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TECH Tips

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Corn Planting 2018: Don't Be In A Rush To Change...Yet

As planting time approaches, the wet and cold soils that remain across much of South and North Dakota are slowly warming up. The snow will eventually fully melt and soils will eventually dry out enough and warm enough to get rolling with spring planting. With the current delays it may be tempting to consider some changes to earlier maturity corn products to offset late planting. However, we would NOT RECOMMEND changes to planting plans, at least yet. There are a lot of factors to consider, including calendar date, soil temperature, corn maturity, expected yield, and that is not to mention the agronomic considerations of driving on wet fields and planting in cold, wet soils. In general, here are some best recommendations, supported by corn company and university data:



- Switching to earlier maturity products for late-planting should not be an automatic decision.
- Continue planting with your originally planned corn products until around May 20.
- Consider a shorter season corn product if planting will be delayed beyond May 25.
- Maintain plans to plant the corn seed at recommended depth. Shallow planting = shallow roots.
- Be patient and remember soil agronomics as well as crop agronomics. Sidewall compaction and soil compaction from field operations in wet conditions are long-term agronomic issues that are hard and very slow to correct. These issues can affect future crops beyond the current season.
- Do not consider a switch to an alternative crop until we approach the insurance cut-off dates.

Potential Yield and Corn Maturity

The best chance of high corn yields does come from early planting dates. Add to that, full-season corn products for a given area typically have the highest yield potential, which can help offset an increase in drying costs. So how late is too late? Generally, the best data would say that anytime from late April to the middle of May is a good time for planting corn in our service area- earlier in the south, later in the north, of course. University data supports this statement, as do the various seed companies.

Planting Date- University Data

Supporting data on being hesitant to make significant maturity group changes based on planting date comes from South Dakota State University, North Dakota State University and the University of Minnesota. Moving to the end of May and into June, corn yields do drop significantly, but not until that time. Although it is older data, research for 101-103 day corn at SDSU Southeast Experiment Farm

over many years showed yields were comparable when hybrids were planted April 17th through May 17th, respectively, at Beresford, SD. For 101-103 day hybrids, no yield loss was expected before the second week of May, with an average loss of only 0.06 bu/acre/day between those dates and May 27.

Our Seed Has Some Flexibility

Most seed companies today publish a table that shows the accumulated Growing Degree Units (GDU) (or Growing Degree Days- GDD) needed for various growth stages in corn (for example, DKC47-47 RIB blend lists 2425 GDU to black layer). GDU accumulation increases as the growing season progresses, and to date, we are far behind normal on accumulated GDU's in 2018. Remember, however, that our modern varieties are quite flexible. As planting is delayed, corn products actually reduce their GDU needs. As a result, the number of GDUs required from planting to physiological maturity (black layer) decreases by nearly seven GDUs per day as planting is delayed beyond May 1st. This Indiana and Ohio research means that late-planted products can mature in fewer than expected GDUs. Therefore, corn planted in May compared to an optimum planting date may require 125 to 200 GDUs less to reach black layer. Of course, the first killing frost date and fall drying conditions come into play eventually; however, this flexibility is why adapted full-season hybrids are recommended until late May.

An additional thought is that modern corn hybrids are developed for and have traits for specific geographies that correspond roughly to the maturity ranges. If a significant change is made toward a very short-season hybrid, a grower may be looking at a hybrid that is out of its intended geographic area, and maximum potential yield may be sacrificed.

Should corn and soybean seeding rates change when planting is delayed?

No. Research funded by the MN Corn Growers and conducted at Lamberton, Morris, and Waseca, MN from a few years back shows that the optimum final stand does not change when planting is delayed.

Final Thoughts

- Late vs. Cold: Imbibitional chilling is real and preventable. We all know that soil temperatures should ideally approach 50°F for corn germination. In cold soil conditions (below 50°F), seeds will readily absorb cold water in the first 24 hours, but will not initiate root or shoot growth. This leads to seed rots and poor emergence. Cold shocked corn is a real consideration if we rush into things.
- Problems associated with “mudding” in the seed will reduce current and future yields. Sidewall smearing will limit root growth and compaction limits rooting depth and root spread.
- Field compaction limits current and future yields. Simply working in fields, and especially doing even light tillage, under wet soils conditions can lead to significant, and long term, soil compaction.
- Seed health. Seed treatments, which are on all commercially available seed, will be pushed to their limits if seed is planted in cold, wet soils. The treatment is most effective right after planting, and delays in germination allow the seed treatment to dissipate and begin to lose maximum efficacy.
- Plant a variety of maturity groups. Even with delayed planting, it is still important to spread the risk of adverse weather by planting a range of maturity groups, to the extent possible.