On-Farm Cropping Trials

Soybean Relative Maturity and Planting Date
Influence on Optimal Yield

Cooperator: Tyler Ross
Nearest Town: Crookston, MN
Soil Type: Bearden silty clay loam
Harvest Populations: 140,000
Harvest Date: 10-4 & 10-11-10
Experimental Design: Split plot with varieties as main plot and planting date as subplot

Purpose of Study:
To evaluate soybean relative maturity and planting date influence on optimal yield and soybean quality in northwestern Minnesota.

Results:
The plots were established utilizing two Asgrow cultivars with 00.9, and 0.4 relative maturities planted at ten different dates commencing April 10 and concluding on June 9. Optimum yield was achieved with planting dates 2 thru 6 for both the AG0401 and AG00901 cultivars in 2010. 2” soil temperatures reached 55 on April 28, retreated to 48 degrees thru May 14 then significantly increased past 55 on May 15 continually climbing there after.

Graph 1. 2010 Planting Date Yields
Soybean Relative Maturity and Planting Date Influence on Optimal Yield (continued)

Results continued . . .

Protein percentage significantly increased as planting was delayed for both cultivars in 2010 as is shown in Graph 3. Oil percent significantly decreased with delayed planting for the early RM cultivar AG 00901 as well as the late RM cultivar AG 0401 as is noted in Graph 2. Both the early and late maturing cultivars oil content decreased by almost 2.5% with delayed planting.

Graph 4 gives the average daily 2 inch soil temperatures for 2006-2010 trials. Mean soil temperatures at the 2 depths had achieved 55 degrees as early as April 25 in 2007 and April 28 in 2010 but then retreated for several days. This was well above normal. It was May 1 of 2006 before soil temperatures exceeded 55 degrees.

In 2008 it was May 25 before the average 2 inch soil temperature exceeded 55 degrees and May 11 in 2009.

To utilize this information to make planting date decisions, several years of different environments need to be considered to determine a risk assessment of early planting of soybean. To date, none of the years (2006-2010) had air temperatures below 32 degrees after soybean plants had emerged.

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For additional information: Russ Severson