



WEEKLY CROP UPDATE

UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION

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Last Issue of Weekly Crop Update for 2015 and Weekly Crop Update User Survey

This is the last issue of Weekly Crop Update for the 2015 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.

It has been several years since we surveyed you, the Weekly Crop Update's readers and subscribers, to see what you find useful about this publication and to try to get some ideas on how it could be improved. **Please participate in our WCU Reader Survey** and help us make this publication better. You can take the survey online at:

https://delaware.qualtrics.com/SE/?SID=SV_6xkTgqblD6k4nJ3

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 Ernest
Associate Scientist - Vegetable Crops;
emmalea@udel.edu

Vegetable Crops

Cover Crops - Are You Growing Cover or Crops? -Gordon Johnson, Extension Vegetable & Fruit Specialist; gcjohn@udel.edu

Cover crop acreage has been growing in the region, largely due to nutrient management efforts and cost share programs. In the last year, there has been an emphasis on growing cover crops for soil health benefits and programs are underway from NRCS and Conservation Districts to increase cover crop plantings for soil improvement.

Nutrient management goals and soil health goals are not necessarily the same. You can think about this with the question are you growing *cover* or *crops*?

In nutrient management based cover crop programs, the goals are to have crops that can take up residual nitrogen and also provide cover to reduce erosion losses. Non-legumes predominate, with most of the acres planted in small grains such as rye with some recent use of radishes (Maryland programs are non-legume based while Delaware conservation district programs allow for the use of legumes). No fertilizer can be used with these cover crops. In this case the answer to the question above is that a *cover* is being grown. While there will be soil health benefits, they are not maximized.

In contrast, when soil improvement is the primary goal, the cover crops are grown as *crops*. You are growing plants to maximize the

benefits they provide. To increase organic matter and improve soil health the main goal is to produce maximum biomass above ground and below ground. A secondary goal would be to provide different types of organic matter (such as with cover crop mixtures) to support a diverse soil microbial environment.

In other cases the goals will be different. With leguminous cover crops a goal may be to maximize the amount of nitrogen fixed. With soil compaction reducing crops such as radishes, the goal is to maximize the amount of “biodrilling” - the amount of tap roots being produced. With biofumigant crops, the goal is to maximize the production of fumigant-like chemicals the crops produce. With mulch based systems, the goal is to maximize above ground biomass.

What these soil improvement and specific use goals have in common is the need to treat the cover crop as a *crop* to optimize plant growth. This would include seeding at the proper rate to achieve optimal stands, planting at the right time, using seeding methods to get maximum seed germination and plant survival, having sufficient fertility to support good plant growth, providing water during dry periods, managing pests (insects, diseases, weeds), and inoculating legumes. If cover crop mixtures are being used, the ratios of seeds being planted must be considered to have the best balance of plants in the final stand.

The best cover crop stands are obtained with a drill or seeder that places the seed at the proper depth, at the proper seeding rate, with good soil to seed contact. Fertilization and liming programs should be used to support season-long growth - fertilizers and other soil amendments will be necessary in most cases. Nitrogen will need to be added for non-legumes.

When the crop is terminated is also key. The cover crops should be allowed to grow to the stage that maximizes the benefits they have to offer before killing the crops. Allowing a winter cover to grow for an extra week in the spring can make a large difference in the amount of biomass produced.

Again, consider the question are you growing a *cover* or a *crop*? The answer is important to achieve your cover crop goals.

Agronomic Crops

Early Planting and Potential for Insect Problems in Small Grains - Joanne Whalen, Extension IPM Specialist; jwhalen@udel.edu

In recent years, there has been a trend in some areas of the state towards early wheat planting. Unfortunately, early planting can result in a number of insect problems including aphids, which vector barley yellow dwarf virus, direct damage from green bug aphids, Hessian fly and armyworms. . Planting after the fly free date (Oct 3 - New Castle County, Oct 8 - Kent County, and Oct 10- Sussex County) can help to reduce losses from insect pests.

As a reminder, although we have not seen significant problems with Hessian fly in wheat for a number of years, I do see it at low levels each year. As indicated in the publication (ANR-1069) Biology and Management of Hessian Fly in the Southeast, “correct varietal selection can be an effective method of Hessian fly management. In most cases, resistance is based on a single gene present in the variety that must match a gene in the Hessian fly. Unfortunately, the Hessian fly can overcome host plant resistance mechanisms, resulting in the formation of new strains called biotypes. To be effective, wheat varieties must be specifically resistant to the local Hessian fly genotype.” Some varieties marketed in our area are screened for biotype L. Unfortunately, we have no recent data regarding the biotype(s) of Hessian fly present in Delaware wheat fields. In the past it was biotype L but we currently have no data as to whether that is still the case. Therefore, a combination of strategies including planting after the fly free date for your area, are still needed to reduce losses from Hessian fly.

Sorghum and Sugar Cane Aphid - Joanne Whalen, Extension IPM Specialist; jwhalen@udel.edu

We still have not detected sugar cane aphid or received any reports of this aphid being found in sorghum fields in Delaware ; however, we do not have a statewide survey program for sorghum.

This very destructive aphid has been moving north this summer. It has been found in Virginia and last week was reported in Suffolk, VA. It can be a significant problem at harvest so be on the lookout for this aphid which is easy to identify and should not be confused with corn leaf aphid. Sugarcane aphids are yellow and can be distinguished from other aphids in sorghum by the presence of black tailpipes on the tail (cornicles) and black feet below their yellow legs. For information on this insect, please check the following link:

<http://blogs.ext.vt.edu/ag-pest-advisory/sugarcane-aphid-update/>

NOTE - not all materials labeled in states to our south and/or emergency use labels can be used in Delaware so be sure to check for both federal and state labels before using any insecticide.

Charcoal Rot on Soybean - Nathan Kleczewski, Extension Specialist - Plant Pathology; nkleczew@udel.edu

Over the last two weeks I have been hearing more reports of charcoal rot showing up in soybean fields in Delaware and Maryland and Nancy Gregory at the UD Diagnostic Clinic confirmed charcoal in a soybean sample last week. Charcoal rot is a soilborne stem and root disease that tends to develop after pod fill when plants are under heat or drought stress. Premature death occurs but the **foliage will remain attached to the stem**. The stem and root system may turn grayish in color and one may observe black dots or specks inside the lower stem or underneath the outer stem tissue (Figure 1 a; Figure 2). Note that the appearance of **black zone lines in stems is not diagnostic of this disease as suggested in the past (Figure 1 b)**. Recent research indicates that these zone lines are caused by at least one, if not two, different species of fungi not associated with charcoal rot.

Charcoal rot is caused by a fungus, *Macrophomina phaseolina*, which can infect over 500 plant species. The fungus overwinters in the soil via overwintering structures. These

structures germinate and infect roots. After pod set, the fungus colonizes the stem more aggressively, choking off water movement from the roots to the foliage. This results in wilt and plant death.



Figure 1. Black dots/specks and a grey appearance within stems or roots is diagnostic of charcoal rot (a). Black zone lines in the stem are NOT associated with charcoal rot (b).



Figure 2. Black flecks indicative of charcoal rot may also be observed under the epidermis.

The best management for charcoal rot is to avoid conditions that will stress the plant. Do not plant at excessive populations or overfertilize. Planting under irrigation will help in hot, dry seasons. Rotation or tillage will have negligible impacts. Seed treatments and foliar fungicides are not effective for managing this disease.

Fungicides for Corn Ear Rot - Nathan Kleczewski, *Extension Specialist - Plant Pathology*; nkleczew@udel.edu

This season I have had several questions on controlling ear rots in corn. Ear rots are caused by several different fungal species. The most common in our area are *Diplodia*, *Gibberella*, and *Fusarium* ear rots. Others, such as *Aspergillus*, and *Penicillium* ear rots are less common in our area, but do occur on occasion. Ear rots can enter ears either directly, such as in *Diplodia*, through the silks, as is seen in *Fusarium*, or secondarily as a result of insect or abiotic damage to the ear or husk. There are also scores of non-pathogenic fungi that can get into ears secondarily when kernels are damaged or exposed and conditions are persistently wet.

Managing ear rots in corn: Focus on reducing the source of inoculum and minimizing stress. Fungal pathogens that cause ear rots are mostly derived from corn residue, and some hybrids are more prone to issues than others. **Rotation** to soybean or small grain/double crop soybean will help reduce the amount of corn residue available the next time corn is planted in a field. **Tillage** that buries residue also will help reduce the amount of available inoculum in a given growing season.

Damage to the ear increases ear rots by providing entry points for the fungi to enter the ear. Minimize ear rots by following good **insect management** practices and using Bt corn when possible. Some hybrids may be more prone to ear rots because of physical characteristics associated with the cob, such as poor husk cover, which also can provide entry for ear rot fungi. Lastly, stress, such as **water stress or overirrigation** at pollination or shortly after pollination can result in deformed or open husked ears that are more easily infected by ear rot fungi.

What about fungicides for ear rots?

Yes there are fungicides that have ear rot suppression on their labels. However, you can imagine that adequate coverage of the silks and husk is going to be an issue. Remember that the fungicides we use are going to be taken up locally and most will move up plant tissues with

water gradients. Therefore, the fungicide is not likely to have any direct effect on the kernels themselves, but rather the silks and husk. Insect damage, open husks, etc. after VT allow entry points that will not be suppressed by fungicides, even if thorough coverage was attained. A recent publication in Plant Health Progress examined fungicide efficacy and timings for suppressing *Diplodia* ear rot in corn. The researchers conducted field studies at two locations from 2011 through 2013 to test two fungicides (Proline and Quilt Xcel) against *Diplodia* ear rot. Fungicides were applied at V6, VT-R1, and R3. Researchers found that **fungicides did not consistently reduce *Diplodia* ear rot compared to untreated controls in any year.**

Reference:

Romero Luna, M. P. and Wise, K. A. 2015. Timing and efficacy of fungicide applications for *Diplodia* ear rot management in corn. Plant Health Progress doi:10.1094/PHP-RS-15-0010.

Considerations for Small Grain Weed Control - Mark VanGessel, *Extension Weed Specialist*; mjv@udel.edu

For no-till small grain 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, often need a non-selective herbicide since these implements are not very effective tools for weed control.

There are few effective herbicides labeled for preemergence applications. Sharpen is labeled for wheat and barley 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. Plant wheat at least one inch deep, otherwise risk of injury is increased. Valor is not appropriate for fields planted by “spinning the seeds” on soil surface and shallow incorporation with a disk or turbo-till. Valor is not labeled for barley.

Axiom and Zidua can be used after wheat emergence, typically spike stage. Both Axiom and Zidua are only labeled for winter wheat, not barley. Neither provides control of emerged weeds but can have utility in situations of needing limited residual control shortly after planting. Axiom and Zidua have good activity on annual ryegrass. Zidua has provided annual ryegrass in limited trials. Neither product will provide full-season control. Fields treated with Axiom should be seeded at least one inch deep while fields treated with Zidua should not be seeded more than one and a half inches deep.

Products that provide postemergence control include: Glory, Harmony, Harmony Extra, Huskie, Starane Ultra, Osprey, PowerFlex, Axial XL, or 2,4-D. Other labeled herbicides with a limited fit include Finesse, Maverick and Prowl H2O.

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, use of Axiom or Zidua shortly after planting, followed by 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. UD Weed Research Program has had good control with Glory. There is a 24-c label for Glory in Delaware (in other states, check before applying). Glory is a metribuzin product from MANA. Applications in the spring have provided much better crop safety than fall application. Be sure to read the label for application rates (which change with application timing). Some wheat and barley varieties are sensitive to Glory, so be careful to use on varieties with known crop safety. Starane Ultra has shown some activity; often not killing common chickweed, but providing good suppression. Starane Ultra can be used either in the fall or spring.

Jagged chickweed control was evaluated last year in UD trials, and Glory and Huskie provided good postemergence control.

Control of cereal rye in wheat or barley is difficult. In field where the rye cover crop or the wind-breaks produced seeds in the spring, work the soil at least 14 days prior to seeding. The tillage will stimulate the rye seeds to germinate and then kill the rye plants with additional tillage or with glyphosate at planting. While we have not tried vertical tillage, I suspect it would have better results if it was set aggressively, to move soil and cover seeds. There are no herbicides to control cereal rye in a winter wheat or barley crop.

Harvest Aids for Soybeans - Mark VanGessel, Extension Weed Specialist; mjv@udel.edu

A few herbicides are labeled as harvest aids for soybeans. Glyphosate and paraquat will have the broadest spectrum of control, with paraquat having quicker activity on the weeds. Aim, Clarity, and Defol are also labeled, but they have a very narrow spectrum of control. Be sure to read the label of the product you are considering for all the precautions and restrictions. Application of these products is after the pods begin to lose their green color. Applications made this late in the season means they will have little to no impact on reducing weed seed production.

Announcements

Poultry Grower's Disease Control Workshop: Keeping Disease Off of the Poultry Farm

Wednesday, September 30, 2015

If you missed the first workshop on June 11th, the same program will be presented on September 30 at the following times and locations:

10:00 a.m. – 12:00 noon

VFW Worcester Post 93

2017 Bypass Rd., Pocomoke City, MD

2:00 p.m. – 4:00 p.m.
Bridgeville Fire Hall
311 Market St., Bridgeville, DE

6:00 p.m. – 8:00 p.m.
Ruthsburg Community Club
105 Damsontown Rd., Queen Anne, MD

TOPICS INCLUDE:

Avian Influenza Outbreaks in Commercial Poultry in the U.S.

Dr. David Shapiro, *Veterinarian, Perdue Farms*

Practical Biosecurity Best Management Practices for Broiler Growers

Dr. Jon Moyle, *Extension Specialist, University of Maryland Extension*

Ms. Jenny Rhodes, *Ag Extension Educator, University of Maryland Extension*

Mr. Bill Brown, *Poultry Extension Agent, University of Delaware Cooperative Extension*

Avian Flu Response and Control Plan on Delmarva

Dr. Don Ritter, *Veterinarian, Mountaire Farms*

REGISTRATION DEADLINE is September 25, 2015

Please register online by visiting:
<http://ag.udel.edu/rec/>. When registering, please be sure to choose the location of the workshop you would like to attend.

For more information, please contact Lisa Collins at lcollins@udel.edu or call (302) 856-2585 x702

This event is hosted by University of Delaware Cooperative Extension and University of Maryland Extension, in cooperation with Delmarva Poultry Industry, Inc., Delaware Department of Agriculture and Maryland Department of Agriculture.

2015 Delaware Cooperative Extension Horticulture Short Courses

Landscape 101 Series

Plant Identification- Woody Shrubs

Wednesday, October 7, 4:30 – 5:30 PM, University of Delaware Botanic Gardens

Learn to identify some of the woody shrubs used in the landscape. We will cover the common disease and insect pests of each and strategies for incorporating

into the landscape. Meet at UDBG kiosk in the Charles Dunham Garden.

Credits: 1 Pest., 1 CNP

Instructors: Valann Budischak and Sue Barton

Weed Identification/Maintenance

Wednesday, October 21, 4:30 – 5:30 PM, University of Delaware Botanic Gardens

Examine some common weeds found in turf and flower beds during the fall and we will discuss management options.

Credits: 1 Pest., 1 CNP,

Instructor: Brian Kunkel

Plant Identification- Shade Trees

Wednesday, November 4, 4:30 – 5:30 PM, University of Delaware Botanic Gardens

Learn to identify some of the major shade trees used in the landscape. We will cover the common disease and insect pests of each and strategies for incorporating into the landscape. Meet at UDBG kiosk in the Charles Dunham Garden.

Credits: 1 Pest., 1 CNP

Instructors: Valann Budischak and Sue Barton

Mid-Atlantic Crop Management School

November 17 to 19, 2015

Ocean City, MD

Local and regional farmers, independent consultants, certified crop advisers, nutrient management consultants, and agency and university professionals join together to learn the latest on a wide range of topics from local, regional, and even national speakers.

Sessions on pest management, crop management, soil and water management, fertility management and some interactive sessions will be offered. Certified Crop Adviser (CCA), Nutrient Management, and Pesticide credits are available. Continuing education credits are available from a number of states in the region including Delaware, Maryland, West Virginia, Virginia, New Jersey, and Pennsylvania. There are 43 different talks to choose from over the 2.5 day school.

Register for MACMS registration online at:

<https://www.SignUp4.net/public/ap.aspx?EID=20154802E>

If you prefer a pdf version of the MACMS brochure, please email Richard Taylor at rtaylor@udel.edu.

Delaware Agriculture Week

Monday, January 11 – Thursday, January 14, 2016

Delaware Agriculture Week will be held in Harrington at the Delaware State Fairgrounds from January 11-14, 2016. Delaware “Ag Week” is in its 11th year and is an ongoing collaboration between University of Delaware Cooperative Extension, Delaware State University Cooperative Extension and the Delaware Department of Agriculture.

Delaware Ag Week provides useful and timely information to the agricultural community and industry through educational meetings and events. In addition, it is a great time for networking and fellowship with old and new acquaintances.

The associated trade show will take place in the Dover Building from Monday afternoon, January 11 to Thursday January 14.

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

For more information, detailed session agendas, exhibitors, sponsors, and directions visit the DE Ag Week website at:
<http://sites.udel.edu/delawareagweek/>.

Wheat Quality and Management Meeting

Wednesday, January 13, 2016
Harrington, Delaware

This meeting will include experts speaking on different aspects of grain production and quality management, from diseases to storage/sampling to marketing. Keep an eye out in the Delmarva Farmer for more details.

Weather Summary

Carvel Research and Education Center Georgetown, DE

Week of September 17 to September 23, 2015

Readings Taken from Midnight to Midnight

Rainfall:

no rainfall recorded

Air Temperature:

Highs ranged from 86°F on September 19 to 72°F on September 21.

Lows ranged from 64°F on September 10 to 56°F on September 18 and September 23.

Soil Temperature:

71.7°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
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