

Corn Planting Date Effect On Yields

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Wet weather since late March has delayed corn planting. According to the National Agricultural Statistics Service, only 20 percent of intended corn acreage was planted in Kentucky as of April 26 compared to the 5-year average of 57 percent. If recent weather forecasts hold true, corn planting will continue to be hindered through early May.

So, when can we expect to lose yield on corn based on planting date? Research indicates that corn should be planted by early- to mid-May to avoid yield losses. In west Kentucky, corn should be planted by May 1-5, according to six years of research at that the UKREC in Princeton, KY Extrapolating these results to other areas of the state: corn planting should be completed by May 1 in extreme western Kentucky; by May 5-10 in west-central Kentucky; and by

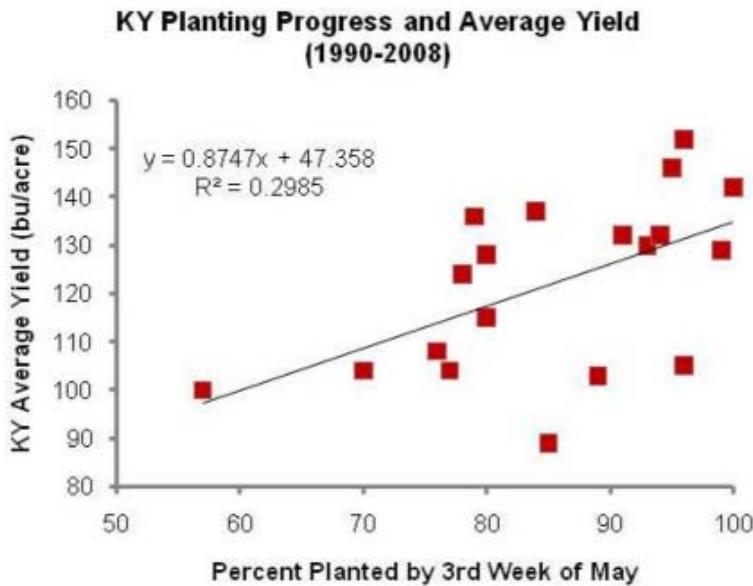
So, if the rest of 2009 turns out to have favorable weather, we would expect any potential yield losses from late planting to be much less than predicted. Of course, if 2009 turns dry like 2008, well . . . let's just hope it doesn't.

Some things to consider when planting corn in May

Use a corn hybrid with the Bt trait for corn borer. University of Kentucky research shows a yield benefit and an economic benefit to Bt corn borer hybrids planted in May. The later the planting date, the greater the yield benefit for the Bt hybrid.

Possibly switch to an earlier-maturing hybrid. Based on calculations of growing degree days remaining in an average season, hybrids with relative maturities of 118-day (and less) will reach physiological maturity (black layer) before frost in west Kentucky even if planting is delayed until late May. For late May plantings in

Figure 1. Statewide average corn yield relative to the percentage of acres planted by the third week of May (source: National Agricultural Statistics Service).



May 10-15 in eastern Kentucky to achieve maximum yield potential. There is an average yield loss of 1 to 2 percent per day for corn planted after early May (west Kentucky) to mid-May (eastern Kentucky).

Most of you reading this and looking at weather forecasts know that you will not get all of your corn in the ground before these dates. Don't panic. There is more to this story.

The corn yield penalty for delayed planting is not constant and can be quite variable from year to year (Figs. 1 and 2). While our research indicates yield losses for corn planted sometime after the first or second week of May, statewide average yields tell a slightly different story. If at least 80 percent of the corn crop is planted by the third week of May, then we still have a chance for good yields (Fig. 1). The trend for corn yields to be lower as planting is delayed across the state has a very low correlation ($R^2 = 0.3$). The statewide averages indicate that more than just planting date goes into making good yields. Actual planting date and yield data from a central Kentucky farming operation would imply that the optimum window for planting is around the first or second week of May (Fig. 2). As you can see, there is a lot of variability in this data as well, indicating that more than just planting date determines yield.

Some of the other factors that affect corn yield include timely rainfall, adequate heat units, low stress at pollination, adequate nutrients, etc.

central and eastern Kentucky, hybrids of 116-day relative maturity or less are likely needed. If planting occurs in early to mid-June, then a switch to hybrids of 113 to 116-day relative maturities will likely be needed. For extremely late plantings (after mid-June), hybrids of 110 to 113-day relative maturities or less are needed.

Keep the seeding rates and row spacing the same. Two exceptions: if someone convinced you to try 38,000 seeds per acre, try it in a small area instead of a large field. Your odds of getting decent yields from late plantings are good, but your odds of getting excellent yields are not.

If you have the ability to plant narrow rows or twin rows, the late planting date could make for some excellent comparisons. We know that going to narrow rows in late-planted soybeans improves yields. Perhaps the same could occur in corn. Some on-farm comparisons would be excellent. One caution here: setting up a really good comparison takes time, and when fields are suitable for planting again, you won't have much time.

For more information on corn planting date and hybrid options, refer to publication AGR-195: Replanting Options for Corn that includes a table on Kentucky location, planting date, and expected date to reach black layer (physiological maturity) for three hybrid maturities. Δ

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