

Early Season Corn Production Concerns



grain outlook

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December 2013 corn futures prices have demonstrated a very erratic pattern since early February, with a trading range of about \$0.70. Prices have reflected both old crop and new crop fundamentals, including expectations about producer planting intentions and the likely timeliness of planting.

The price of that contract declined during February, moved higher during March, and dropped sharply following the USDA's March 28 release of the Grain Stocks and Prospective Plantings reports. March 1 stocks of corn were much larger than expected and producers confirmed intentions for large corn plantings again this year. New crop futures have been choppy over the past two weeks as the start to planting in the Corn Belt has been delayed. The price is currently near the bottom of the recent range. As usual, planting delays raise questions about the likely magnitude of corn acreage and the potential impact on average yields. Some indication of the potential acreage impact of continued delays in planting is revealed in the historic acreage response in years of late planting. There is no standard definition of late planting for corn. Based on research of yield response to planting date, we have previously defined late planting for most of the production regions as occurring after May 20. Based on this definition and the USDA reports of weekly planting progress, we calculate the percentage of the crop planted late each year.

Since 1990, there have been 10 years when the USDA's weekly Crop Progress report indicated that 20 percent or more of the corn crop was planted late by our definition. The final USDA estimate of planted acreage was less than Intentions reported in March in 9 of those years. However, the difference between intentions and actual acreage was large only in 1993 and 1995 when 42 and 47 percent of the acreage was planted late, respectively. Planted acreage was 3.247 million (4.2 percent) less than intentions in 1993 and 3.844 million (5.1 percent) less than intentions in 1993. In the other 7 years, when late planting ranged from 20 to 37 percent, acreage was less than intentions by an average of only 335,000 acres, ranging from 32,000 to 691,000 acres. In 2009, when 29 percent of the

crop was planted late, acreage exceeded intentions by 1.396 million acres even though prevented corn acreage was reported at nearly 1.9 million acres.

Historical corn acreage responses suggest that large declines from intentions occur only under conditions of extreme planting delays. However, responses have varied widely from year to year. In addition, the analysis here does not consider state-by-state acreage responses. For the current year, concerns about planting delays are focused on the northern Plains and upper Midwest where snow accumulations point to the potential for more prolonged delays. These are the areas with a much narrower planting window for optimum corn yields. Corn acreage below intentions in those areas would not be a surprise as acreage is shifted to crops with a shorter growing season or is not planted at all. However, such declines could be offset by increases in areas with more timely planting. Overall, slightly less corn acreage than reported in March seems likely if planting delays continue. Expectations about corn acreage will begin to firm up after the current week of generally rainy weather in the Corn Belt and a more accurate assessment of corn acreage will be available in the USDA's June 28 Acreage report.

Agronomic research that has quantified the relationship between planting date and corn yields has clearly identified a yield penalty associated with late planting. In the Corn Belt, that penalty accelerates for planting dates after about the third week of May. However, planting date is only one factor that influences corn yields. Over a fairly wide planting window, yields are more influenced by growing season weather than by planting date. As a result, the U.S. average yield relative to trend yield has varied considerably regardless of the percentage of the crop planted late. In the 10 years since 1990 with the largest percentage of the crop planted late, the U.S. average yield was below trend in five years, about equal to trend in two years, and above trend in three years. The largest of the five yield shortfalls were in the extreme late planted years of 1993 (widespread flooding) and 1995 (very hot summer). Ironically, the largest yield shortfalls relative to trend in modern history were in the early planted years of 1988 and 2012 and in 1983 when plantings were delayed modestly.

The likely size of the 2013 U.S. corn crop is still very uncertain at this early stage of the season. With recent beneficial precipitation in much of the Corn Belt, prospects for only modest losses in corn acreage, and ample time remaining to plant the crop, prospects for a large crop are still very much in play. Δ

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