

Control of Colorado Potato Beetle & Insecticide Resistance Management

Brian Nault, Cornell—NYSAES, Geneva

(From Carol MacNeil, Cornell Vegetable Program: This article was written regarding Colorado potato beetle (CPB) control in potatoes with insecticides. The principle of rotating insecticides from different Insecticide Resistance Groups is useful for other insects and crops as well. The CPB is known for its ability to develop resistance to insecticides. On some potato farms resistance to neonicotinoid insecticides began showing up a few years ago and has become much stronger since then. Note: Not all the insecticides labeled in potatoes are necessarily labeled in tomatoes and eggplant. Read the label. There are alternatives to insecticides for managing CPB, but for growers with large fields, and a limited ability to rotate, insecticides remain key.)



Colorado potato beetle adult.
Photo: Brian Nault, Cornell

Introduction

There are a number of methods for controlling CPB. Rotating potato fields at least a quarter mile away from fields planted previously to potato (tomatoes or eggplant) is very effective. This strategy will delay and reduce the overall size of the CPB infestation. Other options such as trap cropping, use of beetle trenches and flammers have been used, but require more planning, labor and resources. These cultural approaches are described in the *Cornell Guidelines for Commercial Vegetable Production*, in hardcopy or at: <http://www.nysaes.cals.cornell.edu/recommends/24frameset.html>, and in the *Organic Potato Production Guide* at: http://nysipm.cornell.edu/organic_guide/default.asp.

For those who rely primarily or partly on insecticides, do you still use Admire® at planting to control CPB? Maybe you used to use Admire®, but now you treat your seed with CruiserMaxx®? In either case, this article should be worth reading. Admire®, CruiserMaxx® and similar products that contain a neonicotinoid insecticide may still work well for protecting your potato crop from CPB, but on some farms resistance has developed and control is failing. **The purpose of this article is to describe a strategy that should provide season-long control of Colorado potato beetles and prolong the effectiveness of insecticides, especially neonicotinoids, by using them in a manner that should delay the evolution of resistance.**

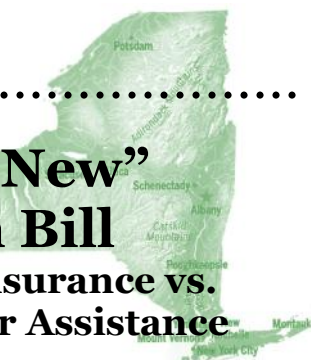
Current Management

Admire®, CruiserMaxx® or another neonicotinoid used at planting is still effective for controlling CPB infestations in many potato fields in New York. However, each year there are more instances where foliar insecticide sprays are needed to manage the second generation (Figure 1). In some cases, foliar insecticide sprays are needed for both the first and second generations, despite an application of Admire® at planting! The need for foliar insecticide

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This publication contains pesticide recommendations. Changes in pesticide regulations occur constantly and human errors are possible. Some materials may no longer be available and some uses may no longer be legal. All pesticides distributed, sold or applied in NYS must be registered with the NYS Dept of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide usage in NYS should be directed to the appropriate Cornell Cooperative Extension (CCE) specialist or your regional DEC office.

CCE and its employees assume no liability for the effectiveness or results of any chemicals for pesticide usage. No endorsement of products or companies is made or implied. **READ THE LABEL BEFORE APPLYING ANY PESTICIDE.**



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applications in potato fields treated with a neonicotinoid insecticide at planting can be a definitive sign that the CPB population on your farm has developed resistance. Admire® has been used on some farms every year since 1995 and on many others CruiserMaxx® has taken its place. **In addition, there are many other closely related insecticides that belong to the same Insecticide Resistance Action Committee (IRAC) Class 4** that may be used on potato: Provado®, Advise®, Alias®, Macho®, Montana®, Widow®, Gaucho®, Cruiser®, Assail®, Actara®, Platinum®, Couraze®, Impulse®, Nuprid®, Pasada® and Prey®. Using Admire®, CruiserMaxx® or any of these other products on an annual basis is a serious problem because the CPB population on the farm will become more resistant to ALL of these products each year. **One of the most important steps to slow down the development of insecticide resistance in Colorado potato beetle populations is to rotate different Classes of insecticides as often as possible.**

Insecticides to Consider in Rotations

There are many insecticides registered for CPB control in potato (see the *Cornell Guidelines for Commercial Vegetable Production* in hardcopy or at: <http://www.nysaes.cals.cornell.edu/recommends/24frameset.html>). There are about two dozen products available for CPB control spanning over eleven unique classes of chemistry, meaning that there are many potential insecticide rotational strategies that could be used to slow insecticide resistance development. Ideally, only a single class of chemistry should be used to manage a single CPB generation. For example, an anthranilic diamide insecticide (e.g., Coragen®) could be used to manage the first generation, while a spinosyn (e.g., Radiant® SC or Blackhawk®) could be used to manage the second generation (Figure 2).

Be Wary of Products with Multiple Active Ingredients. There are several products labeled for CPB control that combine more than one class of chemistry. For example, Voliam Xpress®, Endigo ZC® and Leverage® 360 all include a pyrethroid insecticide and either an anthranilic diamide or a neonicotinoid insecticide. Use of these products may select the CPB population to simultaneously develop resistance to both classes of chemistry. To avoid this possibility, consider using products that have a single insecticide active ingredient. Alternatively, select one of these multiple active ingredient products in which one of the two active ingredients is not likely to be used as a “stand-alone” treatment. For instance, resistance to pyrethroids is widespread in CPB populations, making this class generally ineffective for managing this pest and is a low priority to conserve for future potato beetle management. Therefore, either Voliam Xpress® or Endigo ZC® could be a reasonable choice because the anthranilic diamide and neonicotinoid active ingredient is “doing most or all of the work” with little to no help from the pyrethroid component (although the pyrethroid may be useful for controlling other potato pests).

New Product in the Pipeline. A close cousin to Coragen® is in the pipeline for registration on potato for control of CPB adults and larvae, caterpillars and potato leafhopper. The active ingredient is called cyantraniliprole, which is an anthranilic diamide, and there will be two formulations. One formulation will be for use at planting called Verimark®, the other for use as a foliar spray called

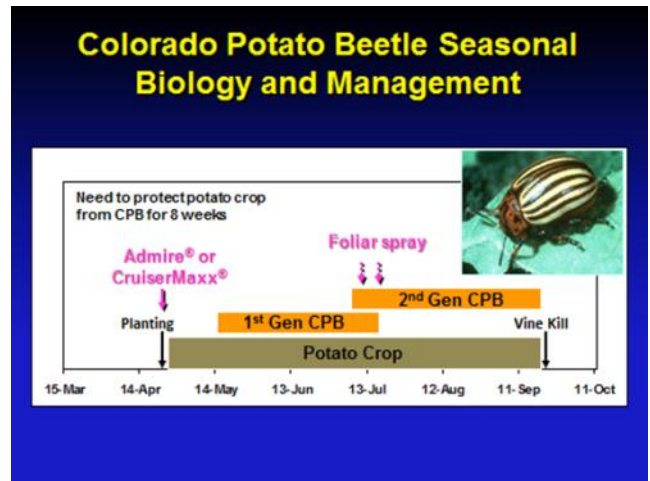


Figure 1. Approach for managing Colorado potato beetle in potatoes on some farms in New York.

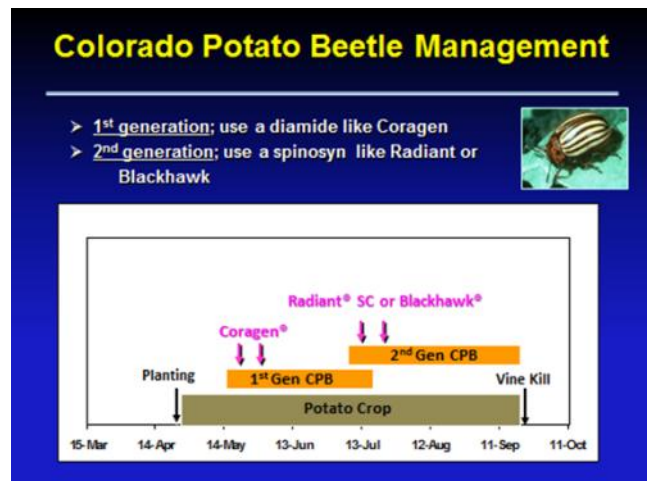


Figure 2. An approach for managing CPB in potatoes that should provide great control, but also slow down insecticide resistance. Note that products belonging to different classes of chemistry target only a single generation.

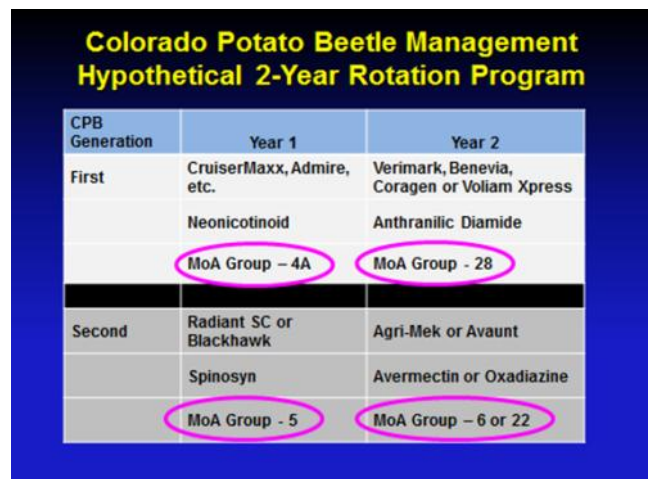


Figure 3. Hypothetical two-year insecticide rotational program that should provide excellent season-long control of CPB and also slow down the evolution of resistance to any of these products.

Benevia®. Both products have systemic activity and are excellent against CPB. DuPont™ anticipates registration of these products in New York in time for the 2013 season.

Hypothetical Two-Year Insecticide Rotation for Near Future. There is a strong preference, by many potato growers, for using an insecticide at planting to control first-generation CPB. Currently, the only at-plant options include neonicotinoid products like Admire® and CruiserMaxx®. As mentioned above, the anthranilic diamide product Verimark® is likely to be available as an at-plant option beginning in 2013 (Figure 3).

For 2012, non-neonicotinoid options applied as foliar sprays that would control both adults and larvae include products similar to Verimark®, like Coragen® and Voliam Xpress® (Figure 3). Regardless of which option may be taken to manage the first-generation of CPB, a product belonging to a different class should be considered for managing the second generation. Possible options include a spinosyn like Radiant® SC or Blackhawk®, an avermectin like Agri-

Mek® SC or Abba® 0.15EC, or an oxadiazine like Avaunt® (Figure 3). Others that might be considered for controlling larvae, especially small larvae, include Neemix® 4.5, Ecozin® 3EC, Novodor®, Kryocide® or Trigard®. **Note that each insecticide class is represented only one time in 2 years (Figure 3). This strategy should expose only 1 generation out of every 4 generations on a farm to a particular class of chemistry and should slow down the evolution of resistance to any one of these products.**




Colorado potato beetle larva.
Photo: Brian Nault, Cornell

Additional Thoughts on Colorado Potato Beetle Control

Insecticide use for CPB control can be reduced by spraying potato field edges where the overwintered adults initially colonize rather than the entire field. Another tactic is to scout fields and time sprays following action thresholds. Scouting methods and thresholds are described in detail in the *Cornell Guidelines for Commercial Vegetable Production* in hardcopy or at <http://www.nysaes.cals.cornell.edu/recommends/24frameset.html>. In general, timing the first spray after most eggs have hatched, but before many large larvae are present, is recommended. A second application timed one week later may also be needed.

Note: The Provado Insecticide label has been consolidated into the Admire Pro label. Admire Pro is now labeled for all the foliar uses that Provado was (including in NYS). On potatoes, 3.8 fl. ozs./acre of Provado = 1.3 fl. ozs./acre of Admire Pro. (Danny Digiacomandrea, Bayer CropScience) ■




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Crop Insurance Deadline—March 15th

The deadline for purchasing crop insurance for most vegetables in NYS is **March 15th**. For more details go to USDA Risk Management Agency at: <http://www.agriculture.ny.gov/AP/CropInsuranceBasics.html> ■

2012 Farm Bill Hearings

Sen. Debbie Stabenow, Senate Committee on Agriculture, Nutrition and Forestry

The following hearings on the 2012 Farm Bill have been scheduled by the Senate Committee on Agriculture, Nutrition and Forestry (subject to change). Witnesses, times and other details to be announced. For more information submitting letters, go to: <http://www.ag.senate.gov/>

March 14 – Hearing on Healthy Food Initiatives, **Local Production** and Nutrition, to explore innovative opportunities in agriculture through policies that assist the development of local markets for farmers – connecting them to the growing consumer demand for locally-produced food.

March 21 – Hearing on **Risk Management** and Commodities in the 2012 Farm Bill, to evaluate the need for and cost effectiveness of risk management tools available to farmers who continue to face volatile crop prices and input costs, and the threat of natural disasters; and how the federal government can provide appropriate risk-management tools while making the best use of limited resources. ■

Conservation Reserve Program Sign-Up

U.S. Department of Agriculture

U.S. Department of Agriculture will conduct a four-week Conservation Reserve Program general **signup March 12 through April 6**. CRP has a 25-year legacy of successfully protecting the nation's natural resources through voluntary participation, while providing significant economic and environmental benefits to rural communities across the United States.

Producers enrolled in CRP plant long-term, resource-conserving covers to improve the quality of water, control soil erosion and develop wildlife habitat. In return, USDA provides participants with rental payments and cost-share assistance. Contract duration is between 10 and 15 years. Producers with expiring contracts and producers with environmentally sensitive land are encouraged

to evaluate their options under CRP. Producers also are encouraged to look into CRP's other enrollment opportunities offered on a continuous, non-competitive, signup basis. For more information on CRP and other FSA programs, visit a local FSA service center or www.fsa.usda.gov. ■

The "New" Farm Bill: Crop Insurance vs. Disaster Assistance

Fay Benson, CCE – South Central NY Dairy Team

The USDA classifies New York as an underserved state for crop insurance since in general we aren't using crop insurance to cover our agricultural production at rates seen in other areas of the country. This will put New York at a disadvantage. **The Farm Bill is heading away from Disaster Assistance and Direct Payments to more reliance on Risk Management** for farmers' protection from disaster events. The January 2012 report from the Congressional Budget Office crystallizes this proposal.

Mandatory spending for agricultural support totaled \$15 billion in 2011; it is projected to average \$16 billion in each year between 2012 and 2022, under the assumption that current farm programs remain in place after the 2008 farm bill (the Food, Conservation, and Energy Act of 2008, P.L. 110-246) expires in 2012. That spending will dip in 2012, to about \$13 billion, largely because of changes in the timing of mandated payments for crop insurance and commodity programs. Starting in 2013, spending for the crop insurance program is expected to rise as a result of projected increases in crop prices and the value of insured crops. The higher spending for crop insurance will be offset by the **scheduled termination of some agricultural support programs, such as agriculture disaster assistance** and payments to tobacco growers.¹

If **Crop Insurance** is to become one of the key avenues for farms to receive federal protection from adverse weather or market events, New York Farmers will be at a disadvantage since they have not had the experience of using it on their farms. They will need to learn more about Crop Insurance and how it can fit their farm. If a natural disaster occurs or market prices plunge, crop insurance allows the producer to pay bills and remain in operation. Beyond this fundamental strength, there are other benefits of crop insurance to producers, government and the public.²

1. Producers share in the program cost. When a producer wants crop insurance coverage, the producer must pay for it. While the program is partially subsidized by the government, producers have substantial "skin in the game."
2. Producers receive crop insurance indemnities in the timeliest way. While some farm programs may make payments fairly promptly, such as marketing loan benefits, others pay out long after the payments are needed. For example, the Supplemental Revenue Assistance Payments Program (SURE) payments may occur about 1 1/2 years after harvest. Crop insurance policies require the companies to pay within 30 days of claim settlement. Losses due to disasters like

floods or hurricanes and prevented planting and replant payments may be paid well before harvest.

3. Producers can use crop insurance as collateral for loans. When bankers loan to a producer, they require an expectation that the loan can be repaid. Many producers use land, equipment or crops as collateral to secure the loan.
4. Producer indemnities are not capped by arbitrary payment limits. There are no income caps to be eligible to buy crop insurance, and crop insurance premium subsidies and indemnities are not limited.
5. Crop insurance has already contributed to deficit reduction. While the budget for the new farm bill remains uncertain, it is likely to be quite limited. The crop insurance program has the benefit of having recently undergone substantial budget cuts, most of which have been earmarked for deficit reduction.

To learn more about **Crop Insurance in New York** visit the NYS Department of Agriculture and Markets Crop Insurance Education Program at: <http://www.agriculture.ny.gov/AP/CropInsurance.html> or contact Sarah Johnston at: 518-457-4531 or sarah.johnston@agriculture.ny.gov ■

¹ The Congressional Budget Office (CBO) : http://www.cbo.gov/ftpdocs/126xx/doc12699/01-31-2012_Outlook.pdf. ² Source: National Crop Insurance Services *TODAY* () February 2011

Vegetable Report—2011 Annual Summary, 1/12

USDA, NASS, NY Office and NY Dept. of Ag & Markets

The value of all New York vegetable production in 2011 totaled \$355.5 million, according to King Whetstone, Director of USDA's National Agricultural Statistics Service, New York Field Office. New York ranked fifth in the nation for area harvested and value of principal fresh market vegetables.

The value of the Empire State's principal fresh market vegetables totaled \$329 million this year. Fresh market production in 2011 was estimated at 11.3 million hundredweight (cwt.).

Processing vegetables were valued at \$27.0 million in 2011 and production totaled 113 thousand tons.

Principal Vegetables for Fresh Market New York, 2009-2011

Year	Planted	Harvested	Production	Value
	-- <u>1,000 acres</u> --		<u>1,000 cwt.</u>	<u>Million dollars</u>
2009	68.2	64.1	12,189	301.2
2010	69.9	67.3	14,058	374.3
2011	66.1	58.5	11,258	328.5

Principal Vegetables for Processing New York, 2009-2011

Year	Planted	Harvested	Production	Value
	-- <u>1,000 acres</u> --		<u>1,000 tons</u>	<u>Million dollars</u>
2009	51.5	50.0	208.0	47.6
2010	58.6	49.0	244.6	47.6
2011	25.2	23.4	112.8	27.0

Major New York Fresh Market Vegetables

Crop and Year		Planted	Harvested	Yield per acre	Production	Marketing year average price	Value
		<u>Acres</u>	<u>Acres</u>	<u>Cwt.</u>	<u>1,000 cwt.</u>	<u>Dollars per cwt.</u>	<u>1,000 dollars</u>
<u>CUCUMBERS</u>	2009	3,400	3,200	120	384	41.80	16,051
	2010	3,000	2,800	170	476	38.80	18,469
	2011	3,000	2,900	160	464	40.00	18,560
<u>SNAP BEANS</u>	2009	7,100	6,700	40	268	88.00	23,584
	2010	6,900	6,700	70	469	83.60	39,208
	2011	5,600	5,300	61	323	96.10	31,040
<u>SWEET CORN</u>	2009	23,100	21,500	100	2,150	27.10	58,265
	2010	23,500	22,800	120	2,736	26.00	71,136
	2011	23,300	19,600	95	1,862	28.80	53,626
<u>TOMATOES</u>	2009	2,700	2,500	140	350	93.50	32,725
	2010	2,900	2,800	140	392	72.70	28,498
	2011	3,000	2,700	160	432	84.80	36,634
<u>BELL PEPPERS</u>	2009	1,100	1,000	250	250	49.30	12,325
	2010	1,200	1,100	175	193	51.30	9,900
<u>PUMPKINS</u>	2009	6,600	6,000	125	750	29.00	21,750
	2010	7,100	6,800	215	1,462	24.00	35,088
	2011	6,800	6,300	110	693	34.10	23,631
<u>SQUASH</u>	2009	4,700	4,500	120	540	42.60	23,004
	2010	4,700	4,600	195	897	41.00	36,777
	2011	4,900	4,400	190	836	51.30	42,887

New York Fresh Market Vegetables

Crop and Year		Planted	Harvested	Yield per acre	Production	Sales ^{1/}	Marketing year average price	Value
		<i>Acres</i>	<i>Acres</i>	<i>Cwt.</i>	<i>1,000 cwt.</i>	<i>1,000 cwt.</i>	<i>Dollars per cwt.</i>	<i>1,000 dollars</i>
CABBAGE	2009	9,600	9,000	380	3,420	3,051	18.30	55,833
	2010	10,600	10,400	430	4,472	4,150	21.20	87,980
	2011	10,900	10,700	440	4,708	4,332	20.00	86,640
ONIONS	2009	10,600	10,300	415	4,275	3,634	18.60	67,592
	2010	10,700	9,800	315	3,087	2,726	19.70	53,702
	2011	8,100	6,200	305	1,891	1,589	20.80	33,051

^{1/} Excludes quantities lost from shrinkage and waste.

New York Processing Vegetables^{1/}

Crop and Year		Planted	Harvested	Yield per acre	Production	Marketing year average price	Value
		<i>Acres</i>	<i>Acres</i>	<i>Tons</i>	<i>Tons</i>	<i>Dollars per ton</i>	<i>1,000 dollars</i>
SNAP BEANS	2009	20,000	19,400	2.87	55,670	267.0	14,864
	2010	25,600	22,100	3.91	86,520	250.0	21,587
	2011	15,100	13,600	3.75	50,970	298.0	15,204

^{1/} The following crops cannot be published to avoid disclosure of individual operations: Cabbage for Kraut, Green Peas, and Sweet Corn. Beets for Canning unavailable due to budget constraints.

K. Whetstone, B.L. Smith, O. Hall, R1 12 Jan

For more information go to: www.nass.usda.gov/ny ■

Survey of Bird Damage to Fruit Crops

Juliet Carroll, Fruit IPM Coordinator, NYS IPM Program



Fruit loss to birds is a longstanding and costly problem that has received little coordinated attention from researchers, until now. Attention to these issues is about to increase, as a new multi-state, multi-year research project kicks off this year. In March 2012, fruit producers across New York will be receiving a mail survey focused on assessing bird damage to 'Honeycrisp' apples, sweet and tart cherries, wine grapes, and blueberries. The survey is being conducted by the Human Dimensions Research Unit at Cornell University, in cooperation with the New York Apple Association, the New York Wine & Grape Foundation, the New York State Berry Growers Association and the Department of Horticulture.

The official title of the project is "Limiting bird damage in fruit crops: integrating economic, biological, and consumer information to determine testable management strategies for the future." It is sponsored by the National Institute of Food and Agriculture (USDA). The project involves a diverse group of university and fruit marketing collaborators in Michigan, California, Washington and New York. Faculty at Michigan State University are coordinating the project nationally.

The primary long-term goal of the project is to provide fruit producers with effective, environmentally sustainable

bird management strategies, based on clearly identified costs and benefits. Secondary goals include providing citizens and officials in fruit-growing areas with economic information about the costs of bird damage and increasing information available to consumers about bird-management strategies.

For more information about the fruit producer survey, please contact William (Bill) Siemer, Dept. of Natural Resources, Cornell, at (607) 255-2828 or wfs1@cornell.edu. ■

	Filling Your Crop Needs	
	Elba Muck: Doug Rathke 716.474.0500 cell; 585.757.6642	Knowlesville: Kirk Zinkievich 585.798.3350
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Producers' Opinions on MarketMaker Impacts

Khin Mar Cho and Donald J. Tobias, Cornell Cooperative Extension-New York City



MarketMaker is a free, web-based resource created to link farmers, processors, retailers, consumers, and other food chain participants. The national MarketMaker network, currently supported by 23 states, contains one of the most extensive collections of searchable food industry businesses in the United States.

Producer Evaluation Survey

In 2009, a producer evaluation survey was conducted to measure farm-level impact of NY MarketMaker usage by producers. The questionnaire was sent to 700 producers who registered with the site. The survey received a response rate of 53% (374 responses).

Figure 1 shows how producers use the NY MarketMaker site. Thirty-two respondents reported they frequently search for sales contacts, 89 said sometimes, 49 said rarely, and 68 said never. Fourteen respondents said that they frequently look for other farm products, 57 said sometimes, 31 said rarely, and 120 said never. Fifty-two said they frequently look for food industry contacts, 80 said sometimes, 49 said rarely, and 58 said never. Forty-three producers responded that they frequently check their business profile, 90 said sometimes, 120 said rarely, and 20 said never.

Producers estimated the dollar value of their business sales helped or started by MarketMaker (see Figure 2). Eight producers responded that MarketMaker helped their business sales in the dollar value of \$5,000-\$9,999; 36 responses showed the estimated dollar values of \$1,000-\$4,999; 132 producers responded the dollar value of \$500-\$9,999; 136 responded \$100-\$499, and the remaining 52 answered under \$100.

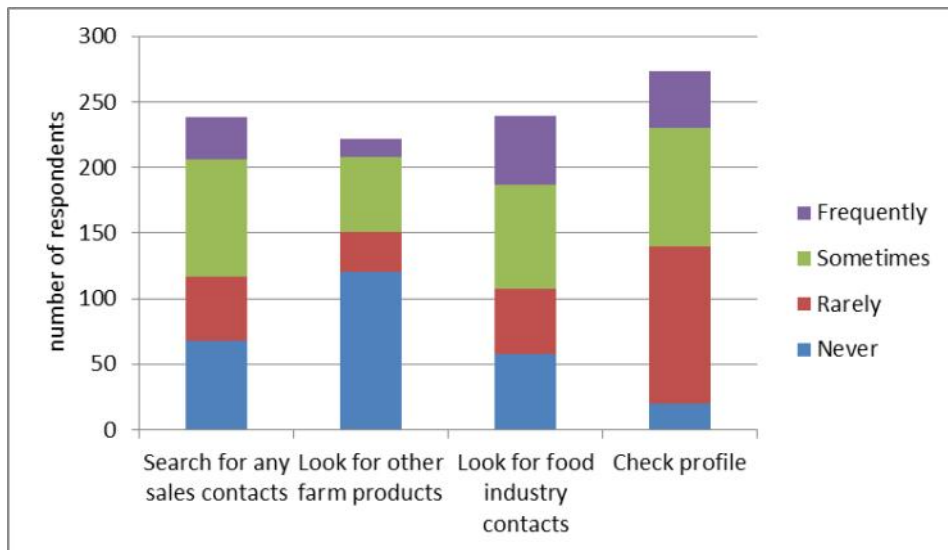
The majority of the respondents, 56.3%, reported that 10-25% of their farm-level income increased from direct and niche marketing activities conducted through MarketMaker. The survey results also

indicate that NY MarketMaker helps small- and mid-sized producers in making marketing contacts, connecting direct to individual consumers, restaurants, farmers markets, and institutional buyers as well as finding producers and their farm products; and finding food industry business partners.

The survey results were shared with

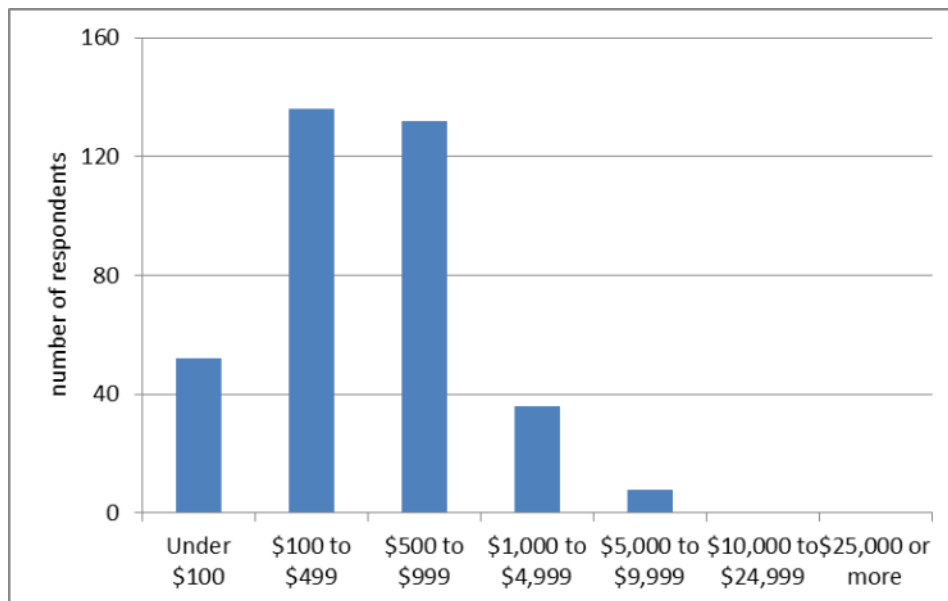
producers, consumers and food industry related stakeholders and are available through our website at: <http://nyc.cce.cornell.edu>. Other publications, brochures, fact sheets, annual reports, harvest calendar, and "How-to" manuals are available online at <http://nymarketmaker.conell.edu> and <http://nyc.cce.cornell.edu>. ■

Figure 1. Producers' Responses to How They Use NY MarketMaker



Source: Survey Results (2009)

Figure 2. The Dollar Value of the Business Sales Helped by NY MarketMaker



Source: Survey Results (2009)

Capital District New Farmer Education Grant

Crystal Stewart, Capital District Vegetable & Small Fruit Program

If you are, or if you know of, a vegetable grower in one of the 11 participating counties of the Capital District Vegetable & Small Fruit Program, with 5 years or less of production experience, please contact us soon. Crystal Stewart and the CDVSF team have received a 2 year, USDA Farmers' Market Promotion Pro-

gram grant. This grant will pay for 2 years of enrollment in the CDVSF program (a \$150 value) for the new farmers, and also enable the participants to gain access to production, marketing, business management and food safety training that they might not have known how to access otherwise. The new farmers

will meet together throughout the 2 year program, and also have individual consults with specialists. For more information, please contact Crystal Stewart at 775-0018 or cls263@cornell.edu or Laura McDermott at 791-5039 or lgm4@cornell.edu. ■

Pesticide Trainings & Recertification Classes

<p>Pesticide Recertification Day Thursday, March 15 The Century House, Latham</p>	<p>Pesticide use, safety, pest management, up to 6 DEC credits. Morning - core credits; afternoon - category specific credits for 3a, 1a, 7a and private categories. Registration required. Contact Chuck Schmitt at 518-765-3513 or cgs34@cornell.edu</p>
<p>Pesticide Certification Core Exam Prep (& Exam) & Core Recertification Credits Meetings March 20 & 22; Exam March 22 Trolley Bldg, Orleans Co. Fairgrounds, 12690 Rt. 31, Albion</p>	<p>March 20: 8:15 am – noon (regulations, pesticides, personal protective equipment); 12:30 - 3:45 pm (Integrated Pest Management, the label) March 22: 8:15 am – noon (mixing pesticides, calibration, storage) \$25 per training or \$65 for all three (\$45 for CCE Orleans Co. enrollees). DEC pesticide credits will be available. Training meeting preregistration: Contact Vicki Jancef, x33 or Kim Hazel, x26, at 585-798-4265. <u>NYS DEC Pesticide Certification Exam: March 22, 1 – 4 pm</u>, \$100 fee. To register or if you have questions contact Gail Mortimer, NYS DEC at 585-226-5423.</p>
<p>DEC Special Permit Training Class for Non-Certified Applicators and Handlers of Federally Restricted-Use Pesticides</p> <hr/> <p>Wayne County Tuesday, April 10, 2012 English Session: 9:00 am - 12:00 pm Spanish Session: 1:00 pm - 4:30 pm Registration: 8:30 am (English) and at 12:30 pm (Spanish) CCE Wayne County 1581 Rt. 88N, Newark</p> <hr/> <p>Orleans County Wednesday, April 11, 2012 English & Spanish sessions 9:00 am - 12:30 pm Registration: 8:30 am Orleans County Cooperative Extension Fairgrounds Trolley Bldg. Rte. 31, Knowlesville (between Albion and Medina)</p>	<p>Certified Supervisors are required to attend the first 30 minutes of training! 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</p> <p>\$20 per DEC Special Permit</p> <p>DEC Special Permit allows non-certified workers to apply and handle federally restricted use pesticides: The Special Permit does not relieve the responsibility of the certified applicator who supervises these employees, but it does relieve the requirement of “on-site, within voice contact” supervision while these pesticides are being applied.</p> <p>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..</p> <p>DEC Special Permit training At Special Permit trainings, we review with non-certified applicators Worker Protection Standard (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.</p> <p>To register contact Kim Hazel: 585-798-4265 x26 or krh5@cornell.edu</p>

Upcoming Meetings

<p>Winter High Tunnel Pest Management Meeting Monday, March 5 10:00 am - 12:00 pm Canticle Farm CSA 3835 South Nine Mile Rd, Allegany</p>	<p>No charge. Come learn about growing winter greens in unheated high tunnels. Observe a winter harvest of greens at Canticle Farms and learn about organic winter pest management. Judson Reid will share data on managing pests such as aphids, slugs, worms and thrips. Register with Katie Klotzbach at 585-798-4265 or email kep39@cornell.edu. <i>Sponsored by NESARE.</i> Canticle Farm is a non-profit Community Supported Agriculture (CSA) farm guided by a dedicated core group of local residents.</p>
<p>Reduce Your Tomato Seed-Borne Diseases! Seed Heat Treatment Workshop Wednesday, March 7 9:00 am—1:00 pm Lilac Rm, CCE Monroe County 249 Highland Ave, Rochester</p>	<p>\$10 - Pre-registration required. Contact Robert Hadad 585-739-4065 or rgh26@cornell.edu. Includes a presentation, hands-on demonstration and construction of your own drying screen. You can bring some seed to treat. (Meeting also planned in Eastern NY – Contact Chuck Bornt at cdb13@cornell.edu or 859-6213.)</p>
<p>Greenhouse IPM In-depth Thursday, March 8 CCE Yates County 417 Liberty St, Penn Yan</p>	<p>Including thrips, Botrytis and testing potting mix for pH and salts. DEC pesticide credits will be available. Contact Judson Reid at 585-313-8912.</p>
<p>Farm Disaster Prep Certificate Course Thursday, March 8 8:30 am - 2:30 pm CCE Genesee County 420 E Main St, Batavia</p>	<p>\$35 includes lunch. The Farm Disaster Preparation Certificate program will help farmers plan for and manage disasters. Farms that complete this training will receive a certificate to for their insurer for credit or discount toward their premium. The insurance policyholder must attend. Contact Jackson Wright at 585-746-3016 or Jan Beglinger at 585-343-3040 x132 or jmb374@cornell.edu by March 1.</p>
<p>Vegetable Production, Pest Management & Marketing Meeting Monday, March 12 12:30 pm - 4:00 pm NYS Fairgrounds, Martha Eddy Room, Art & Home Center, Syracuse</p>	<p>~2 DEC and CCA credits will be available. Free for enrollees in the Cornell Vegetable Program, \$10 for others. Enroll at the meeting for free admission! To pre-register contact Lorene Nans at 315-424-9485 or lmn66@cornell.edu</p>
<p>Greenhouse Intensive IPM Meeting Tuesday, March 13 10:00 am - 4:00 pm CCE Saratoga County 50 W High St, Ballston Spa</p>	<p>\$25 includes lunch and a tour of Sunnyside Gardens' greenhouses. Also includes thrips, Botrytis and testing potting mix for pH and salts. DEC pesticide credits will be available. To register contact Sharon LaPier at (518) 885-8995 or stl32@cornell.edu.</p>
<p>GAPs Food Safety Workshops: Develop Your Own Farm Food Safety Plan March 14 & 15 8:30 am - 3:30 pm Albany</p>	<p>This workshop will teach growers about GAPs (Good Agricultural Practices), for food safety. Attendees will write their own farm food safety plans. You must attend both days. A laptop computer is required for the second day, but we may lend you one for the day on request. Growers will be invited to a mock third party audit during the growing season. Contact Chuck Bornt at cdb13@cornell.edu or 518-859-6213, or Craig Kahlke at ckf24@cornell.edu or 716-433-8839 x237. <i>Sponsored by: Cornell Cooperative Extension, NYS Dept. of Agriculture & Markets, and the National GAPs Program.</i></p>

<p>2012 NYS Dry Bean Meeting Monday, March 19 9:00 am - 3:00 pm LeRoy Country Club 7759 E Main Rd, 1 mi east of LeRoy</p>	<p>2+ DEC, and CCA credits will be available. If pre-registered by March 12: \$20 for current enrollees in the Cornell Vegetable Program; \$30 for others; \$5 extra at the door. To pre-register or for sponsor opportunities contact Angela Parr at 585-394-3977 x426 or aep63@cornell.edu</p>
<p>Spray Technology for Small Acreage, Diversified Vegetable & Fruit Growers Monday, March 19 2:00 pm—4:00 pm Clearview Farm, 243 Faas Rd, Palmyra</p>	<p>Join Cornell, CCE and CVP staff, along with farmer Kurt Forman to learn the importance of droplet size for good coverage, how to calibrate a backpack sprayer and calculate application rates for small areas, and discuss ideas for low-cost scaling up to tractor-mounted boom sprayers. Please bring photos, diagrams, ideas to share. Contact Abby Seaman at 315-787-2422 or ajs32@cornell.edu with questions.</p>
<p>Farms Working Together: Collaborative Marketing for Profitability Tuesday, March 20 8:30 am - 3:30 pm Ravenwood Gold Club Conference Center, 929 Lynaugh Rd, Victor</p>	<p>This seminar is devoted to the modern ways small-scale family farms can increase their marketing power through collaboration. Experienced farmer-marketers will share multi-farm CSAs, Internet-based farm markets, and food hubs. Learn about key legal considerations. <i>Hosted by Cornell Cooperative Extension of Ontario County with support from the Genesee Valley Regional Market Authority</i> \$35 per person. Pre-registration required by March 16. Call CCE Ontario Co., 585-394-3977 x 427 or send name, address and phone number to nea8@cornell.edu</p>
<p>Sweet Potato School Tuesday, March 20 10:00 am - 2:00 pm CCE Albany County</p>	<p>Recommended cultural practices and results of 2 years of variety trials. Contact Chuck Bornt at cdb13@cornell.edu</p>
<p>2012 Northeast Biomass Heating Expo & Vendor Fair March 21 - 23 Saratoga Springs City Center Saratoga Springs</p>	<p>\$249 registration. The Expo includes speakers on biomass heating fuels like pellets, woodchips, and energy crops such as perennial grasses, to educate and explore the potential for expansion of biomass energy in the Northeast. Go to: http://nebiomassheat.com/program.html. Contact 978-669-5019 or info@nebiomassheat.com</p>
<p>Northeast Agricultural Biomass Heating Seminar March 21, 10:00 am—5:00 pm</p>	<p>(\$59 for just the Ag Seminar).</p>
<p>Forecasting Tomato/Potato Late Blight Risk for YOUR Farm – Online Workshop</p> <hr/> <p>Wednesday, March 21 1:00 pm—3:45 pm CCE Genesee County 420 E Main St, Batavia</p> <hr/> <p>Friday, March 23 9:00 am—11:45 am NYS Ag Experiment Station Barton Lab, Room A137, Geneva</p>	<p>Free for Cornell Vegetable Program enrollees; \$5 for others Set up your farm location, sign up for email/text messages, receive forecasts for 3 days into the future, and learn to use the system. Pre-register by Mon, March 12th. Leave your email address, phone number, and whether you'll be bringing a laptop. Contact Carol MacNeil at crm6@cornell.edu or 585-313-8796. ~ 2 DEC pesticide credits.</p>

Upcoming Meetings (continued)

Identification, Assessment & Management of Soil-Borne Plant Pathogens in Vegetable Production Systems

Thursday, March 22

8:30 am - 4:30 pm

CCE Saratoga County, Ballston Spa

This workshop will train participants to identify, assess and manage soilborne pathogens. Resources that can be used on-farm and in various outreach activities will be provided. Cost: \$10 includes lunch, breaks, 3-ring binder of resources, and trowels. Pre-register by March 12, contact Marcie Vohnoutka, 518-272-4210. *Funded by NE-SARE.*

Genesee County 10th Annual Celebrate Agriculture Dinner

Saturday, March 24 at 6:00 pm

Alexander Fire Hall, Rt 98, Alexander

Tickets are \$25 or \$230 for a table of ten, available from the Genesee Co. Chamber of Commerce, 210 E. Main St, Batavia, or call the CCE office at 585-343-7440 x27. *Coordinated by: CCE - Genesee Co, Genesee Co. Chamber of Commerce, Genesee Co. Soil & Water Conservation District and Genesee Co. Farm Bureau*

Garlic School

Monday, March 26 - CCE Albany Co.

OR

Tuesday, March 27 - NYS Agriculture Experiment Station, Geneva

10:00 am - 2:00 pm

Garlic culture and pest management, including an update on the garlic bloat nematode. David Stern, founder of the Garlic Seed Foundation, is a speaker. \$20 for those enrolled in CDVSFP or the CVP; \$25 for others.

To sign up for the Albany location, contact Crystal Stewart at 518-775-018 or cls263@cornell.edu. To sign up for the Geneva location, contact George Abawi at 315-787-2374 or gsa1@cornell.edu; or Robert Hadad at 585-739-4065 or rgh26@cornell.edu

GAPs Food Safety Workshops: Develop Your Own Farm Food Safety Plan

March 28-29

8:30 am - 3:30 pm

Syracuse

This workshop will teach growers about GAPs (Good Agricultural Practices), for food safety. Attendees will write their own farm food safety plans. You must attend both days. A laptop computer is required for the second day, but we may lend you one for the day on request. Growers will be invited to a mock third party audit during the growing season. Contact Craig Kahlke at ckf24@cornell.edu or 716-433-8839 x237. *Sponsored by: Cornell Cooperative Extension, NYS Dept. of Agriculture & Markets, and the National GAPs Program.*

Season Extension: Meeting the Demand for Local, Natural Food

Tuesday, April 3

9:00 am - 2:00 pm

Alfred State University, Alfred, and Quest Farms, Almond

Come learn about the latest techniques in organic farming and season extension from Alfred State College and Cornell vegetable specialists. This workshop will include a tour of an organic high tunnel as well as information from NRCS on their popular high tunnel grant program. DEC credits requested. Contact Lynne Bliven at CCE Allegany Co: 585-268-5939 x18 or lao3@cornell.edu. *Sponsored by NESARE.*

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Expect Worker Protection Standards (WPS) Inspections

Sandy Menasha and Alice Wise, CCE - Suffolk Co.

(Note: At the Cornell Pesticide Management & Education Program Update last November NYS Dept. of Environmental Conservation (DEC) staff explained that they would be increasing inspections for Worker Protection Standard compliance along with their record-keeping inspections. Brush up on the requirements of the Worker Protection Standard!

If only immediate family members work on your farm do you think the Worker Protection Standard doesn't apply to you? Wrong! The use of personal protective equipment (PPE), following early entry worker requirements, and compliance with re-entry intervals (REI) for non-handlers still apply. ed. C. MacNeil, CVP)

Time to go through the checklist to make sure everything is in order for the upcoming season. For more information, or to order any WPS training materials, the EPA website has extensive information online at: <http://www.epa.gov/pesticides/health/worker.htm>

1. Check decontamination kits and upgrade as necessary:

- coverall, soap and a stack of single use towels.
- have fresh water, enough for routine washing (at least 1 gal. per worker using the site) and emergency eye flushing. If the decontamination kit might be used by a pesticide handler, there must be enough water for washing of the entire body in case of emergency, at least 3 gal. per handler.
- check eyewash expiration date.
- decontamination kits must be within ¼ mile of all workers. Portable kits might be a good option.
- make sure all your handlers and workers know where the decontamination sites are and what they contain.

2. Where eye protection is required on a pesticide label, the WPS guidelines say the eyewash must be “immediately accessible” to a pesticide handler. The need for eye protection will be listed on the pesticide label in the box entitled “Agricultural Use Requirements”, in the

section listing PPE (personal protective equipment). The emergency eyewash water (1 pint) must be carried on the tractor. However, if the applicator gets off the tractor, the eyewash must be carried on their person.

3. Check your central posting area. This has been a source of violations in years past. Make sure emergency contact information is accurate. If the WPS safety poster is in poor condition, get a new one. Have your blank pesticide application forms together – they need to have location and description of area to be treated, product name, EPA registration no., active ingredient(s), date and time pesticide is scheduled to be applied, and the restricted-entry interval (REI). You are required to post this information before each application begins. Note that the 30 day posting requirement for all applications starts after the REI expires. A farm map is suggested for the central posting area so that workers can easily ID the location of all farm fields.

4. Train new workers within 5 days. Handlers and early-entry workers must be trained before they do work. Remember also that handlers and workers must be trained at least once every 5 years – check your records on long-term employees. Training must be done by a licensed applicator.

5. Look at the “Agricultural Use Requirements” box on the pesticide label for a list of required PPE. Make sure PPE is adequately stocked – chemical resistant suits, gloves, aprons, protective eye-wear, boots, and respirators. Check respirator cartridges for an expiration date.

6. Start accumulating copies of pesticide labels. All applicators must have a copy of the label immediately accessible.

Some growers deal with individual labels, some put together a notebook to be carried with the tractor.

7. When making a pesticide application, the following items must be on the tractor: appropriate pesticide label(s) and one pint of eyewash. Additionally, the

licensed applicator must carry their license on their person. Don't forget, if the applicator gets off the tractor to adjust something, the eyewash must also be carried on their person. Also, they must be wearing the appropriate PPE if they get off the tractor to check the sprayer or something in the field.

8. Take an inventory of pesticides and assure products are currently registered at <http://pims.psur.cornell.edu>. If you have products that are not registered put a note on the product “not for use” until it can be properly disposed of.

9. Finally, tidy up your pesticide storage area. A disorganized, messy storage area is a red flag to an inspector. Pesticide storage guidelines can be found at: <http://www.dec.ny.gov/regulations/8871.html>

(From the Long Island Fruit & Vegetable Update, 3/11) ■

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High Tunnel Pepper Variety Trial, 2011

Judson Reid, Kathryn Klotzbach and Nelson Hoover, Cornell Vegetable Program

Introduction - If you read last month's VegEdge you know that tomatoes can give excellent yields in high tunnels. However peppers offer a viable option to tomatoes as they require less labor, and suffer from fewer insect pests and diseases. In 2011 the Cornell Vegetable Program completed its third year of high tunnel pepper trials.

Materials and Methods - Pepper varieties Alliance, Gordo, Sandpiper, Yellow Crest and Vanguard were seeded in a heated greenhouse on March 1 and transplanted into a high tunnel on May 6. The high tunnel, fabricated on farm, is a 30 by 120 foot galvanized steel structure with a single layer of polyethylene. Plants were trellised with twine and stakes to prevent lodging. Peppers were harvested from June 25 to October 25. The weight and number of marketable fruit was recorded at each harvest date and average yields calculated. A very thorough explanation of our trial methods is available online at: <http://cvp.cce.cornell.edu>.

Results - Yield as measured by pounds of fruit per plant were not significantly different among the five varieties. Sandpiper was the highest yielding as measured by pounds and number of fruit per plant, although in the same statistical grouping as the other varieties (Table 1). However there were significant statistical differences in number of fruit per plant. Yellow Crest was by far the highest yielder with 35.44 fruit per plant. Significant differences were detected in fruit weight, with Yellow Crest the lightest and Gordo the heaviest.

Discussion and Conclusions - The peppers evaluated in 2011 performed very similar in total yield per plant as measured by pounds. When we look at fruit size and weight we do find differences that can help growers make choices in variety. When selling by the piece, in a retail setting, varieties such as Yellow Crest would work well. For wholesale accounts varieties such as Gordo will fill bushel boxes faster. Sandpiper, a slightly smaller fruit than the other bell peppers in this trial, gave very good yields and offers a nice color spectrum (see photo - *more on the CVP website*).

High tunnels are a great tool for vegetable growers to increase quality and color of bell peppers. In a 30 x 96' high tunnel (2880 sq ft), we can grow 480 peppers (5 sq ft/plant). Planted uniformly to our highest yielding variety, Yellow Crest, we can harvest 4056 lbs per tunnel. If the grower receives a wholesale price of \$10.00 per ½ bushel box there will be a gross return of \$ 0.99/sq ft (1.40 lbs/ sq ft X 0.71/lb). Conversely,

using a retail price of \$0.50 per fruit, again with the Yellow Crest variety, our economics improve to a sq ft gross of \$2.95. Previous research by the CU high tunnel team has documented an input cost of \$0.38/sq ft for peppers.

Although not a perfect rotational crop with tomatoes, peppers are not a host for the Fulvia Leaf Mold and less likely to harbor Two Spotted Spider Mites. We encourage growers to consider peppers in high tunnels for increased quality and yield.

Table 1. Yield Data: Standard Fertility

Pepper Variety	Average Fruit Weight (lbs)*	Average No. Fruit per Plant	Ave. Yield per Plant (lbs)
Alliance	0.49 b	15.88 c	7.86
Gordo	0.56 a	13.12 c	7.26
Sandpiper	0.33 c	26.29 b	8.70
Yellow Crest	0.24 d	35.44 a	8.45
Vanguard	0.52 b	15.71 c	8.10
LSD	0.0000	0.0000	NS

*Means with different letters (groupings) are significantly different with a p test value ≤ 0.05 .



Alliance, Gordo, Sandpiper, Yellow Crest, and Vanguard (left to right).
Photo: Judson Reid, CCE Cornell Vegetable Program

The Cornell Vegetable Program and cooperating grower express gratitude to Harris Seed, Inc. for their collaboration in this project. ■

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A048

Assistance for Adopting Deep Zone Tillage on Your Farm - Reduced Tillage Project 2012

Anu Rangarajan and Ryan White, Cornell University and Cornell Cooperative Extension

With funding from a NYS Dept of Ag and Markets Specialty Crop Grant and a Northeast SARE Grant, we want to assist more growers in testing reduced tillage on their farms.

We can provide \$600 to sixteen growers this year for deep zone tiller rental and transportation. We will provide information, technical assistance and cost share funds to help growers plan trials, rent or borrow needed equipment and learn how to adapt Reduced Tillage (RT) to their own farms. We are seeking growers with farms of all sizes, producing conventional or organic vegetables. Either direct seeded or transplanted crops may be tested. Ideally, a deep zone tillage trial will be paired alongside conventional tillage in the same field, on the same crop.

Trying to find the equipment to test RT has been an obstacle. To help in this search, we have identified several equipment dealers around NY who will have deep zone builder units available in the Spring and Summer of 2012 for rental, for use in trials. **See the January issue of Veg Edge (page 15) for a list of zone till rental and loaner units.** The equipment dealers are working closely with Cornell and Cornell Cooperative Extension to make this equipment available and assist with transportation to interested grow-

ers. Please work with your local Cornell Cooperative Extension educators. Eastern NY: Chuck Bornt, 518-272-4210 x125, cdb13@cornell.edu. Western NY Carol MacNeil, 585-394-3977 x406.

When deciding whether to try deep zone tillage, please consider this:

Limitations: Be sure you have the **horsepower** needed to pull the tillage unit you'll be using. If your soil is heavier or compacted you will need more horsepower or you will not be able to rip as deep and break up compaction layers. Equipment dealers estimate that 100-120 horsepower is needed to pull a four row unit. For growers located in Central, New York, our Cornell Yeoman's plow is a zone builder that has been built specifically for smaller farms where the horsepower rating may be lower, at a 55 rating or more. Our Unververth zone builder requires some more horsepower to run its two shanks at a rating of 85 or more. They are available by request.

For growers new to practicing reduced tillage for vegetables: Do your first trials on sweet corn, followed by winter squash or dry beans, then cabbage or other transplanted crops. Try reduced tillage for vegetables on a small acreage, until your equipment is adjusted properly for your soils and conditions, to ensure a good seedbed and plant stand. Plan to rip the same number of rows that you plant.

Preparing a trial: If you're planning a (RT) side by side comparison with your previous tillage practices: The deep zone tillage should be conducted next to a conventionally plowed plot in the **same field**. The same variety, planting date, weed management and fertility program should be applied to both sides.

Planting your crop: It's very important that the planting row go right over the deep rip for vegetables. If the weather is dry this will allow roots to reach water below your compaction layer. Also, check the spacing between your planter units at the disc openers and between the ripper units at ground level before planting. Row cleaners on the ripper or planter are essential to moving residue out of the way.

If you are interested in participating in the project or have questions regarding reduced tillage, contact your local CCE educator, Anu Rangarajan (ar47@cornell.edu) or Ryan White (rew37@cornell.edu) in the Cornell Dept of Horticulture. Visit our team's website: www.hort.cornell.edu/reducedtillage for videos, fact sheets and stories from other growers who have transitioned to reduced tillage. ■

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2012 Berry Crop Label Updates

Laura McDermott, Capital District Vegetable & Small Fruit Program, and Cathy Heidenreich, NYS Berry Extension Support Specialist

There have been a few additions and changes to pesticides available to berry producers for 2012, some of which specifically address invasive species like Spotted Winged Drosophila and Brown Marmorated Stinkbug (BMSB). Below is a list of pesticides that have new labels and those materials that have 2(ee) labels or Special Local Needs (SLN) labels. Remember that the applicator must have a copy of the Primary label AND the supplemental label in their possession during application. The list below features hotlinks that should help the reader access the labels easily. If the hotlinks do not work, please go to the NYS Pesticide Product, Ingredient and Manufacturer System (PIMS) website: <http://pims.psur.cornell.edu/>

Basic use information is listed so that the user has an idea of how this product might fit into their pest control arsenal; please be sure to read the label carefully for application details and call your extension specialist if you have questions. More detailed information can be found in the 2012 Cornell Pest Management Guidelines for Berry Crops at: <http://ipmguidelines.org/BerryCrops/>

INSECTICIDES/MITICIDES

FIFRA Section 2(ee) labels on pesticides mean that they are classified for restricted use only in New York State. The supplemental 2(ee) recommendation and the primary label should be in the applicator's possession.

Admire Pro systemic (EPA Reg. No. 264-827): Foliar application only to control aphids, spittlebug, whiteflies on bushberries, strawberries and caneberries.

Portal (EPA Reg. No. 71711-19):

Twospotted spider mite, cyclamen mite in low growing berries.

Courier (EPA Reg. No. 71711-20): Control of whiteflies, potato leafhopper on low growing berries including strawberries. Not for use on LI.

Platinum (EPA Reg. No. 100-1291): whiteflies, leafhoppers, aphids, strawberry rootweevil, grubs complex on bushberries, and low growing berries including strawberries. Not for use on LI.

Vetica (EPA Reg. No. 71711-32): Lepidoptera control on low growing berries including strawberry. Not for use on LI.

Lannate LV (EPA Reg. No. 352-384) and Lannate SP (EPA Reg. No. 352-342): For control of cranberry fruitworm, blueberry maggot on bushberries plus BMSB on blueberries.

Acramite (EPA Reg. No. 400-503): For control of two-spotted spider mite on caneberries, small fruit vining berries and low growing berries.

Zeal Miticide 1 (EPA Reg. No. 59639-138): Use on cane berry, low growing berry, and small fruit vine climbing for several mite species. (See [supplemental label](#) approved Sept 20, 2011.)

Radiant SC (EPA Reg. No. 62719-545): For use on strawberry against the unlabeled pest spotted wing drosophila. Radiant SC can be used as part of an integrated program to manage spotted wing drosophila. This use is limited to ground application.

Actara (EPA Registration No. 100-938): [2\(ee\) label](#) to control brown marmorated stink bug (*Halyomorpha halys*) on Bushberry Subgroup. It is also registered

to control aphids and leafhoppers on low growing berries like strawberry, but this does not include cranberry.

Movento (EPA Reg. No. 264-1050): For control of Grape Tumid Gallmaker on gooseberry and small fruit vining subgroup excluding fuzzy kiwi.

Chlorpyrifos – 2(ee) Recommendation for the use of Lorsban Advanced (EPA Reg. No. 62719-591) to control the unlabeled pest Brown Marmorated Stink Bug on several agricultural crops.

Insecticide Deletions

Guthion use on blueberries was restricted in 2010. No aerial applications are allowed, and 1.5 lb maximum application rate. **Note:** Guthion may not be used on highbush blueberries after 9/30/2012.

Thionex currently labeled for control of cyclamen mite, spittlebug. [Supplemental label](#) lists crops and date of phase-outs. (July 2012 for annual strawberries, July 2016 for perennial and biennial strawberries and blueberries)

HERBICIDES

New Products

Sandea (EPA no. 81880-18-10163): [Supplemental label](#) approved in 8/2011 authorizes use in controlling certain broadleaf weeds and nutsedge in highbush blueberry. Pre-emergence and post-emergence directed application allowed.

Dual Magnum (EPA no. 100-816): Weeds managed include most annual grasses and certain broadleaf weeds. A copy of the SLN label ([SLN NY-110004](#)) must be in the possession of the user at the time of application. Pre emergence banded application is recommended (DTH = 28) This label authorizes use on Highbush Blueberry and caneberries. Dual Magnum is a restricted use product; Not for use on Long Island.

Firestorm (EPA no. 82557-1-400): Controls most annual broadleaves and annual grasses and suppresses perennial weeds. Labeled for use on Caneberries, bushberries and strawberries. This is a



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restricted use product; Post emergence, directed spray consistent with technique used when spraying paraquat dichloride, which is the active ingredient.

Label changes:

Prowl H2O (strawberry) EPA Reg. No. 241-418: As of September 2011, the Prowl H2O label became a Primary label that lists strawberries. See label for special instructions for application of Prowl H2O through sprinkler irrigation systems. Prowl H2O can be used as follows:

1. Before planting strawberries apply to the soil surface to prevent most annual grasses and suppress several broad-leaves like velvetleaf or purslane. Irrigate after application to activate herbicide OR shallowly incorporate. Do not apply to soil that will be covered in plastic, but applications to row middles between the beds are allowed. Post transplant applications may be made ONLY if no foliage on dormant plants is exposed to spray. A 2nd application between rows may be applied 35 days before harvest, but material must not come in contact with foliage.
2. Apply to strawberries in fall or winter dormancy. Do not apply if new seasonal growth has appeared.

Arrow EC (EPA no. 66222-60): Annual and perennial grasses managed on the previously labeled crops which included non-bearing Vaccinium and Rubus spp. to now include all bushberries, caneberries, cranberry and strawberry. PHI is 14 days for bushberries, caneberries and strawberries; 30 days cranberries; Restricted use product; Post emergence application; Always use with 1% v/v finished spray volume COC.

Select Max (EPA no. 59639-132): Annual and perennial grasses controlled in Berry crops; new supplemental label 8/2/11; previously non-bearing Vaccinium and Rubus spp. were allowed, now all bushberries and caneberries. PHI = 14 days; Restricted use product for Post emergence application; Application on Long Island is restricted to no more than 32 fl oz (0.25 lb ai) per acre per season. ■

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*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...

March 5 - Winter High Tunnel Pest Management Meeting, *page 10.*

March 7 - Reduce Your Tomato Seed-Borne Diseases! Seed Heat Treatment Workshop, *page 10.*

March 7 - Solar & Wind Power for the Farm, *see February Veg Edge, page 12.*

March 8 - Greenhouse IPM In-depth, *page 10.*

March 8 - Farm Disaster Prep Certificate Course, *page 10.*

March 12 - Vegetable Production, Pest Management & Marketing Meeting, *page 10.*

March 13 - Greenhouse Intensive IPM Meeting, *page 10.*

March 14-15, GAPs Food Safety Workshops: Develop Your Own Food Safety Plan, *page 10.*

March 15 - Pesticide Recertification Day, *page 9.*

March 19 - 2012 NYS Dry Bean Meeting, *page 11.*

March 19 - Spray Technology for Small Acreage, Diversified Vegetable & Fruit Growers, *page 11.*

March 20 - Farms Working Together: Collaborative Marketing for Profitability, *page 11.*

March 20 - Sweet Potato School, *page 11.*

March 20 & 22 - Pesticide Certification Core Exam Prep (and Exam) & Core Recertification Credits Meetings, *page 9.*

March 21 - 23 - 2012 Northeast Biomass Heating Expo & Vendor Fair, *page 11.*

March 21 or 23 - Forecasting Tomato/Potato Late Blight Risk for YOUR Farm - Online Workshop, *page 11.*

March 22 - Identification, Assessment & Management of Soilborne Plant Pathogens in Vegetable Production, *page 12.*

March 26 or 27 - Garlic School, *page 12.*

March 28-29, GAPs Food Safety Workshops: Develop Your Own Food Safety Plan, *page 12.*

April 3 - Season Extension: Meeting the Demand for Local, Natural Food, *page 12.*

April 10 (Wayne Co.) or April 11 (Orleans Co.) - DEC Special Permit Training Class for Non-Certified Applicators and Handlers of Federally Restricted-Use Pesticides, *page 9.*

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