WEEKLY CROP UPDATE
UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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Vegetable Crops

Leggy or Stretched Watermelon Transplants

-Gordon Johnson, Extension Vegetable & Fruit Specialist; gcjohn@udel.edu

Watermelon transplants that have an extended hypocotyl, that area of the stem below the cotyledons (seed leaves), can be more susceptible to damage during and after transplanting. Additional stretching of the epicotyl and internodes above the cotyledons can also occur, causing further problems in planting and with plant survival. What is desired is a compact plant with a short hypocotyl.

Causes of plant stretch:

• Leaving plants in the germination chambers too long. Trays should be moved from germination areas to growing areas before the cotyledons emerge.

• Cloudy weather. Stretch is greater during cloudy conditions. High light reduces stretch. Make sure greenhouse films have high light transmission and replace film more often in transplant houses.

• Overcrowding and shading. Overcrowding is hard to avoid with trays tight together. However, shading can be limited by having clear end walls; making sure other structures, shrubs and trees do not produce shade; and limiting shade from above and around the plants.

• High daytime temperatures and large differences between day and night temperatures. Keep houses cooler in the daytime to reduce stretch.

• Watering program (watering too much). Keep plants on the dry side to avoid stretch and avoid overwatering

• High phosphorus fertilizers. Keep phosphorus levels low in greenhouse fertilizers to avoid stretch.

Stretched watermelon transplant with elongated hypocotyl

Plant Losses in Early Planted Watermelons

-Gordon Johnson, Extension Vegetable & Fruit Specialist; gcjohn@udel.edu

There have been plant losses in a number of early planted watermelon fields over the last 10 days even though the fields had every-row rye windbreaks.

Situation 1. Transplants were set during a 4-day period in late April with cloudy and rainy

weather. Plants failed to root into the black plastic mulched beds and then when clear sunny weather returned, many plants wilted. Transplant roots of affected plants were dark colored and the base of stems were brown.

This is a common problem in April plantings. Watermelons need soil bed temperatures over 60°F to begin rooting and ideally bed temperatures should be above 65°F to root quickly. In overcast conditions with rain, beds do not reach theses temperatures. Watermelon roots are very sensitive to cold soil conditions and will deteriorate quickly. Cold temperatures at the soil surface will also damage the base of transplant stems, particularly if plants have been set too deep.

Situation 2. Leggy (tall) transplants were set just prior to several days of high winds. Many of these transplants were injured by being whipped around with the wind. The stem base was damaged and water conduction in the stem was impaired.

In this case the issue is with leggy transplants. A more compact transplant will be closer the soil surface where there will be less wind and will not move as much with the wind. In fields with rye windbreaks, wind damage can still occur if the wind gusts are high or the wind direction is down the row.

Spinach Crown Mites in Maryland Spinach

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

We have had onion and garlic bulb mites and now this same mite group is being found in spinach crowns where they are called--wait for it--spinach crown mites *Rhizoglyphus sp*. County educator Ben Beale in southern Maryland found crown mites after he inspected damaged spinach plants and mites also were found in northern Maryland spinach fields. These mites feed within the folds of new leaves in the crown of spinach plants. This feeding causes the new leaves to become deformed as they grow (Figs.1 and 2). Crown mite adults are extremely small bulbous nearly transparent mites that also may have a yellow-beige body color with reddish-brown legs (Fig. 3). A good characteristic to look for to identify these mites is the sparse long hairs mostly found on the back end of the mite (Fig. 3). Crown mite eggs are spherical and clear and laid on the creased leaf surfaces in the crown area. I have talked about this genus of mite several times over the years, but always in regards to bulbs of garlic or onion where they feed on and open the bulbs up to infection from soil diseases. Some reports state that crown mites can act as vectors for plant pathogens such as Pythium and Rhizoctonia, but this is not definitive. Although crown mites are in the same genus as bulb mites they may or may not be the same species. As you can see there is still much that is not understood about these pests.

The spinach crown mite is most damaging when there are soils high in organic matter and cool moist conditions - plants grow a little more slowly and the mites proliferate in this type of environment. Because these mites can consume organic matter they can survive in soils after the crop has been removed. This is one reason they are difficult to control as they can survive for fairly long periods of time with no crop being present. The other reason they are difficult to 'control' is we do not realize they are causing the problem until it is too late.

Most control recommendations include sanitation and crop rotations as being important, as well as fallow periods. Pyrethroids are a possible chemical control as is Neem; any chemical control has to get down into the crown of the plant to have any chance of working. There has been little research conducted on the most efficacious material for these mites. Mostly what is needed are warm sunny days where spinach can grow well and the environment is not so conducive to the mites, which reduces their ability to injure the crop.

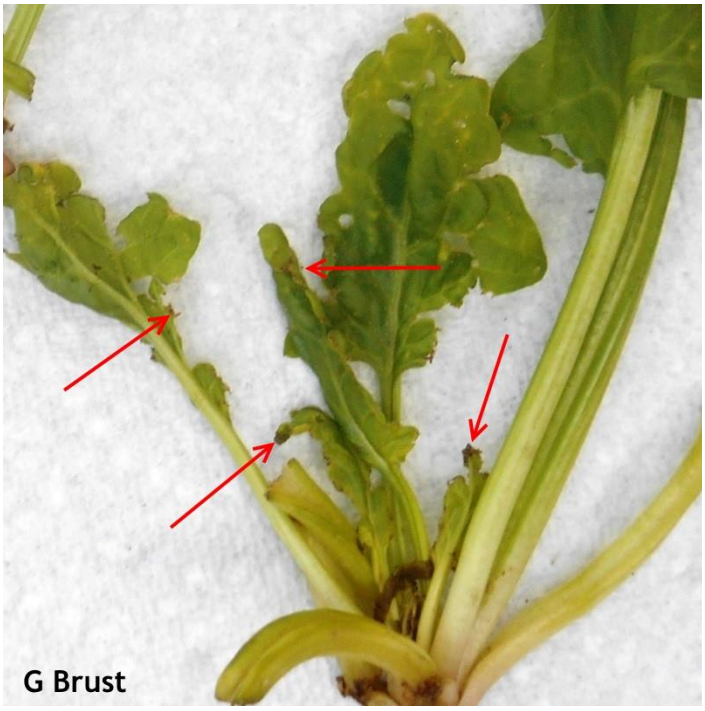


Figure 1. Crown leaves fed on by spinach crown mites are misshapen and ragged with necrotic margins as they expand.

Figure 2. In the field the crown leaves are distorted and wrinkled in appearance.

Figure 3. Spinach crown mite adult with sparse long hairs over its body

Potato Late Blight Update #1 – May 4, 2017

- Nathan Kleczewski, Extension Specialist – Plant Pathology; nkleczew@udel.edu; @Delmarplantdoc

Greenrow- May 1, 2017

	Frederica	
Date	**DSV**	**Total DSV**
5/1-5/4	0	0

Notes: Season severity of **18 severity values** indicates the need for the first fungicide application. An accumulated severity of **7 after fungicide application identifies the need for a subsequent fungicide application**. You can personalize your late blight forecasts for specific fields, sign up for email or text alerts, and enter in management information at http://blight.eas.cornell.edu/blight/.

Real time fungicide application timing tables for locations within Delaware can be accessed at http://blight.eas.cornell.edu/blight/DE

See the 2016 Commercial Vegetable Production Recommendations-Delaware for recommended fungicides: http://extension.udel.edu/ag/vegetable-fruit-resources/commercial-vegetable-production-recommendations/

Any suspect samples can be sent to the Plant Diagnostic Clinic or dropped off at your local extension office. Dr. Nathan Kleczewski can also

be contacted at nkleczew@udel.edu or 302-300-6962.

The website USABlight tracks tomato and potato late blight across the nation and can be found here: http://usablight.org/. Information on scouting, symptomology, and management can also be found on this website.

Fruit Crops

Section 18 for Brigade and Bifenture on Tree Fruit for BMSB – *Bill Cissel, Extension Agent – Integrated Pest Management*; bcissel@udel.edu

Our Section 18 renewal request for Brigade WSP manufactured by FMC Corporation and Bifenture EC and Bifenture 10DF, both manufactured by United Phosphorus, Inc. has been approved by the EPA for use on apple, peach, and nectarine to manage Brown Marmorated Stink Bugs. This use expires on October 15, 2017. You must have a copy of the label in your possession before making an application. Please contact Chris Wade at the Delaware Department of Agriculture (Christopher.Wade@state.de.us) or Bill Cissel (bcissel@udel.edu) for more information.

Agronomic Crops

Time to Scout for Alfalfa Weevil – *Bill Cissel, Extension Agent – Integrated Pest Management*; bcissel@udel.edu

Assessing Fields for Fusarium Head Blight – *Nathan Kleczewski, Extension Specialist – Plant Pathology*; nkleczew@udel.edu; @Delmarplantdoc

We had a run of wet weather that did spur an increase in the Fusarium Head Blight (FHB) risk in varieties flowering last week. A good portion of wheat in Kent and New Castle counties as well as counties at similar latitudes in Maryland still has not flowered. I expect we will see this wheat flower over the next 5-7 days. Rain is forecast during this period, and this, coupled with moderate temperatures may increase our scab risk for soon to be flowering wheat. After the start of flowering you will want to check back in about 18-21 days to assess fusarium head blight. Start by randomly assessing one spot per 10 acres per field. At this site, do not look at the plants and randomly pick 10 heads. Rate the heads for the percent of FHB. Glume blotch typically gives the glumes a grey appearance, whereas FHB will cause bleaching of florets or sections of the head. The florets will be pinkish.

Let's use an example. Here is wheat an assessment of a single site may look like

FHB
0, 0, 0, 10, 30, 0, 10, 1, 50, 0
Average = add severities and divide by total heads assessed = 10.5%

Repeat this assessment at one spot per 2-5 acres of field. Fields with values greater than 10 may see some FHB related yield losses and may be more likely to have elevated DON levels at harvest. Fields in this category should be harvested first, and care taken to keep this grain separate from high quality grain from clean fields.

Soybean Burndown – If You Haven't Sprayed Yet, Good Luck – *Mark VanGessel, Extension Weed Specialist*; mjv@udel.edu

If you have already burned down your soybean fields, be sure to look at them before planting and decide if you are going to need another application of a burndown herbicide (glyphosate or paraquat) due to newly emerged weeds. Even if you included a residual herbicide with your burndown, you need to check to be sure that no weeds have started to emerge.

For those fields that have not been burned down, you have a few things to consider. If you have marestail/horseweed you have two options, 2,4-D or Sharpen to tankmix with glyphosate. Most formulations of 2,4-D used at a pint have a restriction of 15 days preplant, but the 1 pt rate is not going to be very effective on taller horseweed plants. Some formulations of 2,4-D will allow 1 lb acid equivalent (1qt of a 4lb gal)

as close as 15 days to planting. Be sure to check the labels. Sharpen use on coarse-textured soils with less than 2% organic matter needs to be applied 30 days before soybean planting due to potential crop injury. Medium to fine textured soils treated with 1 oz of Sharpen has no waiting period, while there is a 15-day interval with the 1.5 oz rate. Horseweed plants beginning to bolt will need at least the 1.5 oz rate for effective control.

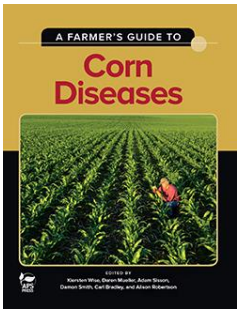
Be aware that if you use Sharpen, the label does not allow another group 14 herbicide (Valor, Authority product, or Reflex) within 30 days on coarse-textured soils with low organic matter or 14-days for all other soil types.

Many of the soybean fields may have had a rye cover crop in them. While the rye will help with weed control by suppressing the growth of weeds or preventing weed emerging, it requires very thick mulch of a cover crop to be highly effective. So scout your cover crop fields to determine what the best approaches for weed management are.

General

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

Congratulations to Josh Emhoff for identifying the disease as net blotch and for being selected to be entered into the end of season raffle for $100 not once but five times. Everyone else who guessed correctly will also have their name entered into the raffle. Josh will also receive a FREE copy of A Farmer's Guide to Corn Diseases. Click on the Guess the Pest logo below to participate in this week's Guess the Pest! For Guess the Pest # 5, 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 # 4

Net blotch is a common fungal leafspot of barley in our region, with severity determined by the weather (favored by cool and wet) and the susceptibility of the barley cultivar. High nitrogen fertilization early will also favor development. Net blotch and the spot blotch form of net blotch rarely get severe enough in Delaware to warrant fungicide applications. If a control measure is necessary, fungicide applications protecting the flag leaf (FGS 8 – Flower) will be the most efficacious. The pathogen can persist in residues of barley and volunteer barley. No-till fields with high levels of residue therefore, will show greater symptoms. Contaminated seed is another source of the disease. The symptoms that develop on barley can vary depending on the fungus present (there are several species or types of the fungus) and the barley cultivar. Later in the season we see the spot blotch form of net blotch more frequently than the classic square or rectangular net-like symptoms. Rotation, encouraging residue decomposition via disking, and planting

clean seed are the best means of managing this disease. There is some resistance known to the net blotch form.

Guess the Pest #5

Guess the Pest? Think you know the answer…. Click on the *Guess the Pest* Icon below or go to https://goo.gl/forms/pWjHQUpmjABFB0v32 to submit your best guess.

Weeds Are Emerging – *Mark VanGessel, Extension Weed Specialist*; mjv@udel.edu

FYI, common ragweed and Palmer amaranth are emerged in many of the fields that have not been treated yet. So, if you have glyphosate-resistant biotypes you will need to be sure to have products in the spray tank for burndown treatments that will control these seedlings.

UD Extension Is Looking For Your Input On Our Two New Specialists– *Mark VanGessel, Extension Weed Specialist*; mjv@udel.edu and *Amy Shober, Extension Nutrient Management and Environmental Quality Specialist;* ashober@udel.edu

The University of Delaware is in the process of hiring an Extension Agronomist and an Extension Entomologist. We have selected three candidates for each position and they will be interviewing on Campus (at Townsend Hall) and at the Carvel Research and Education Center in Georgetown over the next four weeks.

We are inviting stakeholders to meet the candidates, participate in their seminars, ask questions, and provide us feedback. These are vital positions for Delaware agriculture and we are hoping you can join us in this selection process. The times and locations for the presentations are listed below. These interviews are open to everyone.

At the same time, we realize it is an extremely busy time of the year, and so if you are unable to join us in person, we will be taping the seminars and you will have a chance to provide feedback. The videos will be available for about

one week starting on May 12 for the Agronomy position and May 24 for the Entomology position. More details can be found at http://sites.udel.edu/carvelnews/presentations/

Agronomy Candidates

May 3-4: Dr. Jarrod Miller

Date	Time	Location	Activity
Wednesday, May 3	8:30 am	Carvel Center (REC) Georgetown	Coffee and informal discussions
	9:00 am		Extension seminar
Thursday, May 4	10:30 am	132 Townsend Hall, Newark	Research (30 min) and Teaching (20 min) seminars

May 8-9: Dr. Ramdeo Seepaul

Date	Time	Location	Activity
Monday, May 8	8:30 am	Carvel Center (REC) Georgetown	Coffee and informal discussions
	9:00 am		Extension seminar
Tuesday, May 9	10:30 am	132 Townsend Hall, Newark	Research (30 min) and Teaching (20 min) seminars

May 10, 12: Dr. Nicole Fiorellino

Date	Time	Location	Activity
Wednesday, May 10	10:30 am	Fischer Greenhouse, Newark	Research (30 min) and Teaching (20 min) seminars
Friday, May 12	8:30 am	Carvel Center (REC) Georgetown	Coffee and informal discussions
	9:00 am		Extension seminar

Entomology Candidates

May 16-17: Dr. David Owens

Date	Time	Location	Activity
Tuesday, May 16	8:30 am	Carvel Center (REC) Georgetown	Coffee and informal discussions
	9:00 am		Extension seminar
Wednesday, May 17	1:00 pm	Townsend Hall, Newark	Research (30 min) and Teaching (20 min) seminars

May 18-19: Dr. Jaime Pinero

Date	Time	Location	Activity
Thursday, May 18	8:30 am	Carvel Center (REC) Georgetown	Coffee and informal discussions
	9:00 am		Extension seminar
Friday, May 19	9:30 am	Townsend Hall, Newark	Research (30 min) and Teaching (20 min) seminars

May 23-24: Dr. Arturo Goldarazena

Date	Time	Location	Activity
Tuesday, May 23	8:30 am	Carvel Center (REC) Georgetown	Coffee and informal discussions
	9:00 am		Extension seminar
Wednesday, May 24	9:30 am	Townsend Hall, Newark	Research (30 min) and Teaching (20 min) seminars

Announcements

Twilight Tailgate Session

Wednesday, June 8, 2017 6:00 p.m.
UD Cooperative Extension Research Demonstration Area
3/4 mile east of Armstrong Corner on
Marl Pit Road -Road 429
Middletown DE

Join your fellow producers and the UD Extension team for a discussion of this year's demonstration trials and current production issues. Other topics will include nutrient management, pest management and weed management.

Bring: A tailgate or a lawn chair.

Credits: DE Nutrient Management (1) and Pesticide (1) credits .

We will wrap up with the traditional ice cream treat.

Please call our office at (302) 831-2506 or email sharonlu@udel.edu to register by Thursday, June 1, for additional information, or if you require special needs assistance.

Dan Severson, Extension Agent – Agriculture, New Castle County Cooperative Extension

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.

It is the policy of the Delaware Cooperative Extension System that no person shall be subjected to discrimination on the grounds of race, color, sex, disability, age or national origin.

Growing Farmers Workshops

Coverdale Farm Preserve is a 356-acre farm and nature preserve located in Greenville, DE. We are pleased to offer a series of free hands-on workshops for farmers of all levels of experience and scale of operation. Registration is required. *To register please contact Michele Wales: michele@delnature.org.*

Spring 2017 Series: Protected Culture Growing includes the use of greenhouses, high tunnels, low tunnels, hoop houses, and caterpillar tunnels. Both high and low tech options are designed to help defend your crops against the extremes of nature from torrential rains, parching drought, scorching heat, and frigid cold. Protected Culture Growing extends your seasons, brings harvests earlier in spring and later in fall to your customers, and can be used on acres of open field to urban raised bed gardens. Engage in hands-on workshops that take you from construction to production targeting key topics for your growing success.

Vegetable Production in High Tunnels
Wednesday, May 17, 8:00am – 12:00pm
Rain Date: Friday, May 19, 8:00am – 12:00pm

Vegetables are the focus of this workshop with particular attention to selected varieties trailed for protected culture growing, operating and managing irrigation and fertigation systems, utilizing a vine clip trellis system, plant health, pruning, and planting schedules for maximized production.

Troubleshooting in High Tunnels
Wednesday, June 21, 6:00pm – 8:00pm

Keep your plants thriving and productive. Learn to identify common pests including insects, plant diseases, nutrient deficiencies. Discover preventative strategies, steps, and solutions to compromising conditions in order to maximize yields.

Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of April 27 to May 3, 2017

Readings Taken from Midnight to Midnight

Rainfall:
0.17 inch: May 2
Air Temperature:
Highs ranged from 89°F on April 29 to 67˚F on May 3.
Lows ranged from 71˚F on April 29 to 49˚F on May 3.
Soil Temperature:
70.4˚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.