WEEKLY CROP UPDATE
UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

Volume 24, Issue 16 **July 8, 2016**

Vegetable Crops

Crusted Soils and Replanting Decisions in Lima Beans

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

Lima bean planting is currently in full gear. With some areas receiving heavy rainfall right after planting, crusting and stand emergence can be a major problem. There are also some Fordhook limas being planted this year on Delmarva. Fordhooks are very sensitive to seed damage and poor soil conditions and often have stand issues.

Soil crusting can be a major concern in lima beans. As the lima bean seed germinates, the cotyledons or seed leaves are actually the two halves of the seed and provide the stored energy reserves for the young seedling. They must emerge from the soil intact for the young seedling to grow well. During emergence, if the soil crusts, the soil force may be so great that the large cotyledons are trapped in the soil and the seedling stem, the hypocotyl, breaks in half. The resulting "headless" seedlings will not recover. Similarly, if only one of the two cotyledons emerges intact, the plant will be stunted because only half the stored seed reserves are available. These stunted plants will not be productive.

In compacted surface soils, if the soils remain moist, the force required for the lima bean seed to emerge with both cotyledons intact will be reduced. However if the soil dries and forms a crust, the force required increases to a critical point.

To reduce problems with crusting, do not work soils or plant when wet (a problem this year). Limit trips across the fields with tillage equipment, especially disc harrows, and use planters with furrow closers that do not compact immediately above the seed. Adjust closers to limit compaction if planting must be done in damper soils. Consider ways to reduce tillage while forming a good seed bed. From a soil health standpoint, maintaining good organic matter levels in soils will also reduce crusting in fields.

In fields that have crusted, use of a rotary hoe to break the crust may improve emergence. However this must be weighed against damage to cotyledons. Another option on soils that are crusted is to do a light irrigation to reduce the force required for emergence. If emergence is variable, as long as stands have not been reduced more than 30 %, then no action may be necessary until first cultivation which can break the crust and aerate the soil. This cultivation should take place as soon as plants are large enough to cultivate.

For baby lima beans, recommendations are for a stand of 3 to 4 plants per foot of row (Fordhooks 2 per foot). However, lima beans have a great ability to compensate for lower populations by producing larger plants. Past research has shown that even at 50% stand reduction, yield was only reduced by 14-21% in baby limas.

In evaluating a lima bean field with stand losses, the following guidelines are suggested:

● If stand losses are 33% or less, then replanting should not be considered. The yield potential will be close to a full stand.

● If the stand losses are between 33% and 50% and there are not a high percentage of large gaps, then replanting should not be considered. The yield potential will be 85-90% of a full stand.

● If the stand losses are between 33% and 50% and there are a high percentage of large gaps, then replanting may be considered. If fields can be reasonably divided into low stand and high stand areas, then replant only the low stand areas.

● For stands less than 50% then replanting should be considered up to July 20 (working with your processor).

Potato Late Blight Update #16: July 8, 2016 – *Nathan Kleczewski, Extension Specialist – Plant Pathology*; nkleczew@udel.edu

Green row: April 29th, 2016

There are recent, unconfirmed reports of late blight in nearby regions of Maryland. Scout aggressively for late blight, particularly if irrigating heavily.

If you notice symptoms of black leg, please contact me or the Plant diagnostic clinic to have the disease confirmed. Dickeya symptoms increase with heat

	Townsend		Camden		Leipsic		Kenton	
Date	**DSV**	**Total DSV**	**DSV**	**Total DSV**	**DSV**	**Total DSV**	**DSV**	**Total DSV**
5/18-5/22	2	13	2	19	2	19	2	19
5/22-5/26	2	15	0	19	2	21	2	21
5/26-5/30	5	20	5	24	5	26	5	26
5/30-6/2	2	22	4	28	5	31	3	29
6/2-6/6	6	28	4	32	5	36	5	34
6/6-6/9	0	28	0	32	0	36	0	34
6/9-6/15	0	28	0	32	0	36	0	34
6/15-6/24	11	39	5	37	6	42	4	38
6/24-6/30	1	40	0	37	3	45	3	41
6/30-7/5	2	42	2	39	1	46	2	43
7/5-7/8	1	43	0	39	0	46	0	43

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.

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.

Late Blight Update – *Kate Everts, Vegetable Pathologist, University of Delaware and University of Maryland*; keverts@umd.edu

I have received four new reports of late blight in Maryland in the last two days. These outbreaks include a two acre planting of tomatoes in St. Mary's county, a potato field on the eastern shore, a 15 acre field of tomatoes near Crisfield in Somerset County, and a small tomato planting in Garrett County near the location where late blight was confirmed last month. The genotype of the pathogen isolates involved in these new reports are being determined. All tomato and potato plantings are at risk for late blight in Maryland and Delaware. Growers should consult the Commercial Vegetable Recommendation Guide and apply appropriate targeted fungicides (http://extension.udel.edu/ag/vegetable-fruit-resources/commercial-vegetable-production-recommendations/).

Cucurbit Downy Mildew Update – *Kate Everts, Vegetable Pathologist, University of Delaware and University of Maryland*; keverts@umd.edu

Downy mildew was confirmed on cucumber on the eastern shore of Maryland last week. No new reports of downy mildew have been received. However, continue to spray cucumber with downy mildew specific materials and spray other cucurbits with protectant fungicides. Most importantly, scout the fields aggressively for symptoms.

General

Sclerotinia vs "Birds Nest Fungi" – *Nathan Kleczewski, Extension Specialist – Plant Pathology*; nkleczew@udel.edu

Sclerotinia are fungi that cause what is commonly known as white mold in many vegetable crops as well as soybeans. The fungi produce dark, hard structures called sclerotia, which allow for prolonged survival in the soil in the absence of a host. The fungus produces fleshy, trumpet-like structures called apothecia (Figure 1) when temperatures are appropriate and humidity levels are high, often after canopy closure.

Figure 1. A sclerotium with five apothecia. Each apothecia will eject many infective spores into the crop canopy. Note the small size of the apothecia. Photo obtained from: http://ucanr.edu/blogs/salinasvalleyagriculture

Apothecia produce copious amounts of spores, which are ejected into the canopy. When these spores land on senescing tissues, most importantly flower petals, they germinate and grow into the plant stem, choking off water transport throughout the plant and ultimately causing wilt and plant death. When scouting fields, one may observe apothecia under the appropriate conditions, which may indicate a potential issue with white mold in the future in fields containing susceptible crops. Another group of fungi is present in many fields throughout Delaware that can be easily misidentified as Sclerotinia. These are called the "birds nest fungi." These fungi produce cups containing multiple spore bearing, egg-shaped structures (Figure 2).

These are not pathogenic fungi, but instead are saprophytic fungi that decompose plant tissues in the soil. If you just cannot get enough information on birds nest fungi, you can check out the action packed video (With Nirvana's "Smells Like Teen Spirit" as the background music) at this link: https://www.youtube.com/watch?v=EGlaQhDi5ts

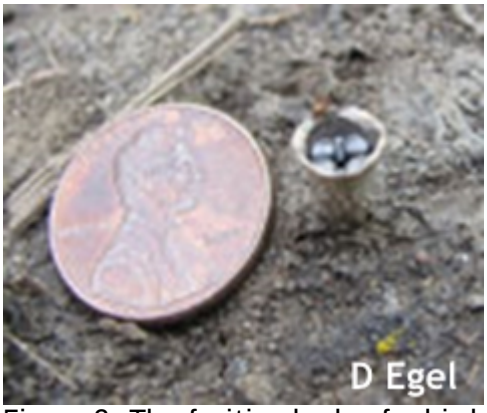

Figure 2. The fruiting body of a birds nest fungus. Note that it is similar in size to Scletotinia apothecia, but contains "eggs" within the cup. There are many species of birds nest fungi, which vary in shape, cup, and "egg" color, among other traits.

Announcements

Free Webinars in July, Sponsored by the Mid-Atlantic Women in Agriculture

7/13: Basics of Creating and Using Infographics - There are many ways to create infographics and you don't need to be a designer with Photoshop. There are also many ways to use this type of graphic to enhance a story or more visually summarize a lengthy report. Break things out by number or by topic. It's fun to do AND it's very shareable.

7/27: Farm Diversification - Ideas on alternative crops - Farm diversification opens opportunity and increases potential profitability! Adding specialty fruit and vegetable crops to your farm can increase profit margins in several ways. Like diversifying in the stock market, engaging in more than one enterprise and adding value to what you already grow will spread profit risk, not to mention "growing" interest in locally produced foods. This webinar will introduce participants to some new potential specialty crops, discuss new federal regulations to be aware of and regional research that has been done with specialty crops over the past few years.

To register:
http://www.eventbrite.com/e/wednesday-webinars-registration-11452674257

Webinars begin at noon EST. Duration is approximately 1 hour. For optimal performance we suggest using Internet Explorer as your web browser and connecting via Ethernet connection instead of wireless (wireless will work, but a hard line is more stable)

See website for more information and other upcoming topics: https://extension.umd.edu/womeninag/webinars

If you do not have access to high speed internet and would like to participate in one of the above webinars, contact Tracy Wootten at wootten@udel.edu.

A Day in the Garden with Sussex County Master Gardeners

Saturday, July 16, 2016 10:00 a.m.-2:00 p.m.
16483 County Seat Highway, Georgetown, DE
(west of Sussex Tech)

Come see the many changes to our garden, including the new outdoor "man cave"!

Activities
- Plant Sale
- Educational Exhibits
- Monarch Waystation
- New! Dry Shade Garden
- Garden Smart Garden Easy
- Container & Raised-Bed Gardens
- Ask an Expert – Sick Plant Clinic
- Ice Cream from the UDairy Creamery

Children's Programs
- 10:30 & 12:15 – The Misadventures of Peter Rabbit in Farmer McGregor's Garden
(free ice cream for kids under 16 with coupon from Farmer McGregor)
- Pot a plant to take home
- See touch & smell the garden

Free Mini-Workshops
10:15 a.m. Orchids
11:00 a.m. & 1:00 pm Making Bee Houses
11:30 a.m. Cooking from the Garden
12:00 noon Miniature Gardens
12:30 p.m. Worm Composting

Bring your camera!

For more information call 302-856-7303 or go to www.rec.udel.edu

Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of June 30 to July 6, 2016

Readings Taken from Midnight to Midnight

Rainfall:

0.09 inch: July 1
0.32 inch: July 3
0.04 inch: July 4

Air Temperature:

Highs ranged from 90°F on July 6 to 70°F on July 3.

Lows ranged from 73°F on July 5 to 60°F on July 3.

Soil Temperature:

78.2°F average

Additional Delaware weather data is available at http://www.deos.udel.edu/monthly_retrieval.html and http://www.rec.udel.edu/TopLevel/Weather.htm

Weekly Crop Update is compiled and edited by Emmalea Ernest, Associate Scientist – Vegetable Crops