

Cultivating Cumberland

July - 2016 VOL. 21, ISSUE 7



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Attachments:

OSHA Fact Sheet—Protecting Workers from Heat Effects
Small Fruit & Beach Plum Farm Tour

**Cooperative Extension
of Cumberland County**



1915-2015

SAVE THE DATE

After many years of service to Cumberland County as Agricultural Agent for the Commercial Nurseries and as Department Head of the Extension Center, Jim Johnson will be retiring as of September 1st.

What: Retirement Open House in honor of Jim Johnson

Date: August 26, 2016

Where: Rutgers Cooperative Extension
291 Morton Avenue, Millville
(Between Rosenhayn and Carmel)

Time: 5:00 p.m. - 8:00 p.m.

Cost: \$10.00 (includes participation in a gift for Jim)

Join us as we wish Jim the best. Jim begins his retirement on September 1st, 2016.

We will be having light refreshments at the Cumberland County Extension Center, 291 Morton Ave., Millville (Between Rosenhayn and Carmel) from 5:00 p.m. to 8:00 p.m. on August 26th.

Everyone is welcome to join us, whether you can stay 10 minutes or the entire time. Come reminisce with Jim about all the changes over the last 34 years.

Please RSVP to Tammy Commander at 856-451-2800 x1 if you plan to attend no later than August 19th.

Rutgers Cooperative Extension 100 Years of Service in Cumberland County

Results From the Early 2016 Food Safety Audits

Wes Kline, Rutgers Cooperative Extension

Indications from audits this summer have been very good. There have been few issues and most audits are taking less time. This relates to growers with a better understanding of the process and being better prepared. There is one issue which has been mentioned by some auditors. That is the lack of refresher training by some food safety persons at farms. The USDA audits do not require that someone goes to training every year, but if the audit fails then the audit cannot be re-scheduled until someone from that operations goes to a refresher course. During the summer, there are few opportunities for training. Our trainings are normally between December and April when growers have more time to attend. If you need to wait until December, obviously the audit will not be completed before the end of the growing season. Plan on attending a refresher training this winter and be ready for 2017.

2015 Center for Produce Safety Symposium Summary: Key Learnings and What They Mean for You

Bob Whitaker, Produce Marketing Association

The sixth annual Center for Produce Safety (CPS) Research Symposium was held in Atlanta, GA in June 2015. The Symposium featured food safety research programs funded by CPS over the last few years along with discussions by industry, academic and regulatory experts regarding the implications of the research for everyday produce growing, packing and processing operations and how that research might be used to improve company food safety programs. This summary is designed to capture “key learnings” from the 2015 CPS Symposium and offer our thoughts on why these results should matter as you examine your own food safety programs; especially in light of new FSMA regulations and our industry’s ongoing efforts to improve food safety performance.

Among the key findings from the 2015 CPS Research Symposium:

- Human pathogens can persist in fruit and vegetable production environments for extended periods of time. There are multiple variables that impact human pathogen survival in our production environments and these need to be considered when developing food safety plans.
- Mobile apps are currently in development to assist growers in making food safety-related decisions.
- Understanding of transference of human pathogens from various types of animals to crops has advanced significantly over the last several years. There really are no “risky” animals, just environments that bring animals into contact with human pathogens that might then be transferred to fruits or vegetables in specific instances.
- Our understanding of the organization and expression of human pathogen genomes is rapidly advancing the development of detection tools, revolutionizing public health investigations and shedding light on new strategies for future human pathogen control.
- Hazard analysis is still the most important tool in supply chain food safety program development.
- Validation of preventive controls and verification of practices is critical.
- Research is providing a better understanding of how sanitizers work biologically and this could lead to next generation disinfectants for use in produce production.

WPS EPA Worker & Handler Training Resources

Patricia Hastings, Rutgers Cooperative Extension

General:

We continue to receive updated implementation information from EPA on the Revised Worker Protection Standard, and will provide information and resources when finalized by EPA. Keep in mind that the Revised Worker Protection Standard requires no changes from existing WPS requirements until January 2, 2017.

WPS Training Content:

Agricultural employers should continue to use existing EPA-approved worker and handler training resources until January 1, 2018 (i.e., the next two growing seasons of 2016 and 2017). This date will be later if EPA has not provided outreach materials with the expanded content.

EPA compiled approved training videos and resources in its "Worker Protection Standard: What Employers Need to Know" CD. We directly distributed these CDs to several hundred growers in the past 2 years. Agents received them from us when EPA first developed them and when EPA updated them in 2006. I have a stock of these CDs available upon request.

Congratulations

The Cumberland County Board of Agriculture announced its scholarship winners for 2016. Congratulations to:

- ◇ Melanie Mayhew - Currently attending Delaware Valley University - was the recipient of the Capaldi Family \$1,000 Scholarship,
- ◇ Giovanni Amigon - Graduate of Bridgeton High School - Will be attending Cumberland County College - is the recipient of a Board of Agriculture \$1,000 scholarship, and
- ◇ Joshua Loew - Graduate of Cumberland Regional High School - Will be attending Cumberland County College received a Board of Agriculture \$1,000 scholarship as well.

Congratulations to all of the winners and we wish them the best in their academic endeavors.

Existing Bulletin Updated

Rutgers Cooperative Extension bulletin E332 "The Economic Impact of New Jersey's Food System: A 2010 Update" has been released.

To view or download this bulletin visit: njaes.rutgers.edu/pubs/publication.asp?pid=E332

Dickeya Dianthicola **Affecting Potato in New Jersey**

Dr. Andy Wyenandt, Rutgers Cooperative Extension
Plant & Pest Advisory June 24, 2016

Dickeya dianthicola, an aggressive form of blackleg, has been found on potato in New Jersey for a second year in a row. The pathogen has also been found in potato crops in other states in the Mid-Atlantic region this summer. The pathogen can cause significant losses if brought into the field on infested seed. Symptoms of *Dickeya* include the rotting/melting of the infested seed piece without the smell of traditional soft rotting bacteria. The bacterium will spread to other tubers developing on plants and into the stems leading to blackleg symptoms on the foliage. Infected plants can collapse quickly under hot conditions. Surveying and testing for *Dickeya* is currently being done in all state in the region. All potato growers should scout on a daily basis and any suspect plants should be submitted for testing. In New Jersey, fields of 'Reba', 'Snowden', and 'Norwis' have tested positive for *Dickeya dianthicola* from seed originating from Maine and Canada.

Fall Vegetables – Timing Plantings

Gordon Johnson, Extension Vegetable & Fruit Specialist at the University of Delaware
Weekly Crop Update, University of Delaware Cooperative Extension - June 24, 2016.

Plantings for fall harvested vegetables will be underway in the next few weeks. Timing these plantings can be a challenge, especially where multiple harvests are needed. Plantings from early July through the beginning of September may be made, with cutoff dates depending on the crop, variety, and season extension methods such as row covers, low tunnels, and high tunnels.

These plantings can be divided into 2 groups: 1) warm season vegetables for harvest up to a killing frost and 2) cool season vegetables for extended harvest in the fall.

The three main factors influencing crop growth and performance in the fall are day length, heat units, and frost or freeze events. A few days difference in planting date in the summer can make a big difference in days to maturity in the fall.

Warm season vegetables for fall harvest include snap beans, squash, and cucumbers. July plantings of sweet corn can also be successful to extend seasons for farm stands. Mid-July plantings of tomatoes and peppers also are made for late harvests, particularly in high tunnels.

Cool season vegetables for fall harvest include cabbage, broccoli, and cauliflower; the cole crop greens, kale and collards; mustard and turnip greens; turnips for roots; spinach; beets; lettuce; leeks; green onions; and radishes.

To extend harvest in the fall, successive plantings are an option. However, days between plantings will need to be compressed. One day difference in early August planting for a crop like beans can mean a difference of several days in harvest date.

Another option to extend harvest in the fall is with planting different maturing varieties at the same time. This is particularly successful with crops such as broccoli and cabbage where maturity differences of more than 30 days can be found between varieties.

Another way to get later harvests is to use row covers or protecting structures (high tunnels). This can allow for more heat accumulation and will aid with protection against frost and freezes. Decisions on what type or combination of covers/protection to use and when to apply the protection will influence fall vegetable maturation and duration of harvest. In general, plantings of cool season crops can be made 30-45 days

later in high tunnels than in outside production.

A final factor for summer planting for fall production is on planting cutoff dates. For example, a crop such as cucumber may produce well with an August 2 planting but poorly with an August 8 planting; broccoli has a wider planting window than cauliflower; turnip greens have a wider planting window than kale.

Planting Window for Fall Harvested Warm Season Vegetables: (harvest September through Frost)

Snap Beans: July 10 through August 10

Lima Beans: June 15 through August 15

Cucumbers: July 10 through August 7 (high tunnel transplanted up to September 1)

Peppers: Transplant up to July 10 (high tunnel up to July 30)

Pumpkins and Winter Squash: Direct seed through June 30

Summer Squash: Direct seed July 15 through August 15 (high tunnel up to September 1)

Sweet Corn: Direct seed July 1 through July 30

Tomatoes: Transplant July 20 through July 5 (high tunnel up to July 30)

Planting Window for Fall Harvested Cool Season Vegetables: (harvest September – December)

For transplants, seed 3-6 weeks prior to desired planting date (8 weeks for leeks and onions).

Beets: Direct seed July 1 through August 10

Swiss Chard: Direct seed July 15 through August 20 (high tunnel up to September 30)

Broccoli: Transplants July 15 – August 20

Brussels Sprouts: Transplants June 20-July 10

Cabbage: Transplants July 1 – August 10

Cauliflower: Transplants July 20 through August 10

Kale: Transplants July 15 through August 30

Kale: Direct seed July 1 through August 15 (high tunnel up to September 30)

Collards: Direct seed July 15 through August 15

Carrots: June 20 through July 5 (high tunnel up to August 1)

Turnip Greens: August 1 through September 10 (high tunnel up to September 30)

Turnip Roots: August 1 through August 30 (high tunnel up to September 20)

Mustard Greens: August 1 through September 10 (high tunnel up to September 30)

Leeks: Transplant July 20 through August 10

Lettuce (full head stage): Direct seeded August 1 through August 20

Lettuce (full head stage): Transplants August 10 through August 30

Lettuce (baby stage and cut salad mix): Direct seed August 1 through September 15 (high tunnel up to October 15)

Onion (green bunching): Direct seed July 1 through August 30 (high tunnel through September 30)

Parsley: direct seed July 15 through August 15 (high tunnel through September 15)

Pumpkins and Winter Squash: Direct seed through June 30

Radishes (salad): Direct seed August 1 through September 30 (high tunnel through November 30)

Radishes (Daikon): Direct seed August 1 through September 10 (high tunnel up to September 30)

Spinach: Direct seed August 10 through August 30 (high tunnel up to September 30)

SNAP EBT Farmer's Market Sign Up

The SNAP EBT program is a collaborative effort between USDA/FNS, Farmers Market Coalition & State Agencies for Agriculture and SNAP.

A win/win for Farmer's Markets and Direct Marketing Farmers:

Increased customer base

Increased economic benefits for you and your communities

Healthy and nutritious options for SNAP recipients

To Apply to become authorized to accept SNAP (Online takes approximately one hour):

- Visit: <http://www.fns.usda.gov/ebt/learn-about-snap-benefits-farmers-markets>
- Call to receive a paper application - 1-877-823-4369

Items Needed to complete application:

- Picture ID (driver's license or passport)
- Social Security Card
- Copy of voided check for bank account you will use to deposit funds

For Non-profit Organizations:

- Copy of your 501(3)© for Non-Profit Organizations
- Employer Identification Number

Find Out if you qualify for FREE wireless point of sale EBT equipment?

For more information, visit the following website:

<http://farmersmarketcoalition.org/programs/freesnapebt/>

New Jersey was also awarded grant money to offer free wireless equipment. Please contact the NJ State EBT for more information: Dewanda Kelly, State of NJ, Division of Family Development, EBT Unit, 609-631-4960

Mosquito Facts—29 Things you Didn't Know about Mosquitoes

1. **Only female mosquitoes bite.** Both male and female feed mainly on fruit and plant nectar, but the female also needs the protein in blood to help her eggs develop. Once she's had her fill of blood, she'll rest for a couple of days before laying her eggs.
2. **There are more than 3,500 species of mosquitoes.** About 175 of them are found in the United States, with the *Anopheles quadrimaculatus*, *Culex pipiens*, *Aedes aegypti* and *Aedes albopictus* (Asian tiger mosquito) among the most common. The *Anopheles* is a malaria carrier, and the other three are known to spread various forms of encephalitis.
3. **West Virginia has the fewest species of mosquitoes.** There are 26 in the mountainous state, while Texas has the most with 85. Florida is a close second with 80 identified species.
4. **Mosquito is Spanish for "little fly."** The word reportedly originated in the early 16th century. In Africa, New Zealand and Australia, mosquitoes are often called "Mozzies".
5. **Mosquitoes don't have teeth.** The females "bite" with a long, pointed mouthpart called a proboscis. They use the serrated proboscis to pierce the skin and locate a capillary, then draw blood through one of two tubes.
6. **A mosquito can drink up to three times its weight in blood.** Don't worry, though. It would take about 1.2 million bites to drain all the blood from your body.
7. **Female mosquitoes can lay up to 300 eggs at a time.** Usually, the eggs are deposited in clusters – called rafts – on the surface of stagnant water, or they are laid in areas that flood regularly. Eggs can hatch in as little as an inch of standing water. Females will lay eggs up to three times before they die.
8. **Mosquitoes spend their first 4-10 days in water depending on weather conditions.** Water is necessary for the eggs to hatch into larvae, called wigglers. Wigglers feed on organic matter in stagnant water and breathe oxygen from the surface. They develop into pupae, which do not feed and are partially encased in cocoons. Over several days, the pupae change into adult mosquitoes.
9. **Mosquitoes hibernate.** They are cold-blooded and prefer temperatures over 80 degrees. At temperatures less than 50 degrees, they shut down for the winter. The adult females of some species find holes where they wait for warmer weather, while others lay their eggs in freezing water and die. The eggs keep until the temperatures rise, and they can hatch.
10. **The average mosquito lifespan is less than two months.** Males have the shortest lives, usually 10 days or less, and females can live about six to eight weeks, under ideal conditions. The females lay eggs about every three days during that time. Females of species that hibernate may live up to six months.

The Bloodsucker Behavior & Anatomy

11. **Mosquitoes have six legs.** They also have a head, thorax and abdomen. On the head are two large compound eyes, two ocelli (simple eyes), two antennae and a proboscis. Two large, scaled wings sprout from the thorax.
12. **Midges and crane flies are often mistaken for mosquitoes.** Biting midges are smaller, have shorter wings and tend to feed in swarms. Mosquito traps often attract and kill biting midges. Meanwhile, crane flies are much larger than mosquitoes – up to 1 ½ inches long in some cases – and do not bite.
13. **Male mosquitoes locate females by the sound of their wings.** Females can beat their wings up to 500 times per second, and the males pick out the higher frequency of those beats when seeking a mate.
14. **Mosquitoes can't fly very far or very fast.** Most mosquitoes can fly no more than about one to three miles, and often stay within several hundred feet of where they were hatched. However, a few salt marsh species can travel up to 40 miles. The top speed for a mosquito is about 1.5 miles per hour.
15. **Mosquitoes generally fly below 25 feet.** However, some species have also been found at extraordinary heights, including 8,000 feet up in the Himalayas.
16. **Mosquitoes can smell human breath.** They have receptors on their antennae that detect the carbon dioxide released when we exhale. Those plumes of CO₂ rise into the air, acting as trails that the mosquitoes follow to find the source.
17. **Sweat helps mosquitoes choose their victims.** Our skin produces more than 340 chemical odors, and

some of them smell like dinner to mosquitoes. They are fond of octenol, a chemical released in sweat, as well as cholesterol, folic acid, certain bacteria, skin lotions, and perfume.

18. **Body heat marks the target.** Mosquitoes use heat sensors around their mouthparts to detect the warmth of your body – actually, the blood inside it – then land on you and locate the best capillaries for tapping.
19. **Mosquitoes feed day and night.** Some species, like the *Aedes* are daytime biters, while others, like *Culex*, start biting at dusk and continue a few hours into dark.

The Trouble with Mosquitoes

20. **Mosquitoes have been around since the Jurassic period (Remember the Movie).** That makes them about 210 million years old. They've been mentioned throughout history, including in the works of Aristotle around 300 B.C. and in writings by Sidonius Apollinaris in 467 B.C.
21. **The bumps from mosquito bites are caused by saliva.** While one tube in the proboscis draws blood, a second pumps in saliva containing a mild painkiller and an anti-coagulant. Most people have minor allergic reactions to the saliva, causing the area around the bite to swell and itch.
22. **Malaria is caused by a parasite that lives in mosquitoes.** The parasite gets into mosquito saliva and is passed on when the insect bites someone. West Nile and other viruses are passed the same way. Mosquitoes can also carry and pass on canine heartworm.
23. **West Nile virus came to the U.S. in 1999.** Scientists first identified it in a feverish woman in Uganda – the West Nile district – in 1937. There were large outbreaks of the virus reported in Israel, South Africa, and Romania up through the late '90s. The virus first appeared in the United States in 1999 with an epidemic in New York.
24. **Mosquitoes do not transmit HIV.** The virus that causes AIDS does not replicate in mosquitoes and is actually digested in their stomachs, so it's broken down without being passed on.
25. **Mosquitoes are considered the deadliest “animal” in the world.** The *Anopheles* mosquito, in particular, is dangerous because it transmits malaria, which kills more than one million people every year, primarily in Africa. Alexander the Great is believed to have died of malaria in 323 B.C.

Keeping THEM Away From You

26. **DEET is considered the 'gold standard' of mosquito repellents.** Endorsed by the Centers for Disease Control (CDC), DEET doesn't mask the smell of the host or jam the insect's senses - mosquitoes simply don't like it because it smells bad to them. A product containing 10 percent DEET can protect you for up to 90 minutes. Two other repellents, picaridin and lemon-eucalyptus oil, have also proven effective and are now recommended by the CDC.
27. **Bacteria can be used to kill mosquito larvae.** *Bacillus thuringiensis israelensis* (Bti) is a commercially-produced bacterium, sold in pellet and powder form, that can be laced into water where larvae live. It produces proteins that turn into toxins after the larvae eat it.
28. **Insecticides work, but only in the short term.** Permethrin, one of the most common chemicals used by local mosquito control programs, kills mosquitoes on contact by disrupting their central nervous systems. However, eggs and larvae often are not affected. Once the insecticide dissipates, mosquitoes can return.
29. **The two main mosquito predators are fish and dragonflies.** *Gambusia*, or mosquitofish, feed on mosquito larvae and are used all over the world to help control mosquito populations. Dragonfly larvae, called nymphs, eat mosquito larvae, and adult dragonflies prey on adult mosquitoes. Some towns in Maine release dragonflies every summer as a natural form of mosquito control.

Sources: The American Mosquito Control Association; the U.S. Centers for Disease Control; the U.S. Department of Agriculture; and, entomology and agriculture departments at the University of California – Davis, Colorado State University, Rutgers University, University of Nebraska, and the University of Florida.

Calendar of Important Events

↻ Indicates the newly added event since last calendar

July 2016

July 16

17th Annual Garden Party, Colonial Park Gardens, 156 Mettlers Rd., Somerset, NJ; Free with suggested donation; 11am-3pm. For more information call 732-873-2459 x21.

↻ **July 31-August 4**

100th Annual Meeting of the Potato Association of America, Amway Grand Plaza Hotel, Grand Rapids, Michigan. For more information call 517-253-7370 or visit: <http://www.experienceagr.com/mipotato/potatoassociation.org>

August 2016

↻ **August 2-3**

2016 Rutgers Turfgrass Research Field Days, 8/2 Hort Farm 2, 102 Ryders Lane, North Brunswick, NJ; 8/3 Adelpia Farm 594 Halls Mills Rd., Freehold. To register online visit: www.njturfgrass.org or call 973-812-6467. Available pesticide credits: 2 CORE credits; 6 credits each for categories 3B, PP2, and 10.

August 6

Sense & Scents-Ability "All About the Birds and the Bees", Colonial Park Gardens, 156 Mettlers Road, Somerset, NJ. Free (suggested donation); 11am-2pm. For more information call 732-873-2459.

↻ **August 8-11**

Potatoes USA summer meeting, Cedarbrook Lodge, Seattle, Washington. For more information email: Caitlin@uspotatoes.com

August 22-26

Introduction to Food Science, Rutgers Continuing Education; \$1,495 by 8/8. For more information visit: www.cpe.rutgers.edu/food or call 1-848-932-9271 x2.

September 2016

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/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/to register, call 732-873-2459.

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 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 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

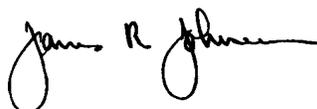
<p>✓</p> <p>Pesticide Certification Exam Schedule—Cumberland County 291 Morton Avenue Millville, NJ 08332 (Between Rosenhayn & Carmel)</p> <p><u>2016</u></p> <p>Sept 22 Oct 20</p> <p>To Register call 609-984-6614 For directions call 856-451-2800</p> <p>*****</p>	<p>✓</p> <p>Cumberland County Agriculture Development Board Soil Conservation Office 1516 Highway 77 Deerfield Street, NJ 08332</p> <p><u>2016</u></p> <p>Jul 13 Aug 10 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>✓</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> <p>*****</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

July 15 Aug 19
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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Extension Education Center
291 Morton Avenue
Millville, NJ 08332-9791

RUTGERS
New Jersey Agricultural
Experiment Station

Protecting Workers from the Effects of Heat

At times, workers may be required to work in hot environments for long periods. When the human body is unable to maintain a normal temperature, heat illnesses can occur and may result in death. It is also important to consider that hot work environments may exist indoors. This fact sheet provides information to employers on measures they should take to prevent worker illnesses and death caused by heat stress.

What is Heat Illness?

The following are illnesses that may result from exposure to heat in the workplace.

Heat Stroke is the most serious heat-related health problem. Heat stroke occurs when the body's temperature regulating system fails and body temperature rises to critical levels (greater than 104°F). **This is a medical emergency that may result in death!** The signs of heat stroke are confusion, loss of consciousness, and seizures. Workers experiencing heat stroke have a very high body temperature and may stop sweating. If a worker shows

Occupational Factors that May Contribute to Heat Illness

- High temperature and humidity
- Low fluid consumption
- Direct sun exposure (with no shade) or extreme heat
- Limited air movement (no breeze or wind)
- Physical exertion
- Use of bulky protective clothing and equipment

signs of possible heat stroke, **get medical help immediately**, and call 911. Until medical help arrives, move the worker to a shady, cool area and remove as much clothing as possible. Wet the worker with cool water and circulate the air to speed cooling. Place cold wet cloths, wet towels or ice all over the body or soak the worker's clothing with cold water.

Heat Exhaustion is the next most serious heat-related health problem. The signs and symptoms of heat exhaustion are headache, nausea, dizziness, weakness, irritability, confusion, thirst, heavy sweating and a body temperature greater than 100.4°F. Workers with heat exhaustion should be removed from the hot area and given liquids to drink.

Cool the worker with cold compresses to the head, neck, and face or have the worker wash his or her head, face and neck with cold water. Encourage frequent sips of cool water. Workers with signs or symptoms of heat exhaustion should be taken to a clinic or emergency room for medical evaluation and treatment. Make sure that someone stays with the worker until help arrives. If symptoms worsen, call 911 and get help immediately.

Heat Cramps are muscle pains usually caused by the loss of body salts and fluid during sweating. Workers with heat cramps should replace fluid loss by drinking water and/or carbohydrate-electrolyte replacement liquids (e.g., sports drinks) every 15 to 20 minutes.

Heat Rash is the most common problem in hot work environments. Heat rash is caused by sweating and looks like a red cluster of pimples or small blisters. Heat rash may appear on the neck, upper chest, groin, under the breasts and elbow creases. The best treatment for heat rash is to provide a cooler, less humid work environment. The rash area should be kept dry. Powder may be applied to increase comfort. Ointments and creams should **not** be used on a heat rash. Anything that makes the skin warm or moist may make the rash worse.

Prevention Made Simple: Program Elements

Heat Illness Prevention Program key elements include:

- A Person Designated to Oversee the Heat Illness Prevention Program
- Hazard Identification
- Water. Rest. Shade Message
- Acclimatization
- Modified Work Schedules
- Training
- Monitoring for Signs and Symptoms
- Emergency Planning and Response

Designate a Person to Oversee the Heat Stress Program

Identify someone trained in the hazards, physiological responses to heat, and controls. This person can develop, implement and manage the program.

Hazard Identification

Hazard identification involves recognizing heat hazards and the risk of heat illness due to high temperature, humidity, sun and other thermal exposures, work demands, clothing or PPE and personal risk factors.

Identification tools include: OSHA's Heat [Smartphone App](#); a Wet Bulb Globe Thermometer (WBGT) which is a measure of heat stress in direct sunlight that takes into account temperature, humidity, wind speed, sun and cloud cover; and the National Weather Service [Heat Index](#). Exposure to full sun can increase heat index values up to 15°F.

Water.Rest.Shade

Ensure that cool drinking water is available and easily accessible. (Note: Certain beverages, such as caffeine and alcohol can lead to dehydration.)

Encourage workers to drink a liter of water over one hour, which is about one cup every fifteen minutes.

Provide or ensure that fully shaded or air-conditioned areas are available for resting and cooling down.

Acclimatization

Acclimatization is a physical change that allows the body to build tolerance to working in the heat. It occurs by gradually increasing workloads and exposure and taking frequent breaks for water and rest in the shade. Full acclimatization may take up to 14 days or longer depending on factors relating to the individual, such as increased risk of heat illness due to certain medications or medical conditions, or the environment.

New workers and those returning from a prolonged absence should begin with 20% of the workload on the first day, increasing incrementally by no more than 20% each subsequent day.

During a rapid change leading to excessively hot weather or conditions such as a heat wave, even experienced workers should begin on the first day of work in excessive heat with 50% of the normal workload and time spent in the hot environment, 60% on the second day, 80% on day three, and 100% on the fourth day.

Modified Work Schedules

Altering work schedules may reduce workers' exposure to heat. For instance:

- Reschedule all non-essential outdoor work for days with a reduced heat index.
- Schedule the more physically demanding work during the cooler times of day;
- Schedule less physically demanding work during warmer times of the day;
- Rotate workers and split shifts, and/or add extra workers.
- Work/Rest cycles, using established industry guidelines.
- Stop work if essential control methods are inadequate or unavailable when the risk of heat illness is very high.

Keep in mind that very early starting times may result in increased fatigue. Also, early morning hours tend to have higher humidity levels.

Training

Provide training in a language and manner workers understand, including information on health effects of heat, the symptoms of heat illness, how and when to respond to symptoms, and how to prevent heat illness.

Monitoring for Heat Illness Symptoms

Establish a system to monitor and report the signs and symptoms listed on the previous page to improve early detection and action. Using a buddy system will assist supervisors when watching for signs of heat illness.

Emergency Planning and Response

Have an emergency plan in place and communicate it to supervisors and workers. Emergency plan considerations include:

- What to do when someone is showing signs of heat illness. This can make the difference between life and death.
- How to contact emergency help.
- How long it will take for emergency help to arrive and training workers on appropriate first-aid measures until help arrives.
- Consider seeking advice from a healthcare professional in preparing a plan.

Engineering Controls Specific to Indoor Workplaces

Indoor workplaces may be cooled by using air conditioning or increased ventilation, assuming that cooler air is available from the outside. Other methods to reduce indoor temperature include: providing reflective shields to redirect radiant heat, insulating hot surfaces, and decreasing water vapor pressure, e.g., by sealing steam leaks and keeping floors dry. The use of fans to increase the air speed over the worker will improve heat exchange between the skin surface and the air, unless the air temperature is higher than the skin temperature. However, increasing air speeds above 300 ft. per min. may actually have a warming effect. Industrial hygiene personnel can assess the degree of heat stress caused by the work environment and make recommendations for reducing heat exposure.

Additional information

For more information on this and other issues affecting workers or heat stress, visit: www.osha.gov/heat; www.cdc.gov/niosh/topics/heatstress; and www.noaa.gov/features/earthobs_0508/heat.html.

Workers have the right to working conditions that do not pose a risk of serious harm, to receive information and training about workplace hazards and how to prevent them, and to file a complaint with OSHA to inspect their workplace without fear of retaliation.

For more information about workers' rights, see OSHA's workers page at www.osha.gov/workers.html.

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For assistance, contact us. We can help. It's confidential.



www.osha.gov (800) 321-OSHA (6742)



U.S. Department of Labor

Small Fruit and Beach Plum Farm Tour



Wednesday, July 13, 2016

5:30 p.m.

Stiles Farm & Nursery

172 S. Delsea Drive

Cape May Court House, NJ 08210

5:30 p.m. - Welcome and Introductions

Jenny S. Carleo, Agricultural and Resource Management Agent, Cape May County
and Dr. Warren and Matt Stiles

5:45 p.m. - Fruit Integrated Pest Management Scouting for Spotted Wing Drosophila

Dean Polk, Statewide Fruit Integrated Pest Management Agent, Rutgers NJAES

6:15 p.m. - Plum Curculio & Oriental Fruit Moth in Beach Plums

Dr. Anne Nielsen, Extension Specialist in Fruit Entomology, Rutgers NJAES

6:45 p.m. - Brown Rot in Beach Plums

Dr. Norman Lalancette, Extension Specialist in Tree Fruit Pathology, Rutgers NJAES

7:15 p.m. - Blueberry Variety Selection for Pick Your Own

Dr. Gary Pavlis, Agricultural and Resource Management Agent, Atlantic County

7:45 p.m. - Growing Table Grapes for the Local Market

Dr. Hemant Gohil, Agricultural and Resource Management Agent, Gloucester County



*** Bring your fruit samples to be diagnosed for Spotted Wing Drosophila ***

Registration preferred but not required.

Contact Jenny S. Carleo at (609) 465-5115, ext. 607 or carleo@njaes.rutgers.edu

Directions to Stiles Farm, 172 S. Delsea Drive, CMCH, NJ 08210

From GSP Southbound: Take Exit 6 toward Burleigh/Whitesboro, turn left onto N. Wildwood Blvd. (Rt-147), continue on Indian Trail Rd (CR-618), turn right onto S. Delsea Dr. (RT-47) Farm's on Right

From Route 55, Millville: Head toward Delsea dr. on Rt 55, continue on Delsea Dr. (Rt-47), keep left onto New Stage Rd (Rt-47/Rt-347), continue on Delsea Dr. (Rt-47 South) Farm's on Left

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.