WEEKLY CROP UPDATE
UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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Vegetable Crops

Rain Check in Tomatoes – *Jerry Brust, IPM Vegetable Specialist, University of Maryland*; jbrust@umd.edu

This has been a very wet period for most of us in the Mid-Atlantic. Some fields have received repeated downpours of rain and have standing water. Others have not gotten as much, but in almost all of the tomato fields I have found rain check (Fig. 1).

Rain check is the many, tiny concentric cracks that form on the shoulder of the fruit and these small cracks can expand over time (Fig. 1). The cracks feel rough to the touch, and affected areas can take on a leathery appearance and do not develop proper color as fruit ripens. Damage will be most visible on exposed, mature green, and possibly breaker fruit after rains; but at times even small, immature green fruit can be affected. This problem is mostly observed on large, fresh-market tomatoes, rather than on smaller cultivars. The exact cause is not known, but appears to be related to exposure of the fruit to rain. The problem is more severe when heavy rains occur after a long dry period with high humidity. The rain might alter the fruit temperature or water uptake, which may impede the development of the shoulder epidermis.

Cultivars can vary in their susceptibility to rain check. Those tomato cultivars that have good leaf coverage that protect the fruit and good epidermal characteristics seem to be more tolerant of rain check. Glossy fruit tends to have less of a problem with rain check than dull fruit. I have mentioned this before about using a 30% shade cloth to reduce quality problems with tomato fruit, and in my studies this year not a single fruit under any of the shade canopies had a fruit with rain check while the other uncovered tomatoes (same cultivars) had 10-20% rain check. If a grower has a cultivar that is prone to rain check they may want to pick-off any exposed green fruit as they harvest, because, unfortunately, the next few weeks look similar to the past few weeks as far as rainfall amounts go. Also with all the rain we have had the foliar diseases are going to reduce the amount of foliage coverage, exposing fruit to even more sun and rain.

Figure 1. Rain check on tomatoes. Tomatoes on left have milder symptoms compared with the ones on the right.

Agronomic Crops

Southern Blight of Soybeans - *Nathan Kleczewski, Extension Specialist - Plant Pathology*; nkleczew@udel.edu; @Delmarplantdoc

Southern blight of soybeans, caused by the soilborne fungus *Sclerotium rolfsii*, is increasing in areas of Virginia and may be observed in some areas of Delaware and Maryland. This is not the same as the white mold pathogen, *Sclerotinia sclerotiorum*, although it is similar in many ways.

Southern Blight in Soybeans. Insert depicts microsclerotia, which resemble golden BBs on the stem surface.

Overview
Southern blight has a very wide host range, with over 200 known hosts. All soybean cultivars are susceptible to the disease. The fungus overwinters in the soil as small, hard, recalcitrant microsclerotia. When conditions are wet and hot the fungus can infect soybeans, resulting in a wilt or blight. The integrity of the stem is compromised in a fashion similar to white mold. Leaves generally develop brown spots which expand. Foliage eventually turns brown, and remains attached to the stem. A lesion at the soil line may be observed that can extend up the stem several inches. A white mat of fungal growth on or above this lesion is very characteristic for the disease, and often fungal growth can be observed on nearby residue. Small, yellow/red/brown "BBs" may be observed on the stem. These are the microsclerotia, which will overwinter in the soil after harvest. Soybeans are susceptible from emergence through pod fill, but typically is only a concern when infections occur during the vegetative stages of growth.

Management is best achieved by rotating away from soybeans to corn or other grasses for at least a year, but 2 may be required if the outbreak is severe. It is important to note that this disease can be a major issue in vegetables such as tomatoes. Thus, do not plant tomatoes into fields infested with Southern blight and ensure soil and debris from infested fields are not transported to fields where tomatoes are to be produced.

Stem Canker on Soybeans - *Nathan Kleczewski, Extension Specialist - Plant Pathology*; nkleczew@udel.edu; @Delmarplantdoc

Stem canker is a disease that has been observed at increasing levels in many regions where soybeans are produced. In Delaware and Maryland we typically observe both Northern and Southern stem canker. Although different in some aspects, their overall impacts and management are similar. Both diseases are caused by fungi belonging to the Diaporthe complex.

Symptoms
As the name indicates, the hallmark of this disease is a canker that forms on the stem. Northern stem canker typically starts at a node within the canopy, and the canker spreads from the node over time. Symptoms of Southern stem canker are often observed during the reproductive phases of growth, and lesions typically occur in the lower portions of the plant. Cankers typically contain black lesions and sunken cankers with grey/brown centers. Cankers can restrict water and nutrient movement throughout the plant, which may impact yield.

Fungal structures forming on the lower stem of a soybean plant.

Sunken canker on the lower portion of a soybean stem likely caused by the Southern canker pathogen.

Infections occur early, during the vegetative growth phase of the plant. For Northern stem canker, foliage can prematurely wilt and often necrotic foliage remains attached to the stem. Plants affected by Southern stem canker may present foliage with interveinal necrosis, meaning that the veins remain green and the tissue between the veins turns yellow/brown. Foliar symptoms can resemble those caused by other soil borne diseases or issues, such as root knot or soybean cyst nematode infestation, SDS, and other diseases affecting the stem such as BSR, white mold, and Southern blight. In plants infected by Southern stem canker, spore bearing structures may form on highly susceptible cultivars. The pathogen is returned to the soil in/on infested residues, but some seed transmission may occur. Weeds such as morningglory, amaranth, hairy indigo, and wild poinsettia can also serve as hosts of the disease. Infected residue is by far the most important source of inoculum for disease.

The impact of the disease on plant yield depends on the age of the plant at the time of infection. Plants infected earlier will suffer greater yield impacts as the pathogen will have a longer period of time to infect, produce cankers, and restrict water and nutrient movement.

Management

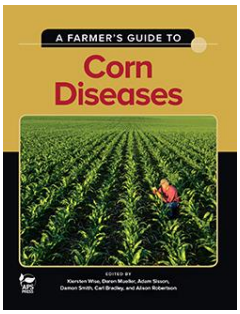
Disease caused by stem canker can be minimized by 1) Managing residue and promoting residue decomposition. This includes tillage where practical; 2) Purchasing certified seed; 3) Planting cultivars resistant to stem canker. Plants with resistance to Northern stem canker may not be resistant to Southern stem canker and vice versa. In addition, because these diseases are spreading, it is not known if changes in the Diaporthe population may be impacting the effectiveness of resistant varieties. Research is currently underway to begin to answer these questions; 4) Planting double crop beans or delaying planting of full season beans. Fungicides are not effective in stem canker management and are not economical for disease management.

General

Guess the Pest! – *Bill Cissel, Extension Agent – Integrated Pest Management*; bcissel@udel.edu

Here is another "clue" for Guess the Pest Week #18-19.

Click on the Guess the Pest logo below to submit your answer! Guessing correctly will automatically enter you into a raffle for $100 gift card at the end of the season and one lucky winner will also be selected to have their name entered into the raffle five times. For Guess the Pest # 18-19, we will also be giving away A Farmer's Guide To Corn Diseases ($29.95 value) to one lucky participant.



http://www.plantmanagementnetwork.org/book/cornfarmersguide/

Guess the Pest Week #18-19

What caused this damage?

To submit your guess click the Guess the Pest logo below or go to: https://docs.google.com/forms/d/e/1FAIpQLSfUPYLZnTRsol46hXmgqj8fvt5f8-JI0eEUHb3QJaNDLG_4kg/viewform?c=0&w=1

Announcements

2017 Dickeya and Pectobacterium Summit

November 9, 2017

The Potato Association of America meetings were held last week in Fargo, ND. Interesting items of note were:

• Scottish scientists (including Ian Toth and Gerry Saddler) recommend regulating *Dickeya dianthicola* as A2 quarantine pest. They also recommend a zero tolerance for all Dickeya spp. on potatoes in Scotland.

• Work from North Dakota and Maine presented changes in dormant tuber tests that increased Dickeya recovery (reduced the false negatives) by as much as 30 percent.

• There is a new Pectobacterium species reported from Maine that affects plants in the field and tubers in storage.

• There may be some progress in chemical control of the pathogens (and NO, it is not phosphorous acid, Tanos, or anything else applied to the foliage!!!)

Sound interesting? Valuable? These, and other speakers will all be presenting on these and other topics at the Dickeya and Pectobacterium summit in Bangor on November 9, 2017.

This is an opportunity to hear the latest information that you, as a grower, need to know about these pathogens and diseases.

There is still room at the upcoming Dickeya and Pectobacterium Summit: https://extension.umaine.edu/agriculture/programs/dickeya-and-pectobacterium-summit/

University of Delaware Vegetable and Small Fruits Extension Program Open House

Thursday, August 17, 2017 5:30-7:30 p.m.
University of Delaware
Carvel Research and Education Center and Thurman Adams Research Farm
16483 County Seat Highway
Georgetown, DE

The University of Delaware Vegetable and Small Fruits Extension Program will have an open house on Thursday, August 17, 2017. Dr. Gordon Johnson, Extension Fruit and Vegetable Specialist and Emmalea Ernest, Associate Scientist in the vegetable program will be on-hand to talk about research programs being conducted with vegetables and small fruits.

There will be a walking tour of nearby research plots including tomato and pepper variety trials, watermelon and tomato plant nutrition studies, watermelon variety trials, grafted watermelons, watermelon hollow heart research, lima bean breeding work, specialty lima bean evaluations and more. There will also be tomato and watermelon variety taste tests.

To register email Karen Adams adams@udel.edu or phone 302-856-7303

Whole Farm Revenue Protection (WFRP) Workshop

Tuesday, August 22, 2017 9:00 a.m.-12:00 noon
University of Delaware

Carvel Research & Education Center
16483 County Seat Highway, Georgetown, DE

Video: DDA Deputy Sec. Kenny Bounds on the Importance of Crop Insurance

An emerging insurance product, Whole Farm Revenue Protection (WRFP), is now available throughout the U.S. In many cases, **WFRP can provide more actual income protection at a reduced premium cost**.

This workshop will include an introduction to WFRP. Every farm family should have someone in attendance to get an overview of how the Whole Farm coverage concept works.

Details are still being arranged. Save the date and watch future Weekly Crop Updates for further details. In the meantime, contact Laurie Wolinski at 302-831-258 or LGW@udel.edu.

Fall Pasture Walk

Thursday, September 7, 2017 6:00 - 8:00 p.m.
Woodside Creamery
378 North Star Rd, Newark, DE 19711

Come and see how Woodside Creamery uses pasture to effectively feed the dairy herd. Learn how to identify weeds and how to control them in a pasture setting. In addition, the topic of integrated pest management on forage fields will be discussed. Hear how to take a proper soil sample and how to pick out the right fence charger for your operation. NRCS will give an update on the programs available for pasture planting. Experts will be on hand to answer specific questions.

The meeting is free and everyone interested in attending is welcome. If you have special needs in accessing this program, please call the office two weeks in advance.

Credits: Nutrient Management (1) Pesticide credit(1)

6:00-6:05
Welcome and Introductions
Dan Severson, University of Delaware Cooperative Extension

6:05-6:20
Tour of Pastures and Pasture Management
Jim Mitchell, Woodside Farm Creamery

6:20-6:35
Soil Sampling Techniques and How to Properly Submit Your Sample
Karen Gartley, University of Delaware Plant and Soil Science Research Manager

6:35-7:00
Weed Identification and Control in Pastures
Quintin Johnson, University of Delaware Cooperative Extension

7:00-7:15
Update on Natural Resource Conservation District Programs
Brooke Jones, NRCS District Conservationist

7:15-7:35
Integrated Pest Management in a Pasture Setting
Bill Cissell, University of Delaware Cooperative Extension

7:35-7:50
Choosing the Right Fence Charger for your Operation
Dan Severson, University of Delaware Cooperative Extension

7:50-8:00
Wrap up and Evaluations
Dan Severson, University of Delaware Cooperative Extension

To register or request more information, please call our office at (302)831-2506. Mark your Calendar and call to register by Friday, September 1!

Thank you and see you there. Dan Severson, Susan Garey

2017 UD/DNLA Summer Hort Expo

Tuesday, August 15
University of Delaware Botanic Gardens
Newark, Delaware

UD/DNLA's 2017 Summer Turf & Nursery Expo will be held Tuesday, August 15, 2017 at the University of Delaware Botanic Gardens Newark, Delaware.

For more information or to register - http://www.dnlaonline.org or contact Valann Budischak at (888) 448-1203 or info@DNLAonline.org

The Delaware Nursery & Landscape Association (DNLA) is a non-profit association of green industry professionals.

Delaware Beekeepers Association's Open Hive Event

Saturday, September 16, 2017
8:30 a.m. – 12:00 p.m.
Delaware State University
Outreach and Research Center
884 Smyrna-Leipsic Road Smyrna, DE 19977

Please join us for educational lectures, demonstrations and a first-hand look inside a real honeybee hive. Get your first exposure to these important and fascinating insects!

(Rain Date September 17, 2017)

RSVP: Kathy Hossler, DBA President, dbapresidenthossler@gmail.com

Or for more information about DSU's beekeeping program, contact Jason Challandes, jchallandes@desu.edu or 302-388-2241

Cooperative Extension Education in Agriculture, 4-H and Home Economics, Delaware State University, University of Delaware and United States Department of Agriculture cooperating, Dr. Dyremple B. Marsh, Dean and Administrator. It is the policy of Delaware Cooperative Extension that no person shall be subjected to discrimination on the grounds of race, color, sex, disability, age, or national origin.

DSU Woodland Workshop Series

Please register for any or all of these workshops by contacting Megan (302) 857-6438 or emailing mpleasanton@desu.edu. (Please note that these workshops are not all at the same location.) You must register to attend these free workshops.

Tree Identification Walk and Talk
Thursday, August 24th 5:00 p.m.
Delaware State University
1200 North Dupont Highway Dover, DE 19901

Come join us at Delaware State University. We will walk and talk about some of the native and nonnative tree species we have located on our Tree Campus USA. A tour will be provided by Dr. Cynthia Hong-Wa our herbarium curator.

Chainsaw 101
Saturday, September 23 10:00 a.m. – noon
915 Kenton Rd. Dover DE 19904

This workshop will show you the do's and don'ts when it comes to chainsaw operations. You will learn safety tips as well as general chainsaw maintenance techniques. The class will be taught by Sam Topper from the Delaware Department of Agriculture's Forest Service.

Selecting and Harvesting Firewood
Thursday, October 26 3:00 – 5:00 p.m.
142 Simmental Meadows Ln, Marydel, DE

During this workshop, you will learn what trees to choose for harvest and which to let grow. You will also learn techniques for harvesting and selecting firewood for sale. This class will be taught by a Delaware Department of Agriculture Forest Service Representative.

Tree Trimming
Thursday, November 9 10:00 – noon
884 Smyrna Leipsic Rd, Smyrna DE 19977

This workshop will teach you the importance of proper tree trimming. The first half of the class will be instructions on how to make a proper cut and the second part will be a demonstration outside.

Building Wood Duck Boxes
Thursday, December 14 6:00 -8:00 p.m.
884 Smyrna Leipsic Rd Smyrna DE 19977

Build them and they will come. During this session you will learn the importance of wood ducks and why we should promote the species. You will be able to build and prepare a wood duck box and take it home with you free of charge.

Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of August 3 to August 9, 2017

Readings Taken from Midnight to Midnight

Rainfall:

0.20 inch: August 3
1.50 inch: August 7
0.10 inch: August 8

Air Temperature:

Highs ranged from 87°F on August 3 to 77°F on August 7 and August 8.

Lows ranged from 68°F on August 4 to 59°F on August 9.

Soil Temperature:

78.0°F average

Additional Delaware weather data is available at http://deos.udel.edu/

Weekly Crop Update is compiled and edited by Emmalea Ernest, Associate Scientist – Vegetable Crops with assistance from Don Seifrit.