

Corn vs Soybean Planting

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Farmers have to decide each spring whether to grow corn or soybeans. Other spring crops are not grown because there is not a local market or product demand, in other words the farmer has no place to sell them or the opportunity to make a profit.

Many factors go into the decision on whether to grow corn or soybeans. Traditionally farmers rotate their crops each year since yields tend to increase and pest problems are diminished when the same crop is not grown year after year. Soil health may also be improved by rotating different crops, particularly when wheat is added to the rotation.

Farmers also consider the anticipated grain price, input costs, and probability of a successful season for each crop. Farmers will also raise a crop for their own needs, such as corn for livestock (soybeans have to be processed and are not used directly on the farm). However, since livestock production is small in our area, most of the grain will be purchased and shipped to processors or other livestock regions of the country.

In recent years, more acres have been planted to soybean in our area than corn. The soybean grain price has been stronger, input costs have been less, management practices have been easier, and the probability of a successful growing season has been better compared to corn.

Input costs for both corn and soybean primarily consists of seed, fertilizer, fuel, herbicides, and possibly insecticides or fungicides. Ohio State University crop budgets estimate input costs for this year to range from \$336 to \$421 per acre for corn and \$196 to \$214 for soybean.

Historically soybean has fewer insect and disease pests compared to corn. Weed control was easier for corn until Roundup Ready soybeans became available in the mid-1990s. However, the Roundup Ready system has not been as effective in recent years because of weed resistance to glyphosate and the arrival of a new weed, marestalk.

Corn requires large amounts of nitrogen fertilizer, a major input costs. However, since soybean is a legume, they have the ability to fix nitrogen from the atmosphere and require no nitrogen fertilizer. The phosphorus and potassium fertilizer requirement is similar for both corn and soybean.

Soybean plants can survive many adverse growing environments and still produce a relatively good crop. Historically, soybean yields do not greatly fluctuate from year to year compared to corn. Corn and soybean, botanically speaking, have a different growth type, which may account for the ability to adjust or not adjust to adverse environments.

Corn has determinate growth and the soybean grown in our area has indeterminate growth. Determinate plants develop most of the vegetative growth before flowering. The

transition from vegetative to reproductive is relatively quick and growth will cease with a large reproductive structure.

For corn the large reproductive structure is the ear. The plant itself has reached its maximum growth by the time tassels and silks appear and the plant will produce no more leaves. The potential number of kernels has been established by this time.

The corn plant has one opportunity to produce viable kernels. After pollination, the corn plant cannot produce new kernels or leaves because of its determinate growth.

Thus if hot and droughty conditions occur during the flowering period, pollination may not occur, potential kernel number may be reduced or even pollinated ovules may abort in early grain fill to cause severe yield losses.

Indeterminate plants, such as soybean, have a long transition period where vegetative and reproductive growth occurs at the same time. Soybeans have the potential to produce many flowers at each node (area of new growth) during this time period. If adverse weather causes early flowers to abort or not set seed it has the potential to produce new growth with new flowers.

This transitional period lasts for about six weeks occurring in July and August. Adequate rainfall in August generally determines whether soybeans will have an ok or great yields. The plants can recover from adverse conditions in June and July and still produce excellent yields.

For both corn and soybean, yields tend to increase with earlier planting. However, corn generally has to be planted by the first part of June to assure enough days for maturity before a killing frost. Soybeans can be planted into the first part of July and still mature in many years.

In the end, yield and grain price will determine farm profitability. Corn has the potential to produce significantly more yield than soybean per acre but the difference in grain price often makes up for the yield difference. As of the end of last week, the local May corn price was \$3.81 per bushel and soybean was \$9.85.

Farmers have already decided which crop they will plant this year. Many factors went into the decision on whether to plant corn or soybeans.

Weather may cause them to change some of those decisions. Farmers would like to have their corn planted by May 15 and soybeans by the end of the month. Weather is already causing farmers to become nervous about the planting date. The current cool and wet conditions will delay planting in our area for at least a week.