

Cultivating Cumberland

September - 2016 VOL. 21, ISSUE 9



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Attachments:

2016 Exotic Crop Field Day

Osha "Hazard Alert"

*Cooperative Extension
of Cumberland County*



1915-2015

Food Safety Modernization Act Grower Certification Training Course

Wesley Kline, Ag Agent

Who Should Attend

Fruit and vegetables growers and others interested in learning about produce safety, Good Agricultural Practices (GAPs), co-management, and the Food Safety Modernization Act (FSMA) Produce Safety Rule. The PSA Grower Training Course is one way to satisfy the FSMA Produce Safety Rule requirement outlined in § 112.22(c) that requires 'At least one supervisor from the farm must complete food safety training at least equivalent to the standardized curriculum recognized by the FDA'.

What to Expect at the PSA Grower Training Course

The trainers will spend approximately seven hours of instruction time to cover content contained in these seven modules:

- ◆ Introduction to Produce Safety
- ◆ Worker Health, Hygiene, and Training;
- ◆ Soil Amendments
- ◆ Wildlife, Domesticated Animals, and Land Use
- ◆ Agricultural Water (Part I: Production Water; Part II: Postharvest Water)
- ◆ Postharvest Handling and Sanitation
- ◆ How to Develop a Farm Food Safety Plan

In addition to learning about produce safety best practices, parts of the FSMA Produce Safety Rule requirements are outlined within each module. There will be time for questions and discussion, so participants should come prepared to share their experiences and produce safety questions. (Continued on page 5)

Rutgers Cooperative Extension 100 Years of Service in Cumberland County

2015 Center for Produce Safety Symposium Summary

As indicated in the last issue of "Cultivating Cumberland", below is the second in a series from the 2015 Center for Produce Safety Symposium. These summaries were written by Dr. Bob Whitaker from the Produce Marketing Association. For complete research reports visit the Center for Produce Safety website: www.centerforproducesafety.org

Human pathogens can persist in fruit and vegetable production environments. Human pathogen survival in the field production environment is a critical question as it goes to the central issue of understanding the risk posed by the presence of human pathogens in soil or irrigation water.

- ◆ ***Norovirus can survive on tomato surfaces and in water.*** We have all heard about foodborne illness outbreaks that have been caused by ill food handlers in restaurants or on cruise ships linked to norovirus. But did you know that the Centers for Disease Control (CDC) estimates that 40-50% of foodborne illnesses associated with the produce are due to produce contamination with norovirus? Historically, it has been difficult to examine norovirus survival in produce environments owing to the fact that there were no rapid methods for its detection. Melissa Jones (University of Florida) investigated norovirus survival and stability in simulated produce production environments. Dr. Jones reported that high temperatures and UV light effectively reduced norovirus levels in water, however, phosphate and ammonium (potentially present in produce wash and irrigation water) increased the stability of low concentrations of norovirus in water. Additionally, preliminary experiments seem to suggest a synergistic affect between bacteria and norovirus, i.e. bacterial presence appears to enhance the stability of norovirus, most likely by attachment to bacteria. CPS has funded research on norovirus in the past that also demonstrated its ability to survive on produce surfaces. Clearly norovirus research bears watching in the coming years, but it really points out the importance of the steps we can take today to prevent produce-mediated norovirus illness. Proper handwashing, vigilant management of worker health and hygiene practices to make sure ill workers do not handle food and effective and verifiable sanitation programs for food contact surfaces have been repeatedly shown to be effective preventive controls to reduce the risk of produce norovirus contamination.
- ◆ ***Soil type can impact survivability of Salmonella and STEC's.*** The ability of human pathogens to survive in agricultural soils and potentially contaminate subsequent plantings of fruits and vegetables has been a point of concern for several years. Research findings by Dr. Keith Warriner (University of Guelph) suggest that the predictability of pathogen die-off in agricultural soils is affected by soil type, manure type, cultural practices and climatic conditions. In their Ontario, Canada field studies, Dr. Warriner's group demonstrated persistence was positively influenced by soil amendment incorporation depth and higher organic content with loam soils supporting human pathogen survival and persistence more than sandy soils. Additionally, human pathogens in agricultural soils did better in cooler, damp or winter/spring conditions than in hot, dry environments. Using generic *E. coli* as a surrogate, a bi-phasic die-off pattern with rapid initial die off was shown but survival and persistence was measured out beyond 120 days under field conditions. These results are similar to earlier CPS-funded program results. Steven Koike et. Al. reported rapid initial die-off of attenuated *Salmonella* and *E. coli* 0157:H7 in

production fields but extended persistence was observed when the attenuated pathogens were associated with organic materials. Also at the 2015 Symposium, Robyn McConchie (University of Sydney) presented laboratory experiments that demonstrated enhanced *Salmonella* survival in clay loam soils versus sandy soils. Human pathogen survival and persistence remains a complex area of study but one where the increasing availability of data from diverse production locations may someday offer growers predictive models that can be used to manage the risk of agricultural soil to crop contamination. For now, growers need to be aware that soil type, environmental conditions, cultural practices and soil amendments can and do have dramatic impacts on human pathogen survival and persistence in agricultural soils and these risk factors must be considered when determining crop rotations and cycles.

- ◆ **Rainfall can help predict the likelihood of in-field produce contamination.** In studies undertaken in the coastal plains of Georgia by George Vellidis (University of Georgia), rainstorm events increased the risk of *Salmonella* contamination in irrigation ponds. Before rainfall events, 33% of pond water samples tested positive and after rain events, 58% of samples tested positive for *Salmonella*. *Salmonella* concentrations were, on average, elevated by 1 log (1.05 ± 0.38 log) MPN/100 mL after rain. Similarly, in studies conducted in New York fields, Martin Wiedmann (Cornell University) reported increased detection of *Listeria monocytogenes* (*Lm*) in soils within 24 hours of a rain event. In the first 24-hours after a rain event, they measured 25 fold increase in positive *Lm* samples. The significance of these findings for growers is one of awareness. Rainfall is certainly an uncontrollable factor for growers and the fact that rainfall events can increase detections of pathogens in surface waters used for irrigation and in soils may create a feeling of helplessness. However, being aware of the increased risks of pathogen presence can also help growers make more informed decisions, e.g. based on weather forecasts and the flexibility a grower might have with product maturity and markets, a grower might choose to harvest a day earlier or a few days later than planned to minimize the risk of cross contamination from soil or water that might contact the crop. Similarly, a grower might choose to hold back on a scheduled irrigation following a rain event to permit the surface water source to settle and thus reduce contamination risks.

English GAPs Online Produce Safety Course

DATE: Sept. 7—27, 2016

*This course is intended to improve your understanding of GAPs to guide assessment of risks and implementation of practices to reduce risks on fresh produce farms. **Taking this course will not result in your farm being “GAPs Certified”.** Gaps certification is done by a third party and involves the successful completion of an on-farm audit.

It is also important to consider that the GAPs Online Produce Safety Training Course is not currently equivalent to the required supervisor training described in the FSMA Produce Safety Rule 21 CFR Subpart C § 112.22(c). This GAPs Online Produce Safety Training Course may, however, satisfy training requirements as described in the FSMA Produce Safety Rule in §§ 112.21(a) and (b).

The **Produce Safety Alliance** plans to offer in-person training that meets the requirement in § 112.22(c) of the FSMA Produce Safety Rule. You can sign up for the listserv on the Produce Safety Alliance website: <http://producesafetyalliance.cornell.edu/> to be notified of where and when in-person trainings will be held.

To register for any session of the GAPs Online Produce Safety Course visit: <http://portal.ecornell.com/corporate/landingPage.do?method=load&corporateGroupId=15606>

You will need to go all the way to the bottom of the page. Under **Courses**, select the **+** sign next to **Other**, then click the **Enroll Now** link. After selecting the course, click **Add to Cart** and **Checkout**. After selecting **Checkout** for a second time, you will be asked to **Create an Account** and complete your eCornell **Profile**. When completing your profile, under **Employer Information, Group Affiliations**, you will be asked to enter a **Group Code**—enter **G000107**. (Please note that these are zeros and not the letter "O"). You will then need to click **Add Group**. A minimum of 10 people must be registered for us to offer the course and class size is limited to 25 people. The course price is \$190.

If you have additional questions or concerns, please contact Don Stoeckel: dstoeckel@cornell.edu

New Rutgers Fact Sheets

The following fact sheet and bulletins are now available on the NJAES Publications website:

FS1257	Build a Better Salad
E353	Recommended Guidelines for Home Animal Agriculture in Residential Areas
E354	Management of Natural Turf Sports Fields

To view/print these fact sheets, visit: <http://njaes.rutgers.edu>. Go to the bottom of the page on the right hand side, click “publications” and enter the fact sheet number you wish to view.

(continued from page 1)

Benefits of Attending the Course

The course will provide a foundation of Good Agricultural Practices (GAPs) and co-management information, FSMA Produce Safety Rule requirements, and details on how to develop a farm food safety plan. Individuals who participate in this course are expected to gain a basic understanding of:

- ◆ Microorganisms relevant to produce safety and where they may be found on the farm
- ◆ How to identify microbial risks, practices that reduce risks, and how to begin implementing produce safety practices on the farm
- ◆ Parts of a farm food safety plan and how to begin writing one
- ◆ Requirements in the FSMA Produce Safety Rule and how to meet them.

After attending the entire course, participants will be eligible to receive a certificate from the Association of Food and Drug Officials (AFDO) that verifies they have completed the training course. To receive an AFDO certificate, a participant must be present for the entire training and submit the appropriate paperwork to their trainer at the end of the course.

Cost to Attend

Total costs to attend the Grower Training Course will vary depending whether it is a one or two day course. The one day session will just be the certification course. The second day will be for those who want to develop a written food safety plan. The one day course will be \$50.00/person and the second day will be \$25.00/person. These trainings are being partly funded through grants from The United States Department of Agriculture and the Food and Drug Administration. NOTE: 10 people are required for each class to be held.

Training Dates and Locations

December 14 and 15 –	Rutgers Cooperative Extension of Cumberland County 291 Morton Ave., Millville, NJ 08332
February 9 -	New Jersey Agricultural Convention Harrah's Resort Hotel, Atlantic City, NJ
February 22 and 23 -	Rutgers Cooperative Extension of Mercer County 830 Spruce St., Trenton, NJ 08648
March 1 and 2 -	Rutgers Cooperative Extension of Cumberland County 291 Morton Ave., Millville, NJ 08332
March 8 and 9 -	Marucci Center for Blueberry & Cranberry Research and Extension Center, 125A Lake Oswego Rd., Chatsworth, NJ 08019
March 22-23 – (Tentative)	Rutgers Cooperative Extension of Hunterdon County 314 State Route 12, Bldg. 2 Flemington, NJ 08822

HACCP Plan Development for Food Processors

No Food Business Can Afford to have a Sub-standard HACCP Plan.

How Effective is Yours?

HACCP Plan Development for Food Processors An International HACCP Alliance Approved Course

HACCP (Hazard Analysis Critical Control Point) involves planning, controlling and documenting the safe production of foods. A well-written HACCP plan can help your facility avoid the costs and liability associated with food contamination, while earning a reputation for food safety.

We know students learn HACCP planning best by doing it, so this course features many opportunities for interaction and participation. Working in small groups, you will complete hands-on exercises to create a sample HACCP plan. Learn how to:

- ◆ Conduct a hazard analysis of your food process, including proper flow charting.
- ◆ Determine the critical control points (CCPs) in your food process.
- ◆ Establish critical limits for each control point.
- ◆ Establish monitoring procedures and corrective actions.
- ◆ Establish verification procedures to ensure your HACCP system is working and validation procedures to ensure your food products are safe.
- ◆ Establish recordkeeping and documentation procedures.

The course will also cover common reasons why HACCP plans fail and solutions for problems you may face when implementing a HACCP plan, so that you can successfully apply what you've learned in class when you're back on the job.

To learn more and/or register, visit:

http://www.cpe.rutgers.edu/courses/current/lf0403ca.html?utm_source=EM-3590+HACCP&utm_campaign=EM-3590+HACCP&utm_medium=email

DATE: October 5-7

TIME: 9am-4:30pm

LOCATION: Rutgers University Inn & Conference Center, New Brunswick, NJ

COST: \$945 by 9/21

\$995 after 9/21

Continental breakfast and lunch are included with the cost of the training.

Further questions contact: Dalynn Knigge 848-932-7315 or email: knigge@rutgers.edu

Ultra-Niche Crops Series: Plasticulture Strawberries

Farmers will learn...

- How to make more money with less land
- How to grow, market and sell plasticulture strawberries



September 28, 2016

Dinner: 5:30 p.m.

Class 6-8 p.m.

\$15.00

Locations of classes:

- Cape May Court House
- Bordentown
- Bridgewater

What are Ultra-Niche Crops? Exceptionally high value crops that can be grown on small acreage.

Plasticulture strawberries is when plants are grown on raised beds covered with black plastic.

Advantages of plasticulture strawberries:

- Earlier strawberry harvests
- Higher yields
- Larger fruit size
- Higher quality fruit



For more information call Jenny Carleo, Agricultural Agent at (609) 465-5115 or email Jennifer Matthews at jmatthews@aesop.rutgers.edu

To register go to Eventbrite link:

<https://www.eventbrite.com/e/ultra-niche-crops-plasticulture-strawberries-tickets-26609094518>

To join the mailing list for future classes go to www.tinyurl.com/UNC2016

Project sponsored by the USDA-NIFA Beginning Farmer and Rancher Development Program



Cooperating Agencies: Rutgers, The State University of New Jersey, U.S. Department of Agriculture, and County Boards of Chosen Freeholders. Rutgers Cooperative Extension, a unit of the Rutgers New Jersey Agricultural Experiment Station, is an equal opportunity program provider and employer.

RU Ready to Farm™

Module One: The Basics of Getting Started

3-Day Program includes: Class Instruction, Farm Tour & Demonstrations

***Rutgers Cooperative Extension
New Jersey Agricultural Experiment Station
School of Environmental and Biological Sciences
Rutgers, the State University***

Class Instruction: Rutgers Eco Complex

1200 Florence Columbus Rd, Bordentown Township, NJ 08505

- 1) Saturday, October 22, 8:00am-5:00pm
- 2) Wednesday, October 26, 2016, 6:00pm-9:00 pm

Farm Tours and Demonstration: TBD

- 3) November 5, 2016 8:00am-1pm meet at the farms TBD

Dress for outdoor activity for the farm tour day

**All participants receive a program certificate
Qualified undergraduates can register to receive
one Rutgers University credit**

Topics Covered:

- ◆ **Traditional and Organic farming, funding, and land opportunities in NJ**
- ◆ **Organizations that provide support for beginner farmers**
- ◆ **Basic overview of farm business planning and recordkeeping**
- ◆ **Determining options for production of crops and raising animals**
- ◆ **Regulatory issues and important considerations for beginners**
- ◆ **Future training opportunities and on-farm training**
- ◆ **Visits to two successful small farms with on-farm demonstration**

Registration On-line at: www.cpe.rutgers.edu/readytofarm

\$150 Adults, \$100 high school students, \$225 for 2 business partners or 2 family members, University Students register through Rutgers Class Registration for 1 credit 11 020 490 under

Food Systems Practicum

Contact hlubik@aesop.rutgers.edu, armstrong@aesop.rutgers.edu for more info

Calendar of Important Events

↻ Indicates the newly added event since last calendar

September 2016

↻ September 9

2016 Exotic Crop Field Day, Horticulture Research Farm 3, 67 Ryders Lane, East Brunswick, NJ; 10am to 5pm. RSVP to Corinne Klewsaat 908-304-3842.

September 10

Autumn in the Perennial Garden, Colonial Park Gardens, 156 Mettlers Rd., Somerset; \$15 per person with a limit of 30 people. For more information or to register, call 732-873-2459.

September 17

Flower & Garden Photography, Colonial Park Gardens, 156 Mettlers Rd., Somerset; \$35.00 a person with 12 people limit. Pre-registration by 9/9 required. For more information or to register, call 732-873-2459.

↻ September 28

Ultra-Niche Crops Series: Plasticulture Strawberries. Classes in 3 locations: Cape May Court House, Bordentown and Bridgewater. For more information contact Jenny Carleo 609-465-5115 or email: jmatthews@aesop.rutgers.edu. See attached Flyer.

↻ September 29

Pollinator Conservation Short Course, RCE Burlington County, 2 Academy Dr., Westampton, NJ; 9am-4:30pm. \$45 per person. Lunch available with pre-order for an additional \$10. For more information contact 609-265-5050 (RCE Burlington County) or Kelly Gill 515-708-6108.

October 2016

October 5-7

HACCP Plan Development for Food Processors, Rutgers Continuing Education; \$945 by 9/21; \$995 after. For more information call 1-848-932-9271 x2 or visit: www.cpe.rutgers.edu/FOOD

October 14-16

Produce Marketing Association Fresh Summit, Orlando, Florida. For more information visit: www.pma.com

October 17-18

Sensory Evaluation, Rutgers Continuing Education. For more information call 848-932-9271 or visit: www.cpe.rutgers.edu

October 19

Statistics for Food Scientists, Rutgers Continuing Education, New Brunswick. For more information call 848-932-9271 or visit: www.cpe.rutgers.edu

November 2016

November 7-9

Better Process Control School, Rutgers Continuing Education, New Brunswick. \$995 by 10/24; \$1095 after. For more information call 848-932-9271 or visit: www.cpe.rutgers.edu

November 15-16

Drone World Expo, San Jose Convention Center, San Jose, CA. For more information visit: www.droneworldexpo.com

November 19

Thanksgiving Floral Arrangement Class, 2016 Horticultural Programs/Events, Park Commission Headquarters, North Branch Park, 355 Milltown Road, Bridgewater. 10a.m.—12 noon; \$25 per person with a limit of 15 people and includes supplies. Pre-registration due by Thursday, November 10th is required. For more information call 732-873-2459 x21 or visit: www.somersetcountyparks.org

December 2016**December 3**

Holiday Kissing Ball Workshop, 2016 Horticultural Programs/Events, Park Commission Headquarters, North Branch Park, 355 Milltown Road, Bridgewater. 10am-12 noon; \$45 per person (limit 15 people & includes supplies). For more information call 732-873-2459 x21 or visit: www.somersetcountyparks.org

December 5-6

Practical Food Microbiology, Rutgers Continuing Education, New Brunswick. \$795 by 11/21; \$825 after. For more information call 848-932-9271 or visit: www.cpe.rutgers.edu

December 6-8

Great Lakes Fruit, Vegetable and Farm Market Expo, Devos Place Conference Center, Grand Rapids, Michigan. For more information call 616-794-0492 or visit: www.glexpo.com

December 7-8

Irrigation Show, Las Vegas Convention Center, Las Vegas, Nevada. For more information visit: www.irrigation.org

REGULARLY SCHEDULED MEETINGS

✓ Indicates meeting will be held at RCE of Cumberland County

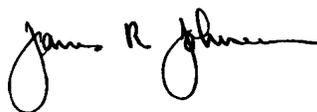
<p>✓</p> <p>Pesticide Certification Exam Schedule—Cumberland County 291 Morton Avenue Millville, NJ 08332 (Between Rosenhayn & Carmel)</p> <p><u>2016</u></p> <p>Sept 22 Oct 20</p> <p>To Register call 609-984-6614 For directions call 856-451-2800 *****</p>	<p>✓</p> <p>Cumberland County Agriculture Development Board Soil Conservation Office 1516 Highway 77 Deerfield Street, NJ 08332</p> <p><u>2016</u></p> <p>Set 14 Oct 12 Nov 9 Dec 14</p> <p>Reg. Meetings start at 7 p.m. Information call 856-453-2211 *****</p>	<p>✓</p> <p>Cumberland County Board Of Agriculture 291 Morton Avenue Millville, NJ 08332 (Between Rosenhayn & Carmel) 7 pm meetings</p> <p><u>2016</u></p> <p>Sept 15 Oct 20 Nov 17 Dec 15</p> <p>For info call Hillary Barile, President 856-453-1192 *****</p>
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**Cumberland County Improvement Authority (CCIA)
Pesticide Container Recycling**
9:00 a.m. to 12 Noon
Cumberland County Solid Waste Complex
169 Jesse's Bridge Rd. (located off Route 55 Exit 29)
Deerfield Township, New Jersey

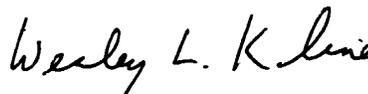
Questions? Call Division of Ag & Natural Resources, NJ Dept. of Ag 609-292-5532

Sept 16 Oct 21 Nov 18

Sincerely,



James R. Johnson
Agricultural Agent
Nursery Management Commercial
Internet: jjohnson@njaes.rutgers.edu



Wesley L. Kline, Ph.D.
Agricultural Agent
Vegetable & Herb Production
Internet: wkline@njaes.rutgers.edu

Pesticide User Responsibility: Use pesticides safely and follow instructions on labels. The user is responsible for the proper use of pesticides, residues on crops, storage and disposal, as well as damages caused by drift.

Use of Trade Names: Trade names are used in this publication with the understanding that no discrimination is intended and no endorsement is implied. In some instances the compound may be sold under different trade names, which may vary as to label.

Have you visited the Cumberland County website for the Present and/or past issues of "Cultivating Cumberland"? It's a great resource for information and dates.....

<http://Cumberland.njaes.rutgers.edu/>

Public Notification and Non-discrimination Statement

Rutgers Cooperative Extension is an equal opportunity program provider and employer. Contact your local Extension Office for information regarding special needs or accommodations. Contact the State Extension Director's Office if you have concerns related to discrimination, 848-932-3584.

Rutgers Cooperative Extension 100 Years of Service in Cumberland County

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New Jersey Agricultural
Experiment Station