



Manage Nightshades to Reduce Crop Loss

Robin R. Bellinder, Cornell, and
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Many New York vegetable growers complained about the abundance of nightshades on their farms last year. The warm spring of 2010 favored early germination of nightshade and other weeds (Table 1). For processing pea growers, nightshades turned to nightmares as many fields with bountiful pea crops were rejected by processors at harvest time because nightshade berries have similar size and shape as peas (Figure 1). Similar crop loss can occur in beans where nightshade berries stain and cause soil to stick to pods. Nightshades should be managed in other crops as well because they reduce crop yields, and harbor diseases of Solanaceous crops such as early blight and late blight of potatoes and tomatoes. Nightshades may become more of a problem in NY if early, warm spring weather becomes a more frequent pattern.

NIGHTSHADE SPECIES - In New York we are primarily concerned with Eastern Black Nightshade (*Solanum elaeagnifolium* Dun.) and Hairy Nightshade (*S. sarrachoides* Sendt.). Knowing which species you have on your farm/fields is important for both cultural and chemical control strategies. The good news is that the two are fairly easy to tell apart (Table 2).

EASTERN BLACK NIGHTSHADE - This species is a North American native. Plants grow up to 3 feet tall but are more frequently spread out. Leaves are generally oval or at maturity, diamond-shaped with "wavy edges," not serrated. Leaves and stems may have a few hairs but cannot be called "hairy." Seedling leaves are usually red-purple underneath and foliage has a shiny, almost translucent appearance. Flowers, borne in clusters of 3-5 blossoms, resemble tomato flowers and are white with purple streaks with a yellow star in the center. The flower petals are separate, not fused. The calyx (collection of small green leaves called sepals that surround the flower petals) is usually small and often fused around the stems of the berries. Mature berries are dull or shiny purplish black and each berry can contain from 50 to 110 tan seeds.



Figure 1. Berries of Eastern Black Nightshade caused this field of peas in WNY to be rejected by processors.

Table 1. The warm spring of 2010 created ideal conditions for early germination of nightshade species in New York. Nightshades germinate at temperatures between 68 – 115 °F.

2010 Month	Days favorable for nightshade germination
April	7 days (70 – 80° F)
May	18 days (75 – 85° F)
June	17 days (75 – 80° F)
July	26 days (75 – 94° F)

Contents



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Veg Edge is a shared publication of two Cornell Cooperative Extension teams, the **Cornell Vegetable Program**, serving 12 counties in Western & Central NY, and the **Capital District Vegetable & Small Fruit Program**, serving 11 counties in the Capital Region of NY

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Change in Veg Edge Monthly & Seasonal Weekly Newsletters

Carol MacNeil, CCE, Cornell Vegetable Program

The Cornell Regional Vegetable Programs' *Veg Edge* monthly newsletter will no longer be published in the months of June, July, August and September. *Veg Edge* monthly will return in October.

The weekly Cornell Vegetable Program newsletter for Western NY has been re-named *Veg Edge Weekly* and all seasonal info will be included

in it. *Veg Edge Weekly* will continue to include the most updated information for you on managing crops and pests from early May until mid-September as you became familiar with in *PestMinder*.

The Capital District Vegetable & Small Fruit Program *Weekly Update* will continue providing growers with up-to-date crop and pest informa-

tion in Eastern NY throughout the growing season.

We will be interested in your comments regarding this change. Please contact Carol MacNeil at 585-394-3977 x406 or crm6@cornell.edu, or Chuck Bornt at 518-272-4210 x125 or cdb13@cornell.edu. ■

Free Agricultural Plastic Container Recycling

Elizabeth Bentley-Huber, Genesee Co. Soil & Water Conservation District

This service is open to farmers all around New York State: the opportunity to recycle their triple-rinsed plastic containers from agricultural crop protection products. Genesee and Monroe County Soil & Water

Conservation Districts are urging farmers to demonstrate their product stewardship by recycling. Please contact either District to advise them of the approximate amount of containers you will have for recycling

this year. Contact Elizabeth Bentley-Huber with the Genesee Co. SWCD at (585) 343-2362, or Tucker Kautz with Monroe Co. SWCD at (585) 473-2120, Ext. 3 for more information. ■

IPM Guide for Weed Identification in Crops

Joy Landis, Michigan State University IPM Program

The MSU IPM Program has collaborated with a number of weed scientists to post on-line *An IPM Pocket Guide for Weed Identification in Field*

Crops. Weeds can be located in listings by common or scientific name as well as identifying characteristics. The guide is available at:

<http://www.ipm.msu.edu/weeds-field.htm> Or, purchase the print pocket-sized guide at: <http://bit.ly/MSUfieldGuide> ■

New Beginning Farmer Website

CCE News, 2/21/11

The Northeast Beginning Farmer Project has a new website with expanded tools and new resources at: www.nebeginningfarmers.org The new site features a collection of videos capturing experienced farmers and their successful production techniques. Also video interviews with farmers sharing advice on profitability, choosing an enterprise, evaluating land, and much more.

You can also:

- sign up for E-News

- look up events
- see who can help
- New Farmer Hub – drafting a business plan
- find publications

The Northeast Beginning Farmer Project is part of the Cornell Small Farms Program and is funded by a Beginning Farmers and Ranchers Development Grant from the National Institute of Food and Agriculture. ■

SUMMER ASSISTANT NEEDED for Cornell Vegetable Program

The Cornell Vegetable Program anticipates hiring a summer assistant to work in Western NY to assist with field research and crop scouting.

Interested persons should direct inquiries to Julie Kikkert at jrk2@cornell.edu or 585-394-3977 x404.

Dry Bean Prices Higher but Smaller Acreage Likely

Vegetables and Melons Outlook/VGS-343/Feb, 2011, ERS, USDA

After stalling for several months with uncertainty, dry edible bean prices have been rapidly moving higher over the past several weeks. It appears that dry bean markets are finally mounting a challenge to other field crops for which potential returns are at historic highs. There are some similarities to the market situation experienced in early 2008 as growers mull over a range of potentially profitable cropping alternatives, including field corn, soybeans, wheat, barley, and dry beans given rapidly rising new crop pricing.

Although dry bean prices have risen, potential returns in early February for several classes of dry beans appeared to lag other crops. (Feb, 2011 price, compared to year ago: blacks (MI) - \$29.75, down 23.7%; light red kidney (CO-NE) - \$33.50, down 4.3%; dark red kidney (MN-WI) - \$41.00, up 20.6%) Given the strong interest in corn, soybeans, and wheat this spring and the prevailing

price relationships, U.S. dry bean seeded area is projected to drop 20-25% from a year earlier. This may be a conservative estimate given the current price relationships and historical precedence. The lowest U.S. dry bean area in the past 20 years was 1.346 million acres in 2004, which returned a crop of just 17.7 million cwt (yields were low that year). Dropping to the 2004 level this spring would represent a 30% decline from a year earlier. However, given the need for increased output for some classes, a 20% decline seems more likely. This would largely return industry acreage to the "maintenance" levels experienced during the 2005-09 period when production averaged around 25 million cwt annually. Weather-related corn planting delays or further gains in dry bean prices over the next 3 months vis-a-vis the corn price would help mitigate the expected decline in dry bean area. The first survey of 2011 row crop area

(including dry beans) will be available on March 31 when USDA releases the *Prospective Plantings* report.

While exports to Mexico (down 18%) and the United Kingdom (down 11%) each dropped, movement to Canada (up 53%), the Dominican Republic (up 38%), and Spain (up 164%) increased. In addition, Cuba returned as a destination for U.S. pulse crops this year after importing no U.S. dry beans during 2009/10. Cuba will be a destination for bean classes such as pinto and blacks this season. Since returning to the market in 2001/02, Cuba has purchased at least one load of U.S. dry beans annually, with the exception of 2009/10. The peak year for recent U.S. dry bean movement into Cuba was 2006/07 when 35 million pounds of dry beans (mostly pintos) was shipped.

(See the complete report at: <http://www.ers.usda.gov/Publications/VGS/2011/02Feb/VGS343.pdf>) ■

Dry Bean Variety & Canning Trials Results

Carol MacNeil, CCE, Cornell Vegetable Program

For details on the results of the 2010 Dry Bean Variety and Canning Trials, including on-farm and Cornell trials, plus a summary of variety and breeding line performance over many years, go to the Cornell Vegetables website at: <http://www.vegetables.cornell.edu/>. On the left side of the page click on 2010 Dry Bean Variety Trial Results. This will bring up the following, plus other bean resources.

[2010 Dry Bean \(Variety and Canning Trial\) Report](#) by Don Halseth, et al.

[2010 Dry Bean Fact Sheet](#) by Don Halseth, et al. (summary of many years of trials showing overall expected variety performance).

These two reports are also available in hard copy. Contact Carol at 585-394-3977 x406 or crm6@cornell.edu. ■

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Herbicides for Snap & Dry Bean Weed Control*

Robin Bellinder, Cornell, and Carol MacNeil, CCE, Cornell Vegetable Program, revised 2/23/2011

Key to Comparative Effectiveness E = Excellent G = Good F = Fair P = Poor N = None	BROADLEAF ANNUALS									GRASSES					
										ANNUAL				PERENNIAL	
	Lambsquarters	Purslane	Common Ragweed	Pigweed	Smartweed	Galinsoga	Mustard	Nightshade	Velvetleaf	Barnyardgrass	Crabgrass	Fall Panicum	Foxtail sp.	Quackgrass	Yellow Nutsedge
Pre-Plant Incorporated															
Treflan (trifluralin)	F	F	P	P	P	P	P	P	P	E	E	G	E	P	P
Prowl ⁹ (pendimethalin)	G	G	P	G	F	P	F	P	G	E	E	E	E	P	P
Sonalan ^{1,2,9} (ethalfluralin)	G	G	P	G	P	P	P	F	P	E	E	E	E	P	P
Eptam (EPTC)	F	G	P	F	P	P	P	G	P	E	E	E	E	P	F
Micro-Tech ^{1,2,4} (alachlor)	P	G	P	G	P	G	P	F	P	E	E	E	E	P	G
Dual Magnum ¹ (s-metolachlor)	G	G	P	E	P	E	P	G ⁵	P	E	E	E	E	P	E
Pre-Emergence															
Command 3ME ^{3,9} (clomazone)	F	F	F	P	F	F	P	P	G	G	G	G	G	P	P
Dual Magnum ¹ (s-metolachlor)	F-G	G	P	E	P	E	P	G ⁵	P	E	E	E	E	P	E
Permit ^{1,2} /Sanda ¹ (halosulfuron)	E	P	E	E	G	G	G	P	G	P	P	P	P	P	F
Reflex ⁹ (fomesafen)	G	G	G	E	P	G-E	E	E/F ¹⁰	P	N	N	N	N	N	F ¹¹
Post-Emergence															
Basagran (bentazon)	G	F	G	F	G	P	G	G ⁶	G	P	P	P	P	P	P
Reflex ⁹ (fomesafen)	F	G	E	E	F-G	G	E	G ⁷	P	P	P	P	P	P	P
Raptor (imazamox)	F	F	P	E	F	F	E	E	P	P	P	P	F	P	P
Poast (sethoxydim)	P	P	P	P	P	P	P	P	P	G	F	G	G	F	P
Assure II/Targa (quizalofop P-ethyl)	P	P	P	P	P	P	P	P	P	E	E	E	E	E	P
Select ² (clethodim)	P	P	P	P	P	P	P	P	P	E	E	E	E	G	P
Permit ^{1,2} /Sanda ^{1,3} (halosulfuro	F	P	E	E	P	G	G	P	G	P	P	P	P	P	E
PPI, Pre- or Post-Emergence															
Pursuit ^{2,9} (imazethapyr)	G ⁸	P	P	E	P	P	E	E	P	P	P	P	P	P	P
Outlook ^{1,2} (dimethenamid-p)	G	G	F	E	P	E	P	G	P	E	E	E	E	P	E

1 - Crop injury is possible on coarse soils if heavy rain occurs shortly after application and beans are emerging, especially black beans

2 - Dry beans only

3 - Snap beans only

4 - MicroTech is slightly better than Lasso EC on some annual broadleaves and grasses

5 - Eastern black nightshade only

6 - Hairy nightshade only

7 - Very small Eastern black nightshade and very small hairy nightshade only

8 - Only the pre-plant incorporated application is effective

9 - Read the label regarding crop rotational restrictions

10 - Excellent – Eastern black nightshade; Fair – hairy nightshade

11 - Fair at snap/dry bean rates

*** For general comparison only. Effectiveness may vary with method of application, rate, use of an adjuvant, size of weed, soil type and weather. See the Cornell 2011 Guidelines for Vegetable Production for more details.**

Always read and follow label directions. ■

Manage Nightshades to Reduce Crop Loss (continued)

HAIRY NIGHTSHADE - This species is a native of South America. Mature plants may grow to be 2.5 ft. tall but more often are spreading. Leaves resemble those of Eastern black nightshade in shape, oval to diamond-shaped. But unlike Eastern black nightshade, seedling leaves are not purple underneath, the leaves and stems are covered with hairs so that they are sticky or “clammy” to the touch, and leaves are not shiny, but are opaque to light. Flowers are borne in clusters, often containing as many as 7 blossoms. The petals are white with a yellow and purple star. The petals are fused, giving each petal a triangular shape. The calyx is very hairy and enlarged, often covering 1/3 to 1/2 of the mature berry. Mature berries are brownish green to olive green, dull or shiny, and have an unpleasant odor. Each berry contains 10 to 35 light brown seeds.

WHY HAVE THESE SPECIES BECOME A PROBLEM?

- Their numbers have increased because cultivation and hand-weeding decreased following the introduction of selective herbicides in the early 1960’s.
- Use of monoculture or short crop rotations encourages seed buildup.
- They are extremely successful as weeds because they emerge over an extended period of the growing season, they grow rapidly and are competitive, and they produce large quantities of viable, long-lived seeds.

GERMINATION AND EMERGENCE: These species germinate in the field, at soil temperatures between 68 and 115°F with 86°F being optimum. They generally will not germinate below 68°F. Seeds may be viable, on

Table 2. Characteristics of Eastern Black and Hairy Nightshade

	EASTERN BLACK	HAIRY
Leaf Color (underside)	Purple on immature plants	Green
Leaf Surface & Stem	Smooth	Moderate to densely hairy
Flower petals (tomato-like)	Separate	Fused
Fruit Color	Deep purple to black	Brown-Green
Calyx (fruit attachment)	Tiny	Large
Germination	68°-115° May-June	68°-115° May-August
Seed Maturity	2-4 weeks	4-5 weeks
Seed Numbers	50-100/berry 488,000+/plant	10-35/berry 16,200+/plant
Longevity	10+ years	10+ years

the plant, 2-4 wks (Eastern Black) or 4-5 wks (Hairy) after pollination. 91% germination 8 wks after pollination has been reported for Eastern black nightshade. However, most seeds become dormant shortly after berry ripening. Species differ in their emergence patterns. Eastern black nightshade appears to emerge early and then ceases by late June to early July. Hairy nightshade, on the other hand, has several emergence peaks throughout the season. Shallow tillage enhances germination and emergence of Eastern black but has little effect on emergence of Hairy nightshade. Neither species will generally emerge from depths greater than 2.5 in and maximum emergence occurs in the top 1-2 in of soil.

GROWTH: Those plants that emerge in the late spring produce the greatest biomass, and the most berries and seeds. All nightshades are, however, very sensitive to shading. Plants that emerge in the early spring begin flowering 7-9 wks later; those that emerge in July flower at 5-7 wk, but when not competing with a crop may begin flowering 1-3 wk after the 5-leaf stage. Nightshades are not killed by light frosts and seeds in existing berries continue to ripen after plant senescence. Eastern black is more frost tolerant than Hairy nightshade.



Eastern Black Nightshade

Table 3. Herbicides with good to excellent activity against nightshades in vegetable crops. This is meant as a starting point only. Make sure to read the product labels for specifics as to crops labeled, timing, rates, size of weeds controlled.

HERBICIDE	TIMING	EASTERN BLACK	HAIRY
Atrazine	PPI/PRE/POST + OIL	YES	YES
Basagran	POST	NO	YES
Buctril	POST	YES	YES
Callisto	PRE/POST	YES	YES
Chateau	PRE	YES	YES
Dual Magnum	PRE	YES	NO
Eptam	PPI	YES	YES
Goal	PRE/POST	YES	YES
Goal Tender	PRE/POST	YES	PRE-only
Impact	POST	YES	YES
Kerb	PRE only	YES	YES
Laudis	POST	YES	YES
Outlook	PPI/PRE/POST	YES	YES
Pursuit	PPI/PRE/POST	YES	YES
Pyramin	PRE	YES	YES
Raptor	POST	YES	YES
Reflex	PRE/POST	YES	YES (fair POST)
Ro-Neet	PPI	Not on label	YES
RoundUp	POST	YES	YES
Stinger	POST	YES	YES

SEED PRODUCTION: There are multiple reports from different states and the UK that reveal that the number of seeds produced by nightshades is dependent upon the time of plant emergence, the amount of competition, and the degree of shading during floral initiation. Plants that emerged in March, August, and September produced 410, 620, and 30 berries/plant, respectively. When grown without crop competition, Eastern black nightshade has been found to produce a maximum of 825,000 seeds/plant, with a range from 488,000 to 825,000. When grown in 94% shade (common under a bean canopy) only 966 seeds/plant were produced. In California, hairy nightshade has been found to produce an average of 16,200 seeds/plant. A common method of reducing nightshade berry and seed production in soy beans is to go to narrow row-

spacing. Shading causes flower abortion and reduces nightshade berry production by up to 50%.

SEED LONGEVITY: The majority of seeds remain viable for more than 10 yr. One study using buried seeds, found viable seeds in undisturbed soils 39 yr after burial. In other studies, it was determined that seed viability decreased exponentially 22-26% per year. If this continued at a constant rate of 22%/yr then 1% of the initial seed population would still be viable after 18 yr.

CONTROL:

- Good planting practices to obtain dense, uniform crop stands
- Timely cultivation
- Prevention of the formation and ripening of berries (clean up fields after harvest)
- Use of small grains as a smother crop in the crop rotation sequence
- Narrower row-spacing if it results in shading out weeds
- Herbicides (Control is difficult because the species are differentially sensitive to herbicides. A claim of control on an herbicide label may not be specified by species. Also, species exhibit different behaviors when grown under different geographic and environmental conditions. In other words, Eastern black nightshade in NY, may not be equally sensitive to a particular herbicide as the same species grown in Minnesota.)

Visit the Cornell Vegetable Program website at <http://blogs.cce.cornell.edu/cvp/files/2011/03/Nightshades-to-Reduce-Crop-Loss-Rpt-Photos.pdf> for more photos of the physiological differences between Eastern black and hairy nightshades. ■



Hairy Nightshade

Reducing Moisture in High Tunnel Systems

Jeff Kindhart, University of Illinois Cooperative Extension

One of the most common complaints of growers using high tunnels is excessive moisture inside the tunnel, especially during the early part of the growing season. When there is high moisture inside the high tunnel, there are commonly increased disease problems. The lack of supplemental heat makes this problem much more difficult to handle in high tunnels than in heated greenhouses. Here are some of the strategies that may be used in a grower's effort to minimize excessive moisture in the high tunnel during the early growing season.

Proper site selection is most important. Set the high tunnel on a ridge crest where possible and avoid sites that are lower than the surrounding terrain.

Address drainage issues. The impermeable cover of the high tunnel results in a high volume of water shed which falls along the sides. The design of the structures makes guttering impractical. Therefore, it is critical that earth be sloped away from the baseboards. This will be part of the directives for those using the NRCS program. Additionally, when

two houses are sited near each other, there must be extra effort to address drainage issues between the two tunnels. Some growers use French drains to address drainage requirements while others use drainage tile. Care must be taken to avoid creating erosion problems in efforts to improve drainage.

Keep water from running in from outside the tunnels. This may require the development of diversion ditches or channels and may involve additional needs for drain tile.

High tunnels must have adequate ventilation. This can be managed to help reduce humidity levels (moisture) within the house. By using several cycles of opening and closing, moisture levels can be reduced. This is similar to the technique used in greenhouses. In the greenhouse, growers reduce humidity levels by drawing in cold air (typically in the evening). As the air is heated by the furnace in the greenhouse it becomes lower in humidity. This allows the air to pick up additional water from the plants, media, etc, in the greenhouse. After the now heated air becomes higher in humidity, it is in turn exhausted from

the greenhouse and new cold air is drawn in, and in turn heated and the cycle is repeated. A few cycles per night over a couple of nights nearly always dries down even the wettest greenhouse. Since there is no supplemental heat source in a high tunnel, we modify this technique by venting the house as soon as it gets warm in the morning which results in cooler air being drawn in. The tunnel is then reclosed and allowed to re-heat. This can be done two or three times each morning and will help dry down the house.

Employ the use of circulation fans. The use of fans (typically 4 or 6 for a 96' structure) can help in keeping the plants drier and also helps make the air throughout the house more uniform. This makes the method above more effective.

Use a wetting agent. If a grower is having problems with water dripping down onto the crop from the polyethylene covering, there are wetting agents which can be purchased and sprayed onto the covering. These will result in the water running down the covering and being shed to the hip board rather than dripping down onto the crop. ■

2011 Organic Farming Conference Presentations

Laura McDermott, CCE, Capital District Vegetable & Small Fruit Program

Select presentations from the USDA ERS 2011 Organic Farming Systems Conference have been recorded and are posted online, with the cooperation of eOrganic. You can see them at: <http://www.extension.org/article/33545> The presentations include:

- Comparing Organic and Conventional Agriculture in the U.S.—

What Can We Measure?

- Productivity in Organic Farming Systems—Findings from U.S. Long-term Experiments
- Social Dimensions of Organic Production and Systems Research
- The Environmental and Social Impacts of Organic Farming
- Organic Agriculture—Global Con-

tributions to Environment and Food Security

- Organic Cropping Systems for Vegetable Production: Crop Nutrition and Environmental Effects
- Transition to Organic Fruit Production—Impacts on Yield and Environmental Performance in a Muscadine Vineyard ■

Harvesting Greens

Molly Shaw, CCE, South Central NY Ag Team

This article was written from case studies involving 12 small scale NY vegetable farms. Thank you to Eric Yetter, Project Manager, to NE SARE for their support of this project, and to all the farmers who opened their farms to us.

Farms sell greens as heads, loose as salad mixes, and as bunches. Greens tend to be one of the more perishable crops on a mixed vegetable farm, and the care they receive in harvesting and washing affects their shelf life. Greens are often eaten raw, and the past food-borne illness outbreaks associated with them merit special attention in their handling.

(Note: Good Agricultural Practice Standards/food safety training will alert you to the recommended practices for reducing food safety risk from greens and other produce, whether you need to be certified by your buyer or not. Classes have been held across the state this winter. For info on the web go to: <http://www.gaps.cornell.edu/index.html> You can sign-up for an on-line GAPS course or click for dial-up vs high speed internet to view the rest of the site. Click on GAPS Educational Materials. The resources: Food Safety Begins on the Farm: A Growers (general) Guide, and Food Safety Begins on the Farm: A Grower Self-Assessment of Food Safety Risks, are an excellent introduction to the topic. They are available in hard copy or on-line. ed. CRM, CCE, CVP)

Field preparations: An efficient harvest starts way back with field preparations—preventing or keeping weeds under control (often with a stale seed bed), adequate soil fertility, low insect and disease damage,

and a good thick stand of plants. A long rotation and adequate cover crops go a long way to accomplishing this.

Growing the mix: For mixed baby salad greens, species and varieties that will make up the mix are usually grown in separate blocks and mixed during the harvesting and washing stages. If one salad component is unexpectedly slow to grow or has a problem with quality it can be left out of the final mix, instead of lowering the whole mix quality. Alternatively, some farms plant more salad mix than they think they will need so they can be quite picky when it comes to harvesting, cutting only top quality greens at the prime stage of growth.

Quality of crop dictates harvest time: The biggest factor affecting the efficiency of harvest is the quality of the crop in the field. When the crop has imperfections that need to be picked through in the field (and/or later in the wash station), it slows down the harvest. In fact, any time a worker needs to make quality decisions during harvest rather than harvesting complete plants or beds, that decision-making process eats up time.

Cutting baby salad greens: Greens are often one of the first crops cut on harvest day, while temperatures are still cool and leaves well hydrated. Salad greens are typically cut with long, well-sharpened knives, dragging a harvest bin along next to the harvester, the bin on the opposite side of the body as the knife. Wide beds are harvested from both sides, or kneeling on the bed itself. Mid-sized farms sometimes use a “basket harvester” for baby salad greens. This harvester has a 48” saw blade held horizontally. As greens are cut, they fall into a bag attached to the blade (see figure 1).

Cutting heads: The most efficient farms will have one person selecting and cutting lettuce heads, as they are able to make quick authoritative decisions on size and quality. This quick worker sets the pace for those that follow to trim off wilted or damaged leaves and pick up the heads—jobs that take much less decision-making.



Figure 1. This basket harvester allows for a quick harvest of baby salad mix when crop quality is good.

Continued on page 10

Harvesting Greens (continued)

Farms vary quite a bit in the details of how they handle lettuce heads. Some farms have selected lettuce varieties with tight stems so one well-placed cut in the field gives a finished lettuce head, leaving behind lower yellowed or damaged leaves and eliminating a later trimming step. Others leave the trimming to workers picking up the heads in the field. Yet others opt to trim the butt ends of the lettuce at the wash tub. The fewer handling steps, the more efficient the process. One farm has sharpened shovel blades that they use to cut the head off the root at ground level without bending over. Workers pick up the heads, then trim them in the comfort of the wash station.

Bunching greens: The fastest harvests of kale, chard, etc. are the ones where the decisions are minimized—where all the good full-sized leaves are quickly stripped, yellowed bottom leaves are left on the ground, and there isn't disease or insect damage to pick through (figure 2). Try not to handle each leaf individually, if possible. Having a sample bunch size for workers to follow helps avoid “bunch creep,” where bunches gradually get larger or smaller.

Counting bunches: Many farms count out the number of rubber bands required to make the number of bunches on the harvest list, wearing them on the wrists or fingers while harvesting rather than counting bunches as they are formed. This avoids counting and recounting bunches. Some farms establish a standard number of heads or bunches to pack into harvest bins. This can streamline the process of packing to fill orders later at the wash station. It's always more efficient to harvest a few extra bunches, pounds or heads rather than going back into the field to harvest more if the count comes up short in the packing stage.

Transporting to the wash station: Full harvest lugs are transported back to the wash station with a cart, truck, van, etc. Farms are quite creative with

their transportation vehicles! Fresh cut greens are tender and need to be quickly protected from sun and wind. Some farms sprinkle the tops of harvested bins with a watering can to keep them fresh; others have harvest bins with lids.

Washing greens: Always use potable water to wash produce and change water frequently. (*Chlorine or other disinfectant is recommended with frequent testing of the chlorine level through the day.* ed. CRM, CCE, CVP) Farms usually sell salad mix as rinsed, but with the suggestion that the customer wash it before eating.

Most small scale farms opt for dunk tubs for washing greens. Greens species or components are combined in the water where they can be gently mixed without bruising. Cleaner stuff gets to use the water first, while really dirty stuff (like spinach) is rinsed last and the water changed. Multiple dunk tanks are ganged up in a line so by the last rinse, the greens are being removed from clean water. Rinses range from one to three, and also serve as a chance to remove weeds and bad leaves. Greens are moved from bin to bin with pool skimmers or fish nets (dedicated to the wash stand, of course). The more water drains from the scoop of greens before going to the next cleanest bin, the better.

One farm in our study (Pleasant Valley Farm in Argyle, NY) has installed a “bubbler” to wash greens. They installed pvc piping in the bottom of a repurposed milk tank (upper half removed) and greens are gently agitated by air blown through the piping by a Jacuzzi motor.



Figure 2. Harvest of bunched greens is quicker when crop quality is high and whole plants (or all the full sized leaves) are harvested. Here the farmer is setting the pace for the crew to follow.

Commentary on dunk tanks:

Dunk tank style washing doesn't ensure that potential disease-causing contaminants brought in from the field don't get moved from wash bin to wash bin and onto the ready-to-sell product. Water should always start out potable, but after the first dirty greens batch, that water is no longer potable and should be changed. Water should be chlorinated but the soil in the water quickly binds up the free chlorine, rendering it inactive (you will still smell chlorine—this doesn't mean it's still active). Test water for the active chlorine level frequently during the day.

The key to keeping produce pathogen-free is in the field. Don't harvest product that is near areas inhabited by wild animals; be careful about manure applications (leave at least 120 days between fresh manure applications and harvest of crops that touch the ground and incorporate the manure 2 weeks before planting); use properly composted (heated!) compost, and prevent water run-off onto the field from areas that could contain manure or chemicals. Train workers seriously about personal hygiene and food safety, and set a good example yourself. (*Signs in English, Spanish, etc. are available at: <http://www.gaps.cornell.edu/index.html>* Supply potable water for hand-washing along with single use towels. ed. CRM, CCE, CVP) As the large-scale greens industry has found out, no amount of sophisticated chlorinated rinses can reliably make field-contaminated greens safe again.

Drying the salad mix: Soggy greens support microbial growth. Some

farms pack newly rinsed greens into containers with good bottom drainage and let them drip drain in the cooler. Clean lugs of various styles work, as long as the greens are kept from drying out in the cooler. Some farms remove water with a clean oversized salad spinner.

Packing greens mix: Some farms like to make individual packages in plastic bags that can be heat sealed or in plastic clamshell containers; these can be sold by weight (must have a registered scale) or volume. They are then labeled with the item, name, date picked, weight or amount, and destination (labels critical in wholesale operations). Other farms opt to bring greens to market loose in a bin and let the customers pack their own quantities, a labor-saving practice.

Note! NYS Ag and Markets considers packaging greens to be a food processing activity, requiring a 20-C licensed kitchen facility. (See: <http://www.agmkt.state.ny.us/FS/general/license.html>)

Packing head lettuce: When much of the water has been removed they can be packed for their next destination, upside down to continue draining (with the exception of buttercrunch varieties which drain right side up). They may go into clean large bins with holes drilled in the bottom to let excess water drain. Farms track quantities by counting the number of heads or number of bins (knowing the number of heads that fit in a bin).

Market influences degree of packing: Markets differ in the degree of packing or bunching required. One of the most efficient farms in our study has deliberately chosen to market only through a CSA because they can offer vegetables to their customers loose in bins and have them count or bunch their own shares. ■



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QuickBooks - Orientation for Tracking Farm Finances

QuickBooks - Orientation for Tracking Farm Finances

Wednesday, April 20, 2011

10:00 am – 2:30 pm

Finger Lakes Community College,
Computer Lab B304, Canandaigua

Hosted by
Cornell Cooperative Extension

QuickBooks is commonly-used accounting software that works well in the farm office for: recording deposits; writing checks; tracking electronic payments; creating and tracking invoices; and accumulating records for your income statement, balance sheet and cash flow analysis. Participants will get hands-on experience from Bonnie Collins, farm busi-

ness management specialist, CCE - Oneida Co. Follow-up coaching for participants will be available. Cost: \$20. Bring a lunch or use the cafeteria.

Pre-registration required: Contact Nancy Anderson at 585-394-3977 x427 or send name, address, phone number to nea8@cornell.edu ■

Effective Political Communication: Tips for Expressing Views

Jack Rabin, Rutgers Cooperative Extension, in Cultivating Cumberland, 3/11

Use farm stationary - This sets your letter apart from the piles of form letters your representatives receive daily. If you do not have stationary, be sure to provide your address, phone number, and email with your signature.

Addressing correspondence - There are several correct forms of address for a Member of Congress including "The Honorable" and "Representative."

Keep letters brief - Keep your letter to one side of one page. Your representative and especially their staff only have a short time to read mail.

By keeping your letter to one page, you will hold their attention. If your letter is about a bill, refer to it accurately, e.g., House bill: H.R. _____, Senate bill: S. _____.

Keep letters focused - Stick to one major issue or problem. The subject of your concern will be easier to remember. Avoid complaining. State personal experiences or credentials you have regarding the subject of your letter.

Show a constituent interest - Tell your representative how the matter is important, how it will personally affect your farm, and other voters you know.

Request the action you want taken - Clearly state if you want support for or against a particular legislative action, policy, vote or regulation.

Ask for a response - When closing, thank your representative for their time reading your letter. Do not expect a response, and only politely request a reply if your concern requires it. ■

New Farmers Market in Lancaster, Erie Co.

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Sat, May 7 & Sun, May 8

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or go to:

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website.www.lancastervillagemarket.com



Schoharie Valley Farm-to-School Project

Cornell Farm to School Monthly e-Newsletter

The Schoharie Valley Farm (Richard Ball family, Schoharie, NY)-to-School Project, including Berne-Knox Westerlo, Cobleskill- Richmondville, Gilboa-Conesville, Middleburgh, Schalmont, Schoharie, and Sharon Springs School Districts, was recently awarded a NY School Nutrition Assoc. – NY Farms Partnership Award for “Promoting Local Foods and Farms” in 2010. The award, co-sponsored by the NYS Dept. of Ag & Markets, is given to schools for their efforts and creativity during the October Harvest Week *Farm to You!* Festival.

In Schoharie County, the Food Ser-

vice Managers from each of the participating school districts organized a “Traveling Lunch Ladies” event. The managers dressed up as chefs and traveled to the schools, handing out samples of fresh, locally-grown fruits and vegetables during lunch. Students in the 3rd to 5th grades were encouraged to try new produce items. A thousand students wrote about their experience. The effort, and positive results of the project, won the group the award.

View and sign up for the monthly Farm to School e-newsletter at <http://farmtoschool.cce.cornell.edu/> hosted by the Cornell University Ex-

tension & Research Program. There are stories about farms partnering with schools to get more local fruits and vegetables to kids. (*Right now in the CVP and CDVSFP regions there are 16 farm to school partnerships in 10 counties. ed. CRM, CCE, CVP*)

Other farm to school resources can be found at:

NYS Dept. of Ag & Markets Farm to School at: <http://www.agmkt.state.ny.us/f2s/index.html>

NY Ag in the Classroom at: <http://www.nyaged.org/aitc/>

National Farm to School Program at: <http://www.farmtoschool.org/> ■

Planning for Winter Crops - Lessons from the Capital District Meeting

Crystal Stewart and Chuck Bornt, CCE, Capital District Vegetable & Small Fruit Program

Growers from the Capital District met on March 8th to hear from industry professionals and other growers about ways to expand their production to take advantage of the rapidly expanding market for local winter produce in Eastern New York. Winter markets are thriving from New York City to Saratoga Springs, and demand is high enough that growers are often selling out of product weeks or months before traditional markets start up in the spring. Winter growing is not new, but improved varieties and techniques for harvesting and storing products are allowing producers to continually expand into this market, providing more, different and better product each year. Additionally, more growers are making the transition to year-round produce marketing each year. This meeting offered information for both new and seasoned winter market growers.

Variety selection for winter markets: Bejo Seed Co. reps have been traveling the state and the greater Northeast all winter, bringing with them a cornucopia of winter vegetables from storage. From parsley root to numerous cabbage varieties for any market, Jan van der Heide, Bejo Seeds, walked us through 20 vegetables that will allow growers to provide high quality products to their customers throughout the winter. Below is an abbreviated list of varieties and their key characteristics. Also included is some supplemental varietal information compiled by John Mishanec, formerly CCE/NYS IPM, in 2010. Not all good winter varieties are included—talk to your seed representative about other varieties that might also work well.

Cabbage: It's not just your grandma's round green cabbage anymore! From Chinese cabbage to Dutch (pointy headed) cabbage to

some great purples, there is a great deal of variety to take you all the way through Saint Patrick's Day. Store with lots of wrapper leaves and at very high humidity. Jan didn't have enough humidity in his storage, so he placed cabbage in large plastic bags and loosely folded them over, so some air exchange was possible but humidity was increased.

(*Circulate air to prevent condensation. ed. CRM, CCE, CVP*)

- Standard cabbages: 'Amtrak'
- Pointed head cabbage: 'Caraflex' stores until mid-late January; Very compact.
- Chinese cabbage: 'Rubicon' is disease resistant, and medium sized.
- Savoy cabbage: 'Deadon' is a red savoy with light green interior. Color intensifies with cold.

Carrots: Store unwashed, green tops off. Harvest before carrots become over-mature and begin to crack. Rule of thumb

Continued on page 14

Planning for Winter Crops (continued)

is to have 20% soil left in your harvest/storage container which helps maintain humidity. May be stored in sand or in plastic bags.

- ‘Bastia’-excellent flavor (orange fleshed)
- ‘Sugar Snax’ – Excellent flavor (orange flesh)
- White Satin – Excellent flavor (white skin/flesh)
- Purple Haze – Excellent for juicing (purple skin/flesh, orange core)
- ‘Deep Purple’- Purple through-and-through. Large carrot.

Celeriac: Store unwashed, tops trimmed but roots on.

Rooted parsley: Store like carrots. Surprisingly delicious, sweet mild flavor. Could be sampled raw.

- ‘Arat’: Good tip fill and length

Brussel Sprouts: Shorter storing varieties should have sprouts closer together on the stalk, while longer storing varieties should have sprouts spread out on the stalk for better air movement. Topping sprouts may help even development spouts for more uniform size. Store in plastic bags if humidity isn’t high enough in storage.

- ‘Dimitri’: Sheds leaves when sprouts mature. Best for Thanksgiving market. No need for topping.
- ‘Nautic’: Christmas market. Also sheds leaves.

Onions, shallots, garlic: Look for thick-skinned varieties of onion for storage. Good storage onions should keep until March. Shallots and garlic are similar. To check storing quality, cut bulb in half. Green sprout should not be present, or should be very small. Bulb should be firm, roots should not be sprouting.

Leeks: Store untrimmed and un-

washed. Many new options are emerging, so check with your dealer for good cold-tolerant fall varieties.

- ‘Runner’: Good early fall variety
- ‘Leroy’: Performs better in the late fall and early winter

Parsnips: Learn about your market. Parsnips can be stored in the field over winter, but you may not have a market for them by the time you can harvest them! Parsnips will sweeten up over the winter, and can then be sold when market conditions are best.

- ‘Javelin’- Consistent producer and favorite of the Carrot Barn

Fennel: Trim leaves and wrap bulbs in newspaper to protect from dehydration. Will store 3-4 months in ideal conditions.

- ‘Floro’: Long day variety, planted in mid-July.

Kohlrabi: In winter storage the “giant” kohlrabi are quite popular. Serve samples as matchsticks.

- ‘Kossak’: Stores very well—tender and good color through to March. Large kohlrabi that does not get woody. Plant in July to harvest in September.

Rutabaga: Harvest rutabaga after a few frosts, if possible. Store unwashed with tops trimmed.

- ‘634X American Purple Top’: Stores for up to 6 months. Good uniformity.

Sweet potato: Curing is necessary for this crop. Properly cured, it will last into March. Based on Chuck Born’s sweet potato research, sponsored by SARE, we recommend these varieties. Each has good yield, low cull rates, and is attractive.

- ‘Beauregard’: An old standard, this sweet potato still has excellent yields

- ‘Covington’: Improved version of ‘Beauregard’ with excellent root uniformity and eating quality.
- ‘O’Henry’: White skin and creamy white flesh. Drier than other potatoes. Fairly uniform but large roots.

Storing winter vegetables: Costs and benefits

Mike Mager of Artic Refrigeration, Batavia, spoke to our growers about designing an effective walk-in cooler and about common problems growers face when their system is not matched to their needs. His take home messages:

1. Work with a company that specifically designs produce coolers—other coolers will not provide the needed humidity for your product. Match the relative humidity in the cooler to the crop (Table 1).
2. Make sure you accurately estimate the maximum amount of product that will enter the cooler and its maximum temperature (field heat), so that the correct number of compressors may be added. There is a difference between cooling a product and holding a product cool. If you are looking to cool the product only before shipping, your needs will be much different (ie – length of time to cool, amount of field heat in product etc.)
3. Cardboard is an insulator. If you are placing vegetables in cardboard boxes and trying to remove field heat, it will take much longer to cool the product than if they were in plastic totes or mesh bags.
4. Make use of the efficiency savers in your cooler—slit plastic doors save energy and keep your

cooler at a more stable temperature, which maximizes produce quality.

Both Mike and Jan emphasized the importance of harvesting long-term storage items on time. Crops that are harvested immature will not provide satisfactory yield while over-mature crops will not give you the storage quality you want.

Mike also had comments specifically relating to winter cooler use, summarized below. Two growers with winter markets also discussed their winter cooler use.

If you already have a fairly tight and well-insulated cooler, winter storage is very inexpensive compared to summer storage, since most if not all cooling may be accomplished using outside air. If you have a cooler but it is not well insulated, you may find that you need to add heat, which is not good because it decreases humidity. Mike recommended insulation with an R-value of 21 or better. If your insulation does not meet this R-value, consider adding more to improve your cooler's efficiency. If you do not already have a cooler, please check future editions of *Veg Edge* for more detailed information about building vegetable storage coolers.

Even in the winter, it is recommended that you cycle air through the cooler to remove ethylene (also remove decaying vegetables, which release more ethylene than healthy ones). 1-2 air exchanges are recommended per day. This amount of air movement can be accomplished in a small cooler using a bathroom exhaust fan installed in one side wall. A small fan will gradually exchange air without drastically affecting the relative humidity or temperature of the

storage, whereas a larger fan could dehydrate the room and cause the temperature to fluctuate. When discussing temperature, Mike cited a University of Guelph study that indicated storage life could be increased by 25-30% by holding storage temperature within one degree. This is of course an unrealistic goal for many, but striving to keep temperatures steady will increase storage life.

Many products have similar storage needs, but to bring maximum variety to your markets, you will need to also create distinct storage environments or "zones." Many winter vegetables need to be cold and wet, but some need to be warmer and wet, and yet others need to be drier and will probably need to be stored in a separate unit entirely (Table 1). More detailed information on storage needs is available through ATTRA, at: <http://attra.ncat.org/attra-pub/postharvest.html>.

When designing your winter storage setup, remember to take into account when you will be removing certain items, and how. One of our grower speakers only leaves 18 inch walkways in the cooler, but he carefully plans the layout of product so that he only removes product in plastic one-bushel boxes. Varieties that must be sold first should be the last into the cooler, and the most easily accessible. The other grower, who has much more space in his storage area, leaves space to move pallets freely in the cooler. This is important because if you plan on using forklifts or pallet jacks in the cooler, you need to make sure you have enough room to move around. If you don't plan for this, your actual storage area will be less than you figured.

Conclusions: Improvements in winter-specific varieties are allowing growers to keep product at high quality for longer than ever, and consumers are responding to the availability of local produce year-round. If you are in an area where winter markets are expanding, this may be a good niche to help even out farm income. Work with your local seed dealer (or regional vegetable specialist!) to determine exact timing for fall and winter crops, and do some market research to see what might sell best for you. You can either try to extend your season a month or two, or you can try to go year-round. Either way, winter marketing is an exciting and growing niche for vegetable producers. ■

Table 1: Storage needs of common winter vegetables

Store at 32 to 36°F and 90 to 98% RH
Beets
Belgian endive*
Broccoli*
Brussels sprouts*
Cabbage*
Carrot*
Cauliflower*
Celeriac
Celery*
Chinese cabbage
Daikon*
Endive*
Fennel
Garlic
Jerusalem artichoke
Kale
Kohlrabi
Leek*
Lettuce*
Onions
Parsley*
Parsnip
Rutabaga
Salsify
Shallot
Spinach*
Swiss chard
Turnip
Store at 38-42°F and 95% RH
Potatoes--see varieties for exact temperatures
Store at 55-60°F and 50-70% RH
Sweet potatoes
Winter squash

* Ethylene sensitive

Get Started Now with Winter Market Production - WNY

Robert Hadad, CCE, Cornell Vegetable Program

The number of winter markets and winter CSAs are beginning to increase, with several of the markets open weekly from November through May in Western NY. The interest by chefs in seasonally available locally grown food is also on the rise. Experience has already shown that demand had outstripped supply tremendously. To take advantage of this very lucrative market, it takes planning and now is the time to think about seeding and producing transplants.

Special attention is needed on scheduling. Unlike summer harvest, late season crops need to be mature at a time when weather and light conditions are less than ideal. Low light levels from shorter day length, and cooler night temperatures mean crops take longer to reach maturity. This translates into a need for earlier planting. Also, many varieties of storage vegetables take longer to reach maturity because of a slower overall rate of growth, smaller cell size, higher dry matter, etc.

In later articles, attention will be paid to harvest techniques, post-harvest handling, and storage. There will be workshops held this fall and early winter at the Bejo Seed Co. research farm in Geneva. The first training will be in October and focuses on harvesting, handling, and storage. The second meeting will be held in late January or early February as a roundtable with growers discussing what worked for them and what didn't, with the goal to share experiences and solve problems. Also discussed will be integrating the use of cover crops into the winter production cycle.

In late August, Bejo will be showcas-

ing their vegetable varieties in their kitchen garden and field trials in Geneva. Many of these varieties are well suited for late market production. A whole variety trial is devoted to storage and winter marketing.

Here is a list of vegetables that fit in well with a winter marketing scheme.

Carrots – Use winter storage varieties. 90-100 days. Direct seed mid to late June. Harvest early November when soils are not wet and are at or below 40°F.

Onions – It is a little late now to get storage onions started from seed as they are day length sensitive. Transplant out late April through early May for storage. Smaller sizes store better. Next year seed in early MARCH with 2-3 seeds per plug cell (220's). You need good ventilation in storage with low humidity. Sell braided onions for a higher price.

Cabbage – Storage varieties mature about 100-110 days from transplanting, which should be around July 1. You want a firm head but not over mature. Harvest with wrapper leaves. Cracked or damaged heads don't store well. Pointed head varieties are about 80 days from transplanting, aim for late July to early August. Firm heads and storage types store longer. They are sweet flavored. Winter cabbage – 120+ days, can be harvested frozen or protected with snow and harvested out of the field into the winter in some locations. (*Temperatures in the low 20s can injure cabbage heads. ed. CRM, CCE, CVP*)

Radicchio, endive, and escarole – 70-80 days if direct seeded. Do not trim before storage. Leave some frame

leaves on for protection and store in boxes lined with plastic. Will store for several months. Harvest firm radicchio heads.

Chinese cabbage – 80 days. Harvest heavy heads with good wrapper leaves. Harvest plants when they are dry. Store in bags. Peel off poor outer leaves. Will store for several months with high humidity.

Brussel sprouts – Transplant in late June. Plant several varieties with different maturity dates to extend harvest.

Fall leeks – 110-120 days. It takes 10 weeks to grow transplants. Set out in late May/June. Will overwinter in field but are prone to wind damage in some locations.

Celeriac – 10-12 weeks to grow transplants. Like celery, it needs lots of water. Irrigate more later in Aug – Sept to increase root size. Good storage keeper.

Fennel – 80 to 90 days. Direct seed by first week of July, or transplant. Susceptible to transplant stress so only grow plants for up to 4 weeks. Harvest with dry foliage. Can store 2 – 2 1/2 months.

Rooted parsley – Direct seed in early June and keep well watered. Use raised beds or light soils for long straight roots. Harvest like parsnips.

Parsnips – 100+ days. Direct seed in late April to early May. Growing in a light soil or on raised beds will result in long thick roots. Harvest when soil is not wet but when ground is cold. Flavor improves with cold nights. Store like carrots.

Beets – 50-70 days with direct seeding in Aug. Large roots store well in sand or boxed if in high humidity.

Cauliflower – Late season. Will stand some cold in the field. Not a long storage keeper but if you can keep plants protected in the field, you can harvest over a longer period. Transplant in early to mid July. Put in varieties with different days to maturity (80, 90, 100, 120 days). Transplant at same time but harvest over a long period.

Kale – Can transplant in Aug, or use longer season varieties. Best flavor when nights get cold and can even stand freezing. Can harvest frozen leaves and store in plastic bags. Let them defrost slowly at cool temperatures and leaves will revive. Keep at high humidity. Plants, if protected, can remain out in the field all winter.

Sprouting broccoli – 90-120 days. Transplant in early July. Once nights remain cold, plants will send out shoots with buds over many weeks. Protect for longer harvests. Good high tunnel crop for winter.

Turnips and rutabagas – 60 - 90+ days. Hybrids mature faster while older standard varieties take longer. Direct seed from the first to the third week in July, or up to early Aug for short season turnips. Turnips are harvested earlier while rutabagas can take colder temperatures and mild freezing. Store in wax boxes or in bags for high humidity.

Potatoes – You can hold late varieties in the ground until weather gets cold (average of 45 degrees F), though harvest before soils get wet. Storage temperatures are best at 40° F or a little above.

Winter squash – 100+days. Leave clean cuts on long stems for a longer shelf life. Store fruit that are free from cuts, scrapes, and cracks. Use higher storage temperatures (50 –

55 degrees F) with lower humidity.

Winter greens – There are a wide variety of crops from mustards to spinach, lettuce and arugula. Protect with row covers and plastic, under tunnels or in hoop houses. Harvest full size or as “baby” greens. Some types, if protected, will go through winter for early spring harvests.

Keeping good records of seeding and transplant dates along with harvest dates and quantities harvested will be important to help you gain ex-

perience and to plan for the next season. Some of this is trial and error since micro climates exist on many farms that have hills and valleys and other geographical features that can influence temperature, wind and growing conditions.


For more information, contact Robert Hadad, CCE Cornell Vegetable Program Specialist at rgh26@cornell.edu or 585-739-4065. ■



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U.S. ONION STATISTICS

Economic Research Service,
USDA, 3/11

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This data set contains series for the period 1960-2010 at the U.S. and State-level for bulb onions, acreage, yield, production, price, and value. Other series include world area, yield, and production (1961-2009), world trade 1990-2008, U.S. trade by product by country (1961-2010), various price series, and more. These tables are stored as Excel (.xls) worksheets. The files can be retrieved and used by any software capable of reading .xls files. If your browser does not allow the file to be opened, try downloading the file, save it to your hard drive, and then open the file with your spreadsheet software. For information contact: Gary Lucier: GLUCIER@ers.usda.gov or 202-694-5253. ■

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Trolley Bldg, Rte. 31, Knowlesville

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Note: In Wayne County, supervisors who attend the first 30 minutes of training in the English session do not need to repeat the training in the Spanish session

\$20 per DEC Special Permit

DEC Special Permits allow non-certified workers to apply and handle federally restricted use pesticides: The Special Permit does not relieve the responsibility of the certified applicator that supervises these employees, but it does relieve the requirement of "on-site, within voice contact" supervision while these pesticides are being applied.

What are federally restricted-use pesticides?

There are several reasons why pesticides may be federally restricted including avian, fish or aquatic toxicity, acute human oral/inhalation/dermal toxicity (poison), ground and surface water concerns, reproductive effects or tumor causing. Several of the **pyrethroid, organophosphorous and carbamate insecticides** such as Warrior, Capture, Diazinon, Lorsban and Lannate, and a few herbicides such as Gramoxone and Atrazine, are federally restricted-use materials.

DEC Special Permit training

At Special Permit trainings, we review with non-certified applicators Worker Protection Safety (WPS) handler training and for each federally restricted-use pesticide the potential hazards to non-target species and the environment, and how to prevent the risk of exposure. Trainees also receive a packet with summaries of this information. **A DEC Special Permit is valid for one year and needs to be renewed every year unless the pesticide applicator becomes certified.**

For more info, contact Christy Hoepting: 585-721-6953 or cah59@cornell.edu ■



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Seed Potatoes - North American Plant Health Certificate Essential

Carl Albers, CCE, Steuben Co.; Edited by Alan Westra, NY Seed Improvement Project

Good seed is the foundation for a successful potato crop and a North American Potato Health Certificate (PHC) provides growers with more detailed information about potato seed. You can request a PHC from the seed certifying agency in which-ever state you are buying seed from, or directly from the seed producer. The PHC contains both the summer inspection information and the results of the winter test readings, and the pedigree – seed source, generation and class. This is important for reducing late blight risk but increasingly the winter test readings are being used for PVY determination.

The lack of visual symptoms during summer inspections doesn't always reveal infected plants. Some potato varieties do not express PVY in the winter test. The grow-out is supplemented with lab testing when symptomless varieties are involved or when symptom expression is not good. NY does not certify any "typhoid Mary" varieties. From the PHC a grower can learn whether late blight was present on a seed farm and if the farm has had any bacterial ring rot in the previous ten years.

A shipping point inspection is required by all states. Seed is not "certified" unless it meets all the

requirements, including a State or Federal-State inspection at the shipping point, and bears official tags or bulk certificates.

For more information about the Maine Seed Potato Program visit: www.maine.gov/agriculture/pi/potato.

Details about the NYS Seed Potato Certification Program are in the NY Certified Seed Potato 2010 Crop Directory at: <http://www.cals.cornell.edu/cals/plp/ath/about/facilities/upload/2010NYPTATOCropDirectory.pdf> ■


Potato Variety & Cultural Practice Trial Results

Carol MacNeil, CCE, Cornell Vegetable Program

For details on the results of the 2010 Cornell Potato Variety Trials and Cultural Practice Experiments go to the Cornell Vegetables website at: <http://www.vegetables.cornell.edu/> On the left side of the page click on 2010 Potato Variety Results. This will bring up the [2010 Upstate NY](#)

[Potato Variety Trials and Cultural Practices Experiments Report](#) by Don Halseth, et al. This report includes: early, mid-season and late varieties; fresh market and chipping varieties; white, red, blue and russet varieties, and breeding lines from all over the country; 31 standard and niche varieties under organic production; a

potassium fertilizer rate trial; chip color Agtron readings for dozens of varieties and lines; and a chart of 9 years data on average tuber dormancy for dozens of varieties. This report is also available in hard copy. Contact Carol at 585-394-3977 x406 or crm6@cornell.edu. ■



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Potato Varieties that Benefit from Pre-Cutting & Holding

Carol MacNeil, CCE, Cornell Vegetable Program

Last spring there were some break-down problems with the seed of some varieties. The cold weather right after planting was likely to blame. Potato seed does best in warm, moist soil because these conditions are best for healing cut surfaces and for sprout development. If cut seed doesn't promptly heal/cure then microbial infection and seed-piece decay is more likely.

The varieties which are slow to heal cut surfaces, have long tuber dormancy, or have thin skin are most likely to suffer if soil temperatures are either hot or cold, or if soils are either very dry or wet. Pre-cutting

and holding these varieties gives them time to heal/cure and good stands are more assured. Some of the varieties which have benefited from pre-cutting are: Allegany, Atlantic, Eva, Genesee, Kennebec, Redsen and Yukon Gold.

Seed tubers of all varieties should be stored at 40°F to prevent premature sprouting and dehydration. Tubers should be warmed up to 50° to 60°F before being handled and cut. Pre-cutting and curing cut seed is best accomplished by placing seed in half-full pallet boxes or spread out in piles only a few feet deep with adequate air circulation, temperature

between 55° and 60°F, and about 90% relative humidity. After cut seed has been held at optimal curing conditions for one week, the storage temperature should be lowered to between 40° and 45°F to maintain vigor and avoid excessive sprout growth. This practice improved plant stand in a trial with Allegany, which resulted in a marketable yield increase of 46 cwt/acre.

(info from Don Halseth, Cornell, and the 2011 Cornell Vegetable Guidelines at

<http://www.nysaes.cornell.edu/recommendations/>) ■

Reducing Potato Diseases - Variety Resistance & At-Planting Fungicides

Tom Zitter, Plant Pathology, Cornell (edited by C. MacNeil, CCE, CVP)

Note to Organic Growers: Organically approved materials are included below. For more complete info on organic disease management go to: http://nysipm.cornell.edu/organic_guide/potato.pdf

(Information below was taken from three articles at Veg MD Online at: <http://vegetablemdonline.ppath.cornell.edu/NewsArticles/NewsList.htm>)

Cultivars/Varieties for NE Production, 2/11, Selected Disease Susceptibility*

Silver Scurf (SS):

- Susceptible (Adirondack Blue and Red, All Blue, Genesee, NY 144, LaSoda)
- Moderately susceptible (Chieftain, Yukon Gold)

Black Dot (BD):

- Very susceptible (Banana)
- Susceptible (Monona)
- Susceptible/moderately susceptible (Andover, Reba)
- Moderately susceptible (Chieftain, Eva, Genesee, Pike, Superior, Yukon Gold)
- Moderately resistant (Lehigh, Nordonna, Norwis, Norland)
- Resistant/moderately resistant (Keuka Gold)

Pink Rot (PR):

- Susceptible (Lehigh, Monona, Norland, Red LaSoda, Yukon Gold)
- Susceptible/moderately susceptible (Allegany, Red Maria/NY 129, NY 115)
- Moderately susceptible (Chieftain, Reba, Nordonna)
- Moderately resistant (Atlantic, Snowden)
- Resistant/moderately resistant (Andover, Keuka Gold, Marcy, Norwis, Pike, Superior)
- Resistant (Yukon Gem)

* See the complete article for more information.

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Potato Fungicides Labeled in NYS, March, 2011*

Group Numbers before products are from the Fungicide Resistance Action Committee and EPA and indicate products with the same mode of action.

Fungicide Resistance concerns are in italics.*

Key: **LB** = Late blight; **Rhiz** = Rhizoctonia black scurf and canker; **SS** = Silver scurf; **BD** = Black dot; **Fus** = Fusarium decay/dry rot; **Pyth** = Pythium leak; **PR** = Pink rot

Seed Piece Treatments

- ²⁵ **Agri-mycin 17 or Agric. Strep.** (Soft rot, Black leg) **OMRI**
- ^{Insect+12} **CruiserMaxx Potato** (thiamethoxam + fludioxonil) liquid (Fus, seed-borne Rhiz and SS) (Not in Nassau or Suffolk Counties)
- ^{M3} **Nubark Mancozeb** (mancozeb) (Fus)
- ^{M3} **Potato Seed Treater PS 8% or 6%** (mancozeb) (Fus)
- ^M **PM223** (protein) (seed suberization) Exempt, not listed in PIMS
- ^{1 + M3 + 27} **Evolve** (thiophanate-methyl + mancozeb + cymoxanil) (LB, Fus, Rhiz, SS)
- ^{Insect. +M3} **Gaucha MZ Pot S-P Trt.** (imidacloprid + mancozeb) (Fus)
- ^{12 + M3} **Maxim MZ** (fludioxonil + mancozeb) (Fus, Rhiz, SS)
- ^{7 + M3} **Moncoat MZ** (flutolanil + mancozeb) (Fus, Rhiz, SS)
- ^{Bio} **T-22 HC** (T. harzianum) (Rhiz) **OMRI**
- ^{Bio} **Mycostop** (S. griseoviridis) **OMRI**
- ^{1 + M3} **Tops MZ Pot. S-P Trt.** (thiophanate-methyl + mancozeb) (Fus, Rhiz, SS)
- ^{Insect. + 1 + M3} **Tops MZ Gaucha** (thiophanate-methyl + imidacloprid + mancozeb) (Fus, Rhiz, SS)

In-Furrow and Soil Treatments

- ^{Bio} **Actinovate AG or Actino-Iron** (S. lydicus) (?) **OMRI**
- ¹¹ **Quadris** (azoxystrobin) (Rhiz, SS, BD)
- ¹¹ **Quadris + ⁴ Ridomil Gold** (azoxystrobin + mefenoxam) (Rhiz, BD, Pyth, PR)
- ¹⁴ **Blocker** (quintozone) (Rhiz)
- ⁷ **Moncut** (flutolanil) (Rhiz, Powd Scab suppression only) (Not in Nassau or Suffolk Counties)
- ³³ **Agri-Fos, ProPhyt, Phostrol or OLP** (Stor. Rots = Pyth, PR)
- ⁴ **Ridomil Gold** (mefenoxam) (Stor. Rots, *Pyth**, *PR*- Resistance concern*)
- ⁴ **Ultra Flourish** (mefenoxam) (*Pyth**, *PR*- Resistance concern*)
- ^{4 + M5} **Ridomil Gold Bravo** (mefenoxam + chlorothalonil) (Stor. Rots, Pyth, PR)
- ²¹ **Ranman** (cyazofamid) (PR)
- ^{Bio} **Serenade Soil** (Bacillus subtilis) (Rhiz) **OMRI**
- ^{Nem} **Vydate C-LV** (oxamyl) (Supp. of lesion, stubby root, root knot nematodes) (Not for Suffolk or Nassau Co)

* See foliar fungicides in the complete article.

Fungicides Rated Good for Three+ Problem Tuber Diseases, 2011*

Tom Zitter, Cornell: The ratings, from research trials, for Rhizoctonia black scurf (**Rhiz**), Silver Scurf (**SS**), and Black Dot (**BD**) are related to the reduced infection of daughter tubers. Treatments for Fusarium (**Fus**), Late Blight (**LB**), and nematodes do not specifically deal with daughter tuber infection (**ST** = Seed treatment; **IF** = In-furrow)

- **CruiserMaxx Potato** ST – Good against Rhiz, Fus, SS.
- **Evolve Potato SP Treatment** ST – Good against Rhiz, Fus, LB, SS.
- **Maxim MZ Potato** ST – Good against Rhiz, Fus, SS.
- **Moncoat MZ** ST – Good against Rhiz, Fus, SS.
- **Tops MZ Potato Treatment** ST – Good against Rhiz, Fus, SS.
- **Tops MZ Gaucha** ST – Good against Rhiz, Fus, SS.
- **Mancozeb** - containing ST - May help reduce LB spread during cutting, infection of sprouts from infected seed
- **Quadris Ridomil Gold** IF – Good against BD, Rhiz (Pyth, PR if there is no mefenoxam resistance).
- **Vydate C-LV** IF - Good against lesion, stubby root and root knot nematode.

* from: Listing of Fungicides for Selected Diseases with Effectiveness

See more potato and vegetable disease information at <http://vegetablemdonline.ppath.cornell.edu> ■



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Managing Colorado Potato Beetle

from the 2011 Cornell Vegetable Guidelines (<http://www.nysaes.cornell.edu/recommends/>); edited by Carol MacNeil, CCE, Cornell Vegetable Program

Managing Colorado Potato Beetle (CPB) – Seed Piece & In-Furrow Insecticides and Other Early Strategies

Note to Organic Growers: While some biological and botanical insecticides are OMRI approved, with effectiveness primarily against small CPB larvae, the following cultural controls can be very effective. For more detail go to: http://nysipm.cornell.edu/organic_guide/potato.pdf

- rotation to non-hosts; avoid planting adjacent to where potatoes were last year
- hand removal
- propane flaming
- floating row cover
- yellow sticky traps and tape
- trench trap around perimeter
- trap tubers (sprouting) around perimeter; early planted trap rows of potatoes
- vacuum - leaf blower operated for suction
- remove Solanaceous weeds from areas bordering potato fields
- thick straw mulch

Genetic resistance to insecticides is an inherited change in the sensitivity of a pest population that is reflected in the failure of a product to achieve the expected level of control. The CPB has a great capacity to become resistant to insecticides in as little as a few years time. The objective of insecticide resistance management (IRM) is to prevent or delay the onset of resistance. In practice, alternations, sequences or rotations of insecticides from different IRM classes (modes of action) reduce selection for resistance in any one class and prolong the effective life of compounds having that mode of action.

Do not follow seed piece or in-furrow treatments with insecticides from the same IRM Class for the rest of the season to slow the development of resistance. Unfortunately, all the potato seed treatment and In-furrow materials for CPB are Chloronicotinyl (IRM Group 4) insecticides. This class of insecticides should primarily be used in managing CPB populations to slow the development of CPB resistance, though they are effective against some other insect pests. Note: The imidacloprid and thiamethoxam insecticides do not control European corn borer or climbing cutworms.

The May Veg Edge will include early season foliar insecticides for CPB control. ■

Seed Piece & In-Furrow Insecticides for CPB Management

Mode of Action	IRM Class	Chemical Class	Chemical Name	Trade Name	*Restricted Use material †Not for use in Nassau or Suffolk Counties ST - Seed Treater IF - In-Furrow
Nicotinic Acetylcholine 4 Receptor Agonists		Chloronicotinyl	imidacloprid	*Admire Pro 4.6lb/gal, *Advise 2FL, *Alias 2F, *Macho 2FL, *Montana 2F, *Widow 2lb/gal ST or IF	
			thiamethoxam	†Cruiser 5FS ST, *†Platinum 2lb/gal IF	
Mix of Insecticide & Fungicide	4	Chloronicotinyl (w/ Fungicide)	thiamethoxam fludioxonil)	†CruiserMaxx Potato ST 2.85lb/gal	
	4	Chloronicotinyl (w/ Fungicide)	imidacloprid thiophanate-methyl + mancozeb)	Tops-MZ-Gaucha ST 1.25%	
	4	Chloronicotinyl (w/ Fungicide)	imidacloprid mancozeb)	Gaucha MZ ST 1.25%	

Trying Deep Tillage in Vegetable in 2011 - Assistance Available

Anu Rangarajan and Betsy Leonard, Cornell

Growers who have tested deep zone tillage have found savings in labor and fuel costs compared to their conventional tillage systems (moldboard plow plus). With funding from a NYS Dept. of Ag & Markets Specialty Crop Grant, we want to help more growers test these approaches on their farms. We will provide information, technical assistance and some **cost share funds** to help growers plan trials, rent or borrow needed equipment, and learn how to adapt RT to their farms. **We can provide \$600 to sixteen growers this year for deep zone tiller rental and transportation.** We are seeking growers with all farm sizes, producing conventional or organic vegetables. Either direct seeded or transplanted crops may be tested. Ideally, deep zone tillage will be compared next to conventional tillage in the same field, on the same crop, same variety, same planting date. We will also assist with some economic analysis to quantify cash savings of these systems.

We have identified several equipment dealers around NY who will have deep zone builder units available for rental for trials. They include: Capital Tractor, Greenwich; Columbia Tractor, Claverack; Lakeland Equipment, Hall; and, Z & M Ag and Turf, Alexander and Oakfield (plus Cornell and CCE 2-row tillers). The equipment dealers are working closely with Cornell and Cornell Cooperative Extension to make this equipment available and assist with transport. See the March *Veg Edge*, pg.22, for dealer contact info, or go to the CVP website at: <http://blogs.cce.cornell.edu/cvp/> Click on Crops & Soils, then Soil Health, then Reduced Tillage for the articles "Try

Deep Tillage on Your Farm in 2011," and "Guidelines for Deep Zone Tillage in Vegetable Production," and a link to the Cornell RT website.

Please work with your local Cornell Cooperative Extension educators. Eastern NY: Chuck Bornt, 518-272-4210, ext 125, cdb13@cornell.edu. Western NY Carol MacNeil, 585-394-3977 x406, crm6@cornell.edu. Long Island: Sandy Menasha, 631-727-7850, srm45@cornell.edu.

Grower Mentors: George Ayres, Shortsville, and Donn Branton, LeRoy, growers with over a decade of reduced till veg experience each, have invited veg growers with questions of any kind related to reduced tillage to email them at: George – geoayres@rochester.rr.com, or Donn – brantonfarm@agristar.net They're easier to catch by email than phone, and they can send you photos, direct you to websites, etc.

Be sure you have the horsepower to pull the tillage unit you'll be using. If your soil is heavier or compacted you'll need more horsepower or won't be able to rip as deep. Equipment dealers estimate 100-120 horsepower is needed to pull a four row unit.

It's very important that the planter row go right over the rip for vegetables, especially if weather is dry. Please check the spacing between your planter units, at the disc openers, and between the ripper units, at ground level, when you get them. Plan to plant the same number of rows that you rip. Row cleaners on the ripper or planter are essential.

For growers new to reduced tillage we suggest you do your first trials on sweet corn, followed by winter

squash/pumpkins or dry beans, then cabbage or other transplanted crop. We also suggest that you try reduced tillage for vegetables on a small acreage until your equipment is adjusted properly for your soils and conditions, so that a good seedbed is ensured for good plant stands. Be sure changes in your weed control program are effective before increasing acreage.

If you're planning a side by side comparison in the same field, previous soil management, crop variety, planting date, weed management and fertility should be the same on both sides. Contact Anu Rangarajan (ar47@cornell.edu) or Betsy Leonard (bai1@cornell.edu) if you are interested in participating, have questions, or would like to borrow one of the Cornell 2-row tillers.

Herbicides for Reduced Tillage Production of Vegetables in NYS, an informative article on both annual and perennial weed control by Robin Bellinder, et al, can be found at the Cornell Reduced Tillage Vegetables website at:

www.hort.cornell.edu/reducedtillage On the left menu click on Herbicides for Zone Tillage. Sweet corn, dry beans, winter squash & pumpkins, and transplanted cabbage are covered, with suggested weed control programs for each. Herbicides which can be used pre or post are listed along with target weeds for each and comments on use.

The Cornell Reduced Till Veg website also contains other articles, videos, fact sheets, pictures of different equipment choices, and stories from other RT growers. ■

It's Time for Cornell Soil Health Testing!

Carol MacNeil, CCE, Cornell Vegetable Program

Spring is the best time for collecting soil samples for the Cornell Soil Health Test (CSHT). Fields should be sampled when they're just dry enough to work but before any spring tillage. If you've never had a CSHT you've missed an opportunity to learn much more about your soil, especially whether it's living up to its potential for supporting good crop growth and good yields. Do you have a problem with crusting? Droughtiness? Ponding? Root diseases? Poor crop growth? The CSHT can help explain why and what you can do to improve your soil and reduce these problems. If you have had a CSHT in the past and are back at the same place in your rotation, now's the time to re-test to see if your soil has improved, assuming you've in-

creased cover cropping, improved your rotation, reduced tillage and/or added organic soil amendments, etc.

The CSHT is available through Cornell's Nutrient Analysis Lab. While soil is sampled in much the same way as for soil nutrient analysis much more soil is needed (1 1/2 qts), the sample must be kept cool (not frozen), and should not be dried.

The Basic Package includes the following: Particle size and texture, aggregate stability, available water capacity, surface and subsurface hardness evaluation, organic matter, active carbon, and the standard nutrient analysis. Cost - \$45.

The Comprehensive Package includes all of the above plus: Potentially mineralizable nitrogen and a

root health (soil-borne disease potential) bioassay. Cost - \$75.

For information on the CSHT and on what makes a soil healthy check out: <http://soilhealth.cals.cornell.edu/index.htm> The website is a tremendous wealth of information on improving soil health, and thus crop growth. It also includes the sampling procedure that should be used, the input sheet which should be included with the sample, and where to send the sample. If you'd like assistance in sampling for the CSHT please contact Carol at 585-394-3977 x406 or crm6@cornell.edu, or Chuck Bornt at 518-272-4210 x125 or cdb13@cornell.edu. ■

Standard Soil Nutrient Testing, Nitrogen Analysis

Carol MacNeil, CCE, Cornell Vegetable Program

It's a good time for all kinds of soil testing. If it's been more than 3 years since the last soil nutrient analysis now's the time to do it! Standard nutrient analysis is now handled by Agro-One, in collaboration with Cornell. Many CCE offices have Agro-One sample input sheets and information on sample pick-up or mailing. Or you can go to: <http://www.dairyone.com/AgroOne/default.htm> or contact Janet Fallon at 607-227-3297 or janet.fallon@dairyone.com for input forms and to order soil boxes. The top of the info input/submittal form should say: **"Agro-One Soils Lab; Nutrient guidelines provided by Cornell University."**

In addition, there's finally a way to test soil for nitrogen (N) - supplying

ability and N fertilizer needs. The Illinois Soil Nitrogen Test (ISNT), along with the LOI % Organic Matter, gives you information on your soil's nitrogen-supplying ability for the next 2 – 3 years. This test is available from the Cornell Nutrient Analysis Lab. A description of the test, input forms, and soil sample containers are available through: <http://cnal.cals.cornell.edu/forms/index.html#Soil> or 607-255-4540, or soiltest@cornell.edu This test is most useful where easily mineralizable nitrogen is likely available, such as where manure or other organic, nutrient rich amendments have recently been added, or where legume crops/cover crops have recently been grown. Soil must be sampled either before, or at least 5 weeks

after, manure application, legume/cover crop incorporation or chemical kill. At this point N fertilizer recommendations can only be given for field corn, but work is underway to adapt the info for sweet corn. Cost is \$14/sample. ■

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New York Vegetable Rebound in 2010

Stephen Reiners, Cornell

After a cold, rainy summer in 2009 reduced yields, 2010 turned out to be a more profitable year for many New York vegetable growers. The fresh market side saw planted acres stay around 88,000 and the value of 14 crops for which statistics are kept increased to almost \$450 million, from a low of \$386 million in 2009 (Table 1). Cabbage edged out sweet corn to be the highest valued crop in NY, worth almost \$75 million. For fresh market crops, sweet corn continues to be grown on the most acres at 23,500.

Average yields for vegetables increased for most of the major crops with the exception of onions and peppers, which saw declines of 22% and 30%, respectively. Yields of the vine crops – pumpkins, squash and cucumbers significantly increased, as did snap beans.

On the processing side (Table 2), planted acres increased while value remained the same. Without the terrible virus problems seen in beans in 2009, yields jumped from 2.9 to 3.9 Tons/A in 2010.

Although many potatoes are grown for chipping/processing, we count potatoes as a fresh crop. In addition to the crops listed, 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, and herbs. These crops would likely add another 6,000 acres and \$30 million to the industry totals.

Table 1. Value and planted acreage of NY fresh market vegetables, 2008 -2010.
(NYS Ag Statistics)

	2010		2009		2008	
CROP	VALUE (Million \$)	PLANTED ACRES	VALUE (Million \$)	PLANTED ACRES	VALUE (Million \$)	PLANTED ACRES
Cabbage	74.5	10,600	55.8	9,600	79.1	10,100
Sweet Corn	71.1	23,500	58.3	23,100	73.9	23,600
Potatoes	69.1	16,200	61.9	17,100	92.3	18,000
Onions	54.2	10,700	67.6	10,600	58.9	10,600
Snap Beans	39.2	6,900	23.6	7,100	40.5	6,700
Squash	36.8	4,700	23.0	4,700	32.5	4,200
Pumpkins	35.1	7,100	21.8	6,600	38.4	6,300
Tomatoes	28.5	2,900	32.7	2,700	43.1	3,000
Cucumbers	18.5	3,000	16.0	3,400	16.1	3,800
Peppers, Bell	9.9	1,200	12.3	1,100	13.9	1,100
Eggplant	4.0	400	6.0	450	6.2	500
Cauliflower	3.4	490	2.4	430	1.8	410
Endive/Escarole	2.0	300	4.2	300	2.8	250
Spinach	1.0	350	0.9	340	1.3	360
TOTALS	447.3	88,340	386.5	87,520	500.8	88,920

Table 2. Value and acreage of New York processed vegetables, 2008 - 2010.
(NYS Ag Statistics)

	2010		2009		2008	
CROP	VALUE (Million \$)	PLANTED ACRES	VALUE (Million \$)	PLANTED ACRES	VALUE (Million \$)	PLANTED ACRES
Snap Beans	21.6	25,600	14.8	20,000	21.5	21,500
Peas	na	na	na	na	na	na
Sweet Corn	na	na	na	na	na	na
Beets	na	na	na	na	na	na
Kraut Cabbage	na	na	na	na	na	na
TOTAL, Processing	47.6	58,600	47.6	51,500	61.7	60,600
TOTAL, Dry beans	7.8	15,000	6.6	16,000	18.1	17,000
TOTAL, Fresh	447.3	88,340	386.5	87,520	500.8	88,920
TOTAL, All	502.7	161,940	440.7	155,020	580.6	166,520

na - Not published to avoid disclosure of individual operations

New York Vegetable Industry Ranks 5th in Acreage In U.S. - Figures compiled from USDA statistics indicate that New York ranked fifth in both fresh market and processing vegetable acreage in 2010. NY ranks in the top four states in terms of planted acres for fresh market cabbage (2), sweet corn (4), cauliflower (3), fall storage onions (4), pumpkins (4), squash (4), and processing snap beans (2). New York no longer keeps statistics for other processing crops (sweet corn, peas, beets, cabbage), but as a whole, the industry moved ahead of Oregon to move into 5th place nationally, both for acres and value. ■

Contact the Cornell Vegetable Program

Cornell Vegetable Program (CVP) Specialists



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Food safety; Western region fresh market vegetables; marketing; organic

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Julie Kikkert*
Extension Specialist
Processing crops: sweet corn, snap beans, peas, beets and carrots

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Visit our website at
<http://cvp.cce.cornell.edu>

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** Member of the Cornell Vegetable Program Administrative Management Team*

Cornell Cooperative Extension Offices of the CVP

Allegany County CCE
Belmont, NY
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Cattaraugus County CCE
Ellicottville, NY
Phone: (716) 699-2377

Erie County CCE
East Aurora, NY
Phone: (716) 652-5400

Genesee County CCE
Batavia, NY
Phone: (585) 343-3040

Monroe County CCE
Rochester, NY
Phone: (585) 461-1000

Niagara County CCE
Lockport, NY
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Onondaga County CCE
Syracuse, NY
Phone: (315) 424-9485

Ontario County CCE
Canandaigua, NY
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Orleans County CCE
Albion, NY
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Seneca County CCE
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CVP Region Berry Program

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Contact the Capital District Vegetable & Small Fruit Program

Capital District Vegetable and Small Fruit Program (CDVSFP) Specialists



Chuck Bornt, Team Leader
Extension Specialist

*Vine crops, sweet corn,
potatoes, tomatoes and
reduced tillage*

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*Small fruits, leafy greens,
labor, high tunnels, and
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Crystal Stewart,
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brassicas, and garlic*

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Colombia County CCE

Education Center, 479 Rte. 66
Hudson, NY 12534
Phone: (518) 828-3346

Fulton & Montgomery Counties CCE

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Greene County CCE

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Mountain Avenue
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Rensselaer County CCE

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Saratoga County CCE

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Schenectady County CCE

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Columbia: John Altobelli, Bryan Samascott,
Jody Bolluyt (organic)
Fulton: Eric and Stephanie Grey
Greene: Pete Kavakos, Jr. and Jim Story
Montgomery: Jim Hoffman and Ken
Fruehstorfer (organic)
Rensselaer: Larry Eckhardt and David
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Schenectady: Al Lansing and Keith
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Saratoga: Cyndi Pastore and Craig DeVoe
Schoharie: Bob and Linda Cross, and Jake
Hooper
Washington: George Armstrong and Rich
Moses
Warren: Kim Feeney
Industry Representatives: Jay Matthews and
Paul Peckham

*If you have questions or comments about
this publication or the Capital District
Program in general, please contact your
county's grower advisory member or the
Agricultural Program leader of your local
Cornell Cooperative Extension office.*



Dates to Remember...

April 6 - Smartphones on the Farm: An Introduction to Apps for Agriculture, CCE Ontario Co, 480 N Main St, Canandaigua, 7:00 pm - 8:30 pm. Cost: \$10. Learn handy applications related to weather forecasts, product inventory, pest management, customer relations, and chemical use. Contact Nancy Anderson, 585-394-3977 x427 or nea8@cornell.edu for info and to pre-register.

April 12 - Berry Pruning Workshop (Stephentown)
The Berry Patch at Stonewall Hill Farm, 15370 NY Route 22, Stephenstown, 1:00 pm - 2:30 pm. Cost: \$10. 2.5 DEC recertification credits in categories 1a, 22 and 10. Blueberry and bramble pruning techniques, an update on scouting for potential insect pests of berries, and high tunnel production. Pre-register by April 11th. Contact Marcie, 518-272-4210 x111 or mmp74@cornell.edu.

April 13 - Agro-One Soils Lab Rescheduled Open House & Tour
See page 24

April 13 - Pesticide Special Permit Class, Wayne Co.
April 14 - Pesticide Special Permit Class, Orleans Co.
See page 18

April 14 - Berry Pruning Workshop (Duanesburg)
Scotch Ridge Berry Farm, 5092 Scotch Ridge Rd, Duanesburg, 1:00 pm - 2:30 pm. Cost: \$10. 2.5 DEC recertification credits in categories 1a, 22 and 10. Blueberry and brambles pruning plus a look at currants and gooseberries. Calibrate a backpack sprayer. Scouting for Brown Marmorated Stink bug and Spotted Winged Drosophila. Pre-register by April 11th. Contact Marcie, 518-272-4210 x111 or mmp74@cornell.edu.

April 20 - QuickBooks - Orientation for Tracking Farm Finances, Finger Lakes Community College
See page 12

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See their full advertisements on the pages listed

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