

SOYBEAN PRODUCTION SYSTEMS

Is it Time to Plant an Earlier Maturity Group Soybean?

Shawn P. Conley and Greg Shaner
State Soybean Extension Specialist and Extension Pathologist

As weather conditions continue to keep growers out of the field, questions begin to arise concerning the effect of the delayed planting date on maturity and yield. The main question is “Should I trade in my full season soybean variety for an earlier maturing variety”? Our data suggests only a 2% difference in yield between an adapted full-season variety and a mid-season variety through June 10th (Table 1). This difference slightly increases to 4% once we hit June 20th. It is not recommended that a full-season variety is planted past June 30th. This data suggests that it is not critical to begin switching soybean maturity groups until we get into mid-June or later. The reason for this recommendation is heat related. Assuming water is not limiting, the growth and development of a soybean plant is temperature driven. When comparing maturity groups 2.6 through 3.6 at W. Lafayette a month difference in planting date equated to only a 2 week difference in physiological maturity (R7 soybean) (Table 2). Once the soybean crop reaches the R7 growth stage the effect of stress on yield is minimal.

Prior to November 2004 the main concern with delayed soybean maturity was frost damage. In 2006 we must also consider the risk of soybean rust. Though it is still unclear the impact this disease will have on Midwest soybean production, a delayed planting date will push the window when the crop is susceptible to this disease later into the season. Fungicide labels implicitly state that foliar fungicides can be applied up to R6 soybean. In 2005 a 3.6 maturity group soybean reached R6 on 8/13 when planted on 4/29/06 (Table 2). When planted on 6/02/05 the soybean did not reach R6 soybean until 8/26. This suggests that scouting may be extended later into the season and that continuous monitoring of the sentinel plot program will prove beneficial.

Table 1. Yield Effects From Delayed Planting (Uniform Stands)³.

Planting Date	Yield as % of normal	
	Mid-season variety	Full-season variety
May 20	100	100
May 30	96	94
June 10	92	90
June 20	82	78
June 30	70	NR ¹



July 10

60²

NR

¹NR: not recommended²In Indiana, south of Interstate 70 only³Purdue University Corn and Soybean Guide (ID-179) p. 112.

Table 2. Effect of Planting Date on the Development and Yield of Various Soybean Maturity Groups at W. Lafayette IN, in 2005.

Maturity Group	Planting date	-----Date Growth Stage was Initiated-----								Yield
		R1	R2	R3	R4	R5	R6	R7	R8	
2.6 ¹	4/29/2005	6/28	7/1	7/10	7/19	7/27	8/4	9/2	9/9	43.4
	5/19/2005	7/4	7/8	7/18	7/28	8/5	8/13	9/5	9/16	43.5
	6/02/2005	7/15	7/20	8/1	8/7	8/12	8/21	9/18	9/30	44.6
2.9	4/29/2005	6/28	7/1	7/10	7/20	8/1	8/11	9/4	9/11	50.6
	5/19/2005	7/6	7/9	7/22	7/31	8/10	8/19	9/7	9/18	46.5
	6/02/2005	7/11	7/20	8/4	8/10	8/15	8/24	9/18	9/28	43.7
3.1	4/29/2005	6/27	6/30	7/12	7/22	8/2	8/12	9/5	9/12	55.3
	5/19/2005	7/3	7/7	7/20	7/30	8/7	8/16	9/8	9/16	49.0
	6/02/2005	7/14	7/20	8/4	8/9	8/17	8/25	9/18	9/26	46.5
3.4	4/29/2005	6/28	7/1	7/16	7/28	8/7	8/17	9/6	9/16	48.8
	5/19/2005	7/5	7/8	7/22	8/3	8/10	9/1	9/12	9/22	42.9
	6/02/2005	7/14	7/20	8/7	8/14	8/20	8/29	9/21	9/30	44.8
3.6	4/29/2005	6/28	7/1	7/11	7/25	8/4	8/13	9/7	9/16	54.7
	5/19/2005	7/6	7/10	7/23	8/1	8/10	8/18	9/11	9/21	49.7
	6/02/2005	7/14	7/22	8/2	8/7	8/15	8/26	9/20	9/30	49.0
3.9	4/29/2005	6/29	7/1	7/12	7/26	8/7	8/16	9/10	9/23	50.9
	5/19/2005	7/6	7/10	7/29	8/5	8/11	8/21	9/17	9/28	43.7
	6/02/2005	7/15	7/23	8/4	8/9	8/18	8/28	10/2	*	45.0

¹Only one variety was used for each maturity group.

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