



Soybean Delayed Planting: Maturity & Populations



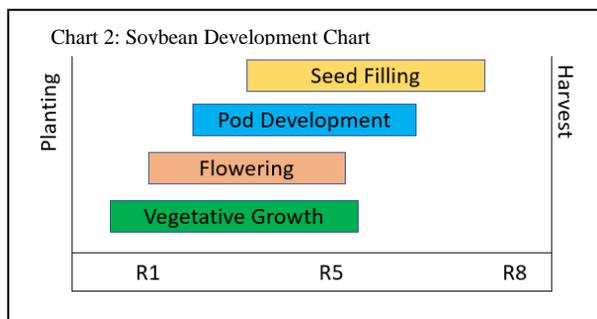
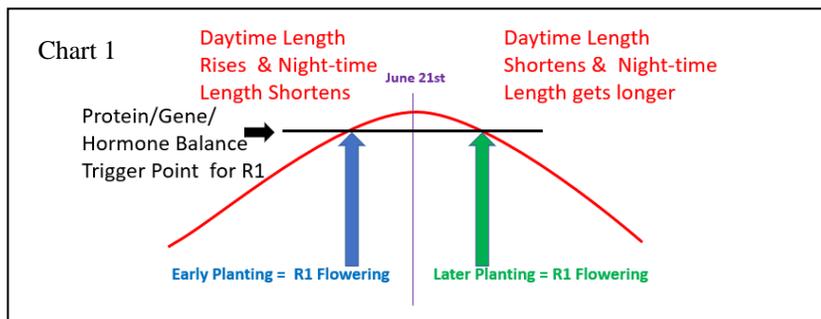
With continued rain events and delays to spring planting, we are receiving many calls regarding what you should do when planting soybeans later in May.

Corn vs. Beans: First off, understand that corn plant is a totally different animal versus a soybean plant. With corn, our yield is determined by one ear per plant with that ear having 400-600 kernels. There is more to it than that: (Population, kernel depth, kernel density, etc.), but with the delayed planting of corn, we must clearly understand how many Growing Degree Units we will need to black layer that hybrid in time. As we enter late May or early June, we lower our RM hybrid selection for this reason.

Soybeans are a Night Time Photoperiod Crop: The soybean does everything based on Night Time Photoperiod. Flowering, Vegetative Growth, as well as Pod and Seed Fill. The Flowering process starts their “Biological Clock” based on “R1 Beginning Bloom”. When the Proteins, Genes and Hormones in the plant all experience the Correct Balance of Night-Time Photoperiod Relationship”, the plant will induce an internal signal for the bean to flower. Then, the plant will express a flower at a leaf axil several days later based on temperature. So, if the beans Photoperiod process is out of balance so to speak, the bean continues to grow vegetatively and will not induce a flower. *Note Chart 1*

So, does the maturity of my bean determine flowering? Yes, a bit, but not much as you might think. If you plant a 2.5 RM bean, a 3.0 RM bean, and a 3.5 RM bean the same day (May 1st), they will all begin their R1 Flowering Clock near the same time. Yes, the 2.5 may begin on a Monday, and the 3.5 may begin on Friday, but most likely it will be within the same week. If the temperatures get increasingly warm, it could be within a day or two.

If all soybeans begin their Biological Clock around the same time, why do we try to plant beans early? Simple: Vegetative Growth and Increased Node Numbers! The reason we try to plant beans in late April and early May is we want them to get as tall as possible and add as many Nodes on the main stem as possible before the R1 Flowering Trigger. If we plant early enough, we may get the R1 Trigger before June 21st. If we plant later in May or early June, most likely our R1 Trigger will be after June 21st when the Protein, Genes and Hormone relationship is back in balance with shorter nights after the summer solstice. *Note Chart 1*



Do I switch to an Earlier RM Soybean like I do with corn?

No, do not switch to an Earlier Soybean RM variety. In almost all cases, stay with the original soybean lineup you ordered.



Yield in Soybeans is a numbers game. Nodes are the driver:

Yield Equation: Nodes + Flowers + Pod Formation + Bean Seed Development = YIELD

Without a NODE, you will never have a Flower, Pod or Seed. **NODE NUMBER per acre drives YIELD!**

How do I get more Nodes planting in Late May/Early June? 2 Suggestions: 1. Plant early beans FIRST! 2. Raise your Pops!

1: Plant your Earliest Soybeans First! Why? You need early beans to get as much height as possible by the R1 Flower Trigger Date, and you want them to develop as many NODES as possible through the Vegetative Growth Process. *Note Chart 3:* A 2.5 RM bean will have a shorter vegetative growth season than a 3.5 RM bean; therefore, plant the 2.5 bean first to give it a greater chance to add NODES to the plant structure. Likewise, a 2.5 RM bean will have a shorter flowering period, pod development period and a shorter grain fill period. *Chart 4, 5, 6* Therefore, plant your early beans first, then work your way up the RM ladder.

2: Raise your Populations on all Maturities: Why? Not so we can sell more seed! You need More NODES/ACRE. Given all your beans will have a shorter Vegetation, Flower, Pod Development and Grain Fill period this year, you need more NODES to add yield potential. Also, the more plants per acres will increase plant height due to plant to plant competition. *Chart 7*

In general we suggest adding 10-15,000 to most medium bush soybeans. This could vary due to plant type and lodging score.

Planting Earlier Beans First and then work your way up the RM ladder. This gives early beans more time for each stage.

Chart 3: Vegetative Growth by RM planted the same day.

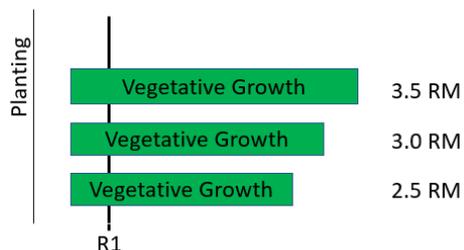


Chart 4: Flowering Period by RM beginning the same day

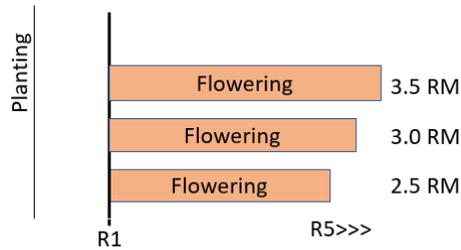


Chart 5: Pod Development by RM example

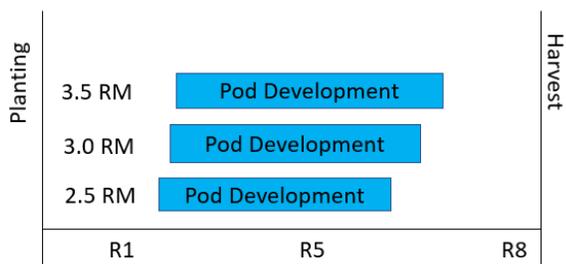
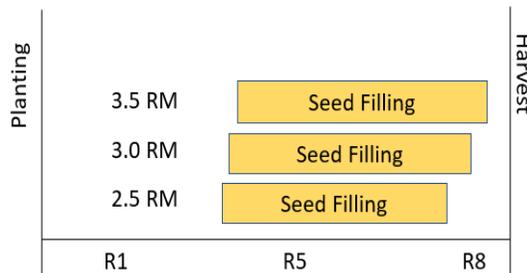


Chart 6: Seed Fill by RM example



Raise your Soybean Populations as we move later in May to increase your NODES/ACRE.

Chart 7 Typical Planting Population Suggestions from our Northern Indiana Asgrow Product Positioning Sheets

Suggested Planting Population			
Row Spacing	Conventional	No Till	After May15th
30" (Plant Early)	140,000	Add 5-10,000	Add 5-10,000
15" -20"	150,000	Add 5-10,000	Add 10-15,000
7.5" - 8"	160,000	Add 5-10,000	Add 10-15,000

Example: 15" Row Soybeans, Planted on June 1st in a No-Till environment with an 85% Tag Germination: 150,000 + 5,000 No Till + 15,000 Late Planting = 170,000

Final Thoughts:

Source: All charts are examples made by the Northern IN Agronomy Team

Lower Germ Soybeans: Lower Germination Soybeans will have a lesser drag on emergence now that we are in later May. If anything, add 5000 to your 80% germ beans and you should be okay (5000 added to your number in Chart 7). With 85-90% germ soybeans, I would follow the standard chart above. Why? Germination testing is done at 50 degrees. Our soil temperatures will most likely be above that when we finally get beans in the ground. Temps + Soil Moisture should cause beans to emerge quickly.

Fungicide Seed Treatments: Stay with your fungicide seed treatments. As wet as we have been, our soil pathogen populations (Phytophthora, Pythium, etc.), are most likely very high. Fungicide will help you for about 30 days after planting to help get the bean up and going in this wetter environment. I would not pull the Fungicide Seed Treatment given our wet weather pattern.

Narrow vs Wider Row Spacing Planting Later: If possible, try to utilize 20" row spacing and narrower if you can. Your objective is always to maximizing plant to plant positioning the later you go in May for overall sunlight utilization knowing your soybean Growth, Flowering, Pod and Seed Development will be more compressed. If you must plant 30" row soybeans late, splitting the rows or planting a checker board pattern could help you with this utilization strategy, just set your target pop to 50%.

This information is for directional purposes only and is not specific or exact. Many factors can and will affect the actual Soybean results you experience. (Location, Weather, Variety, Individual Farming Practices, etc.) Consider all in your decision.

Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. DEKALB® and DEKALB and Design® are registered trademarks of Bayer Crop Science. All other trademarks are the property of their respective owners. ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. ©2019 Bayer Crop Science