Cool Bean Advisor

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Considerations for Switching Soybean Maturity Groups for Delayed Plantings

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Delayed corn planting coupled with frequent rainfall events and poor planting conditions have postponed soybean planting across many parts of WI. Since we are rapidly approaching the hybrid maturity switch date for corn in southern WI (May 20th, given 2014 costs and prices) three common questions have arisen regarding soybean plantings. These are:

1. When during the planting season should a producer switch to an earlier maturing soybean variety?

In southern Wisconsin, full season soybean varieties (>1.8RM) out yielded earlier maturing varieties (<1.8RM) by 15 bu per acre at early May planting dates compared to only 2 to 5 bu per acre at late May planting dates. In northern Wisconsin, late maturing varieties (1.7 to 1.9RM) also out yielded early maturing varieties (<1.7RM), however the difference was not as great. **Switching to an earlier maturing variety when planting after the first week of June will reduce the chance of damage from an early fall frost** (Fig. 1.). Unfortunately growers will realize a yield penalty if they choose to move to an earlier maturity groups and lowered seeding rates (Table 1.). It is also important to note that if you do choose to switch to an earlier maturity group soybean, do not use a variety that is more than 0.5 RM earlier than you normally would plant.

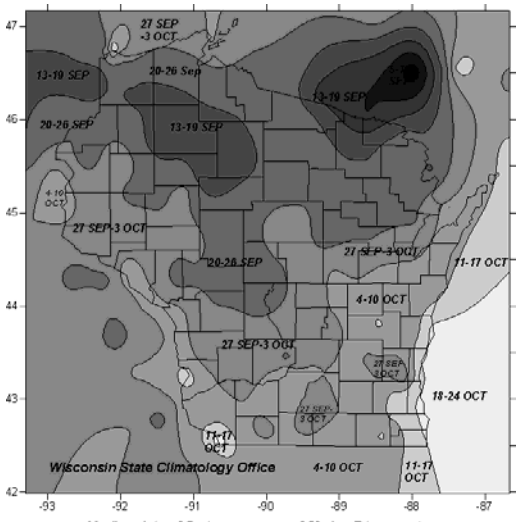

Figure 1. Median frost date for WI.

2. When is the latest soybeans can be planted in Wisconsin and still expect a grain yield?

Research from the 1990's in southern Wisconsin indicates that in two out of three years, grain can be harvested from soybeans planted as late as June 26, although the yields are usually minimal and not generally economically feasible. The frequency of harvesting grain from soybeans planted this late can be increased by using early maturing varieties (<1.8RM) in southern Wisconsin, and <1.0RM in northern production areas. A planting date of June 20 in southern Wisconsin and June 15 in northern Wisconsin, using early maturing varieties, was considered to be the latest practical date. However today's grain prices coupled with opportunities for late-season discounted treated soybean seed may entice growers to push the planting date window in 2014.

3. What should my target plant population be in my late planted soybeans?

To maximize yield potential in late planted soybean, growers should target a stand of 180,000 plants per acre in row spacing's ≤ 20inches. Wider row spacings and reduced plant stands will lead to reduced yield potential due to decreased canopy development. Planting too few seeds can also lead to a lower physical pod set and harvest issues. To achieve 180,000 plants per acre a grower may have to plant up to 200,000 seeds per acre (assuming 90% germ).

Table 1. Expected relative soybean yield at four replanting dates compared to predicted yields for a range of plant populations resulting from an optimum planting date of May 1-20 for full season maturity or short season maturity varieties.

Early plant population	Initial planting (May 1-20)		Replanting date							
			June 1		June 10		June 20		July 1	
ppa x 1,000	% of maximum yield									
200	100	***86***	89	***90***	75	***75***	68	***67***	61	***60***
180	98	***85***	88	***87***	75	***72***	66	***64***	63	***60***
160	97	***84***	87	***84***	73	***70***	64	***61***	63	***58***
140	95	***83***	85	***81***	72	***67***	62	***57***	62	***56***
120	93	***81***	82	***78***	70	***65***	59	***53***	60	***52***
100	91	***80***	80	***76***	67	***63***	57	***49***	56	***47***
80	88	***79***	77	***73***	64	***61***	54	***44***	51	***40***
60	86	***78***	73	***70***	61	***60***	51	***39***	44	***33***
40	83	***77***	69	***67***	57	***59***	47	***34***	35	***25***

* Figures in bold italics are for shorter season maturities.