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Rain, Rain Go Away, but If You Don’t
When Should I Spray?
By Cassandra Swett
Grape and Small Fruit Pathologist
University of Maryland
By Dr. Kari Peter
Penn State Fruit Research and Extension Center
https://www.psla.umd.edu/research/research-lab-pages/swett-lab-berry-pathology

Admittedly this is not going to become the next popular hit tune on YouTube, but perhaps it rings a bell. The Berry Pathology program at UMD has recently installed two weather stations at the WYE and WMREC which include leaf wetness sensors (shown on the left), so we can monitor fruit rot pathogen infection risk

Although there are many weather stations in the area, these are the only ones to monitor leaf wetness, which require much more intensive maintenance than other weather station components (Figure 1).

Figure 1. Leaf wetness sensor is shown up close in the left image, and also in the left hand corner of the right image, together with the rest of the weather station sensors.

Based on these stations, we have had a fairly dry spring so far, which is good for fruit rot suppression. Fruit rot pathogens, particularly Botrytis and Colletotrichum, need at least 12 hours leaf wetness above 65°F for there to be a high risk of dispersal and infection. This is based on studies of both Botrytis and Anthracnose (Colletotrichum) fruit rot on strawberries, but likely also applies to activity of these pathogens in other crops: Botrytis cinerea also causes grey mold in raspberries, blueberries and apples, ripe rot of peach, and bunch rot in grapes; Colletotrichum species also cause anthracnose in blueberry and peach, bitter rot in apples, and ripe rot in grapes.

Based on weather station data, we have had no high risk events and only one low risk event on both the eastern shore (May 6, with 6 hours leaf wetness above 65°F) and northwest Maryland (May 12, 9 hours leaf wetness). Just so you can see what the data looks like, I have included an example of the WYE weather station data (Figure 2).

Figure 2. Weather station temperature, relative humidity (top) and leaf wetness hours and precipitation (bottom) at the WYE research site since the first major leaf wetness event. The date is shown between the two graphs.

There have been several small rain events in the evenings at both sites, with threats of larger rainstorms that have, up to this point, failed to manifest. With rain events comes the question: is it better to spray before or after it has rained? The conundrum: if you spray before, the plants are better protected but the product may wash off. If you spray after, the plants may get in infected before you can get in to spray, but you know that the product is there. The take home message from this article: it’s harder to wash off chemicals that you might think. Although a lot gets washed off, what sticks around really sticks and still works. It takes 1-2 inches to wash off enough fungicide to see a reduction in disease control, according to Dr. Annemiek Shilder’s studies at Michigan State.

Based on this the rule of thumb for “spraying in the rain” (also not a likely future musical hit):

1. If you get less than 1 inch, keep using the normal interval

2. If you get 1-2 inches, shorten the interval by half (e.g. If you were going to spray 7 days later, spray 3-4 days later instead)

3. If you get more than 2 inches, spray as soon as you can re-enter the field.

This is based on recommendations for grapes (M. Nita, Virginia Tech) and small fruits (A. Shilder). For regular updates on fruit rot risk events associated with leaf wetness, you can also visit and / or Follow the Berry Pathology Twitter site at: https://twitter.com/berry_pathology.
Transplant Losses
By Gordon Johnson,
DE Extension Vegetable & Fruit Specialist;
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A number of fields have had issues with poor plant performance and plant losses after transplanting in the last 10 days. Transplant shock is most prevalent when there are cold, windy conditions after transplanting and when night temperatures drop below 50°F. Plant and planting conditions that increase the risk of plant shock include:

**Poor hardening off.** Plants that come directly out of greenhouses or that have just recently come out of houses are most at risk. A proper hardening off will include reducing fertilizer and water and exposing plants to outside conditions in a protected area. It takes a minimum of 5 days to harden off plants.

**Different plant maturities.** Younger plants are more susceptible to shock. In watermelons, pollinizers are often younger than seedless due to having more rapid growth. Pollinizers are often most susceptible to plant shock after transplanting.

**Small root systems.** Plants grown in small cell sizes have fewer roots and if rooting conditions after transplanting are not favorable, they will be at a higher risk of shock than plants with larger root systems.

**Root bound plants.** An opposite problem can occur where plants have been in trays too long and roots have become root bound. Root bound plants dry out more quickly and often do not send out new roots as quickly because many roots in the root ball have died or are growing in circles in the cell.

**Root systems not fully formed.** In cells of plant trays, if the plant has not produced sufficient roots, it will not pull out of the tray properly and roots will be damaged when extracting plants and plants will be more susceptible to shock.

**Rough handling during transplanting.** If transplant crews damage plants when pulling out of trays and when setting plants, there will be increased plant shock. This includes stem crushing or damaging roots when extracting plants.

**Setting plants too low or too high.** In the transplanting process, burying plants too deep where green stem or leaf tissue is below ground can lead to that tissue being exposed to rotting organisms. Conversely, if root systems exposed (set to high), they can dry out and cause plant loss.

**Inadequate plant water.** If there is inadequate water at transplanting, plants can dry out and losses can occur.

Too much fertilizer. Too much fertilizer in the transplant water or in beds near the plant can cause salt injury and plant losses.

**Poor plant handling.** Keeping plants in tight conditions such as plant trucks for long periods of time, in extreme heat conditions, or where they have no light for an extended period will weaken plants and when exposed to the direct sunlight after transplanting, losses can occur. Plants shipped in that have been in transit too long or where truck conditions were stressful (cold or hot) will have more risk of shock. Plants that have dried out before transplanting are also at risk.

**Diseased Plants.** Plants that come out of greenhouses or hardening off areas with stem or root infections from disease organisms such as Pythium will be susceptible to losses in the field when planted.

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Seedling Diseases in Greenhouse Transplants
By Kate Everts
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and
By Nathan Kleczewski
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Transplant production is in high gear on Delmarva and some problems, mostly abiotic, have been observed. Although these current problems are primarily abiotic, a refresher on common diseases is always good. In addition, because of our delayed spring, the weather may cause some transplants to be held longer than usual before planting, which isn't optimal and will further stress the seedlings. If any seedlings appear diseased, identification of the problem is critical.

The most common fungal disease of tomato transplants in the greenhouse is gray mold, caused by *Botrytis cinerea*. However, leaf mold caused by *Fulvia fulva* and even late blight caused by *Phytophthora infestans* can occasionally be problems. All these diseases can be reduced by changing watering practices (by watering the base of the plants and early in the day to reduce moisture on the foliage). Also improving ventilation, venting, and heating (if outdoor temperatures are cool enough) to reduce humidity in the greenhouse will minimize disease.

Bacterial diseases of tomatoes include bacterial spot and speck. To reduce these diseases use certified and hot-water treated seed. Maintaining a good environment is critical to managing diseases. Additionally, there are organic and conventional fungicides that are labelled to use in the greenhouse. See the Maryland Commercial Vegetable Recommendation Guide for more information.
Transplants of squash, cucumber, watermelon and cantaloupe also may contract fungal and bacterial diseases. Reoccurring diseases here on Delmarva include Bacterial Fruit Blotch (BFB), which is caused by the bacterium *Acidovorax avenae* subsp. *citrulli*. Symptoms of BFB on seedlings begin with water-soaked areas on the lower surface of the cotyledons and inconspicuous lesions on leaves. BFB lesions will become necrotic often with yellow halos. Lesions are frequently delimited by veins. Infected seedlings collapse and die.

If the bacterium is present, conditions in greenhouse transplant houses are highly favorable for the development of BFB symptoms and the spread of disease. Good practices for greenhouse transplant production are to disinfect surfaces before planting (benches, walls, walkways, etc.). The seed source should have tested negative for the pathogen with a minimum assay number of 10,000 seeds. Clean transplant trays must be used (disinfect trays if they will be reused) and new soil. Destroy any volunteer seedlings and keep the area in and around the greenhouse weed free. Avoid overhead watering if at all possible, or water in the middle of the day so that the plants dry thoroughly before evening. The bacterium can spread on mist and aerosols, so keep relative humidity as low as possible through proper watering and good air circulation in the greenhouse. Separate different seedlots, to reduce lot-to-lot spread. If BFB is suspected, collect a sample and submit it to your Extension educator, or specialist. Destroy all trays with symptomatic plants. Remove adjoining trays to a separate, isolated area for observation. Monitor these isolated seedlings daily and destroy trays where symptoms develop. The remaining trays should be sprayed with a labeled bactericide and the applications continued until the plants are transplanted to the field.

When receiving shipments of transplants, inspect them carefully for symptoms and get a diagnosis if symptoms are observed.

**Figure 1.** Water soaked appearance of the lower surface of the watermelon cotyledon infected with bacterial fruit blotch.

**Figure 2.** Watermelon transplant with bacterial fruit blotch. Note the yellow halos around the necrotic lesions.

**Figure 3.** Upper and lower surface of leaf with symptoms of angular leaf spot.

Other bacterial diseases of cucurbits in the greenhouse:

Angular leaf spot (ALB), which also is a bacterial disease, looks similar to BFB. This “look-alike” disease occurred in Delmarva’s greenhouses several years ago. Symptoms of angular leaf spot are a chlorotic halo and may appear “shiny” (due to bacteria on the lesion surface). Small irregular lesions expand and become angular. On watermelons the borders are chlorotic. Older lesions may turn brown, dry and tear to produce a tattered appearance.

ALB also may be seedborne. There are several bacteria (*Pseudomonas viridiflava*, *P. syringae* pv. *lachrymans*, and possibly others) that cause similar symptoms and vary in their ability to cause damage. Therefore, it is important to have the disease identified. The symptoms look similar to anthracnose.
The fungal diseases gummy stem blight, Alternaria leaf blight, anthracnose, and Fusarium wilt can also be introduced into the greenhouse on watermelon seed or through inoculum from a previous crop. Diseases that are transmitted on seed often are randomly located throughout the greenhouse. Initial infections will occur as clusters of diseased plants.

Although we have not seen Fusarium wilt infected transplants in local commercial greenhouses, it has occurred in other states. Symptoms are wilted seedlings that may remain green or become chlorotic (yellow).

An additional reason to be concerned about diseases that occur in a greenhouse on transplants is that, if planted, these transplants can introduce new strains of the pathogen into your field. For example, new strains or races of the Fusarium wilt pathogen can be introduced into an area on seedlings grown from infested seed. Recently, scientists in Florida have detected fungicide resistant isolates of Didymella bryoniae (the gummy stem blight pathogen) in transplant greenhouses. If planted to the field, fungicides used for managing gummy stem blight may be ineffective on the crop.

Sanitation is important and growers should scout plants regularly and discard plants that show signs of disease. In addition, elimination of cull piles outside the high tunnel is also important. Sanitation is especially critical for diseases where the rate of increase is low (such as Fusarium wilt or nematodes), where it has a greater impact, than for diseases with short life cycles that increase exponentially, such as late blight or powdery mildew.

Other ways to reduce initial inoculum are to use sterile or disease free soil or soilless mixes. Take care in preparing mixes so that pathogens are not introduced. In the case of ground beds, soil should be sterilized. Once the sterilization is conducted, special care should be used in replanting so that diseases are not reintroduced into an environment where few organisms (and therefore little competition) exist.

Elimination of all inoculum sources is difficult because some pathogens survive in soil (such as sclerotia of S. sclerotiorum or S. rolfsii). Bacteria survive on crop debris and on twine, stakes, and wire. Because all inoculum sources cannot be eliminated, measures should be taken to minimize the presence of disease. Use Greenshield or other disinfectant to clean tools, stakes, and benches.

Composts, while not sterile, may be suppressive to disease development. For example some hardwood bark composts are suppressive to Phytophthora. However, care must be taken with the source of the compost and be wary of unverified claims of suppression. Some composts increase diseases.

Some ornamental plants can harbor diseases, so avoid having ornamental plants in the vegetable production greenhouse. Pathogens are easily spread through the activities of people, on hands, clothing, and tools. Watering can also spread pathogens. Drip tape or watering at the base of plants, will reduce moisture on the leaves and splash dispersal of pathogens.

Finally fungicides and biorational pesticides are often used on high tunnel vegetables. The following is a link to a table of some selected products that are registered for use in the USA for greenhouse vegetable production at:

http://extension.umd.edu/sites/default/files/_docs/PesticidesGH_Vegetables.pdf

If possible these products should be used in high tunnel production because they have been tested in protected environments. However if you roll up the sides of the greenhouse prior to application of fungicides, there are additional options, but avoid fungicides that are prohibited for greenhouse use.
White Rust on Cole Crops and Other Crucifers.
By Kate Everts
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White rust can be a problem on cole crops such as collards during the spring and fall. The disease is most severe during cool weather where dew forms at night and the days are warm but not hot. Symptoms of this disease are small (about 1/8th inch diameter) white or cream colored blister-like lesions on the underside of leaves, or on the flower stalks. Initially a thin layer of leaf tissue covers the lesion, but this layer eventually ruptures and the spores are released. On the upper leaf surface chlorotic spots develop.

Control measures include good sanitation practices, such as plowing the infected crop residue into the soil. Closely related weed species are also hosts and should be controlled to reduce inoculum. Seed treatment prior to planting (either with a fungicide or hot water seed treatment) should be practiced to reduce inoculum from infested seed. A few resistant cultivars are available and should be used if possible.

During the season disease can develop despite the best efforts of growers. When foliage is infected, fungicides such as strobilurins can be helpful in reducing losses.

Seed Maggot Problems in Many Vegetable Fields this Spring
By Jerry Brust
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I have been amazed by the number of problems I have seen in growers’ vegetable fields the past few weeks. Rotting, yellowing transplants or bulb plants or where seed was planted none have come up or they have come up sporadically. This cool spring has been good weather for a pest of early planted seeds, transplants and bulbs—the seed corn maggot Delia platura (SCM) and other seed maggots such as Cabbage maggot Delia radicum (it prefers to feed on cole crops) and Onion maggot Delia antiqua (it primarily feeds on crops in the onion family).

The seed corn maggot is one of the earliest seed maggots in a field and it has a huge host range of seeds and plants that it attacks. The seed maggots overwinter as pupae in the soil usually in wooded areas where the maggots fed on decaying plant material. In early spring (usually early to mid-March for SCM and mid-late April for onion maggot), the adults emerge. Adults are elongated and dark greyish-brown, with wings that overlap their bodies when they are at rest (fig. 1).

Large swarms of flies can be seen in the spring flying over newly tilled fields. The flies mate within 2-3 days after emerging and lay eggs in soil that has a great deal of decaying organic matter including any rotting vegetation or manure as well as bulbs, germinating seeds or newly set transplants—SCM flies are not finicky and will target the artificial medium in the root ball of transplants. That is why even fields that have been fumigated can still have problems with SCM.

Maggots will move into small stems and move up the plant causing a swelling of the stem just above ground level, while also causing root collapse and decay. If these stems are split you will usually find the white cylindrical larvae (figs. 2 and 3). The eggs hatch in 2-4 days in temperatures as low as 50° F. The larvae
develop over a large temperature range of 50°-90° F. However, I have found that the flies do not like to lay eggs in soil that has reached 71°F at a 2-4 inch soil depth for 2-3 days in a row. Larvae or maggots are yellowish-white, about ¼ inch in length, legless with head-ends that are wedge-shaped (fig. 3).

The maggots complete their entire development within the soil by burrowing into seeds or bulbs or feeding on cotyledons or young transplants. The pupae are brown, oval-shaped capsules 1/5 inch in length. Generally, seed corn maggots complete their life cycle within three weeks and have 3-4 generations. It is the first generation that causes the most crop damage in our area.

Although it can take 5 maggots per large seed like a snap bean to cause significant damage, once the seed has been opened up by the maggots it becomes much more susceptible to invasion from soil borne pathogens and under the cool conditions we had earlier in the spring a damaged seed or root is much more susceptible to attack. The maggots also can burrow into the bulb or stem of transplants such as watermelon or cantaloupe as well as cole crops, garlic, onions, etc.

The adult flies are often found dead, stuck to vegetation during periods of warm wet weather—like we have had the last week or so. These flies have been infected by a fungus, *Entomophthora sp.* These infected flies usually will be found at the top of a tall object in the field such as a grass seed head or a wire field-flag (fig. 4).

Just before the fungus kills them the flies cement their body via their mouthparts to the tall object and die. If you look closely you’ll see the body is filled with the white fungus that has ruptured between the segments (fig. 5). Being on a tall object allows the spores of the fungus to move longer distances and infect more flies than if the fly had died on the ground. Even though we have had a fairly dry spring in places, I still have seen many fungus infected dead flies. Unfortunately, the infection rate is not enough to reduce the seed maggot population and stop infestations.

Fig 2 and 3. Swollen stem of cucurbit plant with collapsed rotting roots. When stem is cut open the white maggots often can be found.

Fig. 4 Two SCM flies (killed by a fungus) stuck to a wire field-flag via their mouthparts

Fig. 5 Adult SCM killed by a fungus - white strands coming out of abdomen
Management: As most of you know there is no rescue treatment once maggots are found in the seed or plant. Fields with moist, heavy-textured soil usually have the worst problems. To reduce the appeal of a field to egg-laying adults, disc or plow early in the season to incorporate residues from the previous crop and allow time for residues to completely decompose before planting. Destroy any weed growth. Avoid planting a crop following root crops or cole crops such as cabbage and cauliflower or after fall tomatoes. Ensure rapid seed germination by planting in moist soil not very deep when weather conditions are good.

Later-season plantings may avoid the early season infestation of this pest. For crops like onions or garlic row covers can be used as soon as transplants are put in the field. Plants can remain covered until the ground warms. Organic medium seems to be particularly attractive to seed maggots. The use of treated seed or in-row banding of an insecticide gives some control of seed maggots, however, replacing dead transplants is the only solution after maggots kill a plant. Once seed maggot damage is noticed, it is too late to apply control procedures. Thus, economic thresholds are not useful and all management options are preventative.

Carpenter Ants
By Stanton A. Gill
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A landscape brought a bottle of large black ants to our CMREC labs. The ants were all over the customer’s kitchen counters. The customer was obvious upset and wanted action. The ants that they brought in were carpenter ants, Camponotus pennsylvanicus (DeGeer). In their natural habitat, carpenter ants aid in the decomposition of dead, decaying trees. They normally nest in logs, stumps, and hollow trees. They normally nest in logs, stumps, and hollow trees. In May and June I commonly get calls about these ants invading people’s home, usually in kitchens and bathrooms. The large, dark-colored workers often invade homes in search of food.

The name carpenter ants implies to many, that they are going to cause structural problems to their house, like termites. Not true. The carpenter ants do not have the protozoa in their gut that is found in termites that allow them to digest cellulose (wood). Carpenter ants nest in wet wood. If you have a leaking facets under the kitchen sink and the wood was remains wet for extended periods then possibly carpenter ants might nest in the wood. Repairing the leak and replacing the wood with dry wood is all that is generally necessary. Often they are not nesting in the house but are found out in the landscape nesting in a rotting tree stump or a cavity in a tree.

These ants seldom tunnel into dry, sound wood, but they may excavate moist, rotting wood and other soft materials (such as foamed plastic insulation board) to make satellite nests. Rarely will the expansion of a nest into a building’s wooden timbers cause structural damage.

Cankerworms Defoliating Trees in Southern and Central Maryland
Most Affected Trees Expected to Recover Fully

ANNAPOlis, MD (May 13, 2015) – An infestation of cankerworms have eaten the leaves off of many trees in Anne Arundel, Calvert, Charles, Frederick, St. Mary’s and Washington counties; however, entomologists with the Maryland Department of Agriculture (MDA) expect most trees to survive the defoliation without difficulty.

“These green caterpillars are often mistaken for the much more destructive gypsy moth,” said MDA Forest Pest Management Program Manager Bob Tatman, “Their presence, coupled with the obvious defoliation, has led some local residents to express concern about what’s going on. Trees experiencing defoliation due to cankerworms usually recover completely if they are not otherwise stressed.”

Cankerworms are native insects that have exhibited small, sometimes three-year outbreaks around Maryland. The last outbreak was in 2007 in Anne Arundel and Cecil Counties. The outbreaks are difficult to predict and more likely to be gone after the second year than to persist. Residents who are concerned about the cankerworm’s impact on high-value trees may want to consider insecticide treatment by a licensed pesticide applicator. In addition, watering and fertilizing may also help to keep trees healthy.

For a list of licensed pesticide applicators near you, see:
http://mda.maryland.gov/plants-pests/Pages/pesticide_db.aspx
To see the difference between gypsy moths and cankerworms, see: http://mda.maryland.gov/plants-pests/Pages/fall_and_spring_cankerworm.aspx
For more info on Maryland Forest Pest Management, see: http://mda.maryland.gov/plants-pests/Pages/forest_pest_management.aspx, or call (410) 841-5922.
The Maryland Rural Enterprise Development Center (MREDC)

Available on the web at: http://extension.umd.edu/learn/tools-building-your-online-marketing-plan
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3. MS Word Edition

Commercial 2015 Vegetable Production Recommendations
Maryland EB 236


Farmers Market Nutrition Program (FMNP), Seniors Farmers Market Nutrition Program (SFMNP) and Fruit & Vegetable Check (FVC) Training Dates for 2015.

Please note: If you took this training previously, it is current for 3 full years. If you are new to the Farmers’ Market Nutrition Program (FMNP) the Senior Farmers’ Market Nutrition Program (SFMNP) or the WIC Fruit & Vegetable Check Program (FVC), or took training prior to 2013, you are required to attend a session to participate in the program this market season. Once you have completed the training, it is valid for three years.

It is required that you RSVP for the session you will be attending. Please see the links and information below.

Any session with less than five registered participants may be cancelled. Cancellation will be determined 48 hours prior to the session, and any other attendees will be notified by email and/or phone. (The only exception will be Garrett and Allegany counties.) The sessions are free and take place before or after the lunch hour; lunch is not provided:

May 19 - Garrett County: Conference Room, Garrett County Extension Office, 1916 Maryland Hwy, Suite A Mt. Lake Park, MD 21550. 6pm – 8pm. RSVP to: Cheryl DeBerry: 301-334-6968 or cdeberry@garrettcounty.org

Article of Interest

“The Contribution of Pesticides to Pest Management in Meeting the Global Need for Food Production by 2050”
The CAST (Council for Agricultural Science and Technology) article entitled, The Contribution of Pesticides to Pest Management in Meeting the Global Need for food Production by 2050 summarizes topics and issues regarding the use of pesticides in a scientific and responsible manner. View the article at: http://www.cast-science.org/news/?new_cast_issue_paper_abou the_s significance_of_pesticides&show=news &newsID=19397
May 19 - Baltimore County: Baltimore County Agricultural Center, 1114 Shawan Road, Cockeysville. 10am - Noon.

June 4 - Queen Anne’s County: Wye Research & Education Center. 124 Wye Narrows Drive, Queenstown, MD 21658. 10am – Noon.

June 8 - Queen Anne’s County: Wye Research & Education Center. 124 Wye Narrows Drive, Queenstown, MD 21658. 10am - Noon. This will be both an in person training and a conference call. For those who RSVP for the conference call, additional call in information will be sent to you prior to the call.

June 9 – Anne Arundel County: Maryland Department of Agriculture, 50 Harry S Truman Parkway, Annapolis. 10am – Noon. This will be both an in person training and a conference call. For those who RSVP for the conference call, additional call in information will be sent to you prior to the call.

June 16 – Wicomico County: One Stop Job Market Building. 31901 Tri County Way, Room #025, Salisbury. 12:30 – 2:30pm.

If you need assistance with signing up through the weblinks, or would like to RSVP by phone, please contact Shelby Watson Hampton at 410-841-5776 or shelby.watson@maryland.gov

MDA Revises Poultry Fair & Show Policy as High Path Avian Influenza Spreads in Mid-West
All Poultry Must be Tested 10-Days Prior to Entry; Waterfowl Prohibited from Shows

ANNAPOLIS, MD (May 11, 2015) – As highly pathogenic avian influenza continues to spread in Midwestern states, the Maryland Department of Agriculture, in an abundance of caution, has revised its 2015 Fair and Show Requirements for poultry.

Effective immediately, waterfowl will not be allowed to enter Maryland Fairs and Shows. All poultry both in state and out of state poultry must be tested for avian influenza within 10 days prior to entry, or originate from a NPIP Avian Influenza Clean or Monitored flock. The revised policy is available online at: http://mda.maryland.gov/Documents/MDAfairshowpolicyrev5.8.15.pdf

At this time, the MDA is not ordering the closure of Maryland Fairs and Shows to poultry other than for waterfowl. However, MDA is constantly monitoring the situation. If highly pathogenic avian influenza enters our region, MDA will order a complete closure of all poultry from Maryland fairs and shows.

Any questions, please call the MDA Animal Health Program at 410-841-5810.

Porcine Epidemic Diarrhea Virus (PEDv) Confirmed in Maryland Swine Producers
Alerted to Take Precautions

Annapolis (May 5, 2015) – The Maryland Depart. of Agriculture (MDA) has confirmed a new case of Porcine Epidemic Diarrhea Virus (PEDv) in Central Maryland and is alerting swine producers across the state to take proper precautions to protect their herds. PEDv only infects pigs, poses no known public health threat and is not a food safety concern. Mortality rates, however, can be as high as 100 percent in suckling and early weaned pigs.

PEDv was first diagnosed in Great Britain in 1971, and Europe has had periodic outbreaks ever since. The disease was confirmed in the United States in May 2013. It was confirmed in Maryland in November 2013. That case was contained. The latest case was confirmed in late April 2015 and a hold order has been placed on that farm to contain the disease.

Primary clinical signs of the disease are: severe diarrhea in pigs of all ages, vomiting and high morbidity and mortality. It is generally spread among pigs and by infected feces transported into pig areas by trucks, boots, clothing, and the like. Once infected, the incubation period is very short (12-24 hours) and the virus is shed for 7-10 days. Producers who raise swine are encouraged to follow strict biosecurity methods and undertake disinfection procedures, which include the following:

• Limiting traffic (people and equipment) onto the farm;
• Thoroughly cleaning and disinfecting anything coming onto the farm;
• Enforcing downtime requirements and maintaining a log of visitors;
• Taking care when disposing of dead stock particularly if using a communal disposal method;
• Isolating newly arriving animals and continuing to vet discussions about animal health at the herd of origin; and
• Showering before going into the facility where practical and changing into clean boots and coveralls (veterinarians should also be careful not to track the virus between herds on their person, equipment or vehicles).

Producers who suspect their pigs are sick should contact their veterinarian immediately.

In June 2014, the USDA made PEDv a “reportable disease,” which are diseases of great public health concern. PEDv cases must be reported to MDA and to District 1, USDA, APHIS, VS, Area Epidemiology Officer Dr. Gillian Comyn at 804-343-2563 or by e-mail gillian.a.comyn@aphis.usda.gov. More information and fact sheets on PEDv are available from the American Association of Swine Veterinarians here.

Contact: Maryland Department of Agriculture Animal Health Section, 410-841-5810
WASHINGTON, May 11, 2015 – Agriculture Secretary Tom Vilsack today announced a new report showing tremendous demand for recent college graduates with a degree in agricultural programs with an estimated 57,900 high-skilled job openings annually in the food, agriculture, renewable natural resources, and environment fields in the United States. According to an employment outlook report released today by USDA’s National Institute of Food and Agriculture (NIFA) and Purdue University, there is an average of 35,400 new U.S. graduates with a bachelor’s degree or higher in agriculture related fields, 22,500 short of the jobs available annually.

“There is incredible opportunity for highly-skilled jobs in agriculture,” said Secretary Vilsack. “Those receiving degrees in agricultural fields can expect to have ample career opportunities. Not only will those who study agriculture be likely to get well-paying jobs upon graduation, they will also have the satisfaction of working in a field that addresses some of the world's most pressing challenges. These jobs will only become more important as we continue to develop solutions to feed more than 9 billion people by 2050.”

The report projects almost half of the job opportunities will be in management and business. Another 27 percent will be in science, technology, engineering, and mathematics (STEM) areas. Jobs in food and biomaterials production will make up 15 percent, and 12 percent of the openings will be in education, communication, and governmental services. The report also shows that women make up more than half of the food, agriculture, renewable natural resources, and environment higher education graduates in the United States.

Other highlights of the report:
- While most employers prefer to hire graduates of food, agriculture, renewable natural resources, and environment programs, graduates from these programs only fill about 60 percent of the expected annual openings. Even as enrollments in these programs increase and the job market becomes somewhat more competitive, good employment opportunities for the next five years are expected.
- Growth in job opportunities will be uneven. Employers in some areas will struggle to find enough graduates to fill jobs. In a few areas, employers will find an oversupply of job seekers.
- Expect to see a strong employment market for e-commerce managers and marketing agents, ecosystem managers, agricultural science and business educators, crop advisors, and pest control specialists.

Job opportunities in STEM areas are expected to grow. Expect the strongest job market for plant scientists, food scientists, sustainable biomaterials specialists, water resources scientists and engineers, precision agriculture specialists, and veterinarians.

JOB POSTING

The search for a Nutrient Management Advisor for the UME Queen Anne County office is underway. If you know of anyone who might be interested in the position, please refer them to https://ejobs.umd.edu/postings/33388

The closing date is June 12, 2015.

Vegetable & Fruit News

A timely publication for the commercial vegetable and fruit industry available electronically in 2015 from April through October on the following dates: April 16; May 14; June 11; July 9; August 13; September 10; and October 22.

Published by the University of Maryland Extension Focus Teams 1) Agriculture and Food Systems; and 2) Environment and Natural Resources.

Submit Articles to:
Editor,
R. David Myers, Extension Educator
Agriculture and Natural Resources
97 Dairy Lane
Gambrills, MD 21054
410 222-3906
myersrd@umd.edu

Article submission deadlines for 2015 at 4:30 p.m. on: April 15; May 13; June 10; July 8; August 12; September 9; and October 21.

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