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To Plant or Not to Plant Corn: A Moot Question?

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The 2014 corn planting season is certainly off to a slow start in Indiana and elsewhere across the U.S. Midwest, primarily due to delayed drying and warming of soils. The April 21 USDA-NASS crop report estimated that 1 percent of Indiana's corn crop had been planted as of April 20, compared to the 5-year average planting progress of 14%.

The current 8 to 14-day weather forecast from NWS (4/24) predicts cooler than normal temperatures through the 7th of May for Indiana and surrounding states. The current Weather Channel 10-day forecast for Lafayette(4/24) predicts temperatures next week ranging from daily highs in the low 60's F to the low 50's F and daily lows from the low 40's F to around 50F. If accurate, these forecast temperatures are certainly cooler than the "normal" daily highs in the high 60's and daily lows in the low 50's for this time of year.

Average daily bare soil temperatures (4-inch depth) for the past 7 days (iClimate.org) have ranged from low 40's to the low 50's in central and northern Indiana; slightly warmer in southern Indiana from low 50's to the low 60's. The cooler than normal air temperature forecast, if accurate, does not favor a rapid warming of soils for the next week to 10 days.

Corn requires 115 to 120 Growing Degree Days (GDDs) to emerge after planted into moist soil (Nielsen, 2010; Nielsen, 2012c). Under "normal" temperature conditions for this time of year, it takes 6 to 7 days to accumulate those 115 to 120 GDDs. That translates to daily GDD accumulations of 18 to 20. Recent daily GDD accumulations, based on soil temperatures, have been much lower than that, especially in central and northern Indiana, ranging from zero to about 5 GDDs per day. Emergence of corn with daily soil temperature-based GDDs of only 5 per day would occur in about 24 days (120 divided by 5).

The more calendar days it takes for corn to emerge, the more time the seeds and seedlings are exposed to potential stresses of disease and insects, not to mention the risk of potential outright injury to seed or plant tissue to cold soil temperatures. These potential stresses can result in poor or non-uniform emergence of corn that may require replanting later on. These consequences of delayed or uneven emergence are the key concerns in growers' minds at the moment as they debate whether to get serious about planting or wait even longer.

It's useful to remember that planting date, in and of itself, is not a reliable predictor of absolute grain

yield at the end of the season (Nielsen, 2013). The past few years have reinforced that statement. Remember the record early planting year of 2012 and yields that were not particularly good in that year of the drought? Remember last season's near record delayed planting of corn statewide and yields that set new high records for many growers?

So, is there a black and white correct answer to the question whether to plant or not to plant corn at the moment? Not really. It's all about each grower's assessment and acceptance of the risks involved with planting now under less than ideal conditions or waiting for future, unpredictable, conditions. Growers with fewer acres of corn to plant have more flexibility to be patient and wait for more acceptable soil temperatures. Growers with a lot of acres to plant clearly feel more pressure to be planting now to minimize the risk of finishing "too late".

Given that the end of April is upon us, that soil conditions (other than temperature) are relatively "fit" for tillage or planting, and that weather forecasts are notoriously inaccurate; I think many growers will cautiously begin or continue with planting until excessive rainfall forces them to stop. Clearly, soils that remain "on the wet side" should be allowed more time to dry and warm before tilling or planting. One can "hedge your bets" against the consequences of continued cool soil temperatures and slow emergence by planting your best quality seed lots first (based on warm AND cold germination ratings), delaying the planting of your unusually small sized seed lots until later (80,000 seed units weighing 40 lbs or less), and delaying the planting of fields with particularly poor drainage or large amounts of surface residues (typically wetter and cooler soils).

Related Reading

Nielsen, R.L. (Bob). 2010. Requirements for Uniform Germination and Emergence of Corn. Corny News Network, Purdue University. <http://www.kingcorn.org/news/timeless/GermEmergReq.html> [URL accessed 4/24/14].

Nielsen, R.L. (Bob). 2012a. A Recipe for Crappy Stands of Corn. Corny News Network, Purdue University. <http://www.kingcorn.org/news/timeless/CrappyStands.html> [URL accessed 4/24/14].

Nielsen, R.L. (Bob). 2012b. Corkscrewed Mesocotyls & Failed Corn Emergence. Corny News Network, Purdue University. <http://www.kingcorn.org/news/timeless/Corkscrews.html>. [URL accessed 4/24/14].

Nielsen, R.L. (Bob). 2012c. Heat Unit Concepts Related to Corn Development. Corny News Network, Purdue University. <http://www.kingcorn.org/news/timeless/HeatUnits.html> [URL accessed 4/24/14].

Nielsen, R.L. (Bob). 2013. The Planting Date Conundrum for Corn. Corny News Network, Purdue University. <http://www.kingcorn.org/news/timeless/PltDateCornYld.html> [URL accessed 4/24/14].

USDA-NASS. 2014 (Apr 21). Crop Progress. USDA - National Agricultural Statistics Service. <http://usda.mannlib.cornell.edu/usda/current/CropProg/CropProg-04-21-2014.pdf> [URL accessed 4/21/14].

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