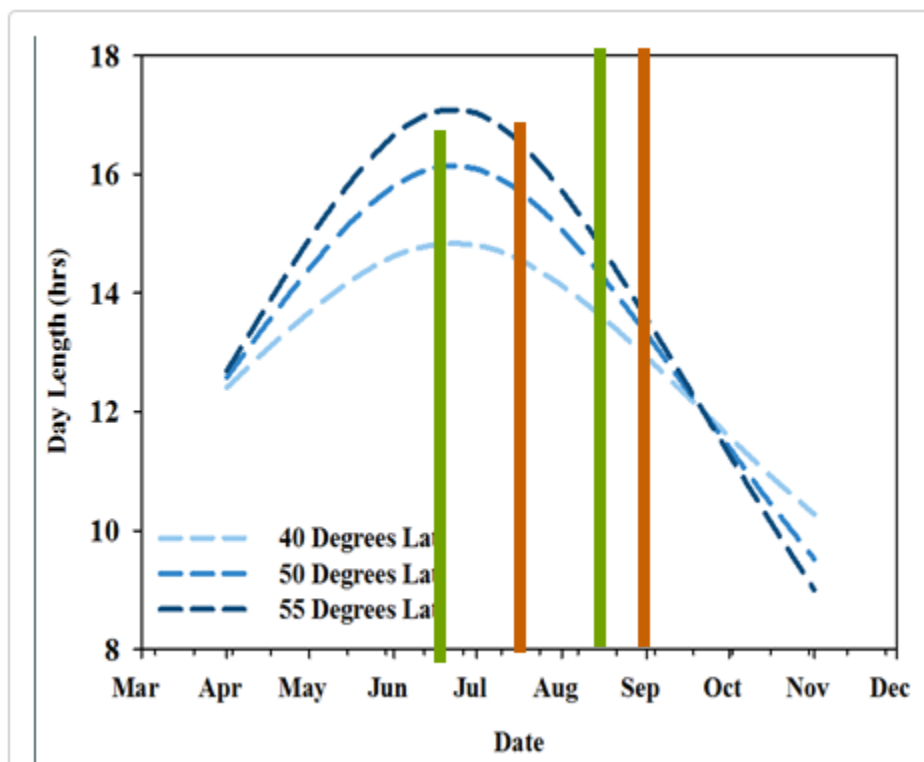




What's the goal behind planting soybeans early?

The goal of a soybean is simple: collect as much of the seasonally available solar radiation as possible in order to use the energy of the sun to convert carbon dioxide into carbohydrates, protein and oils. The more light soybeans can capture, the more soybeans can yield. With early planting comes an increase in canopy photosynthesis, which leads to a quicker canopy to cover the ground and maximize sunlight capture in middle of summer when it matters most.



	Early Planting	Late Planting
Planting Date	May 1 st	June 1 st
Days Spent from R1-R6	~60 days	~45 days

*Derived from Gaspar, A.P. and S.P. Conley. 2015. Responses of canopy reflectance, light interception, and soybean seed yield to replanting suboptimal stands

Our friends across the river in WI looked at light interception in soybeans in 2015 & the image above shows their results. Blue lines represent day length at various latitudes (Minneapolis sits at about the 45 degrees Lat.). The vertical lines represent the time spent from R1 through R6 for a May 1st planting date (Green Lines) and June 1st (Orange Lines) planting date using the same soybean variety. The May 1st planting date spent ~60 days from R1-R6 compared to only ~45 days for the June 1st planting date. The main advantage of the early planting date was simply:

Early planted soybeans experienced both longer duration in reproductive growth (more days) and reproductive growth during the longest days of the summer that resulted in a greater seed filling rate.

Early planting allows soybean plants to maximize the capture of seasonally available solar radiation, produce a greater number of main-stem nodes, more rapid crop growth rate during pod set, potential for earlier flowering, longer reproductive period and a greater seed filling rate.

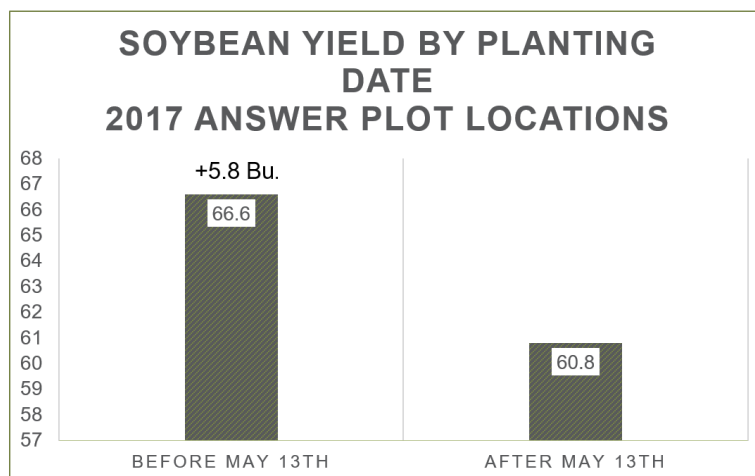




One of the main drivers of yield in early planting is getting to V1 earlier. Keep in mind, temperature plays an important role in germination and emergence, but after beans hit V1, nodal development is not temperature sensitive. About two new nodes are put on per week from V1 to R5, without much regard to planting date or temperature. However, planting date does impact when V1 occurs. The date soybeans hit V1 establishes the earliest date that node accrual can begin. Later planting simply can't catch up to the soybean node development of earlier planted soybeans, and more stem nodes generated earlier is equivalent to more yield potential. 2017 data from the AnswerPlot on the yield impact is in the image to the right. Joint Midwest university data goes one step further to say that *late soybean planting reduces yield potential up to 0.5 bu./acre per day of delay after late April.*

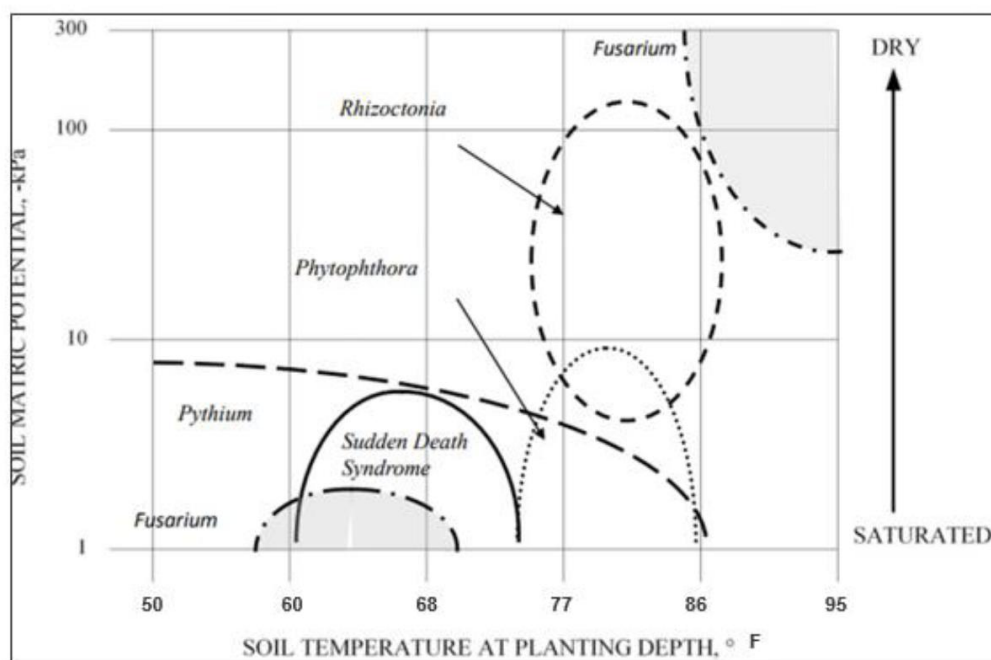


2017 Soybean Planting Date



Planting Date	Avg Yld	Locations
Before May 13th	66.6	25
After May 13th	60.8	109
LSD (.10)	3.8	

We have generally avoided planting soybeans too early due to the risks of cold, wet soil and greater exposure to seedling diseases. Whether you are planting late or early, it doesn't reduce the risk of seedling diseases, it just changes the disease-type spectrum as the graph to the right depicts diseases across different temps. and saturation levels. Make sure to use a broad-spectrum seed treatment that gives you the most protection on the BIG 4 diseases; you never know what the weather will be like 2 weeks after planting!



*adapted from Grau et al., 2004; Hanson et al., 2000; Irmak et al., 2006; Meyer, 2011

