NDSU Carrington Research Extension Center
2006
Influence of Starter Fertilizer on Soybean Performance - Field #12

** The objective of this trial was to determine the influence of varied rates of starter fertilizer placed in the seed furrow on stand establishment.
** The trials row spacing was 7 inches, trial was planted on May 22, and soil moisture conditions after planting were fair to good.

Table 1. Soybean performance as influenced by starter fertilizer. ***** Plant Establishment ***** **** Visual Stand Assessment ****

Starter Fertilizer Salts	Equivalent 11-52-0	Yield	Test Weight	Seed Protein	Seed Oil	Seeds / Pound	Days to PM	Pod Ht	Initial	Interim	Final	Stand % of Check	Initial	Final
lbs/acre	lbs/acre	bu/ac	lb/bu	%	%			cm	plants ft^{-2}	plants ft^{-2}	plants ft^{-2}		%	%
0	0	38.5	57.1	36.4	19.2	3145	109.0	6.1	1.2	2.8	2.7	100	8	68
5	45	35.7	57.2	36.2	19.2	3120	109.7	6.0	0.8	2.3	2.1	78	3	58
10	91	32.7	57.0	36.6	19.2	3119	109.4	5.5	0.8	2.0	1.8	67	3	58
15	136	34.3	57.0	36.1	19.3	2980	110.8	6.0	0.7	2.1	1.6	59	3	61
12														
LSD.05		4.0	NS	NS	NS	NS	0.8	NS	NS	0.6	0.5		NS	NS
LSD.01		NS	NS	NS	NS	NS	NS	NS	NS	NS	0.7		NS	NS

Table 2. Soybean performance as influenced by variety. ***** Plant Establishment ***** **** Visual Stand Assessment ****

Variety	Seed Size	Yield	Test Weight	Seed Protein	Seed Oil	Seeds / Pound	Days to PM	Pod Ht	Initial	Interim	Final	Initial	Final
		bu/ac	lb/bu	%	%			cm	plants ft^{-2}	plants ft^{-2}	plants ft^{-2}	%	%
Pioneer 90M60	Large	36.1	57.0	37.1	18.8	2465	112.1	6.8	0.8	2.3	2.4	3	59
Dairyland Seed DSR-	Medium	38.8	57.4	35.8	19.2	3112	111.9	6.0	0.8	2.3	1.7	3	62
PSI PSI 95009RR	Small	30.5	56.8	36.2	19.7	3703	105.1	4.9	1.0	2.2	2.2	6	63
16													
LSD.05		3.5	0.26	0.37	0.2	206	0.7	0.9	NS	NS	0.46	NS	NS
LSD.01		4.7	0.35	0.5	0.3	277	0.9	1.2	NS	NS	NS	NS	NS

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Table 3. Soybean performance as influenced by interaction of variety and starter fertilizer. ***** Plant Establishment ***** **** Visual Stand Assessment ****

Variety	Starter Salts	Yield	Test Weight	Seed Protein	Seed Oil	Seeds / Pound	Days to PM	Pod Ht	Initial	Interim	Final	Stand % of Check	Initial	Final
	lbs/acre	bu/ac	lb/bu	%	%			cm	plants ft^{-2}	plants ft^{-2}	plants ft^{-2}		%	%
Pioneer 90M60	0	42.4	57.4	37.3	18.7	2391	112.3	7.0	1.0	2.9	2.9	100	3	58
2395 seeds/lb	5	38.7	56.8	36.8	18.8	2392	111.8	7.0	0.7	2.4	2.6	90	3	58
	10	31.4	57.1	37.0	19.0	2698	111.5	6.5	0.9	2.1	1.9	66	3	64
	15	32.8	56.6	37.1	18.7	2325	113.0	6.7	0.6	1.9	2.1	72	1	53
Dairyland Seed DSR-	0	46.4	57.4	36.2	19.1	3099	111.3	7.0	1.0	3.0	1.9	100	5	69
3345 seeds/lb	5	38.6	57.6	35.8	19.1	3172	111.8	6.5	0.8	2.1	2.0	105	3	56
	10	35.2	57.5	36.2	19.1	3115	111.8	5.0	0.7	2.0	1.5	79	2	55
	15	35.1	57.3	35.1	19.5	3063	112.8	5.5	0.6	2.2	1.3	68	4	68
PSI PSI 95009RR	0	27.8	56.7	35.8	19.8	3758	104.3	4.5	1.4	2.6	3.2	100	12	75
4286 seeds/lb	5	29.8	57.1	36.0	19.8	3797	105.5	4.5	0.9	2.3	1.7	53	4	61
	10	30.9	56.4	36.6	36.6	3684	105.0	5.0	0.8	2.0	2.0	63	4	54
	15	34.7	57.0	36.4	36.4	3524	106.0	6.0	1.0	2.1	1.5	47	4	60
	4													
LSD.05	#4	7.1	0.5	NS	NS	NS	NS	NS	NS	NS	NS		NS	NS

Table 4. Analysis of variance for sources of variation and traits reported. ***** Plant Establishment ***** **** Visual Stand Assessment ****

Source of Variation	Yield	Test Weight	Seed Protein	Seed Oil	Seeds / Pound	Days to PM	Pod Ht	Initial	Interim	Final		Initial	Final
Variety	**	**	**	**	**	**	**	NS	NS	*		NS	NS
Starter Fertilizer	*	NS	NS	NS	NS	*	NS	NS	*	**		NS	NS
Variety * Starter Fertilizer	*	*	NS	NS	NS	NS	NS	NS	NS	NS		NS	NS
Mean	35.3	57.1	36.3	19.2	3094	109.7	5.9	0.9	2.3	2.1		4	61
C.V. %	13.7	0.6	1.4	1.5	9.2	0.8	20.3	52.4	29.2	31.1		117	33.1