

NDSU Carrington Research Extension Center

2007

Influence of Soybean Seed Size and Planting Depth on Crop Performance

**Table 1. Influence of planting depth, seed size and the interaction of planting depth by seed size on soybean performance.**

Factor	Early	First Plant	Second	Plant	Pod	Plant	Days to	Seeds/	Seed	Seed	Test	Seed	
	Visual Stand	Stand	Plant Stand	Lodge	Height	Height	PM	pound	Oil	Protein	Weight	Yield	
	%	plants ft <sup>-2</sup>	plants ft <sup>-2</sup>	0 to 9	cm	inch			%	%	lb/bu	bu/ac	
<b>Planting Depth</b>													
1.25 inches	18.1	1.68	1.99	0.04	6.5	27.1	114.1	3484	17.3	33.2	58.6	47.9	
2.50 inches	14.3	1.67	2.12	0.02	7.0	27.3	115.0	3469	17.2	33.5	58.6	49.7	
LSD.10	1.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1.9	
LSD.05	2.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
<b>Seed Size</b>													
Small seed (4834)	10.5	1.47	1.80	0.06	6.6	27.6	115.4	3521	17.1	33.5	58.7	47.1	
Large seed (2894)	21.8	1.88	2.31	0.00	6.9	26.8	113.7	3432	17.4	33.2	58.5	50.5	
LSD.10	1.90	0.13	0.15	0.05	NS	NS	0.3	19	0.05	0.12	0.05	1.4	
LSD.05	2.90	0.15	0.19	NS	NS	NS	0.5	30	0.07	0.18	0.08	2.2	
LSD.01	3.80	0.20	0.25	NS	NS	NS	0.7	40	0.09	0.24	0.10	2.9	
<b>Planting Depth</b>	<b>Seed Size</b>												
1.25 inch	Small (4834)	11.2	1.45	1.76	0.08	6.5	27.3	114.9	3522	17.2	33.4	58.7	46.5
	Large (2894)	25.0	1.90	2.21	0.00	6.5	26.8	113.4	3445	17.5	33.1	58.5	49.3
2.50 inch	Small (4834)	9.9	1.49	1.83	0.04	6.7	27.8	116.0	3520	17.0	33.6	58.7	47.8
	Large (2894)	18.7	1.86	2.42	0.00	7.3	26.8	114.0	3419	17.3	33.3	58.6	51.6
LSD.10	2.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
LSD.05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

Trial results represent the first year of evaluation. Further research is needed to validate these trends.

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Influence of Soybean Seed Size and Planting Depth on Crop Performance

**Table 2. Interaction of soybean variety and seed size on soybean performance.**

Variety	Seed Size	Early	First Plant	Second	Plant	Pod	Plant	Days to	Seeds/	Seed	Seed	Test	Seed
		Visual Stand	Stand	Plant Stand	Lodge	Height	Height	PM	pound	Oil	Protein	Weight	Yield
		%	plants ft <sup>-2</sup>	plants ft <sup>-2</sup>	0 to 9	cm	inch			%	%	lb/bu	bu/ac
RG603 RR	Small seed (5085)	11.5	1.61	1.89	0.25	7.5	32.1	118.1	3559	16.6	34.5	58.9	49.1
RG603 RR	Large seed (2981)	18.9	1.80	2.21	0.00	8.3	30.5	115.6	3505	16.8	34.0	58.9	51.1
RG601N RR	Small seed (5533)	12.9	1.50	1.71	0.13	6.3	26.9	117.0	3659	16.8	33.8	58.8	46.9
RG601N RR	Large seed (2370)	38.1	2.57	3.11	0.00	6.9	25.9	113.6	3361	17.3	33.0	58.4	52.8
RG600 RR	Small seed (4856)	9.4	1.28	1.76	0.00	6.5	26.9	114.3	3368	18.1	32.2	58.3	47.1
RG600 RR	Large seed (3177)	11.1	1.62	2.05	0.00	8.0	26.3	112.9	3277	18.4	31.8	58.1	48.3
RG604 RR	Small seed (4595)	6.9	1.38	1.84	0.00	8.4	28.9	117.8	3703	16.9	33.5	58.6	50.1
RG604 RR	Large seed (2892)	14.1	1.54	2.12	0.00	7.5	29.3	116.6	3661	16.9	33.6	58.7	51.8
RG7008 RR	Small seed (4389)	7.5	1.25	1.56	0.00	5.9	27.3	112.8	3576	17.0	33.6	58.9	43.2
RG7008 RR	Large seed (2969)	16.8	1.65	2.04	0.00	5.8	24.9	112.3	3543	17.1	33.5	58.7	49.4
RG6008 RR	Small seed (4548)	15.1	1.81	2.02	0.00	5.1	23.4	112.6	3272	17.4	33.4	58.6	46.3
RG6008 RR	Large seed (2972)	31.9	2.10	2.34	0.00	4.9	24.0	111.0	3245	17.5	33.4	58.2	49.4
{8 Obs/Trmt}													
	LSD.10	5.90	0.31	0.38	NS	NS	NS	1.1	61	0.14	0.36	0.17	NS
	LSD.05	7.10	0.38	0.45	NS	NS	NS	1.3	74	0.17	NS	0.20	NS
	LSD.01	9.40	NS	0.60	NS	NS	NS	NS	98	0.23	NS	NS	NS
	MEAN	16.2	1.67	2.06	0.03	6.7	27.2	114.5	3477	17.2	33.4	58.6	48.8
	C.V.%	43.9	22.5	22.1	548	29.4	8.8	1.1	2.1	1.0	1.3	0.3	10.8

**Field Trial Methodology:**

**Planting Date = May 18 ; Harvest Date = October 3 ; Previous Crop = Spring Wheat**

**Trial results represent the first year of evaluation. Further research is needed to validate these trends.**