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How early can soybean be planted?

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How early can soybean be planted?

Abstract

Even though it is early in April, I have already gotten the first phone call inquiring, "Is it too early to plant soybean?" Looking outside the window watching the snowflakes and seeing 7 inches of snow on the ground, I know that particular grower probably appreciated that I didn't recommend planting. So how early can you plant? Well, it depends on the weather and the temperature. Previous research from the Department of Agronomy at Iowa State University shows that the optimum planting dates for full-season soybean varieties are in the last week of April and the first week of May, with yields not being significantly different between late-April and mid-May.

Keywords

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INTEGRATED CROP MANAGEMENT

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So how early can you plant? Well, it depends on the weather and the temperature. Previous research from the Department of Agronomy at Iowa State University shows that the optimum planting dates for full-season soybean varieties are in the last week of April and the first week of May, with yields not being significantly different between late-April and mid-May. So why push the planting date? The reason is that date of planting has more effect on soybean yield than any other production practices if soil conditions are suitable. Numerous planting date studies have been conducted in the Midwest with similar results. However, if soil conditions not are suitable, early planting will not be economically feasible for the grower. The use of no-tillage planting practices has been another issue because soils that are not tilled in the spring before planting do not warm up as fast and are usually wetter than those that are tilled.

Many growers have a tight schedule because farms are getting larger and timely planting is therefore more unlikely. However, planting soybean too early puts the crop at risk due to soil conditions that are too cold and too wet, as well as possibly exposing early emerged soybean to a frost or freeze. Soybean germination and growth typically begin at temperatures of 46 to 50°F. Temperatures above 50°F speed emergence in much the same way as the overall growth. Optimum temperature for soybean germination is in the lower 80s that are also the optimum temperature for hypocotyl elongation. By planting too early in a cool and wet soil, you inhibit germination, and emergence can then take as long as 4 weeks, making the seed vulnerable to many soil pathogens and insects. Thus, an adequate and vigorous stand is more difficult to obtain and replanting needs to be considered. Replanting is a nice "backup plan," but who can afford to buy seeds twice with the current profit margin in soybean?

Late-planted soybean will yield less than early-planted soybean, but the loss in yield of soybean will first become more severe past early June. The reason is that in addition to temperature, soybean maturity is influenced by day length. Soybean is photoperiod sensitive, meaning that the lengths of day and night strongly influence when the plant begins flowering. Late-planted soybean go through growth stages much faster than early-planted soybean. It is primarily the vegetative development before flowering that is shortened by planting delays. Soybean planted later will therefore not develop the same biomass as soybean of the same variety planted earlier.

You still have plenty of time and there is no reason to rush planting. Wait to the last week of April--as the earliest. Suitable soil conditions are a must and especially using no-tillage

practice.



Be sure to pick the right maturity group! (Photo by Michael G. Bertram.)

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