



Information

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2006 Food and Specialty Trait Soybean Variety Evaluations

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The Maryland Soybean Board provided funding for evaluation of food and specialty trait soybean varieties during 2006. The tests were conducted at two locations: Wye Research and Education Center in Queen Anne's County and Central Maryland Research and Education Center – Upper Marlboro Farm in Prince George's, County. Pertinent production management information for the test is in Table 1 and precipitation amounts are shown in Table 2. Agronomic performance for the 16 varieties and elite breeding lines tested is shown in Tables 3-5.

The 2006 production year was highlighted by extremes. Cool, dry weather prevailed during much of the spring and up to planting time in May. Timely precipitation during May established good soil moisture for planting. This was followed by warmer temperatures that allowed good seed germination and seedling establishment at Upper Marlboro. Stand establishment at Wye was not as successful due to a June thunderstorm event that caused soil crusting conditions at this site. This led to plant stands at Wye determined to be less than ideal but not so poor to cause abandonment of the study. The summer was highlighted by excessive rainfall at the end of June and early July followed by hot temperatures and very dry conditions during the period mid-July through much of August. The plots at Upper Marlboro received supplemental irrigation during this dry period. The dry weather ended with storms that began around Labor Day and continued with considerable frequency during the rest of September and October. The wet conditions during October delayed harvest at both locations until November resulting in seed quality problems.

Table 1. Production information for 2006 food and specialty trait soybean variety tests.

Production Practice	Wye	Upper Marlboro
Soil type:	Matapeake silt loam	Donlonton fine sandy loam
Planting date:	May 23	May 22
Row Width:	12 inches	12 inches
Previous Crop:	Corn	Corn
Fertilizer:	None	None
Lime:	None	None
Herbicide:	Blazer & Basagran @ 1.5 pt/A + Non-ion surfactant @ 2 pt/100 gal + ½ gal 30% UAN (7/3/06)	Dual II Magnum @ 1.5 pt/a incorporated (5/17/06) Classic @ 0.5 oz/a + Harmony GT @ 0.08 oz/a (6/08/06)
Plots:	6 rows, 25 feet long	6 rows, 25 feet long
Seeding rate:	140,000 seeds a ⁻¹	140,000 seeds a ⁻¹
Tillage:	Conventional	Conventional
Harvest date:	November 11	November 1

Table 2. Monthly precipitation (inches) at the two locations where the test was conducted.

Month	Wye	Upper Marlboro
May	0.80	1.52
June	11.75	7.09
July	5.19	4.18
August	1.75	1.93
September	9.19	10.08
October	4.92	5.06
Total	33.60	29.86

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Variety	Yield Bu a ⁻¹	Reason for Testing Value Added Trait	Seed Wt. No. lb ⁻¹	Ht. (in)	Seed Quality 1-5 ¹	Lodging 1-5 ²	Oil %	Protein %
Chesapeake 82 (15)	43	Tested for Chesapeake Fields	3170	34	2.4	2.75	19.1	42.3
Dillon (3) Check	45.5	Food variety check	3858	29	3	1.75	18.6	40.7
Iowa 3017 (13)	50.5	Low linolenic (1%) soybean	3669	29	4.75	2.25	20.4*	42
MFS x521 (11)	50	Natto bean – Montague Farms	5149	30	1.6	1.5	18	41.3
MFS x531 (12)	36.5	Natto bean – Montague Farms	5569	26	2.75	1.75	18.1	41.7
MFS x541 (9)	54.5	Natto bean – Montague Farms	5522	36	1.4	1.75	16.7	42.8
Montague 511 (10)	40.5	Natto bean – Montague Farms	6100	29	1.3*	1.3	15.9	42.5
Schillinger Seeds 365F.YC (16)	48.5	Mid-Group III; Medium protein; Clear hilum; SCN Resistant; Improved isoflavones	3347	28	3.4	2.6	19.5	42.4
Schillinger Seeds 435.TCS (8)	71.5*	Mid-Group IV; SCN Resistant; STS technology; Grain & oil soybean	3413	34	2.75	2.9	19.2	41.5
Schillinger Seeds 446F.HP (4)	58.5	Mid-Group IV; High yield with medium protein	3613	34	2	2.25	17.2	44.7*
Southern States 516 (14)	44	Tested for Chesapeake Fields	3255	35	2.7	2.4	19.3	41.6
Virginia State 04-796 (1)	43	Virginia State elite breeding line	2013	33	3	2.6	19.1	41.8
Virginia State 04-836 (5)	53	Virginia State elite breeding line	1886	29	4.1	2.25	19.6	41.5
Virginia State 04-856 (7)	40.5	Virginia State elite breeding line	2346	39	2.8	1.25*	19	43
Virginia State 04-885 (6)	45.5	Virginia State elite breeding line	2161	42	2.5	1.9	18.6	42
Virginia State 04-919 (2)	33	Virginia State elite breeding line	1853	29	3.5	2.6	19.2	42.4
Two Location Average	46.5	N/A	3558	32	2.7	2	18.55	42.5

¹Seed quality: 1= seed in excellent condition with no sign of cracked seed coat, purple stain, mold, and other defects; 5 = seed in poor quality.

²Lodging score: 1= no lodging; 5= soybeans are flat.

*Indicates top performing variety averaged across the two locations for this specific trait.

Table 4. Performance of food and specialty trait soybean varieties at Wye Research and Education Center, Queenstown, MD during 2006.

Variety	Yield Bu a ⁻¹	Seed Wt. No. lb ⁻¹	Maturity 100% Leaf Drop	Ht. (in)	Seed Quality 1-5 ¹	Lodging 1-5 ²	Oil %	Protein %
Chesapeake 82 (15)	37	3416	~ Oct. 1	25	1.75	2	18.6	42.2
Dillon (3) Check	36	3871	~ Oct. 20	19	2.5	1	18.7	41
Iowa 3017 (13)	37	4216	~ Sept. 22	21	4.5	2	20.3*	42.3
MFS x521 (11)	40	5572	~ Oct. 1	23	1.5	1	17.8	41.1
MFS x531 (12)	33	5543	~ Oct. 1	17	3	1	18.3	41.5
MFS x541 (9)	42	5850	~ Oct. 6	25	1.75	1	16.3	43.1
Montague 511 (10)	42	6801	~ Oct. 6	20	1.33	1	15.7	42.2
Schillinger Seeds 365F.YC (16)	33	3674	~ Oct. 1	21	2.75	1	19.1	42.3
Schillinger Seeds 435.TCS (8)	55*	3922	~ Oct. 1	29	2.5	3	19	41.2
Schillinger Seeds 446F.HP (4)	60*	3938	~ Oct. 1	28	2	2	16.6	44.7*
Southern States 516 (14)	28	3487	~ Oct. 1	28	2.75	1	19.2	41.5
Virginia State 04-796 (1)	25	2053	~ Oct. 19	23	2.5	2	19.5	42.2
Virginia State 04-836 (5)	43	2034	~ Oct. 15	18	3.5	1	19.6	41.7
Virginia State 04-856 (7)	27	2050	~ Oct. 25	24	2.7	1	18.4	43.9
Virginia State 04-885 (6)	45	2097	~ Oct. 25	30	3	1	18.5	42.3
Virginia State 04-919 (2)	30	1814	~ Oct. 15	15	3	1	18.7	43.0
Location Average	38	3771		23	2.6	1.37	18.4	42.4
LSD _{0.10}	10.2	N/A	N/A	N/A	N/A	N/A	0.52	0.57

¹Seed quality: 1= seed in excellent condition with no sign of cracked seed coat, purple stain, mold, and other defects; 5 = seed in poor quality.

²Lodging score: 1= no lodging; 5= soybeans are flat.

*Indicates a variety is not statistically different ($p=0.10$) from the best performing variety for this trait at this location.

Table 5. Performance of food and specialty trait soybean varieties at Central Maryland Research and Education Center, Upper Marlboro, MD during 2006.

Variety	Yield Bu a ⁻¹	Seed Wt. No. lb ⁻¹	Maturity 100% Leaf Drop	Plant Height in	Seed Quality 1-5 ¹	Lodging 1-5 ²	Oil %	Protein %
Chesapeake 82 (15)	49	2924	~ Oct. 18	42	3	3.5	19.5	42.4
Dillon (3) Check	55	3845	~ Nov. 1	39	3.5	2.5	18.4	40.4
Iowa 3017 (13)	64	3121	~ Sept. 25	36	5	2.5	20.5*	41.7
MFS x521 (11)	60	4725	~ Oct. 21	36	1.7	2	18.1	41.5
MFS x531 (12)	40	5595	~ Oct. 18	35	2.5	2.5	17.9	41.9
MFS x541 (9)	67*	5194	~ Oct. 21	46	1	1.25	17.1	42.5
Montague 511 (10)	39	5398	~ Nov. 1	38	1.25	1.25	16.1	42.7
Schillinger Seeds 365F.YC (16)	64	3019	~ Sept. 30	35	4	2.5	19.9*	42.5
Schillinger Seeds 435.TCS (8)	88*	2904	~ Oct. 18	39	3	2.75	19.4	41.8
Schillinger Seeds 446F.HP (4)	57	3288	~ Oct. 10	40	2	2.5	17.7	44.7*
Southern States 516 (14)	60	3022	~ Oct. 21	41	2.7	3.75	19.4	41.7
Virginia State 04-796 (1)	39	1972	After Nov. 1	42	3.5	4.25	18.7	41.3
Virginia State 04-836 (5)	63	1738	After Nov. 1	39	2.25	3.5	19.5	41.3
Virginia State 04-856 (7)	54	2642	After Nov. 1	54	3	1.5	19.6	42.1
Virginia State 04-885 (6)	46	2225	After Nov. 1	54	2	2.75	18.6	41.8
Virginia State 04-919 (2)	36	1891	After Nov. 1	42	4	4.25	19.6	41.7
Location Average	55	3344	N/A	41	2.8	2.7	18.7	42.6
LSD _{0.10}	20.9	N/A	N/A	N/A	N/A	N/A	0.75	0.63

¹Seed quality: 1= seed in excellent condition with no sign of cracked seed coat, purple stain, mold, and other defects; 5 = seed in poor quality.

²Lodging score: 1= no lodging; 5= soybeans are flat.

*Indicates a variety is not statistically different ($p=0.10$) from the best performing variety for this trait at this location.