Wisconsin Crop Manager

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Crops

Insects and Mites

Plant Disease

Late and Prevented Planting Coverage and Replant Provisions

Paul D. Mitchell, Agricultural and Applied Economics, UW-Madison

The cool wet weather this spring delayed planting for many Wisconsin farmers. As of May 28, USDA reports that only 64% of Wisconsin corn and 29% of soybeans have been planted, well below the 5-year averages of 85% and 60%, respectively. Last year, 70% to 75% of corn and soybean acres in Wisconsin were insured and early reports indicate that the percentage of insured acres is even higher this year. This bulletin quickly reviews crop insurance rules to remind returning growers and to help new growers understand late and prevented planting dates and options as this wet spring continues to develop.

To view Paul Mitchell's complete fact sheet on the subject scroll down to the end of this newsletter.

Vegetable Crop Update 5/25/13

The 5th issue of the Vegetable Crop Update is now available. This issue contains disease and insect updates. Click here to view this update.

Switch Dates for Corn Silage

Joe Lauer, University of Wisconsin – Madison, Corn Agronomist

The Wisconsin USDA-NASS Crop Progress report for May 20 indicated that only 43% of the corn crop had been planted. For Week 20, only the growing seasons of 1996 (38%) and 1979 (40%) have had slower corn planting progress. With the unsettled weather of this past week over much of the state, planting this year will be further delayed. Crop reporting districts with the slowest planting progress include the North Central (24%), North West (31%) and East Central (31%).

We have been discussing the importance of switch dates for dry and high moisture grain production by summarizing data for the last 10 years at one farm (Arlington, WI). As planting delays continue, many farmers are thinking about changing their end use of corn and are wondering about switch dates for corn silage. This decision is complicated because of the changes that occur in yield and the energy pools found in stover (ivNDFD) and grain (Starch content).

Between 2003 and 2008, we conducted trials that compare corn silage yield and quality of full- and shorter-season hybrids. Forage yield was greatest with full-season hybrids for early planting dates (Figure 1). The regression lines converged on about May 20, but forage yield was not significantly different after that date unlike what has been previously described for grain yield. Little difference was seen between full- and shorter-season hybrids for digestibility of the stover energy pool as measured by ivNDFD. However, shorter-season hybrids had higher starch content on every planting date even though grain yield was lower until after May 24.

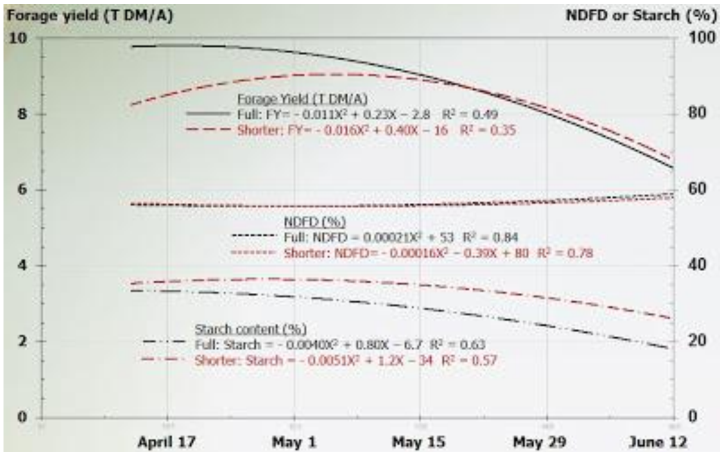

Figure 1. Corn forage yield, ivNDFD and starch content response of full-season hybrids (104-108 RM) and shorter-season (94-98 d RM) hybrids to planting date during 2003 to 2008 at Arlington, WI (N= 324 plots).

Forage yield, ivNDFD and starch content values were used in the Milk2006 model to calculate Milk per Ton and Milk per Acre (Figure 2). Both Milk per Ton and Milk per Acre of full-season hybrids were greater than shorter-season hybrids when planted early. For Milk per Ton, a switch date occurs around May 15, when the shorter-season hybrids has greater Milk per Ton than full-season hybrids. However, around this switch date Milk per Acre differences between full- and shorter-season hybrids are not that much different. A slight Milk per Acre advantage is seen for shorter-season hybrids until about June 1 and then the gap begins to widen.

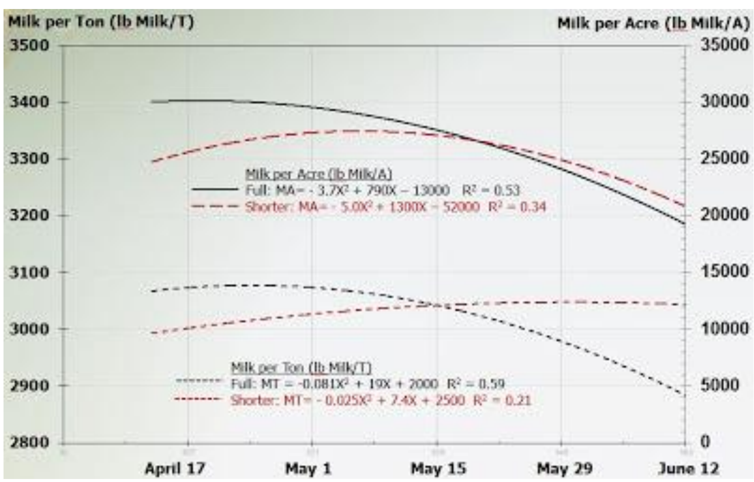

Figure 2. Corn forage milk per ton and milk per acre response of full-season hybrids (104-108 RM) and shorter-season (94-98 d RM) hybrids to planting date during 2003 to 2008 at Arlington, WI (N= 324 plots).

Thus, if the end-use of corn will be for silage, then farmers can stick with full-season hybrids longer than if corn is used for grain. By June 12, the difference between full- and shorter-season hybrids is about 2000 pounds of milk per Acre (10%).

Another question I have received is, "What about growing brown midrib corn as a way to maintain the energy pools of stover rather than grain?" Between 2009 and 2012, we compared switch dates for full-season conventional and brown midrib corn hybrids. Watch for a future blog, when we will describe these yield and quality differences due to planting date.

Anthesis (Flowering) in Wheat

Shawn Conley, Soybean and Wheat Extension Specialist

Dr. Shawn Conley, the Wisconsin soybean and small grains Extension specialist, visits a wheat field to demonstrate the process.

To view the video click on the image below:

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

Shawn Conley, Soybean and Wheat Extension Specialist

1. Instead of complaining right off the bat let me be a glass half full kinda guy....well it looks like the drought of 2012 appears to be over! Ok...with that being said lets talk facts. We have already discussed maturity switch dates for corn grain, corn silage and soybean cultivars. What about switching corn ground to soybean.

   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. Maker 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 6 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 given the likelihood of residual N following last years drought stricken corn and the drought impact on rhizobia populations. 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 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 with these late planted soybeans. The simple answer is yes and here is why.
    - Background populations are likley diminished: Drought impact on rhizobia populations
    - 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).

- Frankly speaking the cost:risk/benefit ratio for 2013 suggests the usage.

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 NO_3- 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.

Wisconsin Pest Bulletin 5/30/13

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. 5 of the Wisconsin Pest Bulletin is now available at:

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

http://datcpservices.wisconsin.gov/pb/pdf/05-30-13.pdf

Wisconsin Winter Wheat Disease Update – May 29, 2013

Damon Smith, Extension Field Crops Pathologist, Department of Plant Pathology, University of Wisconsin-Madison

The wheat crop in southern Wisconsin is progressing through growth stages quickly now. About 10 days ago we were at jointing and now we have fully expanded flag leaves (growth stages ranging from Feekes 8 to Feekes 9 depending on variety in Arlington, WI). Now is the time to be scouting diligently for diseases of wheat. Fungicide applications to protect the flag leaf may be necessary if active disease epidemics are found in your crop.

In general the wheat I have scouted has been relatively free of disease. I have not seen any rust or powdery mildew. The only disease that has been active and continues to be active is Septoria leaf blotch. Severity has been low in most plots; however, this disease should be monitored carefully. Under rainy conditions, spores can be splashed to leaves in the upper plant canopy, which can cause yield-limiting damage if severity is high. For more information on this disease consult my previous article at http://ipcm.wisc.edu/blog/2013/04/wisconsin-winter-wheat-disease-update-april-24-2013/ and our fact sheet that can be found at http://fyi.uwex.edu/fieldcroppathology/files/2013/04/Leaf-Blotch-Diseases-of-Wheat-1.pdf.

Other diseases to be on the lookout for during the "flag leaf stages" include powdery mildew (Fig. 1), leaf rust (Fig. 2), and stripe rust (Fig. 3). I haven't talked much about powdery mildew on wheat yet this season. Levels have been low to non-existent, which is unusual for Wisconsin.

Figure 1. Powdery mildew on a wheat leaf. Note fruiting structures (cleistothecia) lying on top of the fungal growth. Photo credit: Craig Grau.

Figure 2. Wheat leaf rust. Photo Credit: Craig Grau.

Figure 3. Stripe rust on wheat. Photo Credit: Craig Grau.

Powdery Mildew

Powdery Mildew is a frequent pathogen of wheat in Wisconsin. The powdery mildew fungus damages wheat plants by utilizing nutrients, reducing photosynthesis, and increasing plant respiration and transpiration. High incidence and severity of powdery mildew on wheat can cause reduced vigor, heading, and seed fill. In some severe cases, powdery mildew can result in leaf and whole plant death. Yield losses as high as 40% have been recorded as a result of powdery mildew. Greatest yield reduction will occur when infection occurs around the time of wheat heading.

Initial infections by the powdery mildew fungus typically result in white cottony growth (mycelium) of the fungus. This growth can occur on all above ground parts of the plant, but is typically most prevalent on the upper surface of the leaves. The fungal colonies will turn dull gray to light brown as they mature. Once the colonies are fully mature, fruiting structures (cleistothecia) form, which appear as small black dots that resemble small seeds nestled in the fungal mat. The fruiting structures are visible with the naked eye. The fungus exists entirely on the surface of the plant except for microscopic appendages, which penetrate the host epidermis.

Powdery mildew is caused by the fungus *Blumeria graminis*. *B. graminis* overwinters on infested wheat residue as spores in fruiting structures called cleistothecia. If the winter is mild or there is snow cover the fungus can also survive on infested wheat debris as mycelium or another type of spore called conidia). In the spring spores are windblown to wheat plants and subsequent spore cycles can occur throughout the wheat-growing season. Volunteer wheat can serve as a "green bridge" between wheat crops and act as a source for spores that can infect wheat planted in the fall. If plants are infected in the fall, the fungus can survive as long as the wheat leaf survives.

Currently there are a wide variety of fungicides available to control powdery mildew. Careful scouting of the wheat crop should be performed on a regular basis throughout the growing season. Fungicides should be applied when powdery mildew is first observed. Focus should be made on protecting the flag leaf from powdery mildew. Yield losses are greatest when powdery mildew infections occur prior to, and at, flag leaf emergence.

Management of powdery mildew is through the use of resistant varieties, foliar fungicides, tillage, crop rotation and nutrient management. Cultivars of wheat with varying levels of resistance to the powdery mildew fungus are available. Regular scouting should be done to determine disease progress and crop yield potential prior to making decisions on fungicide applications. Fungicide applications are based on the risk of disease on or before flag leaf emergence. Tillage to bury infested residue and to manage volunteer wheat can reduce the level of inoculum in wheat fields. Crop rotation with a non-wheat host can help reduce initial inoculum levels. Powdery mildew can be more severe on plants with high nitrogen. Nutrients, especially nitrogen, potassium, and phosphorus should be optimized for plant growth but not applied in excess.

Rust Update

If you have been following my articles lately, you know that Dr. Carl Bradley has found stripe rust to the south of us in Illinois. However, spread has been slow and severity low enough that yield has likely not been impacted except in very susceptible varieties. All rusts (stripe rust, leaf rust, and stem rust) are favored by wet weather and periods of extended leaf wetness. However, temperature optimums vary among the different rusts. Stripe rust is favored during periods when temperatures are between 55 and 65F, while leaf rust tends to occur at a higher temperature range of 60 to 72F. Stem rust tends to occur at temperatures between 60 and 104F. In most years, spores of the rust pathogens will not readily overwinter in Wisconsin. Cold temperatures (<32 F) will reduce the ability of rust to overwinter. Spores are typically carried into Wisconsin on wind currents from southern states. In years like 2012 where the winter was mild, it is likely that rust pathogens were able to overwinter on wheat debris in Wisconsin. This could be one reason for the unusually high incidence and severity of stripe rust observed in 2012 in Wisconsin. For More about rust, see my previous article at http://ipcm.wisc.edu/blog/2013/04/wheat-scouting-and-little-more-about-rusts/.

Fusarium Head Blight

Finally, Fusarium head blight (FHB; a.k.a Fusarium head scab) is a disease of concern during the heading growth stage of wheat (Feekes 10 and later). Severe FHB can result in high levels of the mycotoxin deoxynivalenol (DON or vomitoxin). Dockage at the elevator can occur if a load of wheat grain tests positive for DON at levels above 2ppm. Therefore, managing FHB can be important in areas with a history of the disease and where susceptible varieties are grown.

Diseased spikelets on an infected grain head die and bleach prematurely. Healthy spikelets on the same head retain their normal green color (Fig. 4). Over time, premature bleaching of spikelets may progress throughout the entire grain head (Fig. 5). If infections occur on the stem immediately below the head, the entire head may die. As symptoms progress, developing grains are colonized causing them to shrink and wrinkle. Often, infected kernels have a rough, sunken appearance, and range in color from pink or soft gray, to light brown.

Figure 4. Fusarium head blight symptoms on spikelets (bleached spikelets) on a wheat head. Photo Credit: Craig Grau.

Figure 5. Entire wheat heads with symptoms of Fusarium head blight. Photo credit: Craig Grau.

FHB is caused by the fungus *Gibberella zeae* (also known as *Fusarium graminearum*). In addition to wheat, the fungus is a pathogen of corn, barley, and other grasses. This fungus overwinters on infested stubble and straw of cereals and weed grasses, and on stalks and rotted ears of corn. The severity of FHB varies greatly from year to year. Infection is favored by extended periods of high moisture or high (>90%) relative humidity, and moderately warm temperatures (59 to 86°F). These conditions have to occur just before or during wheat flowering (Feekes 10.5) and wheat can remain susceptible to infection through the early dough stage (Feekes 11.2). If favorable weather conditions persist, flowering tillers can continue to be infected. This is especially problematic in wheat stands that are at varying levels of maturity.

Fungicides are available for control of Fusarium head blight. Triazole fungicides (Fungicide Resistance Action Committee; FRAC class 3) are recommended for control of FHB. Fungicides containing prothioconazole and tebuconazole, or a pre-mix of these two compounds, have given the best control of FHB in University research trials. Strobilurin fungicides (FRAC class 11) should be AVOIDED for controlling FHB. Research has demonstrated that the use of strobilurin fungicides to control FHB can result in an increase in DON levels in harvested grain. A web-based FHB risk assessment tool is available at http://www.wheatscab.psu.edu. This tool can be used by crop management personnel when making decisions about applying a fungicide just before or at flowering. The tool also provides real-time, local commentary by extension personnel about the status of diseases in wheat.

DO NOT plant small grains into small grain or corn residue as this increases the chance of FHB. Also, avoid planting grain crops near areas where there are large amounts of small grain or corn residue on the soil surface. When possible, plant small grains following a legume crop (e.g., soybeans) and maintain a rotation with two to three years between small grain crops. In addition, deep plowing of all infested plant debris is recommended. DO NOT apply manure containing infested straw or corn stalks onto fields planted to small grains. Certain grain varieties have moderate levels of partial resistance to FHB, and use of these varieties can lead to a reduction in disease severity and an increase in grain quality. Finally, plant several varieties of a small grain that vary in flowering date.

This will decrease the risk that an entire crop will be vulnerable to FHB when weather conditions favor the disease.

For more information about fungicide options in wheat and tips on using fungicides, see my previous article at http://ipcm.wisc.edu/blog/2013/03/using-fungicides-on-wheat/.

Plant Disease Diagnostic Clinic (PDDC)

Brian Hudelson, Ann Joy, and Andrew Pape, 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 18, 2013 through May 24, 2013.

PLANT/SAMPLE TYPE	DISEASE/DISORDER	PATHOGEN	COUNTY
FORAGE CROPS			
Alfalfa	Root Rot	*Aphanomyces euteiches*, *Pythium* sp., *Fusarium* sp., *Cylindrocarpon* sp.	Dane
VEGETABLES			
Potato	Blackheart	None	Dunn

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

Follow us on

Late and Prevented Planting Coverage and Replant Provisions for Wisconsin Farmers

May 29, 2013

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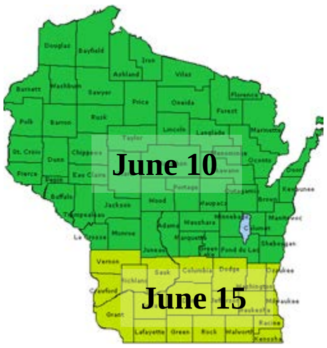
The cool wet weather this spring delayed planting for many Wisconsin farmers. As of May 28, USDA reports that only 64% of Wisconsin corn and 29% of soybeans have been planted, well below the 5-year averages of 85% and 60%, respectively. Last year, 70% to 75% of corn and soybean acres in Wisconsin were insured and early reports indicate that the percentage of insured acres is even higher this year. This bulletin quickly reviews crop insurance rules to remind returning growers and to help new growers understand late and prevented planting dates and options as this wet spring continues to develop.



Soybean final planting dates

Key Dates

The final planting dates in Wisconsin are May 31 for corn for grain, June 5 for corn for silage, June 10 for soybeans in the northern 2/3 of the state and June 15 for the southern 1/3 of the state (see map for the soybean date in your county). Acres planted after these dates are still insured, but the farmer must notify the crop insurance agent, even if he does not have late and prevented planting coverage. Small areas do not trigger late and prevented planting. The late or prevented planting area must exceed 20 acres or 20% of the unit's acreage to qualify.

Late Planting

Once late or prevented planting is triggered, farmers have three options, which should be discussed with their crop insurance agent: 1) The crop can be planted late and the unit's yield guarantee reduced; 2) A different crop can be planted (which may or may not be insured), including switching from corn for grain to silage or to soybeans or to some sort of forage; or 3) The land can be left fallow and an indemnity received for prevented planting. Farmers prevented from planting by these dates should consult with their crop insurance agent to clearly understand these options and associated restrictions and implications, otherwise they may not claim indemnities they are due or inadvertently forfeit insurance coverage.

Crop policies with late planting provisions allow planting the crop after the final planting date, but the unit's yield guarantee is reduced. The contribution of late planted acres to calculating a unit's yield guarantee is reduced by 1% for each day after the final planting date the acres are planted, up to 25 days. If planting occurs 25 days after the late planting date, the contribution of these late planted acres is fixed at 60% of their timely planted yield

Late Planting Example

A 200 acre unit of corn for grain has a yield guarantee of 150 bu/A x 200 A = 30,000 bu. 100 acres are planted before the final planting date of May 31, but 100 acres are planted on June 6, six days after the final planting date. The corn yield guarantee for these 100 acres is reduced 6% (1 % for each day) to 141 bu/A, so that the new yield guarantee for the unit is 150 bu/A x 100 A + 141 bu/A x 100 A = 29,100 bu. If instead the corn was not planted until June 26 (after the late planting period ended), the yield guarantee for these 100 acres is reduced to 90 bu/A (60% of their regular contribution), so that the new yield guarantee for the unit is 150 bu/A x 100 A + 90 bu/A x 100 A = 24,000 bu. If the farmer switched to insuring the corn as silage, only a 1% reduction in the yield guarantee would result, as the final plant date is June 5 for corn silage, so the farmer is only 1 day late. Alternatively, if the farmer planted the 100 acres to soybeans by June 6, no soybean yield guarantee adjustment for late planting would apply.

Prevented Planting

A farmer prevented from planting acreage to the insured crop can choose to plant a different crop (possibly with insurance coverage), or not plant any crop. For example, a farmer prevented from planting corn may elect to plant soybeans instead, and, if soybean insurance has been purchased, can receive insurance coverage for these soybean acres (with reduced coverage for late planting if applicable). Alternatively, a farmer can leave the land fallow and receive a prevented planting indemnity equal to 60% of their yield guarantee (more if higher prevented planting coverage is elected). Farmers leaving land fallow should communicate with their crop insurance agent about allowable activities on this fallow land. For example, grazing or haying a volunteer or cover crop prior to November 1 constitutes a second crop and reduces prevented planting indemnities. Farmers should always check with their crop insurance agent on such practices. Also, remember that leaving land fallow due to prevented planting lowers yield guarantees for later years.

Replant Provisions

If a crop stand is damaged early in the season so that the projected yield is less than 90% of the yield guarantee, a farmer can receive an indemnity for part of the actual cost of replanting. A claim must be field and an insurance adjuster must inspect the stand. The affected area must exceed 20 acres or 20% of the unit's acreage. The maximum indemnity is the chosen price election multiplied by the 20% of the yield guarantee, up to 8 bu for corn, 3 bu for soybeans and 1 ton for corn silage. The replanted crop has the same production guarantee as for the original plant date (i.e., no reduction for late planting is imposed). Note that the replant option is not available for all policies or crops, so contact your crop insurance agent to clarify.

Replant Example

Suppose a 200 acre unit of corn for grain has a yield guarantee of 150 bu/A x 200 A = 30,000 bu with a $5.65/bu price election. All acres are planted before May 31, but cool wet weather reduces the stand to less than 20,000 plants/A on 80 acres of the unit. The farmer can replant these 80 acres to corn and keep the 150 bu/A yield guarantee, even if the corn is replanted after May 31, and receive an indemnity up to $3,616 (8 bu/A x $5.65/bu price election x 80 acres) for the cost of replanting these acres.

Agronomic Considerations

This bulletin only summarizes crop insurance rules – agronomic considerations such as switching corn maturity dates or from grain to silage should be part of the decision. See the UW Extension corn agronomy web page for more information: http://corn.agronomy.wisc.edu/.

Further Information

Delayed and Prevented Planting Provisions (Iowa State University Extension):
    http://www.extension.iastate.edu/AgDM/crops/pdf/a1-57.pdf

Paul Mitchell's UW Extension Web Page: http://www.aae.wisc.edu/mitchell/extension.htm.