

ROUNDUP READY SOYBEAN VARIETY RESPONSE TO EARLY PLANTING

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ABSTRACT: A field study was conducted on a Catalpa silty clay loam soil at Verona, Mississippi, to determine maturity group (MG) IV and V productive soybean variety response to early planting. Environmental growing conditions were a 3 week dry period from mid July through early August and high rainfall in mid August through early September. The yield data indicated a variety by planting date interaction. Except for two (DK 4965RR and Pioneer 9492) of the six varieties in the April planting, soybean varieties planted in mid April early and May showed similar yield and higher yield than June planting. In the April planting, TV 4890RR had higher yield than DP 4965RR, Pioneer 9492, and TV 5486RR. The May and June planting showed no yield difference among varieties.

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KEY WORDS: Soybean, Roundup Ready soybean, early planting.

MATERIALS AND METHODS: A field study on a Catalpa silty clay loam soil was conducted during the 2001 growing season evaluating selected planting dates (4/19/01, 5/02/01, 5/17/01, and 6/17/01) and Roundup Ready productive soybean varieties of MG IV and V. The study was conducted as a split plot with planting dates as main plot, and varieties as subplot with 4 replications.

Both P and K fertilizers were applied based on soil test recommendations. P fertilizer was not required but potash (K₂O) at 200 lb/ac was applied broadcast to the soil surface on 10/30/00. All plots were subsoiled and 11/22/01, and disked 12/11/00. The area was smoothed with a doall 3/27/01. Roundup Ultra (glyphosate) was applied as a burndown and post emergence applications were made as needed to maintain a high level of weed control in the study. Soybeans were planted in 15-inch rows 4/19/01, 5/02/01, 5/17/01, and 6/12/01. All seed were treated with Apron + Vitavax (formulation) fungicide at 4 oz/bu of seed. The fungicide was diluted with 2 oz water/bu of seed and applied to the seed in a batch hopper seed treater. The batch seed treater was operated until the seed were uniformly coated with the fungicide.

Plant population counts were recorded 4 weeks after each planting. Maturity date and plant height at maturity were recorded. Varieties were harvested within 5 to 7 days after maturity with a plot combine. The center 4 rows of a 6-row plot were harvested for yield. The plot seed samples were weighed and seed moisture was determined with a Dickey John® GAC II grain analyzer and yields were adjusted to 13% seed moisture. All data was statistically analyzed and treatment means were separated using Fisher Protected LSD at the 5% probability level.

RESULTS AND DISCUSSION: The 2001 growing season temperature was normal with highly variable rainfall. Below normal rainfall in early May and no rainfall from mid July through early August, followed by excessive rainfall in mid August through early September resulted in average yield. The excessive rainfall and high humidity caused seed rot to occur in the MG IV varieties which matured in early September. Except for two (DK 4965RR and Pioneer 9492) of six varieties in the April planting, all varieties showed similar yield in April or May. However, all varieties planted in April or May planting had higher yield than June planting. The May or June plantings showed no yield differences among varieties.

Table 1. Roundup Ready soybean maturity group IV and V varieties response to planting date on a Catalpa silty clay loam soil in 2001, Verona, MS.

Variety	Brand	RM ¹	LSD (.05) ²	-----Planting date-----			
				4/19/01	5/02/01	5/17/01	6/18/01
				-----bu/ac-----			
1) AG 4702	Asgrow	4.7	6.5	29.3	29.3	32.9	7.4
2) TV 4890RR	Terral	4.9	4.5	34.0	31.2	32.6	7.3
3) DK 4965RR	Delta King	4.9	3.5	22.5	29.7	25.8	8.6
4) 9492RR	Pioneer	4.9	6.9	24.0	32.3	29.8	8.1
5) DP 5915RR	Deltapine	5.9	9.8	30.0	30.6	32.2	10.7
6) TV 5486RR	Terral	5.4	4.8	<u>26.7</u>	<u>28.8</u>	<u>30.3</u>	<u>9.6</u>
	Mean			27.7	30.3	30.6	8.6
	LSD (.05)			7.2	NS	NS	NS
	% CV			17.3	8.9	10.5	30.6
P.date LSD (.05): 3.8							
Varieties LSD (.05): 2.5							
PD x Var LSD (.05): **							

¹ RM means relative maturity.

² LSD(.05) to be used for comparing each variety across planting dates.