result in crop injury.

In 2013 Cornell trial: Outlook 21 fl oz provided very good control of grasses, except quack grass, yellow nutsedge and yellow rocket, control of wild mustard was good and poor on field pepper weed and ragweed. Elephant garlic had excellent tolerance. In this trial, Outlook performed better than Prowl H₂O and Dual Magnum (Fig. 1).

Dual Magnum 24(c) Special Local Needs Label: a.i. metalochlor. For control of annual grasses, yellow nutsedge, some broadleaves like pigweed, Hairy galingsoga, Shepherd's purse and nightshades. Garlic needs to have at least 2 leaves. Adjust rates according to soil type. May be applied as a band application. **Caution:** Risk of injury is greater on lighter textured soils and with higher application rates. *Due to the risk of crop damage, all such use is at the end user/grower's risk and requires users to sign a waiver which releases Syngenta Crop Protection, Inc. from all liability. **PHI:** 60 days (mid-May for a mid-July harvest). **Labeled on other Alliums?** Dry bulb onions –same as for garlic.

In 2013 Cornell trial: Dual Magnum 1.33 pts provided very good control of yellow nutsedge and grasses, except quack grass. It suppressed some species of brassica weeds, but was weak on yellow rocket and also ragweed. Crop tolerance of elephant garlic was very good.

Prowl 3.3EC* and Prowl H₂O: a.i. pendimethalin. For control of annual grasses, some broadleaves like pigweed, Shepherd's purse, chickweed, suppression of nightshades, Lamb's quarters and velvet leaf. Garlic must have 1-5 true leaves. Adjust rates according to soil type. **PHI:** 45 days (end of May for a mid-July harvest). ***Note:** Prowl 3.3EC is also available in gener-



Figure 1. Outlook 21 fl oz applied on April 9 and again on May 9 after cultivation surrounded by untreated sections. Technically, only a maximum of 21 fl oz maybe applied, but this illustrates the effectiveness of Outlook. Photo taken June 18, 2013. Photo: Christy Hoepting, Cornell Vegetable Program

ics, such as **Pendant 3.3EC** and **Stealth**.

Labeled on other Alliums?

Prowl EC: Dry bulb onions and shallots – see label.

Prowl H₂O: Dry bulb onions and shallots – see label. Chives, leeks, scallions, Japanese bunching onions, eschalots - crop stage: 2-3 leaves; single app of 2.0 pts per acre per crop; PHI: 30 days.

In 2013 Cornell trial: Prowl H₂O 2 pts provided very good control of grasses except quack grass. No control of yellow nutsedge or ragweed. Control of mustard species was variable. Saw minor stunting and yellowing of elephant garlic.

Post-emergence to garlic, POST-emergent to weeds:

Goal 2XL and GoalTender: a.i. oxyfluorfen. For control of broadleaf weeds, weak on: mustards, Pennsylvania smartweed and common groundsil. Garlic should have at least 3 leaves. Do not apply to garlic grown for seed. Multiple applications may be made per season. Weeds should be 2-4 inches and actively growing. **Caution:** POST applications of Goal may cause chlorotic leaf banding or lesions and stunting. Symptoms are more severe if garlic emerged under cool, wet, overcast or foggy weather. Injury is temporary. Do not mix Goal 2XL or GoalTender with anything except as specified on the label. In general, GoalTender is a safer formulation than Goal 2XL. **PHI:** 60 days (mid-May for a mid-July harvest).

Labeled on other Alliums? Dry bulb onions – same as for garlic.

In 2013 Cornell trial: Goal 2XL 4 fl oz provided excellent control of broadleaf weeds as long as they were small (2-4 leaves), larger weeds were burned back, but recovered. Injury to elephant garlic was unacceptable.

Buctril: a.i. bromoxynil. For control of broadleaf weeds, excellent on ragweed and some mustards, weak on pigweed, suppresses Canada Thistle. Apply to garlic after emergence, but before 12 inches in height. Apply to susceptible weeds up to 4 leaf stage, 2 inches in height or 1 inch diameter, whichever comes first. **Caution:** Buctril may cause temporary leaf burn. Applications should be made to dry foliage. **PHI:** 112 days (late-January for mid-July harvest), 60 days in muck soils. Also available as several generics such as **Maestro 2EC** and **Bro-clean**.

Labeled on other Alliums?

Dry bulb onions – same as for garlic.

In 2013 Cornell trial:

Buctril 2 pts applied on April 23 when elephant garlic had 5 leaves (75 days pre-harvest) provided excellent control of broadleaf weeds including some mustard species up to 4 inches tall (Figure 2). It suppressed purple dead-



Figure 2. Buctril 2 pts applied on April 23 provided excellent control of broadleaf weeds, including larger mustards (4 inch tall) with no crop injury to elephant garlic. Technically, this is off-label due to 112 day PHI. Photo taken April 30, 2013.

Photo: Christy Hoepting, Cornell Vegetable Program

nettle. It performed better than Goal 2XL in this trial. No control of grasses. It would work best following a pre-emergent grass herbicide. It should also have pre-emergent activity. Minor burning was observed on elephant garlic, which outgrew the injury.

Select Max and Select EC: a.i. clethodim.

For control of annual and perennial grasses including quack grass. Recommended to be used with adjuvants – see label. Multiple applications 14 days apart may be made.

PHI: 45 days (early June for mid-July harvest). Also available as several generics such as **Intensity** (Select Max), **Arrow 2EC** and **Section 2EC**.

Labeled on other Alliums? Dry bulb onions and shallots – same as garlic.

In 2013 Cornell trial: Select Max 16 fl oz + NIS 0.25% v/v performed poorly when used alone. When it was used in combination with Goal 2XL 4 fl oz, it gave very good control of broadleaves and grasses. Larger weeds (>3 inches tall) escaped. Select Max was safe on elephant garlic, but the combo with Goal 2XL resulted in unacceptable injury.

Poast (a.i. sethoxydim) and **Fusilade DX** (a.i. fluazifop-P-buty): For control of annual and perennial grasses. Multiple applications 14 days apart may be made for Poast. Do not cultivate 5 days before or 7 days after applying Poast. Always use an adjuvant – see label. **PHI:** 30 days (mid-June for mid-July harvest) for Poast and 45 days (early-June for mid-July harvest).

Labeled on other Alliums? Dry bulb onions (both) and leek, shallots and green onions (Poast only) – see label.

Not trialed in Cornell trial. ●

When Is It Too Late to Plant Onions?

Christy Hoepting, CCE Cornell Vegetable Program

Onions are a long-season crop requiring 75 to 125 days to reach maturity. ***It is a general rule of thumb to have planting of direct seeded onions completed by May 10th.*** Although it is possible to produce a decent crop when onions are direct seeded later than that, it is with increased risk for the following reasons:

- Maturity is pushed later into September when cooler and often wetter conditions (due to remnants of hurricanes) are less favorable for drying down onions after pulling and successful harvest.
- Cooler fall temperatures are not favorable for bulbing; rather, plants revert back to vegetative growth, and do not mature and lodge properly, which leads to poor quality bulbs with thick necks and double centers that do not store well.
- Onions planted past May 10th would be at the flag leaf stage by the end of May or early June when the risk of temperatures in the 80s and 90s would be much greater than in the beginning of May when April-seeded onions would be at the flag leaf stage. The flag leaf stage is particularly vulnerable to being burned up from the hot sun and muck.
- Bulb size would be down. In onions, large healthy top growth is directly related to large bulb size. The longest day of the year triggers bulbing in onions. Onions that are seeded after May 10th, have only 5 weeks of vegetative growth before the plants go into bulbing mode, compared to onions seeded in mid-April that have 9 weeks. Assuming that onions grow an average of 1 leaf per week, delayed planting can result in significant yield losses. In a Cornell onion yield survey, onions planted on April 30th yielded 150 cwt per acre more than onions grown on May 10th.

If onions are to be direct seeded later than May 10th, it is recommended that varieties of 100 days or less be used. There have been several reported successful onion crops that were direct seeded later than May 10th, obviously, it is at a higher risk and ultimate success will greatly depend on the weather during the rest of the growing season.

Transplanted onions, having 2-3 leaves when they are planted, can probably be transplanted up until around the third week of June. The logic being that a direct seeded crop planted on May 10th would be about at the 4-5 leaf stage by the end of June. Of course, the yield would be reduced significantly compared to transplants going into the ground in April. 🍅

UPCOMING EVENTS

Fertility from the Ground Up - May Rolling Hills Discussion Group

May 20, 2014 | 6:00 PM

Fellenz Family Farm, 1919 Lester Rd, Phelps 14532



Professor Steve Reiners will lead a discussion on how fundamental characteristics of the soil influence a field's inherent fertility. We'll build upon that understanding to discuss ways to optimize your nutrition programs. Bring a copy of your most recent soil test, and be prepared to ask Steve all your nutrient management questions. FREE! For more details, contact Elizabeth Buck at 607-425-3494 or emb273@cornell.edu or Robert Hadad at 585-739-4065 or rg26@cornell.edu.

Muck Donut Hour BEGINS

May 27, 2014 | 8:30 - 9:30 AM

Elba muck, corner of Transit and Spoilbank, Elba 14058



Meet with Cornell Vegetable Program Specialist Christy Hoepting every Tuesday morning to ask questions and share your observations.

Weed Control - June Walk & Talk Discussion Group

June 11, 2014 | 6:30 PM

On the River Farm, 7579 St Rt 19, Belfast 14711



1.5 DEC credits are available in categories 1a, 10, 21, and 23. A crop walk focused on how cultural practices can help reduce weed pressure, and discussion on enhancing in-season control of difficult weeds. FREE! For more details, contact Elizabeth Buck at 607-425-3494 or emb273@cornell.edu.

Beneficial Insects and Habitats - June Rolling Hills Discussion Group

June 17, 2014 | 6:00 - 7:30 PM

Honeyhill Farm, 6241 Price Rd, Livonia 14487



1.5 DEC credits are available in categories 1a, 10 and 23. Abby Seaman and Marion Zuefle, of the NYS IPM Program, will teach which beneficial insects are used to control certain pests. Come learn about their lifecycles, predation strategies, and potential to be used on your farm! Kira White, Vegetable Manager at Honeyhill Farm, will share the farm's use of beneficial insect promoting habitat. FREE! For more details, contact Elizabeth Buck at 607-425-3494 or emb273@cornell.edu or Robert Hadad at 585-739-4065 or rg26@cornell.edu.

Weather Charts

John Gibbons, CCE Cornell Vegetable Program

Weekly Weather Summary: 5/06 - 5/12

Location	Rainfall (inch)		Temp (°F)	
	Week	Month May	Max	Min
Albion	0.33	0.51	82	39
Appleton, North	0.02	0.04	83	39
Baldwinsville	0.71	1.11	86	35
Buffalo*	0.33	0.53	81	43
Ceres	0.25	0.72	83	32
Elba	0.38	0.65	80	39
Farmington	0.10	0.26	84	31
Gainesville	0.24	0.59	80	30
Geneva	0.23	0.42	83	34
Kendall	0.19	0.44	83	40
Lodi	0.28	0.47	83	35
Penn Yan*	0.68	1.03	86	34
Ransomville	0.15	0.27	81	38
Rochester*	0.19	0.27	85	42
Romulus	0.40	0.73	82	33
Silver Creek	0.11	0.43	80	41
Sodus	0.67	1.18	85	31
Versailles	0.05	0.08	84	37
Williamson	0.32	0.37	86	32
Wolcott	NA	NA	NA	NA

Accumulated Growing Degree Days (AGDD)

Base 50°F: April 1 — May 12, 2014

Location	2014	2013	2012
Albion	95	194	124
Appleton, North	66	128	99
Baldwinsville	134	187	151
Buffalo	113	228	150
Ceres	112	126	131
Elba	72	170	146
Farmington	129	179	129
Gainesville	88	154	131
Geneva	133	189	139
Kendall	100	203	NA
Lodi	145	188	158
Penn Yan	132	182	157
Ransomville	81	159	131
Rochester	139	223	167
Romulus	135	190	NA
Silver Creek	97	197	143
Sodus	116	165	119
Versailles	121	221	161
Williamson	97	179	126
Wolcott	NA	183	NA

* Airport stations

** Data from other station/airport sites is at: <http://newa.cornell.edu/> Weather Data, Daily Summary and Degree Days.

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VegEdge is the award-winning newsletter produced by the Cornell Vegetable Program in Western New York. It provides readers with information on upcoming meetings, pesticide updates, pest management strategies, cultural practices, marketing ideas and research results from Cornell and Cornell Cooperative Extension. VegEdge is produced every few weeks, with frequency increasing leading up to and during the growing season.

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