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EARLY GROWTH NEWSLETTER

JUNE 2009

Save/Make Money with N Applied Correctly

Tim Yingst – DSM, CCA, TSP

As planting draws to a close, the next jobs are post spray and side-dress. The learning opportunity this year is that growers will see the advantage of spraying earlier. It is also time to apply side-dress N. Some thoughts about how much N are being published. The current recommendation is about one pound of N for every bushel you are expecting in yield. This includes an N credit from the previous crop and 10 times the amount of organic matter. Also subtract the N in DAP 18% and that which was applied in pre-plant 28%. So you can see that each field will need a unique rate.

Taking some time to calculate will save lots of money. Also check your local fertilizer dealer as to current prices of urea vs. 28%. Either applied correctly will provide the side-dress N needed. Be careful to make sure you are getting uniform coverage. Obviously, urea needs to be applied to shorter corn and should have Agrotain® mixed in to reduce nitrification. Also make sure the 28% is being placed in the slot and not on top of the ground.

Ask your Pfister DSM to assist you in determining the yield potential of a hybrid on a specific field. Take comfort in the fact that the corn plant itself is the best N-meter, and that we have products like CoRoN® that can be applied foliar if you feel you have fallen short.

Expectations for Late-Planted Corn

Emerson Nafziger

Reprint from *The Bulletin, University of Illinois Extension. No. 10 Article 6/May 29, 2009*

The Illinois corn crop was only 62% planted by May 24, indicating rapid progress over the past week, with 42% planted between May 17 and May 24. Some areas of the state were too wet to plant until late last week, and some got wet again over this past weekend, so progress will be slow again this week in some areas.

This all means that 2009 will have the slowest finish to corn planting since 1995, when only 50% of the corn was planted by the end of May. Not to be overly pessimistic, but 1995 was not a good corn year; after the late planting, pollination was late but harvest was not especially late, indicating that the crop had simply "droughted out" or "burned up," depending on your perspective. The state average yield was 113 bushels per acre in 1995.

Will 2009 be a repeat of 1995, or will we luck out like we did in 2008? Much has been made of the improvements in hybrids that have made them less subject to stress, so able to yield much more under poor weather conditions. It is certainly true that selection of hybrids that tolerate high plant populations has resulted in plants that are more stress-tolerant in general. Addition of protective traits like rootworm Bt has also diminished the danger from stresses that result from poor root development. On the other hand, we have had relatively good growing season weather over most of Illinois since 1996, including the astonishing weather of 2008, where late planting did little to diminish corn yields, and in some cases even increased them.

The most reasonable expectation today is that the growing season weather from now on will be more or less normal. It's likely that some current long-term forecasts are for weather that is better than average and others worse than average. Such forecasts have a fairly poor track record, and I don't place much stock in them. Temperatures in April and May have been more or less normal in Illinois. Rainfall has been well above normal over much of the state over the past two months, but close to normal during May in many areas. I'm not joining the ranks of the amateur weather forecasters here, but until and unless the dreaded "blocking high" develops over the southeastern U.S., we seem to have little reason to expect that the weather will be too far off normal during the remainder of the season.

What does "normal" weather for the rest of the growing season mean? Much of our corn crop will have lost 200 to 400 growing degree-days as a result of the delay in planting. The fact that the corn was not planted, not yet up, or not very large when we had the cool temperatures in the middle of May will, I think, prove to be an advantage; we think that temperatures in the low 40s or upper 30s after corn has three or four leaf collars emerged can have a physiological effect that results in lower yield potential. It is an advantage for corn to have relatively warm weather during its entire life cycle, and though we would not recommend planting late to assure this, it will be one small benefit of the crop's late start.

Even with the loss of several hundred GDD, there should be enough temperature to produce a good crop if frost is not early. From June 1 through the date of a 50% chance of frost, about 2,550, 2,800, and 3,150 GDD can be expected to accumulate in northern, central, and southern Illinois, respectively. Given that corn hybrids planted in late May typically require 150 to 200 GDD less than their rated requirement (though not if the weather stays cool throughout the season), getting the crop to develop and reach maturity should not be a problem. In northern Illinois, however, it might be prudent to switch to hybrids rated at no more than 2,400 GDD if planting is delayed into June.

So our real concern for the 2009 corn crop is not a lack of temperature so much as a potential lack of water at critical times. Late planting means that water is much more likely to be the factor that limits yield.

The following are factors to consider as we track this year's late-planted corn crop:

- **Light:** The longest days and hence the days with the most sunlight available (summer solstice is June 21) will come well before the crop has a full canopy, and the crop will benefit less from these hours of sunlight. This also means that the days during grain-fill are shorter, which probably will have a larger negative effect than will the inability to fully use the light in June.
- **Water:** The period of most critical need for water--the week before, week of, and week after pollination--is moved back to a time when water demand is high due to high temperatures and when there has already been a considerable amount of water lost from the soil through evaporation and crop uptake. This means that short periods without rain will likely be both more frequent and more damaging during this critical period.
- **Roots:** Higher temperatures tend to favor the aboveground growth of corn over growth of the root system. Perhaps an even bigger factor is that so much of the crop was (and will be) planted into soils that were not yet dry so were compacted more than normal during tillage and planting. Many of our Illinois soils can be quite forgiving of this and can allow adequate root growth even when planted too wet, but even modest restriction of root growth can mean inability to take up some stored soil moisture later in the season when the crop most needs it. Corn rootworm can damage later-planted, root-restricted corn more severely as well and add to the problem. Some dry weather during vegetative growth can encourage roots to grow deeper, but the fact remains that small, shallow root systems are a major reason why late-planted corn sometimes does poorly. The best we can hope for is that rainfall is uniform and adequate throughout the season so that smaller roots are not a problem. Failing that, dry weather coming in June or late August may not hurt too much, as long as there is enough rainfall during July.
- **Stalks:** Late planting can result in taller but more spindly stalks, which often have more difficulty supporting full-sized ears to maturity and harvest. It will help to have adequate soil fertility and to have leaves that stay green throughout grain-fill.
- **Leaves:** Late planting means that the critical grain-filling gets pushed later, to a time when foliar diseases have had more time to develop. This is not saying that fungicides should be used routinely on late-planted crops, but disease development should be watched carefully, especially after pollination and for the six weeks (starting about two weeks after pollination) during which the yield will be produced.

Late planting means greater dependence on favorable weather for good yields, but we need to stay on top of this crop in order to get the yields that the weather makes possible. Having everything come together to negate the effects of late planting as happened in 2008 is a tall order, but if the weather is good for the whole season, we should be able to at least approach "trend line" yields for Illinois. The prices are up some, which helps, but much of the crop west of Illinois was planted on time, and it may not be our turn for Illinois to have the highest corn yields this year.

Check, Check and Re-Check

Ryan Schumacher –DSM

As I look back at this planting season I have been asking myself, did I do everything right this spring? I'm sure that question has crossed most of your minds as well. This is a great time of year to "Re-Check" our planting practices and make a record of things that we might already start planning to change for next year. As I walked behind planters this planting season, on occasion I would find some things that might have needed changed or adjusted a little. It seemed like the main focus this spring was on 3 main points—planting depth at 2 inches, planting speed under 5 mph, and the right hybrid in the right field.

As we focus on certain things sometimes we lose focus on other things. One thing that I noticed a lot of this spring that had seemed to have lost some focus was the setting on row cleaners. Some would be set too deep, some too shallow, some not running at all. Now as I'm evaluating fields as the corn is in the VE to V5 stage I notice where some practices were improved and where others suffered. The key thing to do right now is not to dwell on any mistakes that we might have made, but rather to note them, learn why they happened, and figure out how to make the things better so they aren't mistakes ever again.

As I am starting to work with customers on planning for next year, (That's right. It's the first part of June, and I said "planning for next year") we are evaluating planting stands and looking ahead to see if there is anything we can do to the planter for next year to address any issues from this year. One way Pfister can help customers address these issues for next year is with the use of our Refuge Wrap Program. We have helped a lot of customers make improvements to their planters with the use of this program and with the new improvements to this program we have made it even simpler for customers to qualify. So as you work with your Pfister representative to "Re-Check" your performance from this spring and start to plan for next year, be sure you "Re-Check" our Refuge Wrap Program to see how it can help you!

Increasing Corn Populations

Ron Romersberger – Quality Assurance

The world population is increasing while at the same time many acres of tillable farm ground are removed from production every year. How will we be able to produce more bushels of corn from each acre in order to double yield by the year 2030?

One of the benefits of new genetics and traits is that plant populations can be increased without the associated risk of devastated yields in stress situations. We have seen recommended planting rates increase over the past few years, and expect that trend to continue.

Monsanto is doing a lot of research in this area. They are looking at plant densities in 20" and 30" rows, twin rows, and variable rate planting. It is interesting to note that in 2008, 30" rows out yielded 20" in the first year of testing. Pfister is contributing to this research effort. We will be using our data combined with their results to make the best recommendations to our customers.

We know it seems self-serving for us as a seed company to recommend higher plant populations. However, we are truly convinced that in order to maximize yield and profit, population rates need to be maximized. We are again reminded of how important the planting process is in contributing to high yields.

Early Stand Evaluation

Matt Weishaupt – Field Supervisor, CCA

Now that most of the corn is up and out of the ground it's a great time to see how good of a job we did at planting and what we could improve upon for next year. The first thing we usually check is the population. Take a count in several areas of the field. Take some in the low spots and some in the higher spots to try and get an overall average. Next, see how evenly spaced the plants are within the row. Is the spacing erratic in every row? If so you probably have a driveline or vac/air pressure issue. Or is there a spacing problem with only one row? When this happens there's probably something wrong with that individual meter or seed tube.

Continued on outside

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Early Stand Evaluation

Continued from inside

Check to see that all of the plants are uniform in height and appearance. If not, check to see that the seeds are at the same depth to rule out row unit bounce from excessive speeds or not enough row unit down pressure.

Also look to see that the row is clear of heavy residue as this can cause uneven emergence especially in a cool wet spring. Consider row cleaners to help with this problem next year.

Finally, check to make sure the seed trench was closed properly. If not, consider adding more down pressure to the closing wheels or trying a different type of closing wheel next year.

It can really pay to take note of any planter problems you encountered this year so you can look back on your notes when getting the planter ready next winter or starting out next spring.