

NEW YORK STATE 2013 PROCESSING SNAP BEAN CULTIVAR TRIAL REPORT
Large Sieve Bean – 3-4 Sieve Bean – Whole Bean – Romano Bean

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PROCEDURE AND MATERIALS

Location: NYS Agricultural Research Farm – field 25, Geneva - soil type - Honeoye silt loam
Planting Dates: Large Sieve – 5/31, 3-4 sieve beans – 6/22, Whole and Romano type – 7/5
Row Width: 30 inches, Row length: 30 ft. **In-row Spacing:** 1 5/8 inches (6-8 plants/ft.)
Conventional Tillage **Fertilizer:** 350#/A of 10-5-10 with Zn and Mn
Herbicide: Treflan preplnt & Dual post plant **Planter** - Two Row Monosem Vacuum Planter
Plot Size: 1 row - 4 replications (Replicated entries), 1 row – two replications (Observation entries).

The objective of this trial was to compare a number of green and wax snap bean varieties for yield and other quality characteristics. This was accomplished in cooperation with the snap bean processors in New York and Ontario Canada in an attempt to find new, higher quality, and disease resistant varieties that are adapted to our climate and soil conditions. A demonstration field day was held on August 21st to view all entries planted on 6/25.

For both replicated and observation entries, yield of five feet per replication was obtained by pulling the plants and hand picking them. Multiple harvests were made to plot yield increase and also seed size increase. An FMC snipper and grader were used to snip and grade the harvested pods. Each replicated entry was processed (canned and frozen) for later evaluation by the processors and seedsmen. Comments from this cutting are not included in the report.

Soil moisture was good for all plantings (rain delayed the 3-4 and whole bean plantings) and no irrigation was needed throughout the season. High temperatures in middle July did not seem to affect pod set. Virus symptoms were as bad as I have seen in some years. The large sieve planting was not affected but the 3-4 sieve and whole bean planting had some cultivars hurt. Eliza tests resulted in only CMV (cucumber mosaic virus) being found. Potato leaf hoppers caused some injury. Starting 2014, a preventative spray will be used just prior to blossom. White mold was only a minor problem, although excessive moisture was the norm for most of the season. See the weather insert at the end of the summary for a breakdown of temperatures and precipitation over the growing season.

Please direct any questions to the following mailing address, phone number or email address.
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Table 1 - Processing Snap Bean Cultivar List

Large Sieve

Venture (std)		Rogers
ACX 6087		A&C
BA1001		Seminis
BA0999		Seminis
Huntington (std)		Syngenta
SV1098GV		Seminis
SBR4556		Syngenta
SB4598		Syngenta
Rincon		Syngenta
Chisolm		HM
Silverado (PV832)		Crites
BSC8777		Brotherton
Cosmos		Brotherton
GB44		Pureline
ACX6137		A&C

3-4 Sieve

Caprice		HM
FMGC61006		Seminis
SV1007GG		Seminis
FMGC6V0958		Seminis
Bowie (HMX7118)		HM
Cabot		HM
SV1136		Seminis
SB4599		Syngenta
SB4566		Syngenta
Cassidy		HM
Flavor Sweet		HM
Wyatt		HM
Lewis		HM
Clarke		HM
Rimember		Crites
Quincy		Crites
Baltimore		Crites

3-4 Sieve Continued

Dinasty		Brotherton
BSC898		Brotherton
BSC897		Brotherton
Sony		Brotherton
BSCB515		Brotherton
BSCB525		Brotherton
GB86		Pureline
GB60R		Pureline
GB39-1		Pureline
GB210		Pureline
Puncher		Vilmorin
Comper		Vilmorin
Dragster		Vilmorin
Comper		Vilmorin
Dragster		Vilmorin

Whole (2-3 sieve)

Masai (std)		Syngenta
Angers		Seminis
Carthage		Seminis
Oakley (HMX 9126)		HM
Kendo		Brotherton
SWB2-1		Pureline
SWB75-1		Pureline
Kylian		Crites
Koala		Crites

Romano

Roma II (std)		PL
Riberia		Seminis
Furano		Syngenta

Wax

Borsalino		Vilmorin
SV1003GF		Seminis
Gold Ribbon std wax		Seminis
Maxiwaxx (PV 833)		Crites

Table 2. Yield Characteristics (large bean planting date 5/31)

Cultivar	Days to harv	Heat units to harv.	Cull % by wt.	% 2 sieve	% 3 sieve	% 4 sieve	% 5 sieve	%6 sieve	% 2-4 sieve	Plants per foot	4 sieve seed length (mm)	5 sieve seed length (mm)	T/A
Venture (std)	53	1008	0	6	6	19	30	39	31	4.9	92	105	7.7
ACX 6087	53	1008	1	17	18	32	22	11	66	6.3	80	97	5.3
	55	1049	1	17	13	36	24	10	66	5.8	80	96	5.3
	56	1056	0	15	14	41	22	9	69	5.7	91	105	5.3
BA1001	54	1027	1	10	10	49	31	0	69	5.9	61	78	5.9
	56	1056	1	10	10	42	37	2	61	5.5	66	83	7.1
	58	1085	1	6	7	33	43	11	46	5.7	73	90	8.1
BA0999	54	1027	1	5	6	48	37	4	59	5.3	86	107	6.7
	56	1056	1	4	4	42	47	2	50	5.8	92	108	7.7
Huntington (std)	54	1027	1	20	17	50	11	1	88	5.6	70	81	5.4
	56	1056	1	14	17	46	23	0	77	5.9	80	83	6.3
	58	1085	1	7	11	59	24	0	76	6.2	78	94	6.9
SV1098GV	54	1027	1	5	5	40	43	7	50	5.7	83	95	7.8
	56	1056	1	5	6	37	46	6	48	5.6	90	102	7.6
	58	1085	1	3	3	28	57	9	34	6.1	100	108	7.7
SBR4556	55	1049	1	18	21	43	18	0	82	5.4	70	85	5.9
	57	1069	0	17	20	51	11	0	89	6.1	87	95	5.8
	59	1102	1	9	12	57	21	0	79	5.6	82	97	6.3
SB4598	55	1049	2	6	8	44	42	1	58	6.0	82	102	5.0
	57	1069	2	6	8	42	43	1	56	6.3	82	110	6.0
	59	1102	1	13	6	33	38	10	52	5.8	89	113	6.3

Table 2 continued:

Cultivar	Days to harv	Heat units to harv.	Cull % by wt.	% 2 sieve	% 3 sieve	% 4 sieve	% 5 sieve	%6 sieve	% 2-4 sieve	Plants per foot	4 sieve seed length (mm)	5 sieve seed length (mm)	T/A
Rincon	54	1027	2	8	10	42	27	13	60	5.1	82	99	3.9
	56	1056	1	8	8	43	32	8	60	5.4	87	99	4.7
	58	1085	2	7	8	44	26	15	59	5.3	85	103	4.6
Chisolm	56	1056	1	11	10	40	27	12	61	4.9	69	76	4.5
	58	1085	1	8	10	41	39	3	59	5.9	76	84	5.3
	60	1118	0	7	8	29	42	14	44	5.0	72	78	5.6
Silverado	55	1045	0	15	17	46	22	0	78	5.6	71	89	4.0
	57	1069	0	13	14	48	26	0	74	6.3	76	92	5.7
	59	1102	1	7	13	45	31	4	66	6.3	89	96	7.7
BSC8777	54	1027	2	8	15	60	17	0	83	5.7	89	101	7.7
	56	1056	2	7	14	62	16	0	83	5.8	99	107	7.9
Cosmos	55	1045	1	8	10	31	42	10	48	4.1	75	81	4.2
	57	1069	3	7	6	31	34	23	43	4.4	77	88	6.0
GB44	55	1045	1	11	8	40	33	8	59	5.0	76	84	5.0
	57	1069	1	11	9	38	42	0	58	5.4	77	91	6.4
	59	1102	2	8	11	39	31	11	58	4.5	77	100	6.7
ACX6137	56	1056	2	14	17	43	21	4	74	4.4	89	100	6.2
	58	1085	1	10	10	46	29	5	65	5.9	96	109	7.6
	60	1118	1	7	9	39	36	9	55	5.8	99	111	8.2

See page 6 for column descriptions.

Column Descriptions for Tables 2, 4, and 6.

Cultivar – Data is based on four replications for entries in the replicated study and two plots for observation entries. Harvest sample was from five feet of row.

Seed Source –Brotherton=Brotherton Seed Co.; Crites M.=Crites Moscow Growers; HM=Harris Moran; Pure Line Seeds; Rogers=Syngenta Seeds-Rogers Brand; Seminis=Seminis Vegetable Seeds-Processor Division; Vil. - Vilmorin

Days to Harvest – The number of days from planting until harvest. Multiple harvests were made.

Degree Day Units Base 50 Degrees F. – The number of heat degree day units from planting until harvest.

% Culls – Based on the USDA specifications for culls #2 grade (misshapen) and pod rot or blemishes.

Percentage 2 sieve – Pods were snipped and graded after harvest. This was the percentage of 2 sieve pods.

Percentage 3 sieve - Pods were snipped and graded after harvest. This was the percentage of 3 sieve pods.

Percentage 4 sieve - Pods were snipped and graded after harvest. This was the percentage of 4 sieve pods.

Percentage 5 sieve - Pods were snipped and graded after harvest. This was the percentage of 5 sieve pods.

Percentage 6 sieve - Pods were snipped and graded after harvest. This was the percentage of 6 sieve pods.

Percentage 2-4 sieve – This was the sum of the 2-4 sieve percentages.

Seed Size of the 2 sieve pods – One seed from ten 2 sieve pods were collectively measured in millimeters as a maturity index.

Seed Size of the 3 sieve pods – One seed from ten 3 sieve pods were collectively measured in millimeters as a maturity index.

Seed Size of the 4 sieve pods – One seed from ten 4 sieve pods were collectively measured in millimeters as a maturity index.

Seed Size of the 5 sieve pods – One seed from ten 5 sieve pods were collectively measured in millimeters as a maturity index.

Plant Population listed as plants per foot – Desired population was 6-7 plants per foot.

Yield listed as tons per acre – The yield from the harvest sample (prior to being snipped) extrapolated to a per acre basis.

Table 3. Plant and Pod Characteristics (Large Sieve Beans)

Cultivar	Plant Ht. (in.)	Plant Width (in.)	Plant Habit Rating	Pod Color (raw) rating	Unsnipped Pod Length (in.)	Pod Shape Rating	Pod Location Rating	Pod Straight. Rating
Venture	18	23	2.25	L-MG	6 - 6.5	R-Cr	M-H	3.5
ACX 6087	20.5	21	4	M-DG	5-5.5	R-Cr	M-H	3.5
BA1001	21	21	3.75	M-DG	5-5.5	R	M-H	4
BA0999	17	20	3.5	M-DG	5-5.5	R-CR	M-H	4
Huntington (std)	19.5	20	4	M	5-5.5	R	M-H	4
SV1098GV	18	21.5	3.5	M-DG	5.5	R-Cr	M-H	4
SBR4556	19	20	4	MG	5-5.5	R-Cr	M	4
SB4598	18.5	21.5	4	M-DG	5-5.5	R	M-H	4
Rincon	16.5	20	3	M-DG	6-6.5	R-Cr	M-H	4
Chisolm	20.5	20	4.2	DG	5.5-6	R	M-H	4
Silverado	19	20	4	DG	5.5-6	R	M-H	3.5-4
BSC8777	20	21	3.5	MG	5-5.5	R-Cr	M-H	3.5-4
Cosmos	20	22	3.5	M-DG	5-6.0	C	M-H	3
GB44	18	22	3.5	MG	4.5-5.5	R-Cr	H	3-3.5
ACX6137	17	22	3	M-DG	5-5.5	R	H	3.5-4

Column Descriptions

Average plant height - The average plant height at harvest in inches.

Average plant canopy width - The average plant width at harvest in inches.

Plant Habit Rating - 5=very erect plant, 3= acceptable, 1=totally recumbent plant

Pod Color Rating - DG=dark green, MG=medium green, LG=light green. (uncooked)

Unsnipped pod length - The average length of the largest pods in inches.

Pod Shape Rating - R=round, CR=creased, O=oval

Pod Location Rating - H= pods high on the plant, M=pods located in the center of the plant canopy, L=pods touching the ground

Pod Straightness Rating - 5=very straight, 3= acceptable, 1=very curved or twisted

Additional Comments - Large Sieve Beans

(heat was not an issue during flower or harvest)

Venture – An old variety that has poor plant habit: has rough, light green, long pods: strength is that it is early and it still yields very well.

ACX6087 – A day or two later than Venture; very good plant habit and nice medium to dark green pods; 20-30 % five sieves; did not yield as well this year as it has in past years.

BA1001 – Main season; decent plant habit; has done well commercially; round, medium to dark green pod; roughly 3-40 percent five sieve, very good yield.

BA0999 – Early season (a day behind Venture) with decent plant habit; medium to dark green, round to slightly creased, straight pods; yielded well; has done well in previous years as well.

Huntington – Main season; commercial standard for large sieve; very good plant habit; straight, round, medium green pods; 20-30% five sieve pods; could have been harvested an additional time for optimum yield; good yield.

SV1098GV – Mid to main season; 40-50% five sieve; uniform, medium to dark green, round to slightly creased, straight pods; very good yield (yield essentially unchanged over the three harvest dates so it might be one that could be harvested earlier for smaller sieve without sacrificing yield).

SBR4556 – Main season maturity; very good plant habit; medium green, round to slight crease, straight pods; pods in the middle of the plant; 10-20 % five sieves; possibly could have been harvested one more time which might have influenced yield and sieve size; good yield.

SB4598 – Main season; very good plant habit; uniform, medium to dark green, round, straight pods; roughly 40% five sieve pods, decent yield; a bit more fiber than others.

Rincon – Mid to main season; acceptable plant habit; long, uniform, medium to dark green, round, straight pods; 20-30% five sieve pods; yield on the lower side.

Chisolm – Main season; very good plant habit; dark green, straight, round, long pods; 30-40 % five sieve pods with quite small seeds; long harvest window; lower yield in comparison to others.

Silverado – Main season maturity; very good plant habit; dark green, long, round pods; 20-30% five sieve pods; very good yield; a hint of fiber.

BSC8777 – Midseason maturity; decent plant habit; medium to dark green, rough looking pods with substantial string; very good yield.

Cosmos – Main season; poorer plant stand compromised ability to harvest multiple times; 30-40% five sieve pods with some six sieve too; good yield; this cultivar has done well in previous years as well but seed quality (plant emergence) has been a limiting factor.

GB44 – Main season maturity; shorter, medium green, round to creased pods high on the plant; a bit rough looking but good quality and texture; 30-40% five sieve pods; good yield.

ACX6137 – Main season maturity; decent plant habit; dark green, round pods on the rough looking side; good flavor and texture; pods high on the plant; 25-35% five sieve pods with some six sieve; very good to excellent yield.

Snap Bean Desc. Provided by the Seed Source (Large Beans)

Venture – Syngenta, early large sieve.

ACX6087 – Abbott and Cobb, 4-5 sieve size, midseason maturity, 5.5-6 inch pods, BBL color and flavor.

BA1001 – Seminis, 58 days to maturity, 60% 1-4 sieve, 40% 5-6 sieve, 5.6 inch pod length, medium green pod color; Breeder Comments: One of two new *Aphanomyces* resistant root rot lines that are built on a Tendercrop Hercules/Titan platform. Yields have been equal to or exceed Hercules and Titan under non-root rot conditions. in De Forest, WI trials. Performance in research plots at Geneva, NY under virus conditions has been excellent. Geographic fit observed across the Midwest, Northeast, and Southeast.

BA0999 – Seminis, 52 days to maturity, 65% 1-4 sieve, 35% 5-6 sieve, 5.5 inch pod length, deep green pod color; Breeder Comments: One of two new first earlies. Quality, color, and holding ability superior to any other early. Yield potential and performance make this line suitable for first early, back fill, or double crop use. geographic fit observed across the MW, NE, and Southeast. Excellent performance in Texas heat set trials. The sieve size split makes 0999 potentially suitable for a high recovery of cut beans.

Huntington – Syngenta, 56 day 5 sieve Blue Lake type, smooth straight pods, very erect plant with beans off the ground, good yielder which has demonstrated tolerance to the Midwest virus complex, IR to Bacterial Brown Spot, HR to Bean Common Mosaic, picks very clean with a good percentage of the beans without stems, leaves tend to show some bronzing at maturity with no affect to yield. Early results from Geneva CMV trial shows limited yield reduction from CMV infection.

SV1098GV – Seminis, 56 days to maturity, 50% 3-4 sieve and 50% 5-6 sieve, 5.5 inch pod length, deep green pod color, IR for BCMV/Pss. Breeder comments – Broad adaptation with moderate to slow seed development. Plant habit moderate to compact plant type.

SBR4556 – Syngenta, Huntington type with potentially a higher distribution of 4 sieves. Excellent yield potential and pod placement (1-2 “ higher than Huntington in most environments.

SB4598 – Syngenta, discontinued.

Rincon (SB4481) – Syngenta, High yielding 4 sieve with 10 – 20 % 5 sieve pods. Pods generally very straight with a medium green color. Erect plant. Straight smooth pods with high quality. Good brown spot tolerance.

Chisholm – Harris Moran, 55 days, straight, smooth pods; medium dark green; slow seed development; upright plant, mid high pod position; 5.9 inch pod length; 20% three sieve, 45% four sieve and 35 % five sieve; HR for Bean Common Mosaic and Curly Top; IR for Halo Blight and Bacterial Brown Spot.

Silverado – Crites, 57 days to maturity, green, sieve 4-5

BSC8777 – Brotherton, mid-season, 17 inch plant height; 4-5 inch pods, dark color, good flavor, R for BCMVC and AN; MR for CT, T for heat and BBS, 40% 4's, 50% 5's, 10% 6's.

Cosmos (BSC 8397) – Brotherton, Mid early, 18 inch plant height; large mid-dark pods with very slow seed development, very good pod quality and good flavor, good standing ability, 20% 4's, 50% 5's, 30% 6's, 5-6 inch pods, R for BCMV and CT, T for heat and BBS.

GB44 – Pure Line, high yielding 5 sieve variety matures in 56 days, has a good bush type and a medium dark green pod color.

ACX6137 – Abbott & Cobb, mid season, Bush Blue Lake type, 5.5-6 inch pod length, 4-5 sieve, experimental, suitable for Oregon and Midwest Processing.

Table 4. Yield Characteristics (3-4 sieve trial planted 6/22)

Cultivar	Days to harv.	Heat units harv	Cull %	% 2 sieve	% 3 sieve	% 4 sieve	% 5 sieve	% 6 sieve	% 2-4 sieve	Plts. per foot	3 sieve seed length (mm)	4 sieve seed length (mm)	T/A
Caprice	67	1291	2	12	15	52	18	2	80	6.7	57	78	6.0
FMGC61006	63	1224	3	33	39	28	0	0	100	6.6	74	81	3.4
	66	1268	1	17	34	49	1	0	99	7.1	80	95	4.5
SV1007GG	62	1203	4	35	34	31	0	0	100	5.9	56	73	3.9
	65	1249	2	18	33	48	1	0	99	7.3	65	74	6.7
	67	1291	2	12	26	60	3	0	97	7.6	60	73	7.0
FMGC6V0958	64	1235	1	24	29	43	4	0	96	7.1	66	84	7.0
	67	1291	0	8	13	64	14	1	85	6.6	69	96	7.7
Bowie	62	1203	1	42	25	31	3	0	97	5.8	58	68	2.1
	65	1249	3	24	22	48	6	0	94	7.5	59	77	4.2
	68	1317	1	12	14	48	24	1	75	5.8	72	95	5.2
Cabot	62	1203	2	20	24	51	4	0	96	5.1	62	81	4.4
	65	1249	2	13	23	59	5	0	95	6.4	65	99	5.7
SV1136	60	1160	0	17	23	43	17	0	83	5.5	60	80	4.4
	63	1224	1	14	20	49	15	1	84	6.5	66	88	5.2
	66	1268	1	6	10	57	24	3	73	6.9	67	104	6.3
SB4599	63	1224	2	26	32	41	1	0	99	6.9	64	89	3.3
	66	1268	1	12	22	56	9	0	91	7.4	85	95	4.4
	69	1341	1	8	12	46	27	7	66	6.9	93	112	4.1
SB4566	61	1181	0	23	32	40	5	0	95	5.7	67	83	3.8
	64	1235	3	21	28	47	5	0	95	6.1	70	94	4.9
	67	1291	2	12	15	53	16	4	80	6.6	69	95	7.4
Cassidy	62	1203	3	55	32	13	0	0	100	5.5	75	86	4.3
	65	1249	1	45	45	10	0	0	100	7.6	87	95	6.3
	68	1317	1	25	53	22	1	0	99	7.1	86	103	8.1
Flavor Sweet	62	1203	0	42	43	15	0	0	100	7.0	76	91	4.3
	65	1249	0	27	53	20	0	0	100	7.2	82	104	6.4
Wyatt	62	1203	1	17	30	50	3	0	97	6.8	68	92	5.8
	65	1249	1	12	26	59	3	0	97	6.8	76	92	5.5
Lewis	62	1203	1	18	28	50	4	0	96	6.2	68	84	4.8
	65	1249	2	14	24	55	7	0	93	6.3	75	93	6.0
	68	1317	2	8	16	61	14	0	86	6.8	85	108	6.8
Clarke	63	1224	4	34	30	36	0	0	100	6.3	64	84	2.5
	66	1268	2	15	31	48	7	0	93	7.4	70	97	4.6
Rimember	66	1268	1	52	40	7	0	0	100	6.9	67	86	6.5
	69	1341	1	39	50	11	0	0	100	8.1	77	86	8.0
Quincy	62	1203	1	40	38	22	0	0	100	6.3	71	82	5.2
	65	1249	1	24	45	32	0	0	100	6.8	88	110	6.5

Table 4 continued:

Cultivar	Days to harv.	Heat units harv	Cull %	% 2 sieve	% 3 sieve	% 4 sieve	% 5 sieve	% 6 sieve	% 2-4 sieve	Plts. per foot	3 sieve seed length (mm)	4 sieve seed length (mm)	T/A
Baltimore	67	1291	1	30	37	27	6	0	94	6.8	72	86	5.3
	68	1317	1	22	36	41	1	0	99	6.8	68	90	5.9
Dinasty	61	1181	0	59	31	9	0	0	100	4.6	62	74	3.6
	64	1235	2	60	32	7	0	0	100	6.5	47	90	4.9
	67	1291	1	37	44	19	0	0	100	5.7	79	97	5.7
BSC898	66	1268	2	14	23	49	11	3	86	6.5	64	80	4.1
	69	1341	1	12	20	52	14	2	84	6.9	77	94	6.6
BSC897	67	1291	1	26	26	43	5	0	95	6.5	61	78	6.4
	69	1341	1	25	26	44	5	0	95	6.4	74	91	7.4
Sony	63	1224	1	30	40	28	1	0	99	6.7	62	70	4.8
	66	1268	1	15	36	47	1	0	99	6.9	63	77	5.9
	69	1341	1	10	27	58	5	0	95	7.3	80	92	7.7
BSCB515	66	1268	0	24	40	35	1	0	99	6.9	67	75	5.9
	69	1341	0	14	31	51	3	0	97	7.1	84	102	7.7
BSCB525	64	1235	2	67	24	10	0	0	100	6.8	71	78	1.6
	67	1291	1	44	33	21	1	0	99	7.0	73	85	2.2
	68	1317	3	47	34	18	0	0	100	6.9	80	94	2.6
GB86	64	1235	2	39	33	28	0	0	100	6.7	55	69	4.4
	67	1291	1	18	34	45	3	0	97	6.6	67	81	6.1
	69	1341	2	16	31	49	5	0	95	6.9	63	86	6.8
GB60R	60	1160	1	38	27	30	6	0	94	5.2	64	76	3.2
	63	1224	0	27	19	44	10	0	90	7.0	72	87	4.4
	66	1268	0	11	13	49	26	2	72	7.3	76	88	6.9
	68	1317	1	7	7	39	39	8	53	7.2	89	109	8.3
GB39-1	60	1160	1	20	15	36	16	13	71	5.1	70	72	4.3
	63	1224	0	15	11	35	25	14	61	6.5	70	92	6.3
	66	1268	1	10	7	27	34	22	44	6.7	75	85	7.5
	68	1317	1	7	6	22	33	32	35	6.6	84	104	8.5
GB210	62	1203	1	60	30	10	0	0	100	6.1	63	74	2.0
	65	1249	1	50	33	15	2	0	98	6.5	76	101	3.4
Puncher	63	1224	2	34	36	24	6	0	94	5.9	79	88	4.3
	66	1268	1	25	42	25	6	2	92	6.5	92	100	6.5
Comper	64	1235	2	88	12	0	0	0	100	6.1	70	81	3.4
	67	1291	1	60	34	6	0	0	100	7.2	89	100	5.3
Dragster	66	1268	2	12	16	20	4	0	47	5.9	79	84	4.8
	68	1317	2	17	40	42	1	0	99	5.7	99	114	5.7

See page 6 for column descriptions.

Table 5. Plant and Pod Characteristics - 3-4 sieve type

Cultivar	Plant Ht. (in.)	Plant Width (in.)	Plant Habit Rating	Pod Color (raw) Rating	Unsnipped Pod Lgth (in.)	Pod Shape Rating	Pod Location Rating	Pod Straight. Rating
Caprice	19	19	4	na	5-5.5	R	M-H	4
FMGC61006	18	20	4	na	4.25-5	R	M-H	4
SV1007GG	19	20	4	na	5-5.5	R	M-H	4
FMGC6V0958	19	21	4	na	5-5.5	R-O	H	4
Bowie	21	20	4	na	4.5-5.25	R	M-H	4
Cabot	17	22	3.2	na	4.5-5	R-O	M-H	3.75
SV1136	15	16	4	na	4.75-5.5	R-Cr	M-H	3.75
SB4599	16	17	4	na	4.5-5	R	M-H	4
SB4566	16	20	3.5	na	4-4.75	R	M-H	3
Cassidy	18	20	4.2	na	5.25-6	R	M-H	4
Flavor Sweet	18	20	4	na	4-4.5	R	M-H	3.75
Wyatt	19	20	4.5	na	5-5.5	R	M-H	4
Lewis	19	19	4.5	na	4-4.75	R	M-H	4
Clarke	19	19	4.5	na	5.75-6.5	R	M-H	4
Rimember	18	18	4.2	na	4.75-5.25	R	M-H	4
Quincy	18	20	4	na	4.5-5	R-O	M-H	4.25
Baltimore	17	18	4.5	na	5-5.5	R	M-H	4.5
Dinasty	16	19	3.75	na	4.5-5	R	M-H	4
BSC898	17	22	3.5	na	4.75-5.25	R	M-H	4
BSC897	19	23	3.5	na	5-5.5	R	M-H	4
Sony	17	18	4	na	4.5-5	R	M-H	4
BSCB515	18	21	4	na	4.5-5.25	R	M-H	4
BSCB525	15	16	4	na	4-4.5	R-O	M-H	3.75
GB86	17	20	4	na	4.5-4.75	R	M-H	4.25
GB60R	16	22	3.5	na	4.5-5	R	H	3.75
GB39-1	16	24	2.75	na	4.5-5.25	R	H	3.75
GB210	16	20	3.25	na	4-4.5	R	M-H	4
Puncher	17	20	3.75	na	5-5.5	R	M-H	4
Comper	17	20	3.75	na	4.25-4.75	R-O	M-H	4
Dragster	16	18	3.75	na	4.5-5	R	M-H	4

Column Descriptions

Average plant height - The average plant height at harvest in inches.

Average plant canopy width - The average plant width at harvest in inches.

Plant Habit Rating - 5=very erect plant, 3= acceptable, 1=totally recumbent plant

Pod Color Rating - DG=dark green, MG=medium green, LG=light green. (uncooked)

Unsnipped pod length - The average length of the largest pods in inches.

Pod Shape Rating - R=round, CR=creased, O=oval

Pod Location Rating - H= pods high on the plant, M=pods located in the center of the plant canopy, L=pods touching the ground

Pod Straightness Rating - 5=very straight, 3= acceptable, 1=very curved or twisted

Additional Comments (3-4 sieve) (harvest was later August)

Caprice – Our four sieve standard; main season maturity; good plant habit; round, straight pods; harvested too early, good yield; some virus symptoms.

FMGC6V01006 – Midseason; good plant habit; shorter, round, straight pods; some virus symptoms; limited yield.

SV1007GG – Mid to main season; good plant habit; round, straight pods; most pods four sieve; minimal seed size increase although yield increased; very good yield.

FMGC60958 – Mid to main season maturity; good plant habit; uniform, round to oval pods high on the plant; high percentage of four sieve pods with a few five sieve; very good yield; has done well in past years as well.

Bowie – Main season maturity; good plant habit; some virus symptoms; round, variable length pods; sizable percentage of five sieve pods (24%); decent yield.

Cabot – Midseason maturity; acceptable plant habit; substantial virus symptoms; round to oval, variable length pods; decent yield (excellent yield in 2012).

SV1136 – Midseason maturity; good plant habit; substantial virus symptoms (not stunted but hurt); round to creased pods; 24% five sieve at the final harvest; decent yield for the amount of virus symptoms.

SB4599 – Mid to main season maturity; good plant habit; virus symptoms; appeared to have affected yield; round, straight pods; 27% five sieve pods at last harvest; limited yield.

SB4566 – Main season maturity; acceptable plant habit; shorter, round pods that were slightly curved; minor virus symptoms; 16% five sieve; very good yield.

Cassidy – Main season maturity; good plant habit; long, round, straight, nice pods; minor virus symptoms; three sieve was the highest sieve percentage; excellent yield (better than 2012).

Flavor Sweet – An older cultivar; midseason maturity; good plant habit; short, round pods; quite substantial virus symptoms; good set and yield considering the virus symptoms; three sieve was the highest sieve percentage.

Wyatt – Midseason maturity; very good plant habit (set was light); substantial virus symptoms; mostly four sieve; round, straight pods; decent yield.

Lewis – Mid to main season maturity; very good plant habit; virus symptoms; shorter, round, straight pods; mostly four sieve with few five sieve; good yield.

Clarke – Midseason maturity; very good plant habit (light set); substantial virus symptoms; short, round, straight pods; a three – four sieve bean with a few fives; lower yield.

Additional Comments continued (3-4 sieve)

Rimember – Main season maturity; very good plant habit; round, straight, nice pods; a bit of virus symptoms but did not seem to affect yield or pods shape; a two – three sieve bean; excellent yield.

Quincy – Early to midseason; good plant habit; shorter, uniform, round to oval, very straight pods: a two – three sieve bean with some four sieve; not a super yield but very nice pod characteristics.

Baltimore – mid to main season maturity; very good plant habit (lighter set); round, very straight, nice pods; a good distribution of two, three and four sieve pods; decent yield.

Dinasty – Mid to main season maturity; medium to dark green, shorter, round, straight, uniform, smooth pods; mostly 2-3 sieve distribution; not an outstanding yielder but very nice pod characteristics (similar as in past years evaluation).

BSC898 – Main season maturity; virus symptoms; medium to dark green, round, straight, uniform, glossy pods; mostly four sieves with a few five sieve; good yield.

BSC897 – Main season maturity; some virus symptoms; dark green, round, straight, uniform pods; most four sieve but good percentage of two and threes too; very good yield.

Sony – Main season; good plant habit; some virus symptoms; medium to dark green, round, straight, uniform pods; high percentage of four sieve pods, very good yield.

BSCB515 – Mainseason maturity; good plant habit; some virus symptoms; round, straight pods; a three- four sieve bean; very good yield.

BSCB525 – Mainseason maturity; good plant habit (very light set); severe virus symptoms including stunting; short, round to oval pods; poor yield.

GB86 – Mainseason maturity; good plant habit; some virus symptoms; shorter, round, very straight, uniform pods; most three and four sieve pods; very good yield.

GB60R – Mid to mainseason maturity; some virus symptoms; round pods located high on the plant; high percentage (39%) of five sieve pods and a few six sieve – should have been trialed with larger sieve; excellent yield.

GB 39-1 – Mid to mainseason maturity; poor plant habit (heavy pod set); some virus symptoms; round pods located high on the plant; high percentage of five and six sieve pods – should have been trialed with larger sieve; excellent yield.

GB210 – Early to midseason; severe virus symptoms including stunting; short, round, straight pods; a two-three sieve bean so possibly should have been trialed with whole beans; poorer yield.

Puncher – Early to midseason maturity; some virus symptoms; round, straight pods; a two-three-four sieve distribution; good yield.

Additional Comments continued (3-4 sieve)

Comper – Midseason maturity; some virus symptoms; shorter, round to oval, straight pods; high percentage of two sieve (60%) with rest mostly three sieve; decent yield.

Dragster – Midseason maturity; some virus symptoms; round, uniform, straight pods; a three-four sieve bean; decent yield.

Snap Bean Descriptions Provided by Seed Source (3-4 Sieve type)

Caprice (HMX 0944) - Harris Moran, 56 days to maturity, 25 % 3 sieve, 60% 4 sieve pods, 15 % five sieve, upright plant habit, even set, straight medium dark green pods, tolerates BBS and common blight, sets well in high fertility, has shown some degree of virus tolerance.

Bowie (HMX 7118) – Harris Moran, 56 days to maturity; upright plant habit; mid to high pod location; 5.5 inch pod length; (30% 3 sieve, 60% 4 sieve, 10% 5 sieve); medium dark green pods; R for Bean common mosaic, Curly Top, Halo Blight and Bacterial brown spot; IR for Common Blight.

FMGC61006 – Seminis, 55 days to maturity, 90% 3-4 sieve, 10% 5-6 sieve, 5.8 inch pod length, medium green pod color, HR for BCMV and IR for Pss. Breeder comments – A fresh market variety also suitable for processing that is similar to Caprice in sieve size distribution and color. Plant habit more compact and 1-2 days earlier than BA0958. Compact plant habit makes this line less prone to lodging under high fertility conditions.

SV1007GG – Seminis, 56 days to maturity, 100% 1-4 sieve, 5.6 inch pod length, deep green pod color, HR for BCMV/Ua³. Breeder comments – All the pods in this line are concentrated in the 3's and 4's. this line may have more quality than Valentino. Pod placement is excellent.

FMGC6V0958 – Seminis, 57 days to maturity, 90% 3-4 sieve, 10% 5-6 sieve, 5.8 inch pod length, medium green pod color, HR for BCMV and IR for Pss. . Breeder comments – A fresh market variety also suitable for processing that is similar to Caprice in sieve size distribution and color. Erect plant with straight, smooth pods well off the ground.

GB86 – Pure Line Seeds, predominantly 4sv with a few 5 sv. Could be a large sieve as well.

Cabot – Harris Moran, attractive, round, straight pods; high quality end product, consistent performance, 55 days to maturity, upright plant, pod position mid high, 5.5 inch pods, 25% three sieve, 60% four sieve, 15% five sieve, medium dark green color, HR for Bean common mosaic, rust and common blight; IR for Curly top, Halo Blight and Bacterial Brown Spot.

SV1136 – Seminis, 54 days to maturity, 80% 1-4 sieve and 20% 5 and 6 sieve, 5.3 inch pod length, deep green pod color, HR for BCMV/CI/Ae/Psp³. Breeder comments – Early maturity, cut or whole large whole bean, 3rd generation root rot resistant. Excellent pod placement on an erect compact to medium sized determinate bush.

SB4599 – Syngenta, discontinued.

SB4566 – Syngenta, Experimental, darker (Caprice color) 4 sieve, excellent pod straightness and yield potential across most environments.

Flavor Sweet – Harris Moran, 55 days to maturity, upright plant, 5 inch pod length, 85% 3 sieve, 15% 4 sieve, medium green pod color, good plant vigor, good quality straight pods, HR for BCMV 1, CI and Psp.

Wyatt – Harris Moran, 54 days to maturity, excellent plant vigor, upright plant, attractive, dark green, straight pods high on the plant; 5.75 inch pod length, 30% 3 sieve, 60% 4 sieve and 10% 5 sieve, HR for BCMV 1, Curly Top, Psp, Pss and Xap.

Snap Bean Descriptions Provided by Seed Source (3-4 Sieve type)

Lewis – Harris Moran, 53 days to maturity, upright plant, 5.5 inch pods, 35% 3 sieve and 65% 4 sieve, medium dark green pods, attractive, straight pods with good disease package, HR for BCMV 1, Curly Top and Ua, IR for Pss.

Clarke – Harris Moran, 56 days to maturity, upright plants, 5.75 inch pod length, 25% 3 sieve, 75% 4 sieve, medium green pod color, long, straight, attractive pods, superior yield potential, HR for BCMV 1 and Ua, IR for Curly Top, Psp and Xap.

Dynasty – Brotherton, medium late maturity; 18 inch plant height; dark green pods, 4-6 inch pods, 50% 3'S, 20% 4'S, 10% 5'S, R for BCMV and AN, T for heat and BBS.

Quincy – Crites, 54 days to maturity, sieve 3-4, green.

Baltimore – Crites, 57 days to maturity, sieve 3-4, green.

BSC898 – Brotherton, medium maturity; 20 inch plant height; dark green, 3-5 inch pods; 20% 3 sieve, 60% 4 sieve and 20% 5 sieve; R for BCMV, AN and CT; T for BBS and heat.

BSC897 – Brotherton, midseason maturity, 21 inch plant height; dark green, 4-6 inch pods; 20% 3 sieve, 60% 4 sieve and 20% 5 sieve; R for BCMV and AN; T for BBS and heat.

Sony – Brotherton, midseason, 50% 3 sieve and 50% 4 sieve; 21 inch plant height; 4.5-5.5 inch, dark green pods; R for BCMV and AN; T for BBS and heat.

2011B515 – Brotherton, mid to full season; 50% 3 sieve and 50% 4 sieve; 17 inch plant height; 4.5-5.5 inch, dark green pods; R for BCMV and HB; T for BBS and heat.

2012B525 – Brotherton, mid early maturity; 15 inch plant height; dark green, 4.0-5.0 inch pods; 40% 3 sieve and 60% 4 sieve; R for BCMV, AN and CT.

Cassidy (HMX6109) – Harris Moran, 55 days to maturity, very upright, 5.3 inch pod length, 20% 2 sieve, 70% 3 sieve, 10% 4 sieve, medium dark green pods, high quality, straight pods, R for Bean common mosaic virus and Curly top diseases, IR for Halo blight, bacterial brown spot and common blight diseases.

Rimember – Crites, 57 days; very similar to Venice but better heat tolerance, sieve 3, green.

GB60R – Pure Line,

GB39-1 – Pure Line,

GB210 – Pure Line,

Puncher – Vilmorin, semi upright plant habit, strong vigor at emergence, good distribution of pods in the plant, dark green, fleshy, straight pods, pod length about 4.5 inches, not susceptible to string or fiber, nice pod quality after cooking, high resistance to BCMV, *Pseudomonas savastanoi* pv *phaseolicola* and common races of *Anthraco*nose; intermediate resistance to *Xanthomonas anoxopodis* pv *phaseoli*, high yielding variety 2-3 sieve.

Comper – Vilmorin, 35 % 6.5-8mm, 55% 8-9 mm and 10% 9-10.5 mm; 11.5-12 cm pod length; HR for BCMV and Cj; IR for Psp and Xap.

Dragster – Vilmorin,

Table 6. Yield Characteristics (Whole bean - planting date 7/5)

cultivar	Days to harv.	Heat units Harv.	% 2 sieve	% 3 sieve	% 4 sieve	2 sve sd length (mm)	3 sve sd length (mm)	Plts per foot	T/A	Cull %
Masai (std)	60	1163	100	0	0	78	0	6.8	5.5	1
	62	1196	96	4	0	88	0	7.3	5.1	0
Angers	61	1183	100	0	0	59	0	6.8	4.9	2
	63	1212	100	0	0	63	0	7.8	5.0	1
Carthage	61	1183	100	0	0	60	0	6.5	3.5	1
	63	1212	100	0	0	60	0	7.3	3.8	1
Oakley	61	1183	97	3	0	58	0	7.1	4.6	0
	63	1212	97	3	0	66	0	7.4	4.2	0
Kendo	60	1163	98	2	0	71	0	6.9	4.5	1
	62	1196	96	4	0	82	0	7.3	4.8	1
SWB2-1	60	1163	97	3	0	63	0	6.9	6.5	1
	62	1196	98	2	0	77	0	7.5	5.8	1
SWB75-1	61	1183	78	21	1	63	81	5.9	6.0	1
	63	1212	75	23	3	72	90	6.7	5.9	0
Kylia	61	1183	98	2	0	73	0	6.3	5.6	1
	63	1212	99	1	0	80	0	7.7	5.7	0
Koala	60	1163	90	10	0	65	89	6.9	6.2	1
	62	1196	87	12	1	82	108	7.1	5.7	1
Borsalino	61	1183	86	14	0	70	84	7.1	3.7	2
(wax)	63	1212	78	22	0	74	93	6.8	4.5	1

Table 6 continued: Wax bean type (Planting date 7/5)

Cultivar	Days to harv.	Heat units Harv.	Plts per foot	% 2 sieve	% 3 sieve	% 4 sieve	% 5 sieve	% 6 sieve	% 2-4 sieve	ave T/A	4 sieve seed length (mm)	5 sieve seed length (mm)	Cull %
SV1003GF	60	1163	6.9	9	16	52	20	4	76	4.8	93	116	0
	62	1196	6.8	10	16	50	20	4	77	4.9	114	129	1
Gold Ribbon (std)	60	1163	6.9	8	12	47	26	7	67	4.1	93	112	1
	62	1196	7.2	5	12	51	27	5	68	4.2	104	117	3
Maxiwaxx	61	1183	6.8	29	24	35	12	0	88	4.0	72	95	5
	63	1217	7.1	23	27	43	7	0	93	5.1	98	118	1

Romano Type

Cultivar	Days to Harv.	Heat units Harv.	Plants per foot	d length h large	ave T/A
Roma II (std)	61	1183	6.7	110	7.8
	63	1217	6.7	120	6.5
Riberia	60	1163	6.2	110	7.0
	62	1196	5.8	na	6.8
Furano	60	1163	6.0	76	7.6
	62	1196	6.1	112	7.6

Column descriptions on page 6.

Table 7. Plant and Pod Characteristics - Whole, Wax and Romano bean type

Cultivar	Plant Ht. (in.)	Plant Width (in.)	Plant Habit Rating	Pod Color (raw) rating	Unsnipped Pod Length (in.)	Pod Shape Rating	Pod Location Rating	Pod Straight. Rating
Masai (std)	18	18	4.25	na	4.5-5	R	M-H	4
Angers	19	18	4.25	na	4.5-5	R	M-H	4
Carthage	17	16	4.5	na	4.5-5	R	M-H	4
Oakley	17	16	4.5	na	3.5-4	R	M-H	3.75
Kendo	18	18	4	na	4-4.5	R	M-H	4.5
SWB2-1	19	19	4	na	4.5-5	R	M-H	4.5
SWB75-1	16	21	3	na	4-4.5	R	M-H	3.75
Kylian	19	17	4.25	na	4.75-5	R	M-H	4
Koala	17	18	4.25	na	4.25-4.5	R	M-H	4.5
Borsalino	16	18	3.75	na	4.5-5	R-O	M-H	3.75
SV1003GF	17	20	3	na	4.5-5.5	R	M-H	3.5
Gold Ribbon	18	21	3.5	na	5.5-6.5	R-Cr	M-H	3.5
Maxiwaxx	18	22	3.5	na	5-6.0	R	M-H	4
Roma II (std)	15	21	2.5	na	5-5.5	Flat	M-H	4
Riberia	18	19	3.75	na	5.5-6	Flat	M-H	4
Furano	19	21	3.2	na	5.5-6	Flat	M-H	3.75

Column Descriptions

Average plant height - The average plant height at harvest in inches.

Average plant canopy width - The average plant width at harvest in inches.

Plant Habit Rating - 5=very erect plant, 3= acceptable, 1=totally recumbent plant
(Plant Habit was done two weeks after harvest)

Pod Color Rating - DG=dark green, MG=medium green, LG=light green. (uncooked)
:light yellow, Y=Yellow, GY=golden yellow

Unsnipped pod length - The average length of the largest pods in inches.

Pod Shape Rating - R=round, CR=creased, O=oval

Pod Location Rating - H= pods high on the plant, M=pods located in the center of the plant canopy, L=pods touching the ground

Pod Straightness Rating - 5=very straight, 3= acceptable, 1=very curved or twisted

Additional Comments - Whole Bean (Harvest period was early to mid September)

Masai – Our small sieve standard; midseason maturity; basically 100% 2 sieve or smaller; very good plant habit; some virus symptoms; shorter, round, straight pods; good yield.

Angers – Very small sieve, midseason maturity; very good plant habit; 100% 2 sieve or smaller – my smallest grader is 2 sieve but many of these were probably 1 sieve; shorter, round, straight pods; good yield.

Carthage – Very small sieve, midseason maturity; very good to excellent plant habit (light pod set); some virus symptoms; 100% 2 sieve or smaller – my smallest grader is 2 sieve but many of these were probably 1 sieve; shorter, round, straight pods; did not yield as much as Angers.

Oakley – Mid to main season maturity; very good plant habit; some virus symptoms; short, round pods; a two sieve bean; decent yield.

Kendo – Mid to main season maturity; good plant habit; shorter, round, very straight, uniform pods; a two sieve bean; decent yield.

SWB2-1 – Mid to main season maturity; decent plant habit (heavy pod set); shorter, uniform, round, very straight pods; a two sieve bean; very good yield.

SWB75-1 – Mid to main season maturity; acceptable plant habit (heavy pod set); short, round pods; 80% 2 sieve and 20% three sieve; very good yield.

Kilian – Mid to main season maturity; good plant habit; tall plants; uniform, round, straight pods; a two sieve bean; very good yield.

Koala – Mid to main season maturity; good plant habit; short, round, very straight pods; most two sieve pods with about 10% three sieve; very good yield.

Additional Comments - Romano

Roma II – Older romano cultivar used as a standard; midseason maturity; poor plant habit; nice quality pods; very good yield.

Riberia – A bit earlier maturity than others; a bit darker green pod color than others; best plant habit of the three; nice looking pods; very good yield.

Furano – Mid to main season maturity; best texture pods of the three; decent plant habit; uniform pods; very good yield.

Additional Comments - Wax

Borsalino – Mid to main season maturity; good plant habit; round to oval pods; most 2 sieve pods with about 15-20% three sieve; decent yield for smaller sieve.

SV1003GF – Midseason maturity; acceptable plant habit; substantial virus symptoms although not stunting, shorter, round, slightly curved pods; yield most likely hurt by virus infection.

Gold Ribbon – Midseason maturity; plant habit a bit better than 1003; substantial virus symptoms although not stunted; long, round to creased pods that were a bit straighter than 1003; sieve distributions very similar to 1003; yield most likely influenced by virus infection.

Maxiwaxx – Mid to main season maturity; decent plant habit; more of a three four sieve where other two (Gold Ribbon and 1003) wax cultivars were four sieves with roughly 20% five sieve; this one had a bit better color than the Gold Ribbon or 1003; round, straight, uniform pods; yield was similar to other two other than this one did not seem to have virus symptoms they did.

Descriptions Provided by the Seed Source - Whole Beans

Masai - Syngenta, - 55 day maturity, a very small straight podded whole pack that yields well, pod smooth at prime, slightly fast seed development; excellent bush habit that can be planted in narrow rows, 3.9 inch pods, medium green pod color. Tender, flavorful pods averaging in the two to three sieve range set in the upper half of Masai's upright, small-leaf bush.

Angers – Seminis, 55 days to maturity, 100%1-2 sieve, medium green, 4.3 inch pods; HR for BCMV/CI, IR for Psp.

Carthage – Seminis, 55 days to maturity, 100%1-2 sieve, medium green, 4.3 inch pods; HR for BCMV/CI, IR for Psp. Carthage is an improvement over Angers for pod quality, plant type and slow seed evolution.

Oakley – Harris Moran, 55 days to maturity, upright plant habit, dark green, 5 inch pods, 100% 2 sieve, HR for BCMV 1, Pss and Ua; IR for Psp.

Kendo – Brotherton, late season, 17 inch plant height, dark green pods, 30% 1 sieve, 40% 2 sieve, 30% 3 sieve; 4-6 inch pod length, R for BCMV and AN, T for BBS and heat.

SWB2-1 – Pure Line,

SWB75-1 – Pure Line,

Kylian – Crites – 58 day maturity, green, 2 sieve

Koala – Crites - 57 day maturity, green, 2-3 sieve

Descriptions Provided by the Seed Source – Wax type

Wax type

Borsalino – Vilmorin, two days later than Soleil; 4.5 inch pod; 2-3 sieve; HR to BCMV, Anthracnose and Halo Blight.

SV1003GF – Seminis; 56 days to maturity; 30% 1-3 sieve, 60% 4-6 sieve; 5.2 inch pod length; HR for BCMV and IR for Pss. Breeder comments – Newest of the Bacterial Brown Spot resistant Wax beans. Sieve size distribution favoring the cut bean and a fancy pack.

Gold Ribbon – Seminis, large sieve wax, about .5 sieve size larger than Goldmine (up to 40% 5 sieve pods, very good resistance to Brown Spot, resistant to BCMV, excellent canned and frozen product.

Maxiwaxx – Crites- 56 days to maturity, yellow wax, 4-5 sieve

Descriptions Provided by the Seed Source – Romano Type

Roma II – Pure Line, standard romano type.

Riberia – Seminis, medium green pods, 52 days to maturity; .3 inch pod thickness; 5 inch pod length and .73 inch pod width; HR for Bean Common Mosaic Virus; erect plant type, pods are uniform, long, wide and fleshy. Breeder Comments: Riberia is the earliest Romano bean in the market; approx. 3 days earlier than Ebro. Plant type is erect. Plant height is medium, About 5 - 10 cm shorter than Ebro, Beronia. Pods are long and wide and fleshy. Their shape is very uniform and the pod color is medium green. Riberia has a relatively slow seed development for an early Romano variety. Yield potential (harvestable yield) has been very good for the maturity.

Furano – Romano/Italian type Processing bean, 5.5-6” pods, very fleshy, excellent upright architecture and yield, high pod placement.

Table 8. 2013 Weather summary for Geneva NY.

Day	Max. Temp.	Min. Temp.	Mean Temp.	Precip.	Acc Precip.	Degree Days Base 50	acc dd units base 50
4/29/13	72	49	60.5	0.16	0.16	10.5	10.5
4/30/13	59	51	55	0.01	0.17	5	15.5
5/1/13	68	53	60.5	0	0.17	10.5	26
5/2/13	75	48	61.5	0	0.17	11.5	37.5
5/3/13	76	49	62.5	0	0.17	12.5	50
5/4/13	73	47	60	0	0.17	10	60
5/5/13	74	47	60.5	0	0.17	10.5	70.5
5/6/13	76	46	61	0	0.17	11	81.5
5/7/13	74	50	62	0	0.17	12	93.5
5/8/13	77	55	66	0	0.17	16	109.5
5/9/13	69	50	59.5	0.06	0.23	9.5	119
5/10/13	71	50	60.5	0.04	0.27	10.5	129.5
5/11/13	72	52	62	0.8	1.07	12	141.5
5/12/13	63	41	52	0	1.07	2	143.5
5/13/13	53	35	44	0.03	1.1	0	143.5
5/14/13	50	33	41.5	0	1.1	0	143.5
5/15/13	57	35	46	0	1.1	0	143.5
5/16/13	82	38	60	0.07	1.17	10	153.5
5/17/13	77	40	58.5	0	1.17	8.5	162
5/18/13	64	40	52	0	1.17	2	164
5/19/13	70	51	60.5	0	1.17	10.5	174.5
5/20/13	73	58	65.5	0	1.17	15.5	190
5/21/13	84	59	71.5	0	1.17	21.5	211.5
5/22/13	83	62	72.5	1.16	2.33	22.5	234
5/23/13	85	63	74	0	2.33	24	258
5/24/13	75	39	57	0.58	2.91	7	265
5/25/13	48	38	43	0.07	2.98	0	265
5/26/13	56	42	49	0	2.98	0	265
5/27/13	61	47	54	0	2.98	4	269
5/28/13	70	48	59	0	2.98	9	278
5/29/13	65	51	58	0.88	3.86	8	286
5/30/13	83	61	72	0.14	4	22	308
5/31/13	87	64	75.5	0	4	25.5	333.5
6/1/13	91	64	77.5	0	4	27.5	361
6/2/13	89	66	77.5	0.26	4.26	27.5	388.5
6/3/13	80	50	65	0	4.26	15	403.5
6/4/13	64	47	55.5	0	4.26	5.5	409
6/5/13	66	49	57.5	0	4.26	7.5	416.5
6/6/13	69	52	60.5	0	4.26	10.5	427
6/7/13	59	53	56	2.16	6.42	6	433
6/8/13	65	55	60	0.23	6.65	10	443
6/9/13	65	52	58.5	0.02	6.67	8.5	451.5
6/10/13	74	57	65.5	0	6.67	15.5	467

6/11/13	66	61	63.5	0.67	7.34	13.5	480.5
6/12/13	67	55	61	0.18	7.52	11	491.5
6/13/13	73	56	64.5	0.02	7.54	14.5	506
6/14/13	61	49	55	1.02	8.56	5	511
6/15/13	72	55	63.5	0.01	8.57	13.5	524.5
6/16/13	73	57	65	0	8.57	15	539.5
6/17/13	74	60	67	0.09	8.66	17	556.5
6/18/13	80	58	69	0.1	8.76	19	575.5
6/19/13	67	50	58.5	0	8.76	8.5	584
6/20/13	66	45	55.5	0	8.76	5.5	589.5
6/21/13	76	51	63.5	0	8.76	13.5	603
6/22/13	81	55	68	0	8.76	18	621
6/23/13	87	69	78	0	8.76	28	649
6/24/13	90	68	79	0.19	8.95	29	678
6/25/13	88	65	76.5	0	8.95	26.5	704.5
6/26/13	83	68	75.5	0	8.95	25.5	730
6/27/13	84	64	74	0	8.95	24	754
6/28/13	80	64	72	0.15	9.1	22	776
6/29/13	69	61	65	0.2	9.3	15	791
6/30/13	74	60	67	0.5	9.8	17	808
7/1/13	78	63	70.5	0	9.8	20.5	828.5
7/2/13	68	60	64	0.47	10.27	14	842.5
7/3/13	81	61	71	0.16	10.43	21	863.5
7/4/13	84	67	75.5	0.11	10.54	25.5	889
7/5/13	85	68	76.5	0.06	10.6	26.5	915.5
7/6/13	87	68	77.5	0.06	10.66	27.5	943
7/7/13	86	70	78	0.19	10.85	28	971
7/8/13	85	70	77.5	0	10.85	27.5	998.5
7/9/13	84	67	75.5	0.93	11.78	25.5	1024
7/10/13	83	68	75.5	0.17	11.95	25.5	1049.5
7/11/13	86	63	74.5	0.11	12.06	24.5	1074
7/12/13	76	60	68	0	12.06	18	1092
7/13/13	75	62	68.5	0	12.06	18.5	1110.5
7/14/13	80	65	72.5	0	12.06	22.5	1133
7/15/13	88	72	80	0	12.06	30	1163
7/16/13	87	71	79	0	12.06	29	1192
7/17/13	89	67	78	0	12.06	28	1220
7/18/13	92	71	0.05	0.98	13.04	0	1220
7/19/13	88	72	80	0.7	13.74	30	1250
7/20/13	91	68	79.5	0.65	14.39	29.5	1279.5
7/21/13	76	63	69.5	0.08	14.47	19.5	1299
7/22/13	75	59	67	0	14.47	17	1316
7/23/13	78	60	69	0.51	14.98	19	1335
7/24/13	83	61	72	0	14.98	22	1357
7/25/13	65	49	57	0	14.98	7	1364
7/26/13	72	53	62.5	0	14.98	12.5	1376.5

7/27/13	76	56	66	0	14.98	16	1392.5
7/28/13	80	56	68	0.2	15.18	18	1410.5
7/29/13	75	56	65.5	0.16	15.34	15.5	1426
7/30/13	71	56	63.5	0.07	15.41	13.5	1439.5
7/31/13	74	57	65.5	0	15.41	15.5	1455
8/1/13	78	58	68	0	15.41	18	1473
8/2/13	76	60	68	0.05	15.46	18	1491
8/3/13	75	61	68	0.23	15.69	18	1509
8/4/13	75	57	66	0	15.69	16	1525
8/5/13	70	53	61.5	0	15.69	11.5	1536.5
8/6/13	73	54	63.5	0	15.69	13.5	1550
8/7/13	78	56	67	0	15.69	17	1567
8/8/13	78	64	71	0.16	15.85	21	1588
8/9/13	81	66	73.5	0.56	16.41	23.5	1611.5
8/10/13	76	63	69.5	0.3	16.71	19.5	1631
8/11/13	76	52	64	0	16.71	14	1645
8/12/13	74	58	66	0	16.71	16	1661
8/13/13	77	60	68.5	1.45	18.16	18.5	1679.5
8/14/13	73	53	63	0.16	18.32	13	1692.5
8/15/13	66	52	59	0	18.32	9	1701.5
8/16/13	73	51	62	0	18.32	12	1713.5
8/17/13	75	52	63.5	0	18.32	13.5	1727
8/18/13	77	57	67	0	18.32	17	1744
8/19/13	76	60	68	0	18.32	18	1762
8/20/13	80	58	69	0	18.32	19	1781
8/21/13	82	59	70.5	0	18.32	20.5	1801.5
8/22/13	85	60	72.5	0	18.32	22.5	1824
8/23/13	84	57	70.5	0.04	18.36	20.5	1844.5
8/24/13	72	51	61.5	0	18.36	11.5	1856
8/25/13	75	52	63.5	0	18.36	13.5	1869.5
8/26/13	80	58	69	0.03	18.39	19	1888.5
8/27/13	80	67	73.5	0.83	19.22	23.5	1912
8/28/13	84	67	75.5	0	19.22	25.5	1937.5
8/29/13	82	66	74	0.22	19.44	24	1961.5
8/30/13	82	60	71	0	19.44	21	1982.5
8/31/13	83	60	71.5	0.02	19.46	21.5	2004
9/1/13	82	66	74	0	19.46	24	2028
9/2/13	81	66	73.5	0.2	19.66	23.5	2051.5
9/3/13	84	56	70	0.16	19.82	20	2071.5
9/4/13	68	57	62.5	0	19.82	12.5	2084
9/5/13	77	55	66	0	19.82	16	2100