

Wisconsin Crop Manager

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Wisconsin Pest Bulletin 5/22/14

A new issue of the Wisconsin Pest Bulletin from the Wisconsin Department of Agriculture, Trade and Consumer Protection is now available. The Wisconsin Pest Bulletin provides up-to-date pest population estimates, pest distribution and development data, pest survey and inspection results, alerts to new pest finds in the state, and forecasts for Wisconsin's most damaging plant pests.

Issue No. 4 of the Wisconsin Pest Bulletin is now available at:

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

<http://datcpservices.wisconsin.gov/pb/pdf/05-22-14.pdf>

Delayed Planting: Top Three Considerations for Switching Corn Acres to Soybean

Shawn Conley, Soybean and Wheat Extension Specialist

A tremendous number of corn and soybean acres have been planted over the past 10 days; however C, NC, and NE WI continue to get hammered for the second year in a row with awful planting weather. It seems like those growers are constantly 1/2 day away from the soil being fit to go. Over the past two weeks we have discussed maturity switch dates for [corn grain](#), [corn silage](#) and [soybean cultivars](#). What about switching corn ground to soybean.

1. Check your herbicide label. Several burn-down or early pre-plant programs have labels for both crops. However tankmix partners or rates may differ between the two. Make sure you verify rates, timings, and plant back restrictions before you

make the switch. Even with the intense rainfall we have experienced don't bank on these products being gone.

2. Fall applied anhydrous or spring applied urea. How much N is too much to not even consider the switch? Biologically I don't think that number really exists. Economically that number is a moving target given yield penalty, corn drying costs, etc. What I can surmise and you would likely agree with is that over the last 4 weeks the amount of N readily available to the late planted corn crop or in this case the soybean crop has declined, though some N is still readily in the soil profile. We were somewhat prepared for this question a year ago given the likelihood of residual N following the 2012 drought stricken corn. In that article I stated:

In excess situations soybean will generally utilize the background nitrogen prior to initiating maximum N fixation. This may lead to luxurious early season growth, which in fields with a history of white mold, may cause problems if weather conditions are conducive. High soil N reserves may also lead to increased lodging. In either case, manage your soybean crop accordingly to minimize risk of white mold or lodging. This can be accomplished through variety selection (e.g. white mold tolerance, short statured soybean cultivars or good lodging tolerance), decreasing seeding rates, and proper scouting to time fungicide applications if needed.

The only change I would make to this paragraph would be to increase seeding rates to compensate for delayed planting. Remember when I wrote this article in 2013 I was under the assumption that soybean would be planted the first week in May not the first week in June.

3. Should I use an inoculant even when excess N is present? The simple answer is yes and here is why....excess N limits N fixation (Lit review excerpt quoted with permission from Eric Wilson; M.S. Thesis; Shaun Casteel Adviser; Purdue University)

Nitrate uptake of soybean plants did not appear to directly damage the BNF capacity (Streeter, 1985; Arrese-Igor et. al, 1997). Streeter (1985) concluded that carbohydrate deprivation and nitrate toxicity did not inhibit BNF. It is hypothesized that additional nitrate increased the oxygen diffusion barrier of the nodule, which limited oxygen

supply and restricted nitrogenase activity and nodule respiration (Vessey and Waterer, 1992). This hypothesis was supported by Arrese-Igor et al., 1997. However, additional oxygen supplied to the nodules did not markedly increase BNF (Heckmann et al., 1989; Serraj et al., 1992).

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Literature cited:

Arrese-Igor, C., F.R. Minchin, A.J. Gordon, and A.K. Nath. 1997. Possible causes of the physiological decline in soybean nitrogen fixation in the presence of nitrate. *Journal of Experimental Botany* 48:905-913.

Heckmann, M.O., J.J. Drevon, P. Saglio, and L. Salsac. 1989. Effect of oxygen and malate on NO₃⁻ inhibition of nitrogenase in soybean nodules. *Plant Physiology* 90:224-229.

Serraj, R., J.J. Drevon, M. Obaton, and A. Vidal. 1992. Variation in nitrate tolerance of nitrogen-fixation in soybean *glycine-max.* - *Bradyrhizobium* symbiosis. *Journal of Plant Physiology* 140:366-371.

Streeter, J.G. 1985. Nitrate inhibition of legume nodule growth and activity .2. short-term studies with high nitrate supply. *Plant Physiology* 77:325-328.

Vessey, J.K., C.D. Raper, and L.T. Henry. 1990. Cyclic variations in nitrogen uptake rate in soybean plants - uptake during reproductive growth. *Journal of Experimental Botany* 41:1579-1584.

Vegetable Crop Update 5/23/14

The 6th issue of the Vegetable Crop Update is now available. This issue contains information on Late blight reminders, updates, and a look at Blitecast, Hop downy mildew detected in Portage and Dane Counties, Cucurbit downy mildew - info resources, and a Vegetable farm field day advertisement (organic and sustainable production). To view this issue click [here](#).

Plant Disease Diagnostic Clinic (PDDC) Update

Brian Hudelson, Ann Joy, Erin DeWinter and Joyce Wu, Plant Disease Diagnostics Clinic

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 May 17, 2014 through May 23, 2014.

Plant/Sample Type, Disease/Disorder, Pathogen, County

FIELD CROPS,

Wheat, [Ergot](#), *Claviceps purpurea*, Door

For additional information on plant diseases and their control, visit the PDDC website at pddc.wisc.edu.