Wisconsin Crop Manager

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Managing Through the Drought: A Special ASA Webinar

Hot, dry conditions have significantly impacted crops across wide areas of the U.S. in 2012. While some areas have received rain, many are experiencing conditions not seen for many years.

As a service to our members and certificants, the American Society of Agronomy is offering a webinar for Certified Crop Advisers, Certified Professional Agronomists, ASA Members, and the broader agricultural community on Wednesday, July 11, 2012. A panel of experts will discuss a number of drought-related topics, including assessing crops and their condition, management recommendations for various situations, risk management, and insurance. A question and answer session will follow the panel discussion.

Confirmed panelists:

- Shawn Conley, PhD, Soybean and Wheat Extension Specialist, University of Wisconsin-Madison,
- Emerson Nafziger, PhD, Professor of Crop Sciences and Extension Agronomist, University of Illinois – Urbana-Champaign,
- Chad Lee, PhD, Grain Crops Extension Agronomist, University of Kentucky, and
- Brian Fuchs, MS, Climatologist, National Drout Mitigation Center, University of Nebraska
- Tim Hoffmann, Director of Product Administration and Standards, USDA Risk Management Agency

As a special program, this webinar is being offered at no charge, but pre-registration is required. Once registered, the webinar system will send participants a confirmation email with instructions about how to connect.

Date: Wednesday July 11, 2012

Time: 12 Noon to 1:30 pm Central Time, 1:00 to 2:30 pm Eastern, etc.

Cost: No Charge

Format: Webinar Panel Discussion using GoToMeeting software

Registration & Additional Information

Questions? Contact Michele Lovejoy, American Society of Agronomy, 608-268-4953

Agronomy/Soils Field Day Schedule is Set

The annual Agronomy/Soils Field Day is scheduled for Wednesday, August 29 at the Arlington Agricultural Research Station. As usual there is a great line up of speakers and topics! See below for details. Light refreshments will be available beginning at 8:00; the first tour will depart promptly at 8:30. Dr. Kathryn VandenBosch, the new Dean of CALS, will provide an update from CALS during lunch. Lunch will be available for $5. CCA continuing education units will be available. So mark your calendars and join us on August 29th.

Corn/Soybean/Wheat Tour (8:30 & 10:30)

- Rotation and management impact on Fusarium species – David Marburger & Shawn Conley
- Current research for finding and mitigating glyphosate resistance in Wisconsin Corn & Soybean – Vince Davis
- Maximizing corn yield – Joe Lauer
- When are nematodes a problem for corn? – Ann MacGuidwin

Forages Tour (8:30 & 10:30)

- Benefits and costs of Roundup Ready alfalfa establishment systems – Mark Renz

- The status of new races of Aphanomyces root rot of alfalfa – Doug Rouse
- Managing alfalfa in drought – Dan Undersander

Soils Tour (10:30 & 1:00)

- Soil compaction: Issues and prevention – Francisco Arriaga
- Nitrogen management after a drought – Carrie Laboski
- Cover crops, rooting depth, and soil building – Matt Ruark
- Implementing no-till through the use of cover crops – Erin Silva

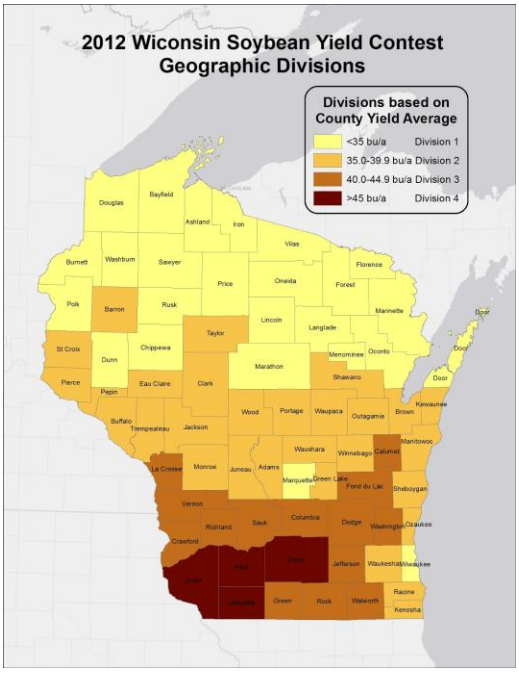
Deadline Approaching for Entering the 2012 Wisconsin Soybean Association Yield Contest

Shawn Conley

Drought conditions in the Southern part of WI coupled with record high temperatures statewide has dampened the excitement of last year's yield contest where Joe Zenz from Lancaster topped the 2011 Non-Irrigated WI Soybean Yield contest at 92.8 bu a^{-1} planting Asgrow 2403. Jason Weigel from S+W Farms LLC, Platteville placed second at 89.7 bu a^{-1} with Dairyland DSR-2770/RR and last year's winner Rick Devoe from RnK Devoe Farms, Monroe placed third at 87.4 bu per a^{-1} with Pioneer 92Y51.

If we do get into a rainfall pattern there is still significant yield to be gained so as a friendly reminder:

- The deadline to enter the 2012 WI Soybean Yield Contest is 8/1/12.
- The objective of this contest is to encourage the development of new and innovative management practices and to show the importance of using sound cultural practices in WI soybean production.
- The two major changes to the 2012 contest are that irrigated and dry-land entries are combined and two winners will be selected from each of four geographical districts in the state.
- Districts are based on long term county soybean yield averages (Image 1 below).
- For more information please see the contest brochure or review contest rules. Entry forms will be posted shortly on www.coolbean.info.



For more information related to this contest please contact Shawn Conley at spconley@wisc.edu.

Preliminary Wheat Yield Results – Janesville, WI

Shawn Conley

Preliminary winter wheat yields at our Janesville, WI variety trial site have been averaging 85 bu per acre. Test weights have all been above 60 pounds with moisture ranges of 12 to 13%. The highest plot yield noted so far has been 108 bu per acre.

Vegetable Crop Update 7/3/12

The 15th issue of the Vegetable Crop Update is now available. This issue contains news items as well as information on early blight and late blight forecasting. Click here to view this update.

Getting the Most from Drought Stressed Forages

Dan Undersander, Forage Agronomist

Good management of moisture stressed forages will increase maintenance of a good stand and reduce the loss of forage production. Management of alfalfa, grass hayfields, pasture and corn each have some special considerations.

Alfalfa

Moisture stress has the following effects on the alfalfa plant:

- Cell enlargement is inhibited.
- The number of basal buds and the number of shoots or stems/plant is reduced when moisture stress occurs in the first 14 days after a harvest.
- The stem internode length is reduced; thus the flowering is seen at reduced plant height.
- Leaf area/leaf size and leaf growth rate is reduced, although to a lesser degree than stem growth.

Therefore leaf to stem ratio is higher under moisture stress.

- Stem nitrogen percentage is increased while leaf nitrogen percentage is decreased, therefore whole plant nitrogen (CP) may be reduced though effect varies with severity/timing of moisture stress.
    - NDF is generally decreased, though effect varies with severity/timing of moisture stress.

Recommendations:

1. If stand is over 10 inches tall and flowering, harvest if economic to do so. Moisture stressed alfalfa should be mowed at the normal cutting height. There is no advantage to raising the cutting height. Alfalfa can regrow from axillary buds higher up on the stubble but they are smaller and produce lower yield than stems growing from the crown buds. Since quality is not declining as rapidly with advancing maturity as under normal growing conditions, let the plants approach 100% bloom before harvest to allow the plant to build nonstructural carbohydrate reserves.
2. If stand is 10 inches or less tall and flowering, do not cut. Let regrowth come through existing growth. Mowing will not increase regrowth.
3. Make sure that soil fertility is at optimum levels.
4. Scout and control potato leaf hopper, army worm and other insects.
5. New seedlings should not be harvested during the season but may be harvested in late August if adequate growth is present to harvest. A late fall cutting may also be taken. The key is to time harvests so that alfalfa either has no regrowth or more than 8 inches of regrowth at frost.

Grassy hay fields
Moisture stress effects on grasses are similar to alfalfa except that, if stems are present, forage quality of grasses may be lowered by stress rather than increased. Most grassy fields are stunted but are leafy and have few stems.

Recommendations:

1. Harvest if tonnage justifies and/or height is over 8 to 10 inches.
2. Apply 40 lb/a nitrogen to stimulate fall growth if rain occurs before mid-August. This cannot be manure since it will become available too slowly to provide optimum fall growth.

Pasture
Most pastures are short but regrowth will occur when it rains if adequate nitrogen is present.

Recommendations:

1. Graze to take advantage of any existing vegetation.
2. Mow tall, weedy or brushy growth.
3. Apply 40 lb/a nitrogen to stimulate growth as soon after Aug 1 as possible.

Corn for forage
Many fields are stunted, some have significant firing.

Recommendations:

1. Plants will put out more growth, all are too wet to ensile now. Check moisture before chopping or bailing to ensure excessive moisture does not cause poor fermentation and seepage losses.
2. If grazing, consider potential for nitrate toxicity. This is especially likely to be a problem if growth was reduced to less than 50% of normal and/or high levels of nitrogen were applied. Samples taken for nitrate test must be frozen or analyzed immediately as nitrate will decline in tissue over 3 to 4 hours. If above toxic, levels feed hay or some other forage in the morning and graze corn a couple hours in the afternoon.

Questions about Whiteflies in Soybean

Eileen Cullen, Department of Entomology

Whiteflies have been reported over the last week from a farmer call to Carl Duley, Agriculture Agent, UW-Extension Buffalo County in western Wisconsin. I also found a few whiteflies during our soybean aphid sampling in research plots in Columbia County in southern Wisconsin. Additionally, some soybean fields in northern Illinois are infested with whitefly as reported by Mike Gray in the Bulletin, University of Illinois' field crop newsletter, Whitefly Infestations Reported in Some Northern Illinois Soybean Fields.

Adults and nymphs have piercing and sucking mouthparts to remove plant sap. They feed primarily on the underside of leaves and inject salivary enzymes that disrupt plant growth. Under heavy infestations plants may become discolored and begin to wilt. Similar to soybean aphids, whiteflies produce honeydew on the leaves and other plant parts where sooty mold can develop. Whiteflies are most commonly seen on velvetleaf or button weed, and soybean fields with heavy weed populations may have higher whitefly numbers.

There are no economic thresholds established for whiteflies in soybean. Various whitefly species are known to feed on soybean in the Midwest occasionally but have never been known to cause economic damage. Yield losses have been reported from whiteflies on soybean in Florida and Georgia.

Whiteflies have a very wide host range. This insect group is known for developing resistance to insecticides in greenhouses and cotton fields.

It is advisable to be aware of this insect and be able to tell the difference between soybean aphid, whitefly nymphs and adults, and twospotted spider mite. If whitefly populations increase in number and co-occur on soybean with twospotted spider mite or soybean aphid, then yield impact is more of a concern.

For more information and images, please see our brochure publication Identification of Soybean Aphid and Look-Alike Species.

Dry Weather Increases Risk of Twospotted Spidermite

Eileen Cullen, Department of Entomology

Twospotted spider mite is likely to become an issue in Wisconsin soybean, and potentiall corn, in areas of the state experiencing drought conditions. Dry weather, low humidity and temperatures exceeding 85°F are associated with spider mite population growth.

Spider mites damage plants by piercing cells and sucking sap. Mites often go undetected until damage is severe because of their tiny size and because spider mite feeding and drought stress symptoms are similar.

It is important to be aware of twospotted spider mite under these conditions, recognize plant damage symptoms, and be able to identify live mite colonies in the field.

Initially, leaves are discolored with tiny white to yellow specks referred to as ‘leaf stippling’. These symptoms often start on the lower leaves in the canopy so you may not see the early signs without a closer look. As damage progresses throughout the canopy plant leaves turn yellow to bronze and leaf drop can occur under heavy infestations.

Damage often begins along field edges where mites have migrated from adjacent fields, grasses and weeds, or in drier areas within a field. You may notice a semi-circle of yellowing plants along field edges or spots within the field.

Adults are very small (about 0.01 inch), yellow-green, with eight legs and two dark spots on the abdomen. Immature spider mites have 6 legs. A 10X hand lens is necessary to clearly see spider mite adults, nymphs and eggs on the underside of leaves. Webbing is often found on the underside of leaves.

Twospotted spider mite adults (above) and eggs (below). Photo: Peter Sonnentag (2005)

Generations are completed in 4 to 14 days with faster developmental rates above 90°F. Spider mites have a high reproductive potential, with 7-10 generations if hot, dry weather conditions persist.

Soybean – Scout field edges and dry areas of the field where infestations are likely to start. Green plants within the field may also have mites or early signs of leaf stippling. Check the upper, middle and lower canopy for leaf stippling, webbing, and presence of live mite colonies. Examine the undersides of leaves with a hand lens. You can tap the plant canopy over a white sheet of paper. Use a hand lens to look for moving tiny ‘specks’; they may be twospotted spider mites.

Soybean field showing advanced twospotted spider mite damage symptoms. Photo: Mike Ballweg, UW-Extension Sheboygan Co. (2005)

No numeric economic thresholds have been developed for twospotted spider mite. Consider treatment when field margins are discolored and mite colonies have been confirmed. Check the interior of the field as green plants may also be in the early stages of infestation. Remember to look for mites and stippling on lower leaves too. A rescue treatment is warranted at 10% to 15% leaf area discoloration during reproductive soybean stages.

The two most common insecticide active ingredients used to control mite populations are products with the active ingredients chlorpyrifos or dimethoate.

Leaf bronzing symptoms in soybean from twospotted spider mite. Photo: Mike Ballweg, UW-Extension Sheboygan Co. (2005).

Treatment decisions can be difficult as drought conditions co-occur with economic spider mite infestations and repeat applications may be required. The best approach is to be aware of twospotted spider mite potential and scout soybean fields before damage advances to leaf yellowing and bronzing. Data vary from state to state during drought years with spider mites, but yield reductions of 40% to 60% have been documented.

Corn – Twospotted spider mites do not usually cause economic damage in field corn. When this pest occurs in dry years, yield losses are more consistent in soybean.

Begin by checking for presence of spider mites on individual green leaves on corn plants along field edges. Repeat the procedure on at least 10 plants at several locations in the field. Moderate infestations will result in leaf stippling and chlorotic spotting (pale yellow) on the leaf surface. Look for spider mite adults, nymphs and/or eggs, as well as webbing on the underside of leaves. Severe infestations can cause entire leaves to turn yellow then brown.

Leaf stippling and chlorosis on corn from twospotted spider mite. Photo: University of Wisconsin Extension (2005).

As with soybean, basing treatment recommendations on counts of spider mites per plant is not practical given their small size. Treatment guidelines are usually targeted for later corn stages in the milk or early dough stages when spider mite colonies cover extensive leaf area. Control is suggested if you find mite colonies on one-third of the leaves on 50% of the plants, or if 15% to 20% of the leaf area is covered with mites and their damage.

The most effective natural control of twospotted spider mite in soybean and corn is the fungal pathogen, *Neozygites floridana*. It attacks all mite stages, and is specific to spider mites. Infected mites have a waxy or cloudy appearance. This mite-killing fungus requires temperatures cooler than 85°F, with 90% relative humidity, to produce infective spores. Periods of at least 12-24 hours of relatively cool, moist, and humid conditions are necessary for the fungal pathogen disperse and infect a spider mite population in a field. Mites die within 1-3 days of infection, and mite populations can decline quickly once the pathogen has spread.

Although rainfall reduces risk of damaging spider mite populations, thunderstorms alone will not eliminate infestations, particularly when rain arrives after large mite populations are established and when rain is followed by dry, hot conditions.

For more information, please see UW Extension Publication 3890 – Twospotted spider mite management in soybean and corn.