



WEEKLY OUTLOOK



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IS THE CORN MARKET TOO COMPLACENT ABOUT PLANTING DELAYS?

At this time of year, corn prices are typically dominated by planting progress and production expectations for the U.S. The USDA's *Crop Progress* report showed only 48 percent of the crop planted as of May 10, equal to last year's slow pace and behind the 5-year average of 71 percent (which includes the slow pace of last year). So far, the corn market has had only a modest reaction to the planting delays. December 2009 corn futures prices are a bit lower than in early April and only about \$.50 above the low of the past four months.

The very measured response to slow planting progress to date may reflect the market's focus on other price factors. However, the anticipation of a rebound in U.S. corn exports and another substantial increase in ethanol use of corn during the year ahead, along with a more stable stock market and rising gasoline prices, should all be supportive for corn prices. Perhaps the price response has been restrained due to the experience of 2008 when the effects of some planting delays and some replanting were offset by very favorable weather in July, resulting in an above-trend U.S. average yield. In addition, planting delays this year are not as widespread as last year. Delays are severe in Missouri, North Dakota, and much of the eastern Corn Belt, but planting has been rapid in the large corn producing states of Iowa, Minnesota, and Nebraska.

A third possibility is that the market may be under-estimating the potential yield implications of extremely late planting in the eastern corn belt. It appears, for example, that the percentage of the Illinois crop planted "late" this year will be the largest in at least 50 years. The yield effect of late corn planting is well documented in agronomic research, but typically the percentage of the crop planted late is low enough to have only a small impact on the state average yield. That may not be the case this year.

A state average corn yield model developed by Mike Tannura, Scott Irwin, and myself for Illinois may be useful to help quantify the potential impact of late corn planting (http://www.farmdoc.uiuc.edu/marketing/mobr/mobr_08-03/mobr_08-03.pdf). In its current iteration, that model explains state average corn yield as a function of time (trend), percent of the crop planted late (currently defined as after May 20), total precipitation from September through March before planting, April precipitation, and monthly precipitation and average temperature for June, July, and August. The model

explains about 96 percent of the annual variation in the Illinois average corn yield from 1960 through 2008.

As a starting point, the model can be used to forecast the 2009 state average yield if all weather variables were at the average level of the past 49 years and an average portion (14 percent) of the crop was planted late. That projection is 175 bushels per acre. By comparison, the unconditional trend yield for 2009 (based on actual yields from 1960 through 2008) is 163 bushels. The projection based on average weather is higher than the unconditional trend because years of adverse weather have a larger negative impact on yields than the positive impact generated by favorable weather.

Second, the model can be used to forecast the 2009 Illinois average yield based on actual precipitation from September 2008 through April 2009, the assumption of average weather for June through August, and the percent of the crop likely to be planted after May 20. With only 10 percent planted as of May 10 and a small window of opportunity for planting last week, it appears that a large percentage of the crop will be planted after May 20. Assuming 75 percent is planted late, the model forecasts a state average yield of 157.4 bushels per acre, almost 22 bushels below the 2008 yield. These results might be typical in Indiana and Ohio as well. These three states account for 25 percent of intended corn acreage this year. That magnitude of reduction is generally consistent with the yield penalties estimated from planting date experiments. Each one percent change in the percent of the crop planted after May 20 changes the yield forecast from our model by about 0.3 bushels per acre. The yield penalty could be larger if a substantial portion of the crop is planted after May 30. A generally drier forecast for the remainder of the month, however, suggests planting could be completed by month's end.

Actual summer weather could offset part of the yield impact of late planting or could contribute to further declines in yield potential. Based on weather to date and assuming 75 percent of the crop is planted late, July and August precipitation one standard deviation above average and July and August temperatures one standard deviation below average (cool and wet) would result in a yield forecast of 172.6 bushels per acre. Conversely, precipitation one standard deviation below average and temperatures one standard deviation above average (hot and dry) would generate a yield forecast of 134.5 bushels. The forecast error of the model is large enough to limit confidence in specific yield forecasts, but the direction and magnitude of the impacts of alternative weather scenarios are clear.

While not enough is yet known to confidently forecast the 2009 U.S. average corn yield, it appears there is risk of the average yield falling below current expectations even with rapid planting progress in Iowa, Minnesota, and Nebraska. The corn market currently appears to reflect a very low risk of such a shortfall.

Issued by Darrel Good
Extension Economist
University of Illinois