Are Your Beans “Feelin the Burn”?

Shawn Conley, State Soybean and Small Grains Specialist; Damon Smith, Extension Field Crops Pathologist, Department of Plant Pathology, University of Wisconsin-Madison

Weed management has been a significant challenge for many farmers and retailers in 2018. The challenges range from short planting windows to shorter pre-emergence and post emergence herbicide application windows to early soybean flowering. As we approach the end of growth stage cutoffs for herbicide applications in soybean can we expect any damage from herbicides and especially the Group 14 herbicides? Well unfortunately the answer to that question is the good ole Extension cop-out answer “Well folks that depends”…..

What we mean by that is as follows:

What growth stage was the soybean crop at?

Where in the United States are you located?

Was the crop stressed before or more importantly after the application?

What rate, a.i., adjuvants, carriers, tank mix partner, etc are we dealing with?

What soybean variety did you plant?

What phase is the moon in….well not really… but you all get the point.

Generally speaking as the soybean growth stage approaches R1 (flowering) the risk for yield loss increases. However this is a highly regional response as we have documented differential yield responses from a +1.2% yield gain in the south to a -4.7% to -4.1% yield loss from the I-states north (Table 1). Furthermore as we transition from specifically using lactofen as a “herbicide” to a tool in white mold management we also note a differential response. In a recent meta-analysis where Dr. Smith focused on the 6 oz lactofen rate at R1 application he noted a 3.7% yield loss in low-to-moderate disease pressure, but a significant yield increase in high-pressure situations (Figure 1). In Dr. Smith’s meta-analysis he does want to emphasize they noticed A LOT of variability among varieties and environments tested as you can see by the error bars around treatments in Figure 1.

In summary we would expect some level of yield loss in these late “hot” applications; however in-terms of long-term weed management we would rather see you take a small yield hit than allow herbicide resistant weeds go back to seed and replenish the weed seed bank. This
Understanding Nutrient Requirements and Utilization for High Yielding Soybeans

Shawn Conley, State Soybean and Small Grains Specialist

Soybean genetics and production practices have changed significantly in the past half-century. This has resulted in consistent yield increases of 0.42 bushels per acre per year in addition to physiological changes that have undoubtedly altered nutrient utilization for the soybean plant. This publication provides an updated summary of soybean uptake and partitioning of the three macro (nitrogen [N], phosphorus [P], potassium [K]), the three secondary (sulfur [S], calcium [Ca], magnesium [Mg]) and five of the micro (zinc [Zn], manganese [Mn], copper [Cu], iron [Fe], boron [B]) nutrients for soybean growth and development. These models can be used by farmers and ag industry personnel across the country to better understand and monitor soybean nutrient utilization during the growing season, including total uptake, the uptake rate and partitioning to help guide and evaluate fertility decisions. In addition, biomass (dry matter) accumulation can provide insight into soybean growth and development.

To read the rest of this publication, click here.

Palmer amaranth is now a prohibited noxious weed seed in Wisconsin, but what does it look like?

by Rodrigo Werle (UW-Madison Extension Cropping Systems Weed Scientist)

Under a new emergency rule, Palmer amaranth has been labeled as a prohibited noxious weed seed in Wisconsin. Given Palmer amaranth's aggressive nature, this is a worthwhile and necessary attempt to keep this troublesome weed species out of the state. For more details, see DATCP article: “Keep an Eye Out for Palmer Amaranth, DATCP Cautions”.

Palmer amaranth’s late and extended emergence window throughout the growing season and vigorous growth rate (up to 2 inches per day under ideal conditions) make control in row crops very difficult. Palmer amaranth is a major weed problem in the US Mid-South and parts of the Midwest. According to University of Wisconsin-Madison Weed Scientists, Palmer amaranth

To read this article on their blog, click here.
has been reported in 6 Wisconsin counties thus far (see map below).

To see the map and read the rest of this article, click here.

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**Soybean Response to Nitrogen Application Across the U.S.**

Shawn Conley, State Soybean and Small Grains Specialist

U.S. soybean \([Glycine \text{max (L.) Merr.}]\) production has increased by 60% from 1996 to 2016 due to a 30% increase in area planted to soybean, and due to better genetics and improved crop management practices. While these historic seed yield increases have been substantial, U.S. soybean producers continually search for opportunities to optimize crop management and increase soybean seed yield, including applying fertilizer N to soybean.

Soybean has a large nutrient requirement throughout the growing season, and has an especially high N requirement due to its seed protein content that averages about 40% based on seed dry weight (Bellaloui et al., 2015). Soybean N requirements peak in the R3 to R6 growth stages (Gaspar et al. 2017; Harper, 1974). The N requirement of soybean is generally fulfilled by biological nitrogen fixation (BNF) plus N uptake from soil (Salvagiotti et al., 2008). However, BNF activity can be limited by a number of environmental conditions such as low soil moisture, extremes of soil pH and temperature, and soil compaction, any of which can result in insufficient N supply to the soybean plants (Purcell and King, 1996).

To read the rest of this pdf, click here.

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**Soybean Injury from Dicamba**

Richard Proost, Nutrient and Pest Management Program, University of Wisconsin-Madison

Investigations of soybean leaf puckering in Wisconsin have often found the injury was caused by dicamba—a plant growth regulator (Group 4) that is prone to drift and commonly used in corn herbicides (i.e., Banvel, Clarity, Distinct, NorthStar, Status, Sterling Blue, Yukon).

In 2017, dicamba-tolerant (DT) became available to U.S. farmers along with three new restricted use dicamba products for use on DT soybean—Engenia, FeXapan, and Xtendimax. Although this represents a step forward in weed management and reducing injury and reducing injury in some soybean fields, it also potentially increas-
es dicamba use and therefore the likelihood of injury to non-DT soybean and other dicamba-susceptible plants in nearby fields. Other than misapplying dicamba to a non-DT soybean field, there are four common ways that dicamba can reach fields and cause injury:

1. Spray particle drift
2. Vapor drift
3. Application during a temperature inversion
4. Contaminated spray solution

Understanding how these work and how to reduce their incidence, along with being able to differentiate between true dicamba injury symptoms and those that mimic dicamba injury will help increase responsible dicamba use.

To read the rest of this pdf, click here.

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**Wisconsin UWEX Vegetable Crop Update Issue 8**

Amanda Gevens, Associate Professor & Extension Specialist, Potato & Vegetable Pathology, UW-Madison Plant Pathology Department

Vegetable Crop Updates Newsletter #8

In this issue:

- late blight ‘look-alike’ disease Phytophthora nicotianae in North Carolina potatoes/tomatoes
- national late blight updates
- WI DSV accumulations – no thresholds met yet for late blight preventive fungicide application trigger
- national cucurbit downy mildew updates
- potato crop status updates

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**Wisconsin UWEX Vegetable Crop Update Issue 9**

Amanda Gevens, Associate Professor & Extension Specialist, Potato & Vegetable Pathology, UW-Madison Plant Pathology Department

Vegetable Crop Updates Newsletter #9
In this issue:

- potato dieback in response to high heat in WI
- late blight updates and DSVs
- cucurbit downy mildew updates (national)
- horticultural updates – determining potato canopy coverage and moisture

Wisconsin Fruit News- June 8

Janet van Zoeren and Christelle Guédot, UW-Extension

https://go.wisc.edu/54j2q8

This week we have a variety of articles in the supplemental issue, including information on first reports of the season for spotted wing drosophila and Eastern flower thrips, along with a final installment on precision apple thinning.

- First detection of spotted wing drosophila in Wisconsin for 2018
- First reports of Eastern flower thrips in Wisconsin for 2018
- Precision apple thinning part VI: Wrapping up and rescue thinning
- Current carbohydrate models

Wisconsin Pest Bulletin, Issue No. 5, May 31

Krista Hamilton, Entomologist, Bureau of Plant Industry/ Division of Agricultural Resource Management, Wisconsin Department of Agriculture, Trade and Consumer Protection

Volume 63 Issue No. 5 of the Wisconsin Pest Bulletin is now available at:


INSIDE THIS ISSUE

LOOKING AHEAD: Heavy June beetle populations reported in Grant County

FORAGES & GRAINS: Peak alfalfa weevil feeding expected in the next two weeks

CORN: Continue scouting for signs of black cutworm activity

FRUITS: Large codling moth flights documented in several apple orchards

VEGETABLES: Colorado potato beetle egg laying underway

NURSERY & FOREST: Red spot on peony and other nursery reports

DEGREE DAYS: Growing degree day accumulations as of May 30, 2018

Wisconsin Pest Bulletin, Issue No. 6, June 7

Krista Hamilton, Entomologist, Bureau of Plant Industry/ Division of Agricultural Resource Management, Wisconsin Department of Agriculture, Trade and Consumer Protection

Volume 63 Issue No. 6 of the Wisconsin Pest Bulletin is now available at:

http://datcpservices.wisconsin.gov/pb/index.jsp

INSIDE THIS ISSUE

LOOKING AHEAD: European corn borer spring flight likely to peak next week

FORAGES & GRAINS: Alfalfa weevil larvae counts remain low

CORN: Continue scouting for BCW damage through V5 stage

SOYBEAN: Soybean aphids detected in WI soybean fields by June 4

FRUITS: Large codling moth flights recorded for second week in a row

VEGETABLES: Set yellow pan traps next week to capture first squash vine borer moths

NURSERY & FOREST: Downy mildew, Fletcher scale, and other nursery reports

DEGREE DAYS: Growing degree day accumulations as of June 6, 2018
Wisconsin Pest Bulletin, Issue No. 7, June 14

Krista Hamilton, Entomologist, Bureau of Plant Industry/Division of Agricultural Resource Management, Wisconsin Department of Agriculture, Trade and Consumer Protection

Volume 63 Issue No. 6 of the Wisconsin Pest Bulletin is now available at:


UW/UWEX Plant Disease Diagnostic Clinic (PDDC) Update June 8

Brian Hudelson, Sue Lueloff, John Lake and Ann Joy

The PDDC receives samples of many plant and soil samples from around the state. The following diseases/disorders have been identified at the PDDC from June 2, 2018 through June 8, 2018.

The 6/8/18 PDDC Wisconsin Disease Almanac (i.e., weekly disease summary) is now available at:

AGRONOMY/SOILS FIELD DAY

Wednesday, August 22, 2018
UW-Arlington Agricultural Research Station

PROGRAM

8:00  Registration ($0), coffee

8:30  Tours
Soil Fertility & Management
Pest Management
Interseeding in Grain & Forage Systems

10:30 Tours
Soil Fertility & Management
Grain Production Systems
Pest Management

12:00  Lunch Speaker: Dan Veroff
Wisconsin Population & Demographic Megatrends: Implications for Agriculture & Farming
Lunch provided by Badger Crops Club ($5 donation)

1:00  Tours
Pest Management
Interseeding in Grain & Forage Systems
Equipment Rodeo

2:45  Have a safe trip home!

TOURS

Soil Fertility & Management

8:30  Improve ROI and NUE by timing N applications for corn
Carrie Laboski

10:30  Soil sampling with banded fertilizer
Andrew Stammer

Use of a rye cover crop in dairy forage production: Environmental and yield benefits
Francisco Arriaga

Soil health in Wisconsin
Matt Ruark

Grain Production Systems

8:30  Forages: Old, new and reimagined
Ken Albrecht

10:30  Management practices that minimize the soybean yield gap on your farm
Shawn Conley

The Wisconsin Crop Innovation Center
Heidi Kaeppler

The Wisconsin corn pop-up/starter fertilizer challenge
Joe Lauer

Pest Management

8:30  Using fungicide in corn for grain and silage
Damon Smith

10:30  Weed management for annual cropping systems
Rodrigo Werle

Using an integrated approach to western bean cutworm management
Bryan Jensen

White mold management
Megan McCaghey

Interseeding in Grain & Forage Systems

8:30  Interseeding cover crops in organic corn and soybean production
Erin Silva

10:30  Interseeding legumes with Kernza
Valentin Picasso

Small grains with frost seeded clover
Lucia Gutierrez

Interseeding corn and alfalfa
Will Osterholz

Equipment Rodeo

Agriculture technology: Planting, UAV remote sensing and autonomous machines
Brian Luck, Jessica Drewry, Jeff Nelson

Visit exhibits between tours and during lunch
UW Soil & Forage Analysis Lab, SnapPlus, Nutrient & Pest Management Program and more!

Certified Crop Advisors
7.5 CEU credits requested

To help us organize a successful event, if you are considering attending please complete a RSVP at https://go.wisc.edu/uwtu24
Thanks!

The Arlington ARS is located on Hwy. 51, about 5 miles south of Arlington and 15 miles north of Madison. Watch for Field Day signs.
GPS coordinates: 43.300467, -89.345534

In the event of rain, presentations will be held inside.
For more information contact the Arlington Ag Research Station at 608-846-3761 ext 101.

Visit exhibits between tours and during lunch
UW Soil & Forage Analysis Lab, SnapPlus, Nutrient & Pest Management Program and more!

Certified Crop Advisors
7.5 CEU credits requested

The College of Agricultural and Life Sciences will make a reasonable effort to provide accommodations for participants with disabilities when notified in advance. To request a disability accommodation, please contact ars_accommodation@cals.wisc.edu or call 608-846-3761 ext.101 at least 10 days in advance of event. Efforts will be made to meet same day requests to the extent possible.