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Thoughts on Late Planting of Soybean

Shaun N. Casteel, Purdue Extension Soybean Specialist
scasteel@purdue.edu, 765-494-0895

This planting season is going down in the record books as one of the wettest and one of the slowest for Indiana and the eastern corn belt. As of May 22nd, only 17% of the intended soybean acres were planted across Indiana with the majority in the northwestern and west-central areas (USDA-NASS, 2011). We are approximately two weeks behind the five-year average and nearly four weeks behind last year's furious pace (Figure 1). Soybean planting progress near this calendar day was 25% in 2009, 38% in 2008, and 19% in 2002. The current planting progress is mirroring 2009 growing season up to this point (Figure 2).

Late Planting Effects. I certainly preach the importance of timely plantings to maximize yields, which is normally within the first three weeks of May for Indiana. Two benefits of these plantings include greater node development prior to flowering and quicker canopy to capture sunlight and shade out weeds. The yield potential can be reduced as planting is delayed, but it is not a guarantee that yields will be lower. Delayed planting probably contributed to the low state yields in 2002 (41.5 bu/acre) and in 2008 (45.0 bu/acre), which were nearly 7% and 4% BELOW the annual yield trend. However Indiana averaged 49.0 bu/acre in 2009, which was 3% ABOVE the annual yield trend. Favorable seed fill period in 2009 allowed many soybeans to increase seed size to compensate for fewer nodes and thus, yield well. Approximately 33% of soybean yield departures were related to the date at which half of the soybean acres were planted in Indiana (Figure 3) which is slightly higher than is noted for corn (Nielsen, 2011). Soybeans trip their reproductive trigger (flowering) as the day length shortens, which occurs much quicker with delayed plantings (Figure 4) and partially explains the greater effect to soybean over corn.

Tips When Planting Soybeans Late. We need set the stage for the best possible return on late plantings of soybean. Planting in the first weeks of June require 10 to 20% increase in seeding rates to facilitate quicker row closure and higher pod height with fewer days to flowering. Increased seeding rates will also be needed in those fields that have heavy corn residue and weed biomass (see Casteel, 2011 for my seeding rate discussion). Late-planted soybeans should also be planted in narrow rows to hasten the time to row closure. Wide rows (30-in) take nearly 25 days longer and 40 days longer to canopy compared to 15-in and 7.5-in rows, respectively. This delay will certainly decrease the yield potential as canopy closure would occur well after reproductive initiation. Full-season varieties for your respective regions should be planted until June 15 for the northern quarter, June 20 for the central half, and June 25 for the southern quarter of Indiana. Varieties should be dropped a half maturity group after these dates and planted for another two weeks before we consider other alternatives.

Late Planting of Soybean

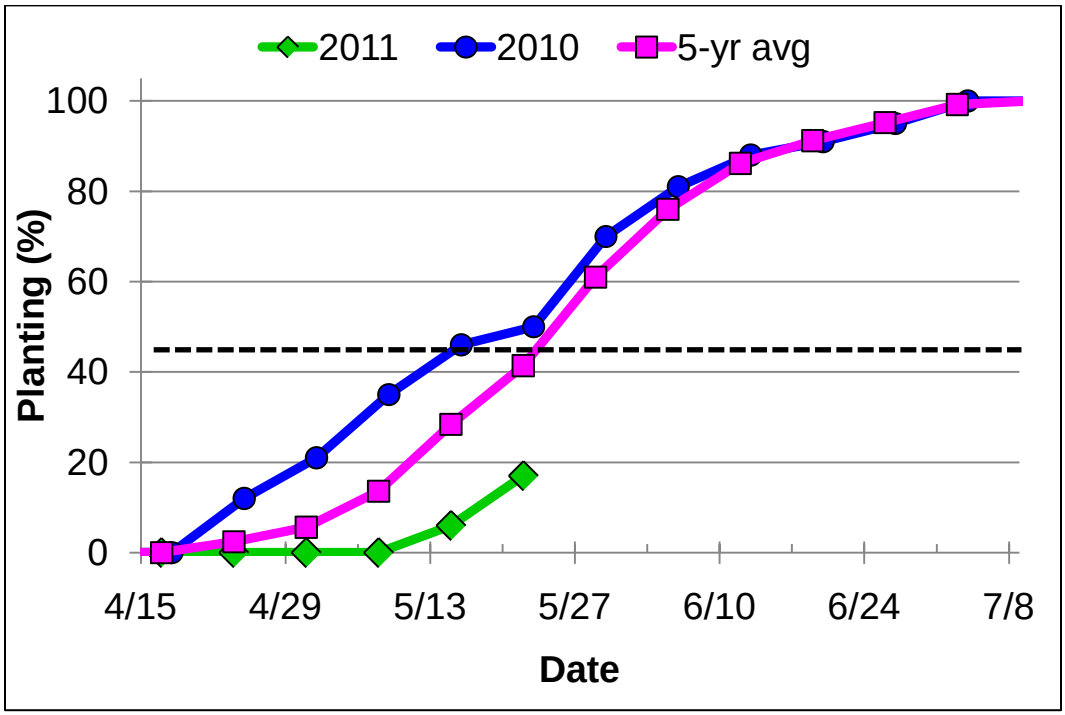

Figure 1. Indiana soybean planting progress in 2011 (USDA-NASS, 2011).

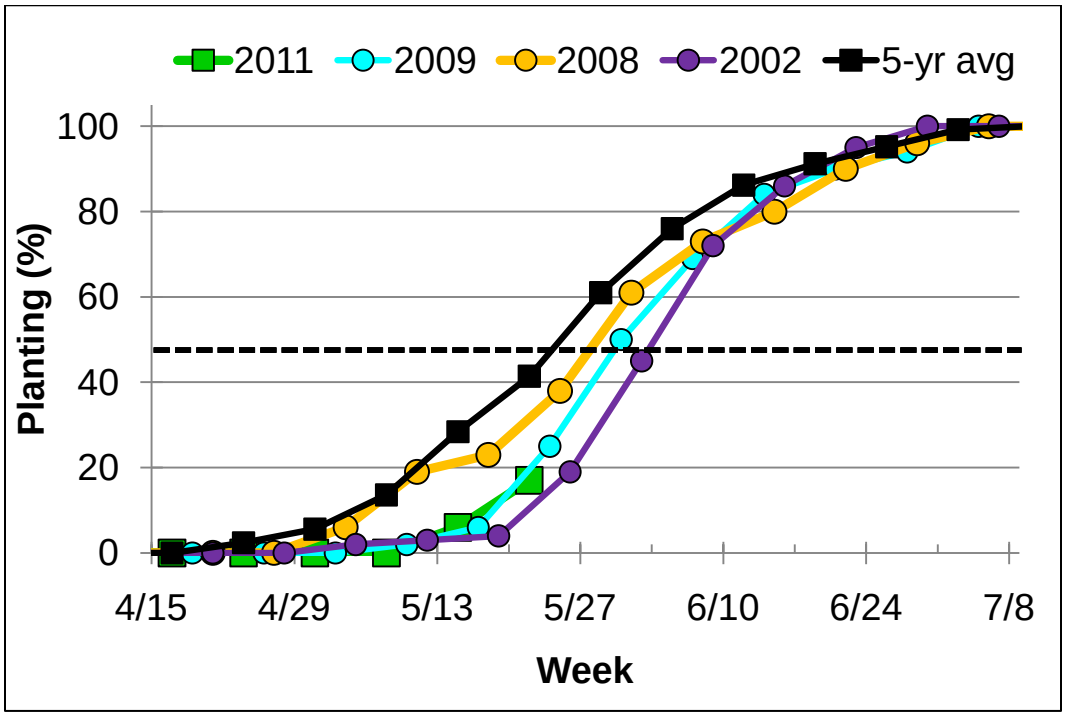

Figure 2. Late soybean plantings in Indiana from 1997 to 2010 (USDA-NASS, 2011).

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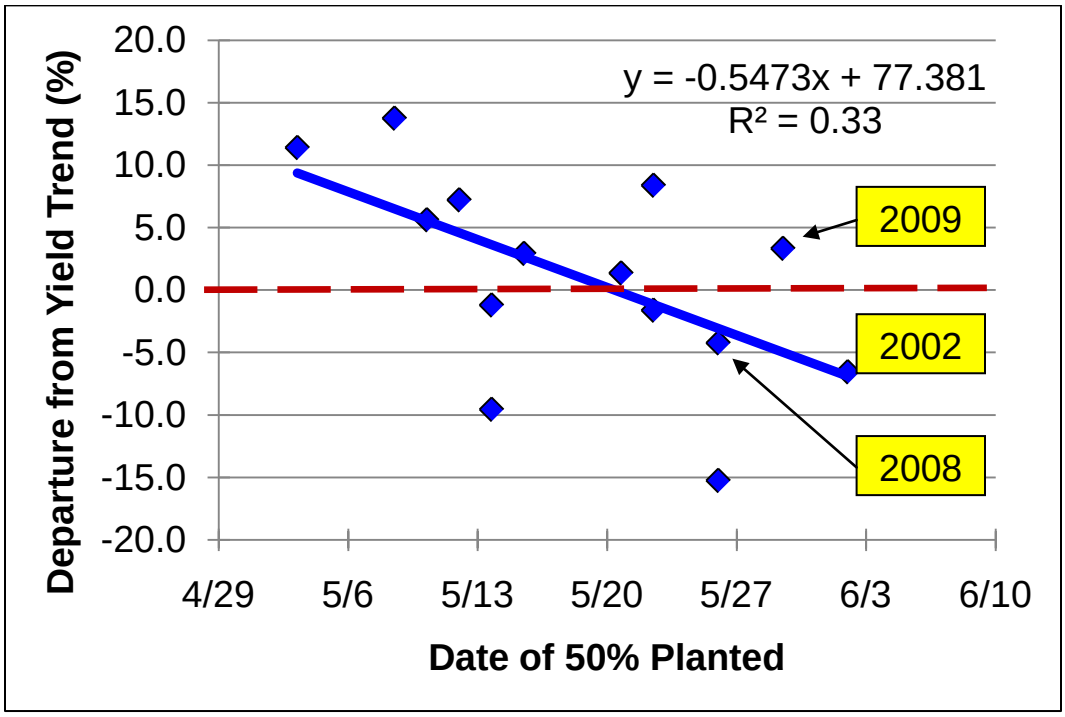

Figure 3. Departure from soybean yield trend based on 50% planting dates in Indiana (USDA-NASS, 2011).

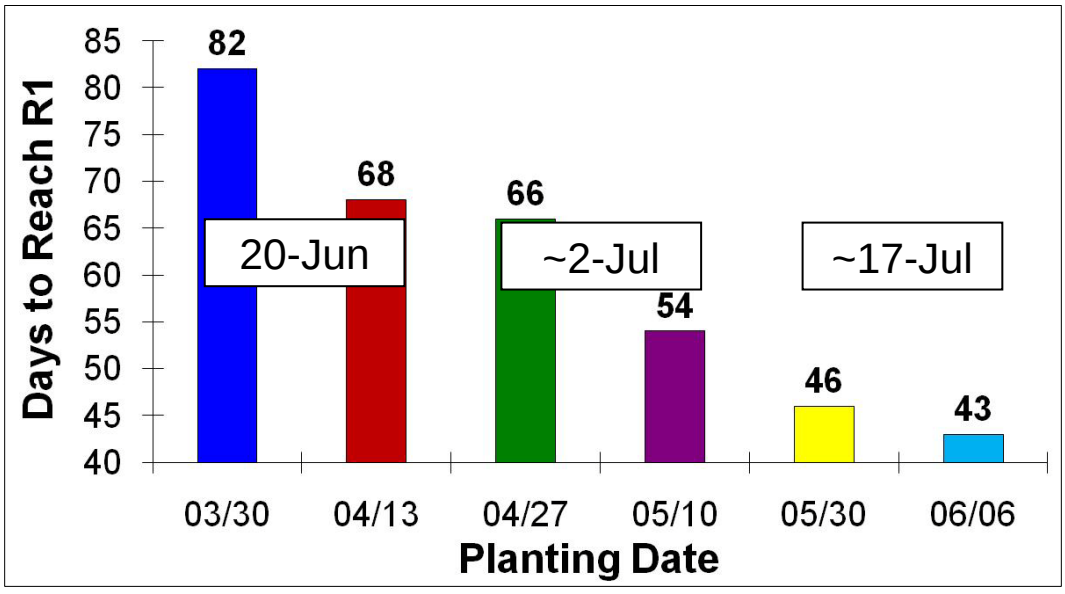

Figure 4. Number of days from planting to reach R1 (First Bloom) in West Lafayette.

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References:

Casteel, S.N. 2011. Fine-tune soybean seeding rates during chilly and wet spring. [On-line]. Available at http://www.agry.purdue.edu/ext/soybean/Arrivals/2011_0421SOYSeedRate.pdf [URL accessed May 2011].

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