



Cornell University Cooperative Extension Regional Vegetable Programs

February 2011

Volume 7, Issue 2

NYS IPM Program Cut from State Budget

from Don Rutz, Director of the NYS IPM Program

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We have learned from NYS Dept. of Agriculture & Markets that the **NYS IPM Program contract will end on March 31**, **2011** and not June 30, 2011, as we anticipated. Subsequently, all of our state funding for the NYS IPM Program will end on March, 31, 2011. I have been in discussions with both Ag & Markets and the Cornell College of Agriculture and Life Sciences (CALS) administration about this but with our overall very dire budget situation in NY there does not appear to be a viable option for our funding at this time. Therefore, the NYS IPM Program will be forced

to end on March 31, 2011. This will likely occur before voting on the 2011/12 NYS budget occurs. I have attached a list of impacts that the NYS IPM program has had on NYS.

<u>If state funding for Agricultural IPM is not restored, we lose</u>: *Money savings and improved profitability...*

- Our large NY food companies require grower/suppliers to document their practice of IPM. IPM Elements developed in NY for 34 crops help growers with this essential documentation.
- Organic production manuals developed by the IPM Program help growers of 13 crops to tap into the organic marketplace and the typical 30% premium for growing their crops organically.
- NYS IPM's pheromone trap network provides critical information for sweet corn growers to prevent damage from worm pests. Three other trap networks address serious pests of field crops and dry beans.

Pesticide use reductions and protection of public health and the environment...

- The Environmental Impact Quotient (EIQ), developed and maintained by NYS IPM, allows farmers to choose the least toxic pesticide when they have to use one. The EIQ web page gets 10,000 hits annually. The model is used worldwide.
- Of Cornell's 10 annual pest management Guidelines, 4 (Vegetable web version, Grapes, Trees & Shrubs, Homes & Grounds) would not be published without NYS IPM staff. Four additional (Berries, Tree fruit, Field crops, Turfgrass) have significant content contributions from NYS IPM staff. The Vegetable Guidelines website alone gets 300,000 hits from 5,000 users annually.
- We research and promote biocontrol for dairy barns, greenhouses and sweet corn.

Educating New Yorkers...

- Hundreds of presentations on specific IPM pest control options to thousands of people each year.
- The NYS IPM website is the sole source for organic IPM manuals, IPM guidelines, EIQ information, newsletters, and many other IPM resources. It gets 1,000,000 hits annually.

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11 & 12 Farm Food Safety Trainings with GAPs

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 New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide usage in New York State should be directed to the appropriate Cornell Cooperative Extension specialist or your regional DEC office.

Cornell Cooperative Extension 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.**

"Building Strong and Vibrant New York Communities" Cornell Cooperative Extension provides equal program and employment opportunities. Please contact Cornell

Cooperative Extension if you have special needs. Cornell Cooperative Extension does not endorse or recommend any specific product or service.



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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IPM information is timely...

- IPM staff produce weekly articles and e-newsletters for field crops, vegetables, grapes and ornamentals that directly contact more than 10,000 NY farmers to give them timely information about impending pest problems.
- IPM Guidelines, trap networks and other IPM information is available online 24/7.

This state investment goes a long way...

 NYS IPM staff have used their agricultural IPM allocation to leverage \$2-3 million more for New York by obtaining grants from federal and private sources. Without the funding from New York State, these dollars and impacts will be lost.

Attention Garlic SEED Growers

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Robert Hadad, CCE Cornell Vegetable Program

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If you have questions or wish to express an opinion regarding the elimination of NYS support for the NYS IPM Program please contact and/or copy Don Rutz, Director of the NYS IPM Program, 630 W North St, Geneva, NY 14456, 315-787-2353, or

dar11@cornell.edu.



The Cornell Vegetable Team and Capital District Vegetable & Fruit Team are working to help growers deal with the garlic bloat nematode problem facing the growers in NYS. We are looking for information from you to develop/recommend courses of action. We will be setting up testing for garlic, developing management guidelines, working with NY Seed Improvement Program to hopefully create a certification program. Realizing the economic condition of the state, any program that involves testing or certification will likely have a fee.

Please answer these questions and mail or email your responses to one of the contact persons below.

1)	Are you a garlic seed producer in NYS?	
2)	How many acres of <u>seed</u> do you grow a year?	
3)	How many tons of <u>seed</u> do you produce a year?	
4)	Do you sell <u>seed</u> : only in-state; mostly out-of-state; generally both	(circle the best answer)
5)	Do you think you have garlic nematode now?	
6)	Did you purchase garlic seed from Canada in the past 6 years?	
	If you have, what year was it?	
7)	How many varieties of <u>seed</u> do you grow?	
8)	Do you grow the German type for <u>seed</u> ?	
9)	Would you be willing to pay for garlic nematode testing?	
10)	Would you be interested in a certification program, or a program to show that the nematode is undetectable in your <u>seed</u> ?	
11)	Would you be interested in having your garlic stock tested for Fusarium?	
12)	Would you be willing to come to an informational meeting in March, probably in Syracuse, to provide input on this program?	
For Crys Rob	more information or to send in your survey, please contact: tal Stewart, 55 E Main St, Johnstown, NY 12095, <u>cls@cornell.edu</u> or see page 19, or ert Hadad, 4487 Lake Ave, Lockport, NY 14094, <u>rgh26@cornell.edu</u> or see page 18.	

Thanks for your assistance!

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Evaluation of Pepper Varieties in High Tunnels, 2010

Judson Reid and Kathryn Klotzbach, CCE Cornell Vegetable Program

We appreciate the support of Harris Seeds in this trial.

Introduction

High tunnels, unheated, passively ventilated greenhouses, are gaining acceptance among Northeast fresh market vegetable growers for several reasons:

- Season extension
- Increased product quality
- Increased yield
- Pest/disease management

Tomatoes are the most common crop in high tunnels due to their high yield response and corresponding retail value. Peppers are less frequently grown in tunnels but do offer several advantages over tomatoes:

- Dramatic labor reduction
- Rotation crop to reduce tomato Fulvia Leaf Mold
- Wider harvest window

Significant variety research has been conducted on high tunnel tomatoes, yet little work to date has examined the potential of different pepper varieties in these settings. With hard data on yields and performance of pepper varieties Northeast growers will increase their rotation options for high tunnels. Thus in 2010 Harris Seed and the Cornell Vegetable Program collaborated on a high tunnel pepper variety trial.

What we did

Eight bell and two frying-type varieties were selected for evaluation, in a grower's high tunnel in Penn Yan, New York, Magno being the grower standard for high tunnel production. Peppers were seeded in a heated greenhouse on March 8 and transplanted in the high tunnel on May 12. Peppers were harvested from July 16 to November 6.

What we found

Yield as measured by pounds of fruit per plant were not significantly different among the 10 varieties however Chesapeake yielded the highest with 9.3 lbs per plant, followed by Flamingo and Karisma with 9.2 lbs per plant (Chart 1). Banana Bill did yield the highest fruit number per plant with 51.9. If we concentrate on the true bell peppers we find that Flamingo yielded the most fruit at 25.8, followed by Chesapeake with 21.1 fruit per plant. Revolution was



the heaviest fruit at 0.61 lbs followed by Aladdin at 0.56.

What it means

Based on fruit per plant Banana Bill would be an excellent choice using a retail price of 3/\$1.00 for frying peppers. However, market demand is still strongest for colored bell types. This would point to Flamingo (Ivoryto-Orange-to-Red) and Chesapeake (Red) as the top tunnel performers, with gross returns of approximately \$10/plant if sold at \$0.50/fruit. Using a standard of 3000 square feet as a common tunnel size and a spacing of 5 square feet/plant, we could gross approximately \$6000/tunnel/season using these varieties. Other varieties will give significantly less under this analysis.

Fruit weight is another consideration. In competitive markets, size per fruit may be essential for product differentiation, in which case Revolution would be an excellent option.

However, most fresh market growers will find a mix of colors lends to aesthetic appeal in retail setting (Figures 1 and 2). In this case a mix of Chesapeake (Red) Flamingo (Ivory-to-Orange-to-Red) and Summer Sweet (Yellow) would work well, although Summer Sweet fruit per plant was significantly lower.

Chesapeake was the favorite of the grower due to its indeterminate growth habit. This allowed for later harvest after frost. "It is nice when left for a medium sized red pepper, and has a blocky, heavy appearance." For large green peppers Revolution was favored. The grower would like to include a purple (lavender) pepper in future plantings for earliness and color. An earlier and higher yielding yellow pepper would also be desirable. The grower standard, Magno, will continue to be grown for its deep orange color.

Conclusions

Peppers grown in high tunnels will have much lower cull rates than field grown peppers due to less bacterial rot, sunscald and European Corn Borer damage. Our findings support the use of Harris varieties Chesapeake and Flamingo among others. Certain markets, such as CSA growers, may consider frying types such as Banana Bill, which on a per piece basis greatly exceeded the bells.

Although gross returns will not be as high as tomatoes, peppers require less labor and are not hosts to Fulvia fulva, the fungus that causes Leaf Mold in tomatoes. Growers are cautioned that peppers do share some pests and diseases with tomatoes such as Bacterial Spot, Thrips and Whitefly. They are both Solanaceous crops and thus will share some rootzone pathogens as well. Yet, if we envision the possibilities of other tunnel crops, such as winter greens, peppers can be a good rotational crop without the labor demand of tomatoes or cucumbers.

Figure 1. Green Bell Types: (left to right) Declaration, Revolution, Karisma, Aladdin



Figure 2. Colored Types: (left to right) Marcato, Chesapeake, Banana Bill, Summer Sweet, Flamingo, Magno



Chart 1. Yield data				
Pepper Variety	Average Fruit Weight (lbs)*	Average No. Fruit per Plant	Average Yield per Plant (Ibs)	
Magno	0.45 e	19.4 c	8.8	
Revolution	0.61 a	14.6 d	8.8	
Aladdin	0.58 ab	14.9 d	8.6	
Flamingo	0.36 f	25.8 b	9.2	
Karisma	0.56 bc	14.5 d	8.2	
Summer Sweet	0.51 d	15.2 d	7.8	
Declaration	0.53 cd	17.1 cd	9.2	
Marcato	0.38 f	20.9 c	7.8	
Banana Bill	0.13 g	51.9 a	6.8	
Chesapeake	0.44 e	21.1 c	9.3	
LSD	0.04	3.90	NS	

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

Figure 3. Tunnel Field Day, Penn Yan



Contact Judson Reid if you have any questions at 585-313-8912 or <u>jer11@cornell.edu</u>. See photos of all the varieties and the full report at <u>http://blogs.cce.cornell.edu/cvp/files/2011/01/Harris-Seed-HT-Peppers.pdf</u> ■

High Tunnel Hanging Baskets, 2010

Judson Reid, Kathryn Klotzbach, & Nelson Hoover, CCE Cornell Vegetable Program

This project was a Partnership Grant funded by NESARE.

Introduction

High tunnels offer a vertical production environment that is often not fully utilized. Hanging baskets of petunias were selected as a trial crop for economic evaluation due to their ability to harvest sunlight while, potentially, not interfering with the production of other tunnel crops grown below. Risks include the shading of an in-ground tomato crop and spread of insects and diseases between the flowers and vegetables. Although research from 2009 showed a net positive impact of the

baskets on tunnel economic performance, tomato yields were decreased and overall profits were negligible. In 2010 the project team repeated the research with an additional lower density treatment to answer the question: Will hanging baskets always reduce tomato yield?

Materials and Methods

Multiple colors of petunias were seeded on February 16 in cooperating grower's greenhouse. These were transplanted to 48-cell transplant flats at the 2-leaf true stage. A final transplant took place on April 12, when 4 plants per 12-inch hanging basket were transplanted and hung on the hoop-cross pieces of a 20 by 240-foot unheated high tunnel. Baskets were hung in two blocks of densities, 16 square feet per basket and 32 square feet per basket. There was also a control plot with no baskets. The grower's irrigation and fertigation with drip emitters was used.

Seeds of BHN 589 tomatoes were planted on February 16 and then transplanted to 3-inch pots once foliage from adjoining plants began to shade each other. Tomatoes were transplanted on April 12 into the tunnel soil. Black plastic mulch and drip tape were laid prior to transplanting. Plants were irrigated as needed and fertilized with 12-48-8, 20-20-20 and 9-15-30 plus micronutrients throughout the season, per grower practice.

Petunia baskets were 'pinched' one time on April 22 to promote branching. Katie Klotzbach scouted weekly for pests and diseases. Baskets were to 24.2 lbs per plant for those with a low density of baskets and 25.1 lbs per plant under the high density of petunia hanging baskets. The baskets received an average price of \$8.09 at wholesale auction (chart 1). There were no recorded insect or disease issues on either crop. The cooperating grower then estimated a \$4.59 input cost per basket, which includes labor for the project at the rate of \$10.00/hour.

Discussion

In this trial hanging baskets above high tunnel tomatoes did not reduce tomato yield, although they did in a 2009 trial. The baskets themselves

performed well economically with a wholesale gross of \$8.09 per basket, netting \$3.50/basket (after all expenses are deducted). Hanging petunia baskets would give a net return of \$525 per tunnel, if the tunnel were planted uniformly at a density of 32 sq ft per basket (75 baskets in 4800 sq ft). At the high density planting, of 16 sq ft per basket, the net return increases to \$1050 for the tunnel.

It should be noted that a similar trial in 2009 decreased tomato yields which when entered into the economic analysis brought the net return per basket to \$0.73. At this low return, the system appears marginally profitable, yet increases the risk of insect and/or disease transmission from petunias to tomatoes. These include thrips, aphids, Tomato Spotted Wilt Virus, Botrytis Gray Mold and others.



removed from the tunnel beginning May 12, with the last sale on June 12. Price data was collected for all baskets sold at the Finger Lakes Produce Auction (Penn Yan). Tomatoes were harvested multiple times per week from June 23 to October 22. Total weight of fruit per block was recorded at each harvest.

Results

Tomatoes grown without any baskets overhead (control) gave a mean yield of 24.6 lbs per plant compared

Chart 1. Wholesale prices of baskets grown without supplemental heat.

Conclusion

Growing petunia baskets over an inground high tunnel crop was a profitable enterprise for the cooperating farm in 2010. Benefits include net economic gains as well as sales early in the growing season. Heat inputs for the flowers were constrained to the seedling production representing a decrease in fuel inputs. Caution is warranted as a 2009 trial did negatively impact tomato yields, and pest threats are significant.

We highly recommend that growers considering this system start all their own petunia and tomato seeds onfarm to avoid importing the many pests and disease common to greenhouse flowers. We cannot recommend this multi-story approach to growers new to high tunnels as the management demand is high.



A more detailed version of this report is available on the CVP website at <u>http://blogs.cce.cornell.edu/cvp/archives/957</u>. The authors express gratitude to the NESARE for their support of this work. Questions? Contact Judson Reid, Cornell Vegetable Program, jer11@cornell.edu or 585-313-8912. ■

Marketing - Getting the Most Out of USDA's Market News Reports

Fruit and Vegetable News: Getting the Most out of USDA's Market News Reports Webinar

Thursday, February 24, 2:00 pm This webinar is FREE. Registration required by Monday, February 21.

Every business day, AMS Market News collects and reports detailed information about marketing conditions for hundreds of fruits, vegetables, ornamental crops and nut products at major domestic and international wholesale markets, production areas, and ports of entry. *All of the reports are free*. Patty Willkie, officer -in-charge of the Idaho Falls Market News office, will lead the webinar, providing practical tips to get the most out of the available information. Webinar participants will have the opportunity to ask questions.

To register, go to: <u>https://vance-events.webex.com/</u> vance-events/onstage/g.php? <u>d=662389186&t=a&EA=christopher.</u> <u>purdy%</u> <u>40ams.usda.gov&ET=12d02f9369cf8</u> <u>bf5c80b7a79edee24a8&ETR=04fced</u> 5730817ada2e01ca517e75d19d&RT

<u>=MiM3&p</u>.

On the "Event Information" page click the "Register" link under "Event Status" and follow instructions. A confirmation email will be sent. For questions, contact Christopher Purdy, USDA AMS Fruit and Vegetable Programs, 202-720-3209 or <u>chris-</u> topher.purdy@ams.usda.gov.

Hosted by Red Book Credit Services as part of the Red Book University educational offering. For fast access and comprehensive information, visit the Fruit and Vegetable Market News Portal at <u>http://www.marketnews.</u> usda.gov/portal/fv



Helpful Information for Hispanic Employees & Their Employees

Sandy Buxton, CCE Washington Co, and Mary Jo Dudley, Cornell Farmworker Program

In the United States, everyone regardless of their immigration status has rights and are covered under the U.S. Constitution. However, with rights it is also important to follow the laws as much as possible. We all have the basic rights to remain silent and the protection against search and seizure. It is important to understand what this means and be able to exercise our rights under stress.

When facing a law enforcement official – whether in the wrong or the right – employees should understand that it is not a time to lie or run. Stay calm, provide your name, your correct legal name. You may also want to give the name of the local business where you are an employee.

Here are some key points: do not carry documents with false information (such as a false Social Security



How You Grow Matters™ RESPONSIBLE :: ECONOMICAL :: PROVEN

www.bioworksinc.com 1.800.877.9443 Victor, NY card) on you or with you. These can be considered proof of identity theft which is a felony and VERY serious.

Please understand, as employers if you have a completed I-9 Form and have not received a No-Match letter from the Social Security Administration, you have no way of knowing the status or veracity of any of the paperwork you have seen. You have completed all of the due diligence currently required by the federal government.

If an employee is stopped or picked up by local law enforcement (town/ village/county sheriff), you may be able to post bond, appear in town court and not have a big problem. If the NY State Police are the arresting unit, it may be a different story. Make sure the employee can tell you the color of the vehicle the arresting officer was driving as a clue to who may have picked them up. Regardless of what law enforcement agency has detained the worker, always request bail.

When not at work, employees should keep their doors locked! This can not be stressed enough. If law enforcement knocks on the door with an immigration warrant looking for a specific person such as "Miguel Juan Cordoba", the officer must have a warrant listing that exact name which has been signed by a judge. Ask the officer to slide the warrant under the door. Read the name carefully and check for signature.

If the person is present, say "Step away from the door, I (he) is coming out." Do not let the law enforcement agents in and make sure the door is then re-locked. If that person is not in the residence, tell the officer he is not there but do not open the door.

It is vital to understand that an open door provides the police with free access to any part of the residence. Any person who is a resident there can give this permission, so everyone must operate in the same manner. Do not open the door unless you know who is there. The farm owner CAN NOT give permission for a worker's residence to be searched. If Immigration comes to the farm office, it is the same rules. The owner/manager can instruct the official to remain there while the employee is found and brought to the office. The agent should not have full access to the farmstead.

However, if the warrant is a criminal warrant instead of an immigration one, the procedure will be different. Encourage employees to follow the laws of the area, criminal warrants are most common for drinking, drugs, involvement with underage persons or often driving offenses.

By taking some of these simple precautions, it is possible to foster a valuable and productive working relationship between employees and employers while maintaining good ties in the community.

If you would like to learn more about this topic, go to <u>http://</u> <u>devsoc.cals.cornell.edu/outreach/</u> <u>cfp/</u>.

This article is not designed to provide all of the information required to make decisions about potential situations, rather to provide a basic understanding about some issues and situations. This information should help prepare you to discuss your specific situation with legal professionals.

Sustainability & Smart Marketing

Rod Hawkes, Food Industry Management Program, Dyson School of Applied Economics and Management, Cornell



Sustainability is one of the major undercurrents in the world today and many businesses large and small are integrating sustainability

in their strategies. The food industry is a major factor in sustainability due the global impact of its agriculture, employment, and supply chain activities.

Increasingly, food manufacturers, wholesalers, and retailers are striving to measure and reduce their impact on the planet and people. Those at the leading edge are finding that assessment is complicated and addressing sustainability issues takes creativity and capital investment. However, most companies are also realizing that doing business sustainably can lead to doing business more profitably as well.

Sustainability encompasses a broad range of complex and often interconnected issues. For example, while the carbon footprint of a supermarket company's operations is significant, the combined carbon footprint of all the manufacturers of the products the supermarket sells can be many times greater.

Walmart, the world's largest company and the U.S.'s largest supermarket operator, is also a major driving force in the food industry sustainability movement. The company has three bold sustainability goals: to use 100% renewable energy, to create zero waste, and to sell products that sustain people and the planet. Achieving these goals will take a remarkable effort by Walmart and its suppliers.

Given that one of Walmart's goals is

to sell sustainable products, it has been working with its tens of thousands of suppliers to help them understand their impact on people and the planet. While Walmart's own carbon footprint is huge, it has estimated that the carbon impact of its suppliers is more than 100 times greater than Walmart's direct impact.

One implication is that noncomplying suppliers risk losing some or all of Walmart's business. Another, potentially more significant, implication is that the changes suppliers make in response to Walmart's sustainability initiatives will benefit all retailers and consumers.

Walmart is not alone. Many food wholesalers and retailers have been proactive in measuring and addressing their environmental impacts. For example, Hannaford, a division of Delhaize USA, has developed one of the first LEED-certified supermarkets in the U.S., featuring, among other things, a "green roof" with living plants that control and reuse rainwater while helping to cool the store in summer and insulate the store in winter, skylights to reduce electricity usage, recycled building materials, and highly efficient heating and cooling systems.

Among many efforts to reduce its carbon footprint, **Wegmans** has designed efficient delivery routes, allowing it to take over 200 trucks off the road, and reduced total fleet emissions by almost 90% by investing in more efficient, cleaner trucks. A **Price Chopper** supermarket in Albany, NY is one of the first grocery stores in the U.S. to install a fuel cell to supply cleaner, greener electricity along with heat and hot water, producing just a fraction of the carbon dioxide and other pollutants emitted by power plants. Another manufacturer example is **Frito-Lay**, which produces its Sun Chips in a California plant completely powered by on-site solar panels, recycles almost all of the water used to make potato chips in a southern Arizona plant, and is using 100% electric-powered delivery vans in some major metro areas.

What does this all mean for you?

If you are a grower, packer, shipper, processor, or other component in the food chain, then you are facing a future where sustainable operations and products will be expected from most wholesalers and retailers. The time is now to assess the sustainability of your operations and reduce any adverse impacts your operations or those of your suppliers.

As stated earlier, sustainability includes a broad range of issues for which solutions can be complex and costly. However, there are also probably some issues that can be addressed relatively quickly and without significant capital investment. A general assessment of your current operations is the first step and the **Walmart Sustainability Sup**plier Assessment might be a good resource to get you thinking about the issues and the process. You can find the assessment questions at Walmart's website:

www.walmartstores.com.

Remember, smart marketing is always about anticipating shifts in the marketplace before they become realities. ■

"Smart Marketing" is a marketing newsletter for extension publication. It reviews elements critical to successful marketing in the food and agricultural industry.

Starting a CSA (Community Supported Agriculture)

Eric Gibson, University of California Small Farm Program (edited by M. Ullrich, CCE - Orange Co.)

What is a CSA? Consumers buy a "share" of produce or other ag product before the growing season. This gives the grower working capital and the consumer a weekly supply of produce throughout the season. ed. CRM, CCE CVP.

Determine feasibility. Decide whether CSA would work in your area. Find out if land is available, what the population within a fivemile radius is, if labor is available, how much time and capital you can invest, about marketing.

Determine local interest. Find out how many families would join. Have them mark on a list of vegetables how many they want and to suggest additional items. Ask the number in the family and ages; days they want to pick up food (plan to offer two pick-up days weekly); ask them to suggest other people. Invite people to call you for information and to attend an information meeting.

Pesticide Recertification Classes - Ontario Co.

Pesticide Training & Recertification Classes February 7, 14, 21 and 28 7:00 – 9:30 pm CCE – Ontario Co. 480 N. Main St, Canandaigua Exam: March 7 at 7:00 pm

Cost based on the classes attended Pre-register at 585-394-3977 x436 or x 427, or <u>nea8@cornell.edu</u> Registration form is at: www.cceontario.org ■ **Spread the word**. Word-of-mouth is the best way to let people know about the project. Take flyers to the media for free press coverage. Leave flyers at health food stores, co-op markets, alternative health facilities, medical clinics, day care centers, etc. Tell social and service groups about your CSA.

Set up a meeting. Explain the concept of CSA, give a farm tour and show slides. Emphasize benefits--nutritional value, superior taste of fresh produce, and saving grocery money, preserving farmland, and the need to keep food buying dollars in the community.

Form a core group. A group of three to eight should set policy, solve problems, monitor distribution, collect payments, prepare a budget, pay the farmer, deal with legal issues, and find more consumers.

Draw up a proposal. This is an outline of the concept and philosophy, an estimate of capital and costs, a list of crops and yields. Distribute it to people who attend meetings and throughout the community.

Draw up the budget. The budget is a detailed expectation of costs and income. The farmer's salary should provide a decent living for him and his family.

Acquire land, buildings and equipment. Usually the farmer already has land. In some projects people in the consumer group have land. A community land trust might be set up. Or, you may lease land.

Obtain shareholders. The consumers' group/shareholders includes everyone, including the farmer. A shareholder is someone who buys produce "shares" up front before the season) requirements vary.

[Note: Other marketing information available at Cornell Small Farm Program website: <u>http://</u> <u>www.smallfarms.cornell.edu/pages/</u> resources/marketing/index.cfm]

Pesticide 30-Hour Course for Technicians/ Applicators - Rensselaer County

Pesticide 30-Hour Course for Technicians/Applicators February 8 – 10, 15 – 17 9:00 am – 3:00 pm CCE – Rensselaer Co, Troy \$350 fee, space is limited

This course is offered as part of the training needed to become certified as a pesticide technician in category 3a (turf and ornamentals) OR *certified as a private applicator in category 23 (vegetable)* by the Department of Environmental Conservation NYSDEC. For *complete* requirements, contact the NYS-DEC at (518) 357-2234 or go to: <u>http://pmep.cce.cornell.edu/certification</u>.

Please send your contact information and check payable to Cornell Cooperative Extension, 61 State St, Troy, NY 12180, Attn: Marcie Vohnoutka, by February 2, 2011. Questions: 518-272-4210. ■

Food Safety - Farmer Training with GAPs

Food Safety – Farmer Training with GAPs

February 8-9, 2011

8:30 am - 3:30 pm

Ontario Co. Cooperative Extension 480 N Main St, Canandaigua



Workshops on farm food safety training for Good Agricultural Practices (GAPs) certification for farmers

required by buyers to provide 3rdparty verification of their food safety practices. 3-day training - the first 2 days at the Ontario CCE building, the third in late winter/early spring on a participant's farm (mock audit).

Visit the CVP website at <u>http://</u> blogs.cce.cornell.edu/cvp/ archives/894 or contact Robert Hadad, 585-739-4065, or rgh26@cornell.edu ■



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Potato Short Course - Best Management Practices

Potato Course - Best Management Practices

Thursday, February 10

9:00 am - 4:00 pm

Holiday Inn, Syracuse/Liverpool (at I-90 Exit 37)

Sponsored by the Empire State Potato Growers, Inc.

DEC credits will be available. **Pre-register** with Don Halseth at 607-255-5460 or <u>deh3@cornell.edu</u>

Reduced Tillage - Making it Work for You

Reduced Tillage – Making it Work on Your Farm Friday, February 11 9:00 am - 2:30 pm Lunch included - Preregistration required!

This 2-way audio/video conference will include: weed control; cover crop and residue management; fertility; equipment by experienced reduced-tillers.

Eastern NY: Contact Chuck Bornt, 518-859-6213 or cdb13@cornell.edu.

<u>Central NY</u>: Cornell, Ithaca. Contact Betsy Leonard, 607-254-8943 or <u>bai1@cornell.edu</u>.

Western NY: CCE Genesee Co, Batavia. Contact Carol MacNeil at 585-394-3977x406, or crm6@cornell.edu.

Long Island or UMASS: Contact Betsy Leonard, 607-254-8943 or bai1@cornell.edu.

Check out: <u>www.hort.cornell.edu/reducedtillage</u> ■

Capital District Growers Winter Meeting

Capital District Small Fruit & Vegetable Growers Winter Meeting

Tuesday, February 15

8:00 am - 3:40 pm

Best Western Albany Airport Inn 200 Wolf Road, Albany, NY 12205

Registration deadline Friday, February 11th. For more info, contact Chuck Bornt, <u>cdb13@cornell.edu</u> ■



Crop Production Services

Organic Certification Orientation

Organic Certification Orientation Wednesday, February 16 or Thursday, March 10 1:00 - 4:00 pm Cornell Cooperative Extension - Broome County 840 Upper Front St, Binghamton, NY 13905

All first year applicants are strongly encouraged to attend a free Certification Workshop to answer questions about the certification process. They will include a review of the application forms and overview of the National Organic Program Standards. Pre-register by contacting: NOFA-NY Certified Organic at 607-724-9851 or certifiedorganic@nofany.org Visit: https://www.nofany.org/organic-certification/becoming-certified/workshops-schedule

Wholesale Marketing for Small-Scale Producers

Wholesale Marketing for Small-Scale Producers Wednesday, February 23 (Pre-register by February 17) 6:30 - 8:30 pm

Cornell Cooperative Extension - Ontario County 480 North Main Street, Canandaigua, NY 14424

One way to make more net cash income for your farm is wholesale marketing to nearby restaurants, institutions, auctions, and other bulk buyers. The problem is, scaling up to serve fewer but bigger volume accounts takes a different set of skills than weekly farm market retail. Presenter Matt LeRoux will give you the practical facts about how to initiate a wholesale account, maintain good supply relationships, and other important factors, like risk and profitability. We will also review the produce grading standards you need to know and product liability considerations. This workshop is suitable for any small farm operator who would like key insights to move more farm products to benefit the bottom line.

\$10 per farm, and includes the booklet "Guide to Marketing Channel Selection: How to Sell through Wholesale and Direct Marketing Channels". For more information or to register, contact Nancy Anderson at 585-394-3977 x427 or <u>nea8@cornell.edu</u>. ■

Food Safety - Capital District GAPs Training

Food Safety - Capital District GAP's Training for Fruit & Vegetable Growers March 3 - 4, 2011

This is an extensive training going over the details of GAPs that many buyers are requiring from their farmers. The first day is an in-depth session covering the details of reducing microbial risk. The second day will focus on writing a draft of a Farm Produce Safety Plan. For location and further information contact Chuck Bornt, <u>cdb13@cornell.edu</u> or 518-859-6213. ■

Dry Beans - 2011 NYS Dry Bean Meeting

2011 NYS Dry Bean Meeting

Thursday, March 3

8:30 am – 3:00 pm

Batavia Party House 5762 E. Main Rd/Rt 5, Stafford between Batavia and LeRoy

Discount for Pre-registering and/or 2011 Cornell Vegetable Program Enrollment. 2.4 DEC credits were requested.

Topics: Dry bean breeding and resistance/tolerance to diseases; variety and breeding line trial results; management of insect, disease and weed problems; new Western bean cutworm invasion; defoliation update; new soil test procedures through Agro-One, markets, news from industry, and more! Interested in sponsoring? Contact Carol MacNeil at 585-394-3977x406 or crm6@cornell.edu ■

Veg Grower Winter Meeting - March 7th

Veg Grower Winter Meeting

Thursday, March 7

1:00 - 4:30 pm

CCE Niagara County 4487 Lake Ave, Lockport

Topics to be covered: Diseases of 2010, Phytophthora, Weed Management and Herbicides, and more.

More info to follow. DEC credits will be available. For more information contact Robert Hadad 585-739-4065, or rgh26@cornell.edu ■

Pesticide Training & Exam - Wayne County

Pesticide Training & Exam

March 15-16, 2011

1:00 - 4:00 pm

CCE Wayne County 1581 NYS Rt 88N, Newark

Exam: March 24 at 1:00 pm

CCE Wayne is offering a training and exam to become a certified pesticide applicator. **This training is only for those with experience.** Call the DEC, 585-226-5411, to determine work experience. Training workshops cost \$50 plus additional costs for manuals and exam. **Pre-register for workshops by February 28.** See <u>www.ccewayne.org</u>, search "agriculture" and "pesticide certification" for more information or call 315-331-8415.

Exam will be held on March 24 from 1-5 pm for a fee of \$100, payable to the DEC. An official photo ID is required for the exam. ■

Growing Vegetable Transplants with Compost Heat

Molly Shaw, CCE South Central NY Ag Team

Most vegetable farmers have a heated greenhouse for growing transplants, while many gardeners grow seedlings on a window sill or under florescent lights in the home basement. But what do you if you're a "tweener," when you're a small farm too big for the basement growlights but unable to invest in a heated greenhouse?

You could pay another farm to grow your transplants, potentially sacrificing some timing and quality control. But here's another option—one that Muddyfingers Farm in Schuyler County uses—capture the natural heat generated by rotting manure to grow seedlings in an unheated high tunnel.

Liz and Matthew of Muddyfingers Farm are young farmers with about 3 acres of vegetable production, and they find the compost-hotbed method fits their farm well. They use a small 20' x 24' unheated high tunnel for growing their transplants. To use compost heat, they construct a "trough" of hay bales stacked two high and fill the 42-44" wide center space with fresh horse manure mixed with bedding. The surface that holds the seedling trays is a simple 2 x 4 frame resting on the hay bales with snow fence as the slatted table top. Wire hoops, the type used for low tunnels in the field, span from hay bale wall to another, then heavy row cover topped with plastic is draped over top the hoops to hold in the heat. The resulting "incubator" gives nice bottom heat perfect for germinating seeds.

The compost trough is set up in early February a week before seeding leeks and onions. The one week lead -time ensures that the pile will reach at least 100 degrees internally by the time they seed. They fill just one half of the trough at this time—the other half is filled later, a week before seeding cucurbits and Solanaceous plants (peppers, eggplant, tomatoes). "We add the manure in two stages because it will stay at 120-130 degrees for a couple of weeks, then will slowly decline over the next week or so-you can get about 4 weeks out of it. Even after it's not generating much heat there is still a lot of thermal mass under your plants so it stays in the 60-80 degree range internally," Matthew explains. They keep a min/max thermometer on the surface of the bed to monitor the temperature. Ideal temperatures for germinating various vegetable seeds are provided in the Cornell Vegetable Guidelines, hard copy or at http://www.nysaes.cornell.edu/ recommends/ in the Transplant

Continued on page 14



Continued from page 13

Production chapter.

"We've always had good germination with this method," Matthew says. Freezing at night has never been a problem, but once they did "steam" a batch of Swiss chard plants on a particularly cold night when they really sealed the hotbed up tightly.

After germination, cold tolerant seedlings move out of the "incubator" to benches that can be draped with row cover on cold nights, while the heat-loving plants get to stay and grow a while in the warmth. Row cover is pulled back on warm/sunny days, and seedlings are covered at night. They don't have to use back-up heat in the greenhouse until the hot bed becomes full and some trays have to be moved off, sometime in March. At that time, they use both a wood stove and a small space heater.

The one down-side to the compostbed system is that rodents are attracted to the warmth and shelter of the hay bales, and they will destroy young seedlings. "If you don't have a cat living in your greenhouse, traps should be set preemptively," Matthew advises. "Once the weather warms up a little in April, we always have garter snakes move in, and the rodents move out. After they're finished with the hotbed, the manure and hay bales get spread on their fields—the most versatile renewable energy one could ask for. ■

Vermicompost for Transplant Nutrition & Disease Suppression

Allison Jack, Cornell

Vermicomposts, or earthworm composts, have captured growers' interest as an organic source of plant nutrients and for their potential ability to protect crops from soil-borne diseases. Vermicomposts can be useful tools for nutrient management, especially for organic growers who have limited choices in this area. However, optimal amendment rates have not been well established for specific production systems and this remains a barrier to effective use. Although the disease suppressive nature of some composts and vermicomposts is well established, the practice of using these materials for the management of soil borne diseases is fraught with highly inconsistent results. Development of tests that will accurately predict a specific compost's ability to suppress disease is limited by our lack of understanding of the microbial mechanisms responsible for suppression. A multidisciplinary team at Cornell has been working with vermicomposted dairy manure produced in NY State and exploring its most effective uses for nutrient management and disease suppression in a variety of cropping systems.

Direct soil application of vermicompost provided limited benefits, however vermicompost can be a valuable component of transplant media. A mix developed for the study includes; vermicompost, blood meal, green sand and rock phosphate as organic amendments. This mix provided adequate levels of nutrition for tomato, pepper, cabbage and cauliflower without the use of synthetic fertilizers and is suitable for use in both organic and conventional systems. Since these organic amendments rely on microbial activity for nutrient release, greenhouse temperature has a major impact on performance. Temperatures of 60/50 F for cabbage and 70/60 F for pepper supported the production of marketable transplants within 6 weeks. Higher temperatures led to shorter production times and an economic analysis is currently underway to help growers balance the cost of heating with the benefits of decreased production times for transplants using this mix.

Vermicomposted dairy manure consistently suppressed Pythium damping off on cucumber in laboratory tests. When the swimming zoospores of *Pythium aphanider-matum* are exposed to germinating cucumber seeds, they use seed exudates as chemical cues to find their host in a process called 'chemotaxis'. Vermicompost microbes that colonize the germinating seed within 8 hours of sowing can successfully prevent the arrival of zoospores even when seeds are transplanted to sterile sand before inoculation. Based on preliminary results, it appears that these seed-colonizing microbes are chemically altering seed exudates in such a way that zoospores can no longer reach their hosts. It is our hope that this detailed understanding of vermicompost-mediated suppression of Pythium can provide a scientific foundation for the development of more effective compost and vermicompost-based disease management strategies.

Visit the Vermicompost Research site at: <u>http://www.css.cornell.edu/cwmi/</u> <u>vermicompost.htm</u> for project reports and an award winning extension video. *This project was funded by: NY Farm Viability Institute, USDA SBIR, NYSTAR and the Organic Farming Research Foundation.* ■



Organic Producers Offered USDA NRCS Funding

USDA, Natural Resources Conservation Service

\$775,000 in funding available

State Conservationist, Astor Boozer announced that \$775,000 in

funding is available to help New York organic producers and transitioning producers implement soil and water conservation practices on their agricultural operations. Applications are accepted on a continuous basis, with the funding cutoff date set for March 4, 2011. Under the Organic Initiative and over the past three years, New York producers have used funding to plant cover crops, establish grazing systems, and implement nutrient management systems consistent with organic certification standards. Last year, NRCS New York funded more than \$1 million through the Organic Initiative to help producers implement conservation practices. The 2008 Farm Bill provided for assistance specifically for organic farm operations and those transitioning to organic production. Organic Initiative funding is provided through the Environmental Quality Incentives Program (EQIP), a voluntary conservation program administered by USDA's Natural Resources Conservation Service (NRCS).

Eligible producers include those certified through USDA's National Organic Program, those transitioning to certified organic production, and those who meet organic standards but are exempt from certification because their gross annual organic sales are less than \$5,000. Under Organic Initiative contract, producers are paid a practice payment rate for each implemented practice. Beginning, limited resource, and socially disadvantaged producers are paid at a higher practice payment rate. The program provides up to \$20,000 a year per person or legal entity, with a maximum total of \$80,000 over six years. Producers interested in applying must submit applications through their local USDA Service Center, which can be located online at http://offices.sc.egov.usda.gov/locat or/app?state=NY. Additional information is available online at www.nrcs.usda.gov <http://www.nrcs.usda.gov>.NRCS is an Equal Opportunity Employer and Provider.

2011 Cornell Crop & Pest Management Guidelines

The 2011 Guidelines are now available in local county Cooperative Extension offices. In some counties you may have signed up/paid for a copy of the Guidelines with your 2011 enrollment and it will be sent to you. In other counties you must request and

It's amazing what your roots can become with a little help.



pay for a copy. If you're not sure call your local office. Contact info for offices is on the inside <u>back</u> cover of this *Veg Edge*. Publications include the 2011 Pest Management Guidelines for Berry Crops (\$26); Integrated Field Crop Management



(\$23); Integrated Crop and Pest Management for Commercial Vegetable Production (\$31); and Commercial Production and Maintenance of Trees and Shrubs (\$26). There may be an additional charge for mailing it to you. ■



3704 Yaegel Rd. • Geneva, NY 14456 315-789-4450 (Office)

Grafting Cucumbers for Yield & Cold Hardiness in High Tunnels

Judson Reid and Kathryn Klotzbach, CCE Cornell Vegetable Program

For several years the Cornell Vegetable Program has run grafted vegetable trials in soil based greenhouses and high tunnels. Much of our work has confirmed yield advantages, particularly for tomatoes. In 2009 we grafted eggplants and in 2010 we grafted cucumbers.

Grafting, the combination of two separate cultivars into one plant, can not only increase yield and disease resistance, but may also confer cold hardiness in the root zone. For a very cold sensitive plant, such as greenhouse cucumbers, additional cold hardiness could mean an earlier planting date and hence earlier yield. This project endeavored to graft cucumbers onto a fig leaf gourd for increased yields and cold hardiness.

What did we do?

On March 2, 2010 seeds of cucumber varieties Diva (Johnny's Selected Seeds) and Manar (DeRuiter) were planted at a cooperating greenhouse. Rootstock Triumph (F1) (Johnny's Selected Seeds) was also planted, all into 48-cell flats. On March 13 grafts were made using a technique known as the cleftmethod where a notch is cut into the rootstock and a wedge into the scion (top-portion). After going through the healing process only one plant successfully healed out of 76 grafts! We routinely have 90% success grafting tomatoes.

A different method was needed. On March 20 we performed a 'slant graft' removing 1 cotyledon of the rootstock and both of the scions'. After a lot of 'baby-sitting' we had 16 surviving plants out of 75. We transplanted at a cooperating high tunnel farm on April 5 but soon were down to only one surviving plant each of grafted Diva and Grafted Manar. Our graft unions were easily broken by workers, or many plants simply wilted. After so much success with grafted tomatoes, cucumbers had humbled us! We harvested from May 25 to July 9.

How did it work out?

Grafted plants of both varieties Manar and Diva out-yielded their ungrafted counterparts as measured by pounds per plant and number of fruit per plant (Charts 1 and 2). Grafted Diva plants yielded 6.4 lbs more per plant than ungrafted Diva, and grafted Manar out-yielded ungrafted Manar by 0.9 lbs. Grafted plants gave more fruit; 6.5 more per plant in the case of Diva and 4.1 fruit in the case of Manar.









Discussion

One goal of this project was to increase cucumber vigor and get an earlier harvest. The gourd rootstock is reportedly tolerant of soil temperatures much lower than that of the cucumber. This was most apparent with the variety Diva, which when grafted yielded earlier in cold soils than ungrafted. Soil temperature in the tunnel was higher than outside, particularly in the months of April and May. Thus by combining the technologies of grafting with plastic mulch/high tunnels, growers can begin harvesting cucumbers when they would otherwise be planting with little to no additional heat inputs. However with such a low success rate in grafting, our approach is far from ready for commercial application.

Recommendations

Although this trial gave promising data, there were many challenges. Low survival of grafted plants must be overcome for this to be feasible on a commercial level. The rootstock had uneven germination. Thus we recommend soaking seeds in water for 24 hours to achieve more uniform germination. As the rootstock stems have wider circumference than the scions (when seeded on the same date) we also recommend that Triumph should be sown 3-5 days later than scion. Future work could examine other rootstocks with smaller stem diameters. Secondary shoots from the rootstock also may have competed with the scion for water. These should be pruned regularly.

A full version of this trial report is available on the Cornell Vegetable Program website at <u>http://blogs.cce.cornell.edu/cvp/arc</u> <u>hives/972</u> including pictures of the graft process as well as details on our healing and transplant methods.

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issued a comprehensive state-wide Agriculture Energy Efficiency Program to assist farmers with the purchase and installation of NEW energy efficient products and systems to reduce on-farm energy costs. Recognizing the important role that the extended agricultural community-New York Farm Bureau, Cornell Cooperative Extension, New York Department of Agriculture, the USDA, etc-will play in the success of this program, by supporting and educating your members of its ease and benefits, we invite you to learn more and join us in this exciting effort.

The Program includes:

- NO- or low-cost energy audits for farmers, if needed.
- Help identifying, prioritizing and implementing energy-saving measures.
- Monetary incentives for farmers of up to 75% of eligible project cost up to \$250,000.

Learn more by visiting

www.nyserda.com/programs/agric ultural or call the Program Representative at (800) 732-1399. We are here to help! ■







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Contact the Cornell Vegetable Program

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* Member of the Cornell Vegetable Program Administrative Management Team

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

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CVP Region Berry Program

Deborah Breth, Lake Ontario Fruit Program Team Leader Monroe, Niagara, Orleans, Oswego & Wayne Counties Phone: (585) 798-4265 x36 dib1@cornell.edu Email: Website: http://lof.cce.cornell.edu

Cathy Heidenreich, Berry Extension Support Specialist Erie, Genesee, Ontario, Seneca & Yates Counties Phone: (315) 787-2367 Email: mcm4@cornell.edu Website: www.fruit.cornell.edu/berry.html

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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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...

February 7, 14, 21 & 28 - Pesticide Recertification Classes, CCE Ontario County, see page 10

February 8-9 - Farm Food Safety Training with GAPs, CCE Ontario County, see page 11

February 8-10, 15-17 - 30-Hour Training Course for Pesticide Technicians/Applicators, CCE Rensselaer Co. *See page 10*

February 10 - Potato Short Course: Best Management Practices for Potato Production, Syracuse, see page 11

February 11 - Reduced Tillage Videoconference -Focus on Weed Control, *see page 11*

February 15 - Capital District Vegetable & Small Fruit Growers Winter Meeting, Albany, see page 11

February 16 - Organic Certification Orientation CCE Broome County, see page 12

February 16 - Renting Farmland: How to Establish & Manage a Good Lease, CCE Ontario Co. For more info contact 585-394-3977 x427 or <u>nea8@cornell.edu</u>.

February 23 - Wholesale Marketing for Small-Scale Producers, CCE Ontario County, see page 12

March 3 - 2011 NYS Dry Bean Meeting, Batavia Party House, Rt 5, Stafford. 9:00 - 3:00 pm. *See page 12*

March 3-4 - Capital District GAPs Training for Fruit & Vegetable Growers, see page 12

March 5 - Planting & Cultivating Juneberries in the Great Lakes Region, CCE Ontario Co. For more info contact 585-394-3977 x427 or <u>nea8@cornell.edu</u>.

March 7 - Veg Grower Winter Meeting CCE Niagara County, *see page 12*

March 15-16 - Pesticide Recertification Classes CCE Wayne County, *see page 13*

March 23 - Adaptive N Management & Cornell Soil Health Test Interpretation, Cornell. Details in March Veg Edge.

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