

Corn Kernels

How Late Can I Plant Corn?

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How Important is Planting Date in Corn?

The selection of planting date and the appropriate hybrid maturity for that planting date remain two of the most important decisions a corn grower will make during the growing season. The goal for corn should be to choose a planting date and hybrid maturity that allows the plant to grow for the longest period of time possible (maximizing the amount of light captured) while avoiding stress, particularly stress during the critical one-week period prior to silking. In North Carolina corn can be planted anytime soil temperatures reach 55° F or greater up until fall frost prevents the crop from reaching maturity (from mid March to early July). Research in 2003 and 2004 in North Carolina (Fig. 1) and Virginia suggests that the optimum planting dates for corn range from late March through the first week in May with mid to late maturing hybrids performing best in most parts of the region. This combination of planting date and hybrid maturity provided the longest period of growth and avoided having the critical period prior to silking occur during periods of dry weather in late June. Planting in April also helped avoid the extensive damage that later planted corn suffered due to second and third generation corn borer and corn earworm infestations.

However, recent changes in corn hybrids and rainfall patterns have called into question the wisdom of early planting. New stacked trait corn hybrids have the ability to tolerate late season insect infestations and have better drought tolerance. Changes in rainfall patterns have resulted in higher probabilities for rainfall in mid to late July. Over the past four years, corn planted in mid-May has often produced higher yield than corn planted in April or early May (Fig 2). While recent weather patterns suggest that planting corn later might be desirable, it is clear from this previous research that there is a limitation to how late corn can be planted to achieve economic yield. A balance must be achieved between planting early when soil moisture is adequate for good growth through the V10 stage and when the accumulation of growing degree units (GDD) does not severely limit the number of days over which the crop can intercept light, and planting late enough to move the critical period around silking to a time when the first tropical rains bring adequate moisture (mid July) (Fig. 3).

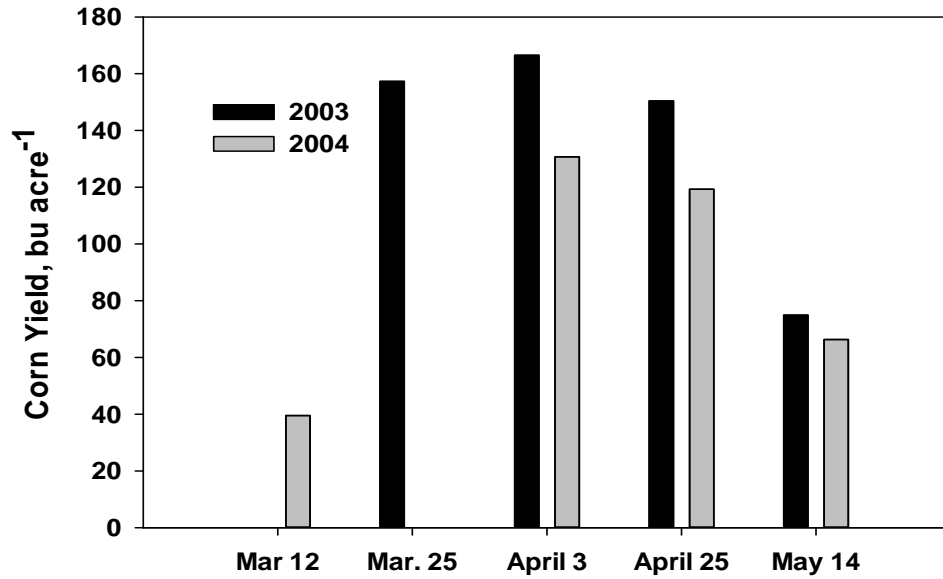


Figure 1. Corn yield response to planting date in eastern North Carolina in 2003 and 2004.

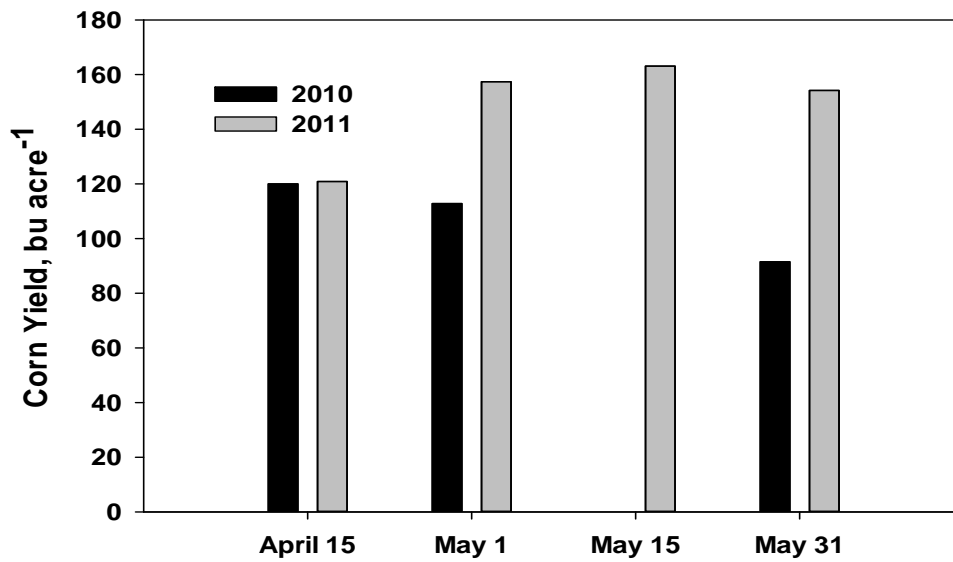


Figure 2. Corn yield response to planting date in eastern North Carolina in 2010 and 2011.

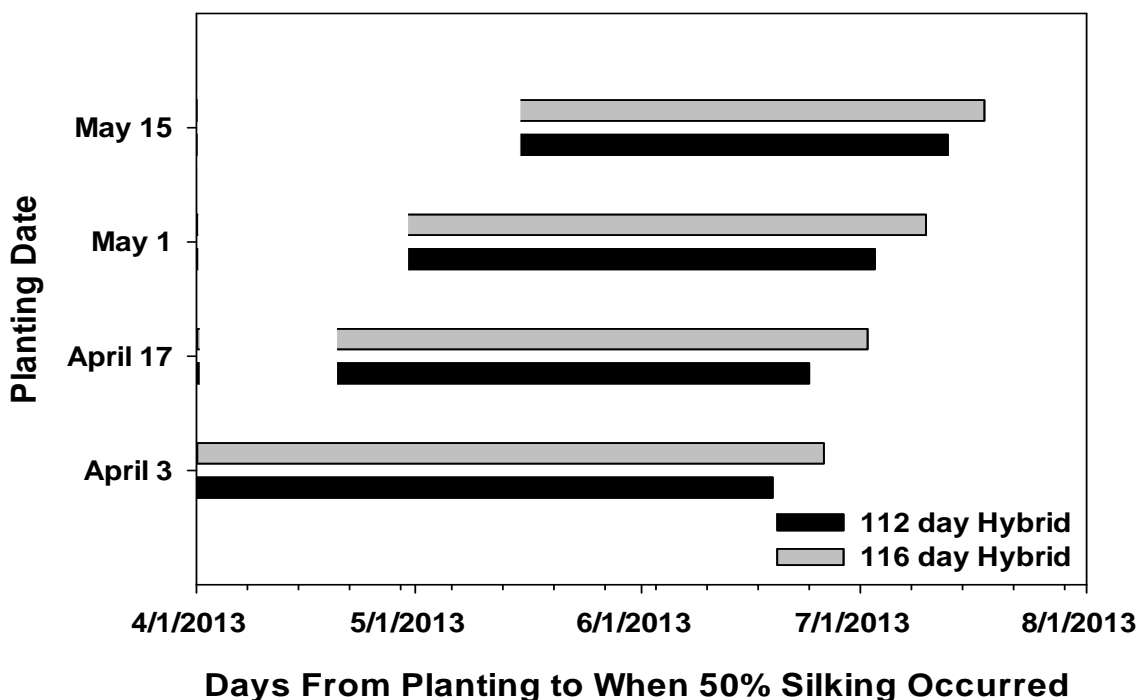


Figure 3. Length of period from planting to silking and date silking occurred on hybrids with differing maturities in 2013.

With the Delay in Planting How Late Can I Plant Corn in 2014?

The key to success with late planting is whether or not rainfall will occur during the silking period. Given the good to excessive soil moisture conditions present at this time (May 1) and the cool weather pattern we are experiencing there is no question that corn planted as late as May 15 will have the moisture necessary to reach pollination. As Figure 3 shows corn planted on May 15 will pollinate during the middle of July. Current forecasts suggest a good probability of rainfall in this period. Therefore, corn growers should not hesitate to continue planting through May 15 with the expectation of full yield potential. However, after May 15 there are several factors that begin to negatively affect corn yield. First, the decrease in days between planting and silking starts to have a major impact on yield. In general corn yield will be reduced by 2 bushels per acre for each day planting is delayed past May 15. Second, late-season corn diseases such as southern rust become concerns when planting after May 15. Third, the potential for hurricane damage becomes greater, and finally, the last planting date for full coverage for crop insurance is May 15. All of these factors suggest that growers should look at May 15 as the cutoff date for corn planting. While certainly corn can be planted later than this growers should expect lower yield, higher risk of diseases, and need to

contact their crop insurance agent to make sure they understand the implications of planting late on their coverage. We have produced 120 bushel per acre corn in the coastal plain and piedmont when the corn was planted in June but the risks are greater and growers should understand and be prepared to accept those risks.

What Adjustments Should I Make When Planting in May?

Increasing plant populations could help overcome the limitation in the number of days that the crop is exposed to light. Planting date studies suggest that growers should increase plant populations from 1000 to 2000 extra seeds per acre when planting after May 1. Placing the tassel to silking period in a period of rainfall would help sustain those higher populations.