



WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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Last Issue of Weekly Crop Update for 2013

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This is the last issue of Weekly Crop Update for the 2013 season. I hope that this newsletter has been a useful resource to you as you dealt with the challenges of this past growing season. My thanks to the Extension specialists and agents who have contributed articles this year – the WCU would obviously not be possible without them. My thanks as well to our office staff at the REC, who make sure the WCU gets to our fax and mail subscribers.

As editor of WCU, I appreciate your comments and suggestions for improvement of this publication. You can contact me at the email address above or at (302) 856-7303.

Best wishes for a safe and prosperous fall harvest season. I look forward to seeing many of you at meetings this winter.

Kind regards,

Emmalea



Vegetable Crops

Planting Small Grains for Spring Vegetable

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

Small grain windbreaks are a useful tool when planting early warm season vegetables such as watermelons or tomatoes the following spring. Small grain crops planted in early fall will overwinter and then elongate and head in the spring. Depending on the crop used and when they were planted in the fall, they can reach 3-5 feet in height by the end of April. Small grain windbreaks serve two main functions: 1) they provide protection against wind that can desiccate or physically injure transplants and young plants and reduce sandblasting in sandy soils and 2) they help retain heat by reducing convective heat losses of wind passing over plant beds. Small grain windbreaks are particularly useful where vegetables are grown on plastic mulch. They also can serve as a winter cover crop.

Rye has been the preferred windbreak because tall types are still available and it elongates early in the spring. While barley is also early, tall varieties are not generally available. Wheat and triticale are intermediate and later.

Windbreaks are planted in every drive row, between every 2-3 beds or between every bed. Maximum protection and earliness are achieved when windbreaks are used between each bed and black plastic mulch is used for beds.

Orientation of windbreaks so they are planted East-West is preferred to reduce shading.

Setting up windbreaks can be done in several ways. A simple method is to plant the field solid with the small grain and then till planting strips using a narrow tillage device (tractor mounted rototiller or multiple passes with a narrow field cultivator) in the spring before it puts on much growth. Tilling bed strips is best done in March. Alternatively, a non-selective herbicide can be used to kill strips in the late winter or early spring and then tilled later. Another method is to set up grain drills to plant 2 or 3 rows of small grain and then block the seed meters to skip the area where the beds will be in the spring. This allows more flexibility in the spring for tilling beds because there is less vegetation to manage. A third method we have tried in demonstrations at our UD Georgetown research station is to plant bed areas with a winter killed cover crop and then rye in the windbreak areas. This is done by dividing up and blocking certain seed meters on the drill. We use a drill with both small grain seed box and a small seed box. We plant forage radish with the small seed box in the area we want to have the bed and block of the other seed meters and do the opposite for the rye in the larger seed box.

It is best to plant windbreaks earlier in the fall to get good fall tillering. The last week in September or first week in October is ideal for most of Delaware and mid to upper Delmarva. Rye can be planted later but will then be delayed in the spring by several days and tillering may be reduced. You should plant at standard rates or higher (120 lbs/acre equivalent or more) for the most effective windbreaks. Higher seeding rates should be considered when planting late.

Frost, Freezes and Fall Vegetables - *Gordon Johnson, Extension Vegetable & Fruit Specialist;*
gcjohn@udel.edu

As we move into October, frost becomes a factor in harvest and recovery of vegetables. Later in the fall, freezes can become a concern. The first frost on inland sites generally occurs by the third week in October in the middle of Delmarva.

However, this can vary quite a bit. For example, the first temperature below freezing in the Laurel DE area occurred on Oct13 (28.9°F) in 2012, Oct 30 (30.7°F) in 2011, Nov 1 (31.6°F) in 2010, Oct 20 (31.5°F) in 2009 and Oct 20 (29.8°F) in 2008. The first hard freeze (below 28°F) in the Laurel area occurred on 11/5, 10/31, 11/14, 11/6, and 10/31 from 2012 to 2008 respectively. Coastal areas will see a delay in frost. For example, Kitts Hummock, near the Delaware Bay, had first frosts on 11/6, 10/31, 11/2, 11/6, and 10/31 over the last 5 years.

Light to moderate frosts will not affect cool season vegetables such as cole crops, lettuce, and spinach. Some cool season crops, such as broccoli, kale, and collards will handle freezing conditions. In contrast, cauliflower, once frozen, will deteriorate quickly. Warm season vegetables vary considerably in their ability to tolerate a light frost. For example, pepper is more cold tolerant in the fall than tomato which is severely damaged by frost. Pumpkins and winter squash will have leaf and vine kill with light frost but fruits will remain marketable. Heavier frosts and freezes will damage the fruit. Sweet potatoes must be dug quickly after a frost kills vines and will suffer root damage if soil temperature drops below 40°F. We often have significant acreage of beans still out in the fall. Snap beans and lima beans will have leaf damage but still can be harvested with a light frost. It is when temperatures drop below 28°F and pods freeze that harvest recovery is affected. When lima beans are frosted, you may have several weeks to get into the field and harvest. However, if there is pod freezing, the harvest window drops to a few days, depending on the day temperatures, before seeds start to "sour".

For unprotected frost sensitive vegetables, it is important to follow weather forecasts closely for risk of frost or freeze. Clear sky conditions after a cold front moves through will be the highest risk for frost or freeze. When risk is high, growers should harvest all marketable produce ahead of the frost or freeze with crops like tomato (ripe, breakers, and mature greens).

Floating row covers offer the best protection of sensitive vegetables against frost and freeze injury, depending on the thickness of the row cover, expect 2-6°F degrees of protection. Moist

soil also can store some heat, lessening frost, and sprinklers can be used for fall frost protection (see past articles of spring frost protection).

Agronomic Crops

Arrested Ear Development of Corn - *Nathan Kleczewski, Extension Specialist - Plant Pathology; nkleczew@udel.edu and Richard Taylor, Extension Agronomist; rtaylor@udel.edu*

Arrested ear development (AED), sometimes called, "hollow husk" is a rather understudied and somewhat unexplained phenomenon that has been observed occasionally in Delaware corn and has been found in other corn growing regions in the United States. Symptoms of AED vary from tiny ears of corn similar to those you may consume in Asian food to stout cobs sometimes referred to as, "beer can" cobs (Figure 1). Overall, ears are shorter, contain fewer kernels, and have dried tips. Husks tend to be slender and pointed at the tip as a result of smaller ears. Often silk emergence is reduced and leaves may develop a red or purple color. AED is sometimes associated with multiple ears at a node and its occurrence can be rare and sporadic within a field. Several other disorders can resemble AED. For example, injury from a period of drought stress at the wrong stage of development can result in short, blunt ears similar to AED. Poor, incomplete kernel set due to poor pollination or asynchronous pollen shed and silking, insect feeding and silk clipping, as well as a number of other related causes differ from AED in that the cob grows to nearly its full length but kernel set is either scattered, concentrated at the butt or tip end, or is limited at the tip end. Another syndrome called "banana" ears or "zipper" ears is often associated with extreme environmental conditions or defoliation injury and possibly even excessive silk growth.



Figure 1. A blunt ear, also called a beer can ear, which is the hallmark of Arrested Ear Development syndrome.

Although the literature on AED is limited, the disorder has been associated with several factors including sudden drops in temperature and application of pesticides during early ear development (V8-V16). Although the exact mechanism is unknown (some speculate ethylene is involved -e.g. Schmitz et al. 2011. DOI: 10.2134/agronj2011.0048) we do know that AED is not the result of disease.

A brief cold shock of even a few hours can result in AED during the early stages of ear formation.

(<http://www.extension.purdue.edu/extmedia/BP/BP-85-W.pdf>) as well as the Corny Network, authored by Dr. Bob Nielson (<http://www.agry.purdue.edu/ext/corn/news/archives.html>).

Considerations for Small Grain Weed

Control - Mark VanGessel, *Extension Weed Specialist*; mjv@udel.edu

For no-till fields, a non-selective herbicide needs to be used prior to planting. If grasses or perennial weeds are present, glyphosate is a better choice than paraquat. Fields worked with a vertical tillage implement for residue management still need a non-selective herbicide. These implements are not weed control tools.

There are few effective herbicides labeled for preemergence applications. Sharpen is labeled but we have limited data in the region. Valor can be used at 1 to 2 oz with the burndown application, but there must be a 7 day period between application and planting wheat. Valor is not labeled for barley.

Axiom and Prowl H2O can be used at crop emergence (Axiom at the spike stage and Prowl H2O at 1 leaf stage, winter wheat only). Neither provides control of emerged weeds but can have utility in situations of needing limited residual control shortly after planting.

Products that provide postemergence control include: Harmony, Harmony Extra, Starane Ultra, Osprey, PowerFlex, Axial XL, or 2,4-D. Other labeled herbicides with a limited fit include Finesse and Maverick.

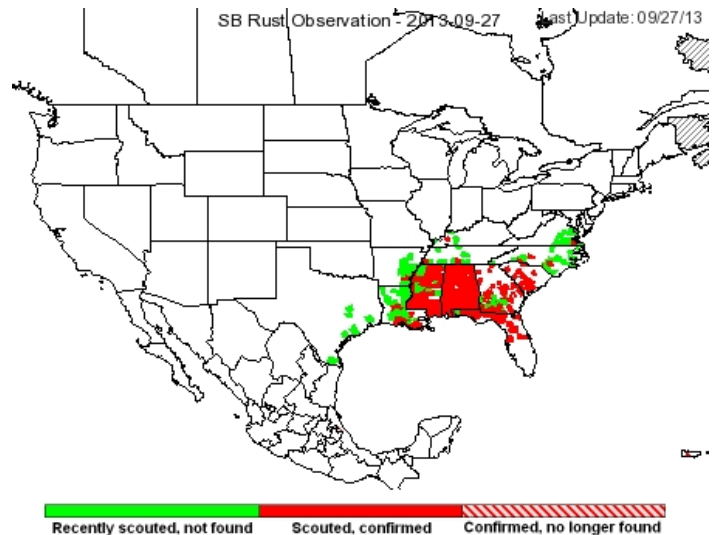
Control of annual ryegrass has been good with Osprey, PowerFlex, or Axial XL. However, ALS-resistant ryegrass has been identified in Delaware and these populations will not be controlled by Osprey or PowerFlex. Furthermore, Finesse will not control these populations. In situations where ALS resistance is suspected, Axial XL is the best postemergence option.

ALS-resistant common chickweed has been confirmed in Delaware. These biotypes are not

controlled with Harmony Extra, Osprey, PowerFlex or Finesse. Currently, Starane Ultra has showed the best activity, often not killing common chickweed, but providing good suppression. Starane Ultra can be used either in the fall or spring.

Soybean Disease Update - Nathan Kleczewski, *Extension Specialist - Plant Pathology*; nkleczew@udel.edu

SBR continues to develop and spread in the surrounding areas, with an additional report of the disease in Isle of Wight County, Virginia and a field of double-cropped soybeans nearing the R6 growth stage in Caldwell County, Kentucky. Kentucky is the 11th state to report SBR. Other reports have come in from North Carolina and Mississippi, among others. In 2013, SBR has been detected in 213 counties in 11 states in the U.S. including 65 counties in AL, 53 counties in MS, 40 counties in GA, 22 counties in FL, 13 counties in SC, 11 parishes in LA, three counties in NC, two counties in AR and VA, and one county in both TN and KY. SBR was also reported in two municipalities in Puerto Rico.



The current status of Soybean Rust in the United States as of September 27, 2013.

We are currently monitoring all counties for SBR and have not detected any signs of the pathogen in the area. Monitoring of the pathogen will

continue until double crop beans are at R6, which should be right around the corner for many fields. Unlike Virginia, which has been warm and wet, Delaware has been rather dry and cool, which is not conducive to disease development. However, we never know what the future may hold in terms of weather. Just a reminder, fungicide sprays are most useful if the risk for disease is moderate (i.e. we find it within 100 miles of Delaware) to high (we find it in a Delaware field), beans are at a growth stage earlier than R6, and the weather is favorable for disease development. There are several fungicides labeled for SBR, although remember that a greening effect may occur if a product containing a group 11 fungicide is utilized. In addition, late planted beans may be at risk for frost. **Sprays are not recommended at the current time.** Fields should continue to be scouted for SBR through R6 as a precaution. Suspect leaves can be sent to the University of Delaware Plant Diagnostic clinic or to your local Extension office. For updates on SBR, go to <http://sbr.ipmpipe.org/cgi-bin/sbr/public.cgi>. I will continue to add commentary under the Delaware section on the ipmPIPE website, and any future updates on the progress of SBR will be posted on the [Field Crops Disease Management Blog](#).

This year has been an interesting introduction to Delaware agriculture, to say the least. I hope to meet many more of you at various conferences and meetings during the winter, and I can be easily reached by phone or email. Feel free to call or write with any questions or concerns you have regarding field crops disease management. I will be populating the Field Crops Disease website for the University of Delaware during the winter and will continue to post to the [Field Crops Disease Management Blog](#).

General

Fall Control of Perennial Weeds - Mark VanGessel, *Extension Weed Specialist*; mjv@udel.edu

Fall is the best time to treat most perennial weeds because it is the time that plants are best able to move the herbicide to the roots where it

will do the most good. When considering fall weed control the emphasis should be on what the patch of weeds will look like next spring or summer not the amount of dead stems this fall. Also, it is important to consider that a fall application will not eradicate a stand of perennial weeds; the fall application will reduce the stand size or the stand vigor. Fall application of glyphosate is the most flexible treatment for most perennial weeds such as bermudagrass, Canada thistle, common milkweed, common pokeweed, dock, hemp dogbane, horsenettle and johnsongrass. Rates of 1 to 1.25 lb acid per acre are consistently the most economical (or about 1.5X the normal use rate for annual weeds). Allow at least 7 days after treatment before tilling, mowing, or planting through the treated area. Dicamba (Banvel) at 2 to 4 pints is also labeled for artichoke, bindweeds, dock, hemp dogbane, horsenettle, milkweeds, pokeweed or Canada thistle. Allow 10 days after treatment before disturbing the treated plants. Planting small grains must be delayed after dicamba application 20 days per pint of dicamba applied. Fall herbicide applications should be made to actively growing plants. Allow plants to recover after harvest before treating them. Weed species differ in their sensitivity to frost; some are easily killed by frost (i.e. horsenettle) others can withstand relatively heavy frosts. Check the weeds prior to application to be sure they are actively growing.

Announcements

Health Insurance: Making a Smart Choice in Delaware

Experts at Delaware Cooperative Extension are available to help the public make informed choices concerning their health care insurance needs. Extension personnel and volunteers have received specialized training in the content of health insurance and can provide resources that will help individuals and families to be more confident in making decisions about health care insurance.

Workshops are being held in New Castle, Kent and Sussex Counties in September through December.

For more information go to:
<http://extension.udel.edu/fcs/family-and-consumer-sciences/insure/>

The workshop brochure is online at:
<https://extension.udel.edu/fcs/files/2013/08/SCHI-flyer-fall-2013-final2.pdf>

Or call the New Castle Co. Extension Office at (302) 831-1239 or email: twocenttips@udel.edu

DSU Pole Lima Bean Fall Field Day

Wednesday, October 2, 2013 5:30-7:30 p.m.
Council Farm
98 Sharon Hill Rd.
Dover, DE 19904

This program is organized by the Delaware State University Small Farms Program and is being held at the farm of a long-time pole lima bean producer.

Topics & Tour:

- Pest issues, including stink bugs
- Weather conditions affecting growth and yield
- Tour of the Council's bean patch

To register, for location information, and if you have any questions or special needs, please contact Ileana Garcia at (302) 857-6366 or imayes@desu.edu.

Monitoring Investments in Water Quality Improvement:

Are We Moving the Needle?

Wednesday, December 4, 2013
Delaware Technical and Community College, Terry Campus
Dover, Delaware

Please plan to join us for a one-day workshop that will highlight ongoing agricultural management activities from multiple perspectives, discuss how those impacts on water quality are assessed, and review the changes we have observed. In the afternoon, interested attendees are encouraged to participate in a structured discussion about how to better integrate efforts, data, and networks with the goal of building an atmosphere of scientific collaboration!

Full agenda, continuing education credit details, and registration information to follow. Please contact

Jennifer Volk at jennvolk@udel.edu or 302-730-4000 to receive registration and agenda information.

Sponsored by:

- Delaware Department of Agriculture
- Delaware Department of Natural Resources and Environmental Control
- USDA Natural Resources Conservation Service
- US Geological Survey
- University of Delaware – Cooperative Extension

Southeast Strawberry Expo

December 3-6, 2013
Sheraton Imperial Hotel
Durham, NC

This is a joint meeting of the Expo (which is coordinated by the North Carolina Strawberry Association) with the North American Strawberry Growers Association. The workshops are on December 3, there is a full-day farm tour on December 4, and educational sessions and trade show on December 5-6.

For more information, email info@ncstrawberry.com, call 919-542-4037, or visit www.ncstrawberry.com.

Exhibitor inquiries are welcome.

Delaware Agriculture Week

Monday, January 13 – Friday, January 17, 2014

The University of Delaware Cooperative Extension, Delaware State University Cooperative Extension and the Delaware Department of Agriculture are again cooperating to organize a week of agriculture-related events.

The following General Agenda outlines the various meetings and events that are planned and their approximate times. Most will take place at the Delaware State Fairgrounds. The associated trade show will take place in the Dover Building from Monday, January 13 to Thursday, January 16. The First State Antique Tractor Club Exhibit will be set up January 14-16 in the Exhibit Hall.

The detailed session agendas will be available online at the end of November and the completed program will be mailed out in December.

Delaware and Maryland Pesticide Recertification credits, Nutrient Management credits and CCA credits will be offered.

AG WEEK GENERAL AGENDA

Monday, January 13

Poultry Production and Nutrient Management Session

State Fairgrounds – 2 to 8 PM

Fruit & Vegetable Growers Association of Delaware Annual Meeting

State Fairgrounds

- *Fruit Session* - 6 to 9 PM

Tuesday, January 14

Fruit & Vegetable Growers Association of Delaware Annual Meeting

State Fairgrounds

- *General Session* – 9 AM to Noon
- *Fresh Market/Vine Crops* – 1:30 to 4:30 PM
- *FVGAD Annual Awards Banquet* – 6-9 PM at Harrington Fire Hall

Hay and Pasture Session

State Fairgrounds - 9 AM to 4:30 PM

Equine Session

State Fairgrounds - 6 to 9 PM

Small Ruminant Session

State Fairgrounds - 6 to 9 PM

Wednesday, January 15

Fruit & Vegetable Growers Association of Delaware Annual Meeting

State Fairgrounds

- *Processing Crops Session* - 9 AM to Noon
- *New Grower Workshop* - 1:30 to 4:30 PM
- *High Tunnel Workshop* - 1:30 to 4:30 PM
- *Direct Marketing Session* - 9 AM to Noon

Corn Production Session

State Fairgrounds – 6 to 9 PM

Small Flock Poultry

State Fairgrounds - 6 to 9 PM

Beef Cattle Producers Session

State Fairgrounds - 6 to 9 PM

Thursday, January 16

Agronomy/Soybean Session

State Fairgrounds - 9 AM to 4:30 PM

Friday, January 17

Forestry Session

State Fairgrounds – 10 AM to 3:00 PM

2014 Women in Agriculture Regional Conference

February 20, 2014

The 13th Annual WIA Regional Conference will be on February 20, 2014 in Dover, DE

Weather Summary	
Readings Taken from Midnight to Midnight Rainfall:	
0.33 inch:	September 21
0.09 inch:	September 22
Air Temperature:	
Highs ranged from 79°F on September 21 to 65°F on September 23.	
Lows ranged from 53°F on September 22 to 44°F on September 25.	
Soil Temperature:	
67.3°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, Extension Agent - Vegetable Crops

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