



Weekly Outlook: Can Corn and Soybean Crops Overcome Late Planting?

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For much of the Corn Belt, optimum planting dates for both corn and soybeans are generally identified as occurring in late April or early May. Agronomic research has clearly documented the negative yield impacts of planting corn and soybeans "late". The yield response of late planting is estimated to be nonlinear. That is, yield losses generally accelerate as planting dates get later.

The percentages of the U.S. corn and soybean acreage planted late in 2011 are among the largest of the past 41 years. Based on estimates of weekly planting progress contained in the USDA's Crop Progress report, an estimated 26 percent of the 2011 corn acreage has been or will be planted after May 20. The percentage of the corn acreage planted "late" (defined as after May 30 before 1986 and after May 20 since 1986) was larger in only 5 years since 1971. Those years were 1993, 1995, 1996, 2002, and 2009. The largest percentage of the corn acreage planted late, 47 percent, occurred in 1995.

For soybeans, an estimated 46 percent of the 2011 acreage will be planted after May 30. The percentage of the acreage planted "late" (defined as after June 10 before 1986 and after May 30 since 1986) was larger in only 6 years since 1971. Those years included 1986, 1990, 1991, 1993, 1995, and 1996. The largest percentage of the soybean crop planted late, 66 percent, occurred in 1995.

While planting date has a measurable impact on corn and soybean yield potential, planting date is not the dominate factor determining actual yield in a particular year. Summer weather conditions tend to dominate yield outcomes. In the previous five years of late corn planting identified above, the U.S. average yield fell below trend in three years, equaled trend value one year, and exceeded trend in one year. The largest shortfall relative to trend occurred in 1993, when summer weather was dominated by widespread flooding. The U.S. average corn yield was above trend and record large, in the late planted year of 2009. A generally cool, wet summer in 2009 favored crop development and grain fill.

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Another way to illustrate the yield impact of summer weather relative to the impact of planting date is to consider the years of lowest U.S. average yield relative to trend yield since 1971. The largest yield shortfalls occurred in 1974, 1983, 1988, and 1993. Of those years, only the 1993 crop was considered to be a late planted crop.

In the previous six years of late soybean planting identified above, the U.S. average yield was at or above trend yield in four years. The average yield fell slightly below trend in 1995 with a modestly larger shortfall in 1993. The largest shortfalls in the U.S. average soybean yield relative to trend occurred in 1974, 1980, 1983, 1984, 1988, and 2003. Of those years, only the 1974 crop was considered to be a late planted crop.

The yield potential of the 2011 U.S. corn and soybean crops has been reduced due to a large percentage of the acreage being planted after optimum dates for maximum yield potential. The actual yield outcome for these crops, however, will be determined by weather conditions over the next three months. The generally warmer, drier conditions now being experienced are likely favorable for crop development. At the same time, early summer conditions this year are not similar to summer weather conditions of 2009 that resulted in a record large U.S. average corn yield. The widespread favorable weather conditions of 2009 have occurred only rarely over the past 50 years.

In addition to the uncertainty surrounding yield potential of the 2011 corn and soybean crops, there is more than the normal amount of uncertainty surrounding acreage prospects. The uncertainty stems from a combination of regional flooding, late planting, and the relatively attractive payments that are available to some producers under the prevent plant provisions of the crop insurance program. The magnitude of total planted crop acreage and the mix of crops planted is still very much in doubt late in the season. The planting progress revealed in USDA's June 6 Crop Progress report may provide some additional insight on both of these issues.

Recent price behavior suggests that the corn and soybean markets have become more optimistic about acreage, yield, and production prospects for 2011. That optimism seems more justified for soybeans than corn. The corn market may be weighting the 2009 experience too heavily.