Should I hold back on planting soybean?

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Should I hold back on planting soybean?

Soybean planting has just started in the last week or so and less than 10 percent of the fields have been planted. However, there are some concerns because of the cool temperatures if it is too early to plant soybean. The reason for concern is that emerged soybean plants have their growing point above the soil surface and can suffer more easily from frost than corn. The soybean seedling has two vegetative buds in the cotyledonary axils. Regrowth can occur from either of these vegetative buds if they have not been frozen. It is important to wait several days after a crop has been frost damaged (or has emerged) before replanting. The injuries can look very serious the day after the event, but recovery may, and will often, be possible. It is recommended to wait 48 to 72 hours before making a decision. Crops that haven't emerged yet should be okay.

Currently, the soil temperature in Iowa is in the lower 50°s and many may believe that it would be wise to wait. However, based on the research over the last two years here in Iowa, I have seen a tremendous response to planting date as long as we don't get a killing frost after emergence. In addition, our weather forecast looks favorable for the next week. If soil conditions are suitable, soybean should be planted during the last week of April and the first week of May in Iowa. In 2003, I saw on average a yield loss of 0.25 bu/acre in Iowa by delaying planting by one day after the optimum window. In 2004, it was closer to 0.60 bu/acre/day. We even had some locations that lost 0.9 bu/acre by delaying planting by one day.

Those kinds of yield responses are tempting, but there is a risk associated with early planting, and you should evaluate this risk prior to planting. On average, a farmer currently spends $32 per acre on seed, so it can be quite a lot of money. It is also important to consider the history of sudden death syndrome (SDS) and bean leaf beetles, both of which can increase yield loss significantly with early planting. Both SDS and bean leaf beetles can be managed easily, though, if you have a history of them on your farm--just take that into consideration. However, you must manage them.

If you don't, you will not see an advantage in planting early. You may even see a yield decline from those two yield robbers.
Soil conditions are currently good, and there is little reason to delay planting soybean despite the cool conditions. Of course it would be better to have warmer soil temperatures, but the threat of wet conditions could be even more costly. If you plant in wet soils just to plant early, soil compaction from working soils that are too wet will outweigh any benefits of early planting. Warmer soils will give us a faster emergence, and since soybean seed doesn't stay viable as long as corn seed under cooler and wetter conditions, soybean seeds are weaker and more susceptible right now compared to corn. A fungicide seed treatment may be able to protect the soybean seed under these kinds of conditions, but we are still unsure about that. I am currently doing a lot of research in this area, and after this season, we should have a much better idea on this since all our experiments, except one, have already been planted. One of the soilborne pathogens that prefer cool, wet conditions is *Pythium* and the only way to protect your crops from this disease is using a fungicide seed treatment.

For more information on seedling disease, see last year's article on damping-off [2].

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