

Maximizing the Advantages of Early Corn Planting

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Early corn planting can contribute significantly to higher corn yields. Research results show that yields begin to decline when planting occurs later than the optimum corn planting date for an area. Figure 1 illustrates the effect of planting date for an area.

Higher yield is not the only advantage of early planting. The fullest benefits from high plant populations and high fertilizer rates can only be enjoyed under early planting. It also allows harvesting earlier in the season, when conditions are usually better and field and work time losses can be minimized. And, very simply, early planting increases net returns without adding production costs.

The trend to early planting is encouraged by the production flexibility of larger farms and the use of herbicides and fungicides, high quality seed of vigorous hybrids and starter fertilizers, as well as other optimal production practices. However, there are a number of factors corn growers should consider to maximize the advantages of early corn planting.

HYBRID MATURITY

Yield

Full-season hybrids respond especially well under early planting. Maximum yields for any area are usually obtained with hybrids that utilize the entire growing season. Early planting allows the use of the fullest season hybrids for a given area, providing them time to produce their maximum potential yield, and minimizes the risk of obtaining immature corn or sustaining early fall frost damage. However, medium-season hybrids are preferred for growing under irrigation in the southeast United States because of high yields produced, fewer applications of water needed and the chance for planting multiple crops in one year.

Harvest

Maturity-management practices result in maximizing the production on total corn acreage. A range in the harvesting season can be obtained by planting corn hybrids of different maturities. Full-season hybrids should be planted first, followed by the earlier maturing hybrids. If the planting date interval is not too great, the later planted, early-maturing hybrids will reach harvestable moisture content (about 25 percent kernel moisture) first. The early-maturing hybrids can be planted as much as three weeks after the full-season hybrids and yet be ready for harvest about two weeks before the first planted, full-season hybrids.

Early harvest of part of the corn acreage may be an advantage to producers with large corn acreages because they can start fall fertilization and tillage sooner. Completing the normal fall field work is important to accomplish early planting the following year.

PLANTING DATES

Corn should be planted by the calendar, not the soil temperature. Planting should not be delayed because of cool soils, since soil temperatures fluctuate markedly on a daily basis for most areas during the optimum corn-planting period. During time periods when soil temperatures are below 50°F, little germination activity will occur. Since soil temperatures are likely to be lower in early corn planting periods, germination and emergence may require more time. For this reason, planting depth is very important. One should plant seed as shallow as possible. Although 1 to 2 inches is the usual effective range, the need to obtain good seed-to-moist-soil-contact should determine actual planting depth. This promotes uniform germination and plant emergence.

Even during the optimum planting period, every day is not a good corn planting day. The number of good planting days during the last week in April and the first half of May equals about 50 percent of the calendar days. Therefore, corn growers should have sufficient planting and tillage equipment to plant their entire corn acreage in 7 field-work days.

PLANTING RATE

Generally, a 10 to 15 percent increase in planting rate is recommended with early planting, because the percent of seeds that emerge may be lower with early planting. The cooler soil temperatures slow germination and growth and may result in more rotting of kernels and seedling losses. High quality, fungicide-treated seed is important regardless of planting date, but it is an absolute must for early-planted corn.

FROST DAMAGE

Early planting may cause some concern about stand loss or leaf injury due to a late spring frost, but this is usually not a serious problem. The corn growing point remains below ground for 2 to 3 weeks after emergence or until the corn plant is about 10 inches tall. At this time, when there are six fully emerged leaves, the stalk begins to elongate. It is this process that moves the growing point above the soil surface. Because the corn growing point is protected for a considerable period after emergence, a continuous temperature below freezing is necessary to kill the entire plant. Thus, while there may be some leaf loss from a late spring frost, this minimal plant damage will have little effect on grain yield.

PEST CONTROL

Weeds

Low soil and air temperatures early in the season may favor faster growth of some weeds in corn. Therefore, effective weed control is essential to prevent corn yield losses as a result of early weed competition. Application of preplant or preemergence herbicides specific for the weed populations present, followed by timely rotary hoeing or harrowing, cultivation and/or postemergence applications of herbicides should be effective in controlling early and late emerging weeds. Many herbicides are labeled for over-the-top application until corn reaches the 4 to 5 leaf stage; where corn is planted early and there is no appreciable weed emergence for 3 to 4 weeks, delayed applications can extend weed control.

Insect problems

In the southeast United States, early planted corn generally produces high quality grain. Grain from later planted corn has a higher level of insect damage and often high levels of aflatoxin, making it unacceptable for food or livestock feeding.

FERTILIZER

The low soil temperatures common during early planting slow nutrient uptake as well as reduce the rate of soil nutrient release. As a result, early vegetative growth is slow. Row placement of a starter fertilizer stimulates early growth and may increase yields in some areas, especially during a cool season or with corn produced under minimal tillage systems.

