

**NEW YORK STATE 2012 PROCESSING SNAP BEAN CULTIVAR TRIAL REPORT
Large Sieve Bean – 3-4 Sieve Bean – Whole Bean – Romano Bean**

James Ballerstein - Research Support Specialist, Horticultural Sciences
New York State Agricultural Experiment Station - Cornell University, Geneva, New York

Stephen Reiners - Associate Professor, Horticultural Sciences
New York State Agricultural Experiment Station - Cornell University, Geneva, New York

PROCEDURE AND MATERIALS

Location: NYS Agricultural Research Farm – field 17, Geneva - soil type - Honeoye silt loam

Planting Dates: Large Sieve – 5/24, 3-4 sieve beans – 6/8, Whole and Romano type – 6/18

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 prepl & Dual post plant **Insecticide** – Hero (potato leafhoppers)

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 18th 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 for the large sieve bean planting was less than optimum resulting in slightly staggered emergence. The other two plantings had good moisture and emerged very uniformly. High temperatures and a high infestation of potato leafhopper stunted plants in the large sieve trial. The large sieve trial also had quicker seed size increase and resulted in many cultivars having a single harvest. Irrigation was required in late June and July. White mold was only a minor problem. Symptoms of bean virus complex were not visible to the eye. 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.
Jim Ballerstein, NYSAES, 630 West N. Street, Hedrick Hall, Geneva, NY 14456-0462
315-787-2223 (phone) jwb2@cornell.edu(email)

We wish to thank the NYS Vegetable Research Council and Association, Ontario Processing Vegetable Growers and cooperating seed companies for their financial support of the project. We also wish to thank Mr. Michael Gardinier and Mr. Roger Ward of Farm Fresh First and Mr. Jeff Johnson of Seneca Foods for their assistance in planning the trials. Special thanks to Wilma Kean, Russ Harris, Patty Gibbs, Calli Robbins, Mike Rosato, Sean Murphy, Nick Luango and Andy TenEyck for their assistance in day to day operations.

Table of Contents

Page 1 Title Page

Page 2 Table of Contents

Page 3 Table 1 - Cultivar List

Large Sieve Bean Section

Pages 4 & 5 Table 2 - Yield Data

Page 6 Column explanations for Tables 2, 4 and 6

Page 7 Table 3 - Plant and Pod Characteristics

Page 8 Additional Comments (Large Sieve Beans)

Page 9 Cultivar Descriptions Provided by the Seed Company

3-4 Sieve Bean Types

Pages 10&11 Table 4 - Yield Data

Page 12 Table 5 - Plant and Pod Characteristics

Pages 13 &14 Additional Comments

Pages 14 & 15 Cultivar Descriptions Provided by the Seed Source

Whole Bean Type

Page 16 Table 6 - Yield Data

Page 17 Table 7 - Plant and Pod Characteristics

Page 18 Additional Comments

Page 19 Cultivar Descriptions Provided by the Seed Source

Romano Type

Page 20 Table 8 - Yield Data

Page 21 Table 9 - Plant and Pod Characteristics

Page 22 Additional Comments

Page 22 Cultivar Descriptions Provided by the Seed Source

Pages 23-24 Table 10 - Weather Summary

Table 1 - Processing Snap Bean Cultivar List

Large Sieve		
Buffalo	Rep.	Crites
Venture (std)	Rep.	Rogers
ACX 6087	Rep.	Abbott&Cobb
BA1001	Rep.	Seminis
GB44	Rep.	Pure Line
BA0999	Rep.	Seminis
Huntington (std)	Rep.	Syngenta
Rincon (4481)	Rep.	Syngenta
Chisholm (HMX8105)	Rep.	Harris Moran
Sierra (HMX7115)	Rep.	Harris Moran
HMX0105	Rep.	Harris Moran
HMX 0106	Rep.	Harris Moran
BSC898	Rep.	Brotherton
Cosmos	Rep.	Brotherton
BSC8777	Rep.	Brotherton
3-4 sieve		
Tambora (PV792) (wax)	Rep.	Crites
Rimember (PV766)	Rep.	Crites
PV818	Rep.	Crites
PV819	Rep.	Crites
ACX6094	Rep.	Abbott&Cobb
GB86	Rep.	Pure Line
GB63	Rep.	Pure Line
GB19	Rep.	Pure Line
FORC6V0954	Rep.	Seminis
FMGC61006	Rep.	Seminis
FMGC6V1007	Rep.	Seminis
FMGC6V0958	Rep.	Seminis
Caprice (Std)	Rep.	Harris Moran
Barron (HMX8121)	Rep.	Harris Moran
Bowie (HMX7118)	Rep.	Harris Moran

3-4 sieve type continued		
Cabot	Rep.	Harris Moran
Cassidy (HMX61)	Rep.	Harris Moran
Pike (HMX6108)	Rep.	Harris Moran
Flavor Sweet	Rep.	Harris Moran
BSC890	Rep.	Brotherton
Dynasty	Rep.	Brotherton
Venice	Rep.	Crites
ACX6096	Ob	Abbott&Cobb
ACX6119	Ob	Abbott&Cobb
ACX6137	Ob	Abbott&Cobb

Romano type		
Roma II	Rep.	Pure Line
Furano	Rep.	Syngenta
Roma 5210	Rep.	Pure Line
Bogota	Rep.	Seminis
Riberia	Rep.	Seminis
Beronia	Rep.	Seminis
Navaho	Rep.	Crites
Whole Bean		
MV242	Rep.	vilmorin
Banga	Rep.	Seminis
TWS08061276	Rep.	Seminis
TWS08061159	Rep.	Seminis
TWSC6V1194	Rep.	Seminis
Masai (std)	Rep.	Syngenta
HMX 9126	Rep.	Harris Moran
HMX8102	Rep.	Harris Moran
Granderon	Ob	Syngenta
Fashion	Ob	Syngenta
Borsalino (wax)	Ob	Vilmorin
Puncher	Ob	Vilmorin

Table 2. Yield Characteristics (large bean planting date 5/24)

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	57	1156	1.2	3	4	15	75	4	21	6.6	107.5	129.5	2.9
ACX 6087	57	1156	2.3	14	18	38	31	0	69	7.1	96	106.5	1.8
	59	1188	4.0	22	15	39	15	10	76	8.1	102	121	1.4
BA0999	57	1156	1.8	4	7	49	39	0	61	8.0	94	120	2.9
	59	1188	1.2	4	6	47	42	0	57	8.0	121	127.8	2.8
Rincon	59	1188	0.2	3	8	53	32	1	64	7.2	90	105.5	2.8
	61	1236	1.5	5	7	44	47	1	57	7.8	111	123.5	2.6
Buffalo	60	1210	1.1	8	13	51	37	0	72	6.6	108	115	2.3
GB44	60	1210	0.8	4	8	40	38	3	52	6.1	97	120.3	2.1
	62	1269	1.8	5	12	48	33	1	65	5.9	96	132.3	2.1
	64	1313	1.6	2	4	28	49	9	35	6.0	97	122.5	3.1
BA1001	60	1210	2.1	7	7	37	49	0	50	7.3	97	110.8	2.4
	62	1269	3.6	2	4	36	57	0	42	7.7	101	120.8	2.1
	64	1313	0.9	2	2	18	52	25	23	5.0	109	129	2.5
HMX0105	57	1156	1.7	7	19	53	20	0	80	6.6	83	108.8	2.5
	59	1188	3.7	8	9	37	31	0	55	7.0	95	101.8	2.4
	61	1236	3.3	7	10	41	38	2	58	7.2	101	120	2.9
BSC8777	59	1188	2.0	10	12	58	20	0	80	7.5	102	111	2.7
	61	1236	2.7	6	13	52	29	0	71	8.3	111	128.8	2.8
Hystyle	60	1210	1	8	8	38	46	0	53	6.5	100	126	2.4

Table 2 continued: Yield Characteristics Large Sieve

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
Cosmos	59	1188	2.1	6	7	36	41	3	49	4.9	96	118.5	2.7
	61	1236	4.0	7	8	37	43	5	52	5.5	98	113.3	2.7
	63	1290	2.7	3	3	24	45	19	30	4.0	91	114.5	3.0
BSC898	60	1210	2.3	16	10	29	49	0	55	7.3	86	110.3	2.0
	62	1269	1.1	6	8	34	46	4	48	8.0	95	132.8	2.0
	64	1313	0.1	9	7	23	44	35	39	7.4	97	121.3	2.6
Huntington	61	1236	2.7	10	9	43	38	1	63	7.4	91	122.5	2.6
	63	1290	1.6	4	4	30	51	5	39	6.6	87	126.3	2.7
Sierra	62	1269	1.8	7	7	51	38	0	65	6.4	81	107.5	1.3
	64	1313	1.1	4	2	17	63	16	24	6.5	90	120.8	1.1
HMX 0106	61	1236	3.4	12	13	28	44	0	52	6.0	75	102.5	1.2
	63	1290	2.0	14	5	21	36	22	40	5.3	89	101.3	1.5
Chisholm	60	1210	3.4	6	5	27	54	0	38	7.4	77	87.5	1.5
	62	1269	5.4	6	5	26	54	9	37	7.8	76	113.3	1.7
	64	1313	3.0	5	4	16	32	37	24	7.9	79	102.8	1.8

See page 5 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	13	13	4	LG-MG	4.5-5.5	CR	M	3
ACX 6087	9.8	8.8	4	DG	4.5-5.0	R-CR	M-H	3
BA0999	11	11	4	MG	4.5-5.0	R-O	M-H	3.5
Rincon	13	12.5	4	M-DG	4.5-5.0	R	M-H	3.5
Buffalo	12.5	12.5	4	M-DG	5-5.5	R	M-H	3.5-4
GB44	12	12	4	MG	4.5-5.0	R-CR	M-H	3
BA1001	12	11	4	M-DG	4.5-5.0	R- CR	M-H	3
HMX0105	12.8	13	4	M-DG	5-5.5	R-CR	M-H	3.5-4
BSC8777	13	12	4	M-DG	4.5-5.5	R-CR	M-H	3.5
Hystyle	14	15	4	L-MG	4.5-5.0	R-CR	M-H	3
Cosmos	12.8	12.3	4	MG	5.0-5.5	R	M-H	3.5
BSC898	12.5	11.3	4	M-DG	4.5-5.0	R	M-H	3.5
Huntington	12	12	4	MG	4-4.5	R-CR	M-H	3
Sierra	12.5	11	4	DG	5-5.5	R	M-H	3.5
HMX 0106	12.8	11.5	4	DG	5.0-6.0	R	M-H	2.5-3
Chisholm	13	12	4	DG	5-5.5	R	M-H	2.5-3.0

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 and leafhopper injury greatly affected this planting.)

Venture – Early; moderate to severe symptoms of leafhopper infestation; a few flowers on the plants; decent set, light green, creased pods; high percentage of five sieve pods.

ACX 6087 – Early; seed was not treated with Cruiser, severe leafhopper injury symptoms (plants very stunted), this cultivar did very well in 2011 so it should not be judged on this planting; some flowers at harvest; dark green, round to creased pods; poor yield.

BA0999 – Early; moderate to severe leafhopper injury symptoms; good set; high percentage of five sieve pods; medium green, round to oval pods; one of the better yields in the planting.

Rincon – Midseason; moderate leafhopper injury symptoms; good pod set; medium to dark green, round pods; decent yield for the planting.

Buffalo – Midseason; moderate leafhopper injury symptoms; medium to dark green, round, straight pods.

GB44 – Midseason; moderate leafhopper injury symptoms; good set; high percentage of five sieve pods; medium green, round to creased pods; decent yield for the planting.

BA1001 – Midseason; moderate leafhopper injury symptoms; high percentage of five sieve pods; medium green, round to creased pods.

HMX0105 – Midseason; moderate leafhopper injury symptoms; good pod set; medium to dark green, round to creased, straight pods; decent yield for the planting.

BSC8777 – Midseason; moderate to severe leafhopper injury symptoms; decent pod set; medium to dark green, round to creased pods; decent yield for the planting.

Hystyle – Midseason; moderate leafhopper injury symptoms; high percentage of five sieve pods; light to medium green, round to creased pods.

Cosmos – Mid to mainseason; moderate to severe leafhopper injury symptoms; lower plant population than most; high percentage of five sieve pods; medium green, round pods; seed size did not seem to move very fast over three harvests; decent yield for the planting.

BSC898 – Mid to mainseason; moderate leafhopper injury symptoms; high percentage of five sieve pods; fair amount of flowers at harvest; medium to dark green, round, uniform pods.

Huntington – Mid to mainseason; commercial standard; moderate to severe leafhopper injury; high percentage of five sieve pods; medium green, round to creased, uniform, shorter pods; decent yield for the planting.

Sierra – Mid to mainseason; moderate leafhopper injury; lots of flowers at harvest indicating possible split set; high percentage of five sieve pods; dark green, long, round pods; poor yield.

HMX0106 – Mid to mainseason; moderate leafhopper injury; lots of flowers at harvest indicating possible split set; high percentage of five sieve pods; dark green, round, long, curved pods; poor yield.

Chisholm – Mid to mainseason; moderate leafhopper injury; lots of flowers at harvest indicating possible split set; high percentage of five sieve pods; dark green, round, curved pods; poorer 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.

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.

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.

Buffalo – Crites, mid early maturity, very dark pods, 3-4 sieve, Caprice type bean.

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

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.

HMX0105 – Harris Moran, 54 days to maturity.

BSC 8777 – Brotherton, mid-season, long 6-7inch pods-sieve pods, dark color, good flavor, MS to CT, T for heat, 40% 4's, 50% 5's, 10% 6's.

Cosmos (BSC 8397) – Brotherton, Large Bean, early-midseason, very long and 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, 6-7 inch pods, R for BCMV, R for CT, T for heat.

BSC898 – Brotherton, late maturity; medium green pod color; 5-6 inch pod length; 20% 3 sieve, 60% 4 sieve and 20% 5 sieve; plant height 21 inches; R for BCMV and Anthracnose; Tol for Bean Curly Top and Bean Rust; creaseback pod shape.

Huntington – Rogers, 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.

Sierra – Harris Moran, large sieve, 56 days to maturity, upright bush; medium to high pod position; medium dark pod; 5.9 inch pod length; (10% 3 sieve, 50% 4 sieve, 40% 5 sieve; R for Bean common mosaic, IR for Halo blight and Bacterial Brown spot; holds well.

HMX0106 – Harris Moran, 57 days to maturity, upright plant habit, mid high pod position; dark green pod color, 20% three sieve, 50% four sieve, 30% five sieve; 6.7 inch pod length, HR for Bean common mosaic, Bacterial Brown Spot and Rust; IR for Halo Blight and Common Blight.

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.

Table 4. Yield Characteristics (3-4 sieve trial planted 6/8)

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)	5 sieve seed length (mm)	T/A
ACX6119	53	1174	2.8	10	6	22	62	0	38	7.4	49	77	na	4.6
	57	1269	0.6	4	5	15	21	55	24	7.5	62	83	na	6.0
	59	1329	0.6	1	2	9	24	63	13	8.6	na	103	119	8.2
FORC6V0954	57	1269	0.9	6	9	42	22	21	58	6.3	65	90	na	6.4
	59	1329	0.6	3	8	47	30	12	58	7.7	na	118	na	6.6
	61	1370	1.3	3	5	43	36	13	51	7.3	85	116	na	6.5
ACX6137	57	1269	4.2	13	14	38	34	0	66	6.8	74	101	na	4.4
	59	1329	0.9	14	9	43	26	9	65	8.9	na	93	122	4.1
	61	1370	1.9	13	11	40	27	10	63	7.8	88	102	na	6.1
GB63	55	1224	0.9	25	16	45	14	0	86	5.9	79	94	na	3.2
	57	1269	0.3	14	20	40	23	3	74	7.5	76	98	na	5.0
	59	1329	1.7	8	14	42	30	6	64	6.9	na	115	131	6.2
ACX6094	53	1174	3.7	21	21	49	9	0	91	7.0	64	77	na	4.2
	55	1224	2.3	14	23	50	13	0	87	7.8	74	91	na	4.6
	57	1269	1.9	9	17	51	21	2	77	8.3	79	95	na	5.5
Caprice (Std)	57	1269	0.3	7	10	64	20	0	80	7.0	65	81	na	5.0
	59	1329	0.5	4	5	56	35	0	65	7.4	na	95	na	5.0
	61	1370	0.7	6	7	51	36	0	64	8.2	78	101	na	5.9
C6V0958	57	1269	0.5	8	20	67	5	0	95	5.8	70	78	na	5.8
	59	1329	0.4	5	15	67	13	0	87	7.9	75	90	na	6.2
	61	1370	0.5	3	10	64	22	0	78	7.3	89	109	na	6.5
GB19	56	1245	0.1	17	24	48	10	0	90	7.2	72	88	na	3.7
	58	1297	0.2	7	21	55	18	0	82	8.0	90	112	na	4.2
	60	1354	0.5	4	9	66	21	0	79	7.4	83	113	na	3.9
Bowie	55	1224	0.1	13	24	61	2	0	98	6.7	65	74	na	4.1
	57	1269	0.0	7	14	59	20	0	80	8.2	68	83	na	5.1
	59	1329	0.0	4	8	67	21	0	79	8.1	70	98	na	5.9
BSC890	56	1245	0.3	17	23	52	8	0	92	6.4	71	96	na	4.5
	58	1297	0.6	10	21	62	7	0	93	7.9	84	90	na	4.6
	60	1354	0.5	4	14	65	17	0	83	8.1	79	108	na	5.7
Barron	56	1245	0.2	8	18	66	8	0	92	7.1	62	90	na	4.9
	58	1297	0.3	5	18	75	2	0	98	7.8	79	96	na	4.8
	60	1354	1.3	3	9	72	16	0	84	8.0	86	102	na	5.4
GB86	55	1224	0.2	22	31	47	0	0	90	6.3	54	61	na	2.5
	57	1269	0.0	9	29	59	3	0	97	6.6	65	76	na	3.9
	59	1329	0.5	10	20	62	8	0	92	7.5	72	84	na	5.4
	61	1370	0.7	8	20	69	3	0	97	6.7	82	93	na	4.9

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)	5 sieve seed length (mm)	T/A
Cabot	54	1198	0.5	20	27	51	2	0	98	6.4	57	72	na	5.0
	56	1245	0.8	6	19	67	8	0	92	6.7	66	80	na	6.2
	58	1297	0.3	3	14	76	6	0	94	6.8	87	103	na	6.8
FMGC61006	56	1245	0.4	17	34	42	7	0	93	7.7	70	90	na	4.9
	58	1297	0.6	13	43	42	3	0	97	7.5	84	106	na	5.4
	60	1354	0.4	7	25	62	5	0	95	7.9	96	112	na	6.1
PV819	55	1224	0.5	30	46	24	0	0	100	5.9	68	77	na	3.0
	57	1269	0.0	22	41	37	0	0	100	7.8	71	90	na	3.0
	59	1329	0.0	10	37	48	4	0	96	8.2	92	107	na	3.8
C6V1007	54	1198	0.3	35	41	24	0	0	100	7.1	52	68	na	3.2
	56	1245	0.2	17	32	52	0	0	100	8.1	62	71	na	4.0
	58	1297	1.2	8	27	62	3	0	97	8.1	78	90	na	4.2
Tambora	54	1198	0.5	24	36	40	0	0	100	6.6	81	97	na	3.2
(wax)	56	1245	0.8	16	30	54	0	0	100	8.2	97	109	na	3.7
Flavor Sweet	56	1245	0.1	37	42	22	0	0	100	7.5	73	83	na	3.5
	58	1297	0.2	18	46	36	0	0	100	8.3	84	102	na	4.2
	60	1354	0.3	11	37	52	0	0	100	7.8	88	115	na	4.8
Pike	55	1224	0.8	33	33	34	0	0	100	6.1	72	84	na	3.8
	57	1269	0.2	24	35	41	0	0	100	7.4	77	99	na	4.4
	59	1329	0.0	21	47	32	0	0	100	7.7	86	106	na	5.0
	61	1370	0.7	14	44	42	0	0	100	7.8	90	110	na	5.3
Dynasty	57	1269	0.5	35	38	27	0	0	100	6.4	68	97	na	4.8
	59	1329	0.0	31	32	37	0	0	100	8.6	85	114	na	6.5
ACX6096	56	1245	0.0	47	27	26	0	0	100	6.9	68	86	na	3.3
	58	1297	0.7	41	39	20	0	0	100	8.5	90	115	na	4.5
	60	1354	0.7	19	46	35	0	0	100	8.6	95	105	na	5.3
Cassidy	54	1198	0.7	35	30	35	0	0	100	7.0	66	83	na	4.0
	56	1245	0.1	32	39	29	0	0	100	8.1	68	94	na	4.6
	58	1297	0.5	27	51	23	0	0	100	7.9	85	104	na	4.9
Venice	56	1245	0.3	42	47	12	0	0	100	6.6	59	82	na	3.2
	58	1297	0.0	38	52	10	0	0	100	7.7	76	93	na	4.0
	60	1354	0.3	19	51	30	0	0	100	7.8	80	94	na	5.0
PV818	54	1198	0.6	49	32	19	0	0	100	6.6	66	85	na	2.7
	56	1245	0.8	28	42	30	0	0	100	7.8	73	97	na	3.2
	58	1297	0.2	23	47	30	0	0	100	8.0	88	111	na	3.9
Rimember	56	1245	0.4	48	41	10	0	0	100	6.9	56	85	na	3.0
	58	1297	0.2	33	52	16	0	0	100	8.3	76	83	na	3.1
	60	1354	0.2	25	53	22	0	0	100	8.4	88	94	na	3.8

See page 5 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
ACX6119	14.0	16.0	3.2	MG	5.5-6.0	R-CR	M-H	3.2
FORC6V0954	15.0	18.5	3.3	DG	5-5.75	R	M-H	3.5
ACX6137	15.0	17.0	3.5	DG	5.5-6.0	R	M-H	4
GB63	14.0	14.5	3.5	M-DG	4.5-5.0	R-O	M-H	3.5
ACX6094	14.0	13.0	4	DG	5.5-6	R	M-H	4.3
Caprice (Std)	16.0	17.0	3.8	DG	4.5-5.25	R	M-H	4
C6V0958	16.0	20.0	3.2	DG	5-6.0	R-O	M-H	4
GB19	15.5	17.5	3.5	DG	4.5-5	R-O	M-H	3.8
Bowie	16.0	17.0	3.8	DG	4.75-5.5	R	M-H	4
BSC890	17.0	16.5	3.8	VDG	5.0-6	R	M-H	4
Barron	16.5	15.0	4.5	VDG	5-5.5	R	M-H	3.8
GB86	15.0	16.0	3.7	DG	4.5-5.0	R	M-H	4.5
Cabot	15.0	16.0	3.2	DG	4-5.0	R	M-H	3.8
FMGC61006	16.0	19.0	3.5	DG	5-5.5	R	M-H	4
PV819	15.0	16.0	3.8	DG	4.75-5.5	R	M-H	4
C6V1007	15.0	16.0	4	DG	5-5.5	R	M-H	3.8
Tambora	10.5	11.0	4	wax	3.5-4	R	M-H	3.5
Flavor Sweet	16.0	16.0	4	DG	3.5-4.25	R	M-H	4
Pike	15.0	16.0	4	VDG	5-5.5	R-O	M-H	4
Dynasty	15.5	16.0	4	DG	5-5.5	R	M-H	3.8
ACX6096	13.0	15.0	3.5	VDG	4-4.5	R-O	M-H	4
Cassidy	15.0	15.0	4	VDG	5-5.5	R	M-H	4
Venice	17.0	16.5	4	DG	4.5-5	R	M-H	4.5
PV818	13.0	16.0	3.8	DG	5-5.5	R	M-H	4
Rimember	13.0	14.0	4	DG	4.5-5.5	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) Cultivars in order of sieve size – largest first.

ACX6119 – Early to midseason; large sieve bean (high percentage of five and six sieve pods); pods rough (similar to Venture); medium green, long, round to creased pods; high yield.

FORC6V0954 – Midseason; Bush Blue Lake flavor; some leafhopper injury; large sieve bean (had roughly 30% five sieve along with some six sieve pods; dark green, long, round pods; good yield although it did not change over three harvests; possibly could harvest this one young without sacrificing yield.

ACX6137 – Mid to mainseason maturity; Bush Blue Lake flavor; roughly 30% five sieve and a few six sieve pods; dark green, long, round, straight pods; good yield.

GB63 – moderate leafhopper injury; roughly 30% five sieve and a few six sieve pods; medium to dark green, shorter, round to oval pods; decent yield.

ACX6094 – Early to midseason; good plant habit; dark green, long, round, very straight pods (nice pods); roughly 20% five sieve pods; good set; leafhopper injury (no cruiser on seed); possibly could have been harvested one more time; decent yield.

Caprice – Mid to mainseason; commercial standard; good set; good plant type; roughly 35% five sieve pods; dark green, round, straight pods; decent yield.

FMGC6V0958 – Midseason; good set; dark green, uniform, long, round to oval, straight pods; roughly 20% five sieve pods; good yield.

GB19 – Midseason; Bush blue lake type flavor; dark green, round to oval, straight pods; a few flowers; roughly 20% five sieve pods; did not yield.

Bowie – Midseason; good plant habit; dark green, uniform, round, straight pods; good yield; might have been harvested one more time.

BSC890 – Midseason; good plant habit; very dark green, long, round, straight pods; some flowers at harvest; decent yield with a nice pod package.

Barron – Midseason; very upright plant habit; good plant type and good pod set; very dark green, round, straight pods; roughly 10-15% five sieve pods; decent yield.

GB86 – Mid to mainseason; decent plant habit; started harvest too soon (possibly could have harvested one more time and still had good seed size); dark green, round, very straight, uniform pods (nice pods); 5-10% five sieve pods; decent yield.

Cabot – Midseason; plants a bit recumbent; dark green, round, straight pods; 5-10% five sieve pods; heavy pod set; very good yield for this sieve size.

FMGC61006 – Early to midseason; dark green, round, straight pods; good set; roughly 5% five sieve pods; decent yield.

PV819 – Midseason; good plant habit; dark green, round, straight pods; a three – four sieve bean; some flowers; did not yield (did not look like it reset).

FMGC6V1007 – Midseason; good plant habit; dark green, round, straight pods; good set; high percentage of four sieve pods; looks like it could have been harvested one more time; so so yield.

Additional Comments (3-4 sieve) continued:

Tambora (wax) – Early; very short plants; good plant habit; short, round pods; three four sieve type; so so yield.

Flavor Sweet – Midseason; good plant habit; small leaves and a thick canopy; some flowers; dark green, short, round, straight pods; a three four sieve type; so so yield.

Pike – Mid to mainseason; good plant habit; very dark green, round to oval, long, straight pods; good set; some flowers; a three four sieve type; decent yield.

Dynasty – Midseason; good plant habit; dark green, long, round, straight pods; good set; even distribution of 2-4 sieve pods; good yield.

ACX6096 – Midseason; short, very dark green, round to oval, straight pods; three four sieve type; decent yield.

Cassidy – Midseason; good plant habit; very dark green, long, round, straight pods; good set; some flowers; high percentage of three sieve pods; decent yield.

Venice – Mid to mainseason; good plant habit; dark green, round, very straight pods; good set; high percentage of three sieve with substantial some flowers still at harvest; decent yield (possibly could have gone another day or two). This cultivar continues to be a very solid performer year after year.

PV818 – Midseason; good plant habit; dark green, long, round, straight pods; a three four sieve bean; so so yield.

Rimember – Mid to mainseason; good plant habit; dark green, round, straight pods; a few flowers; high percentage of three sieve pods; so so yield.

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

ACX6119 – *Abbott & Cobb*

FORC6V0954 – *Seminis, 56 days to maturity, 80% 1-4 sieve, 20% 5-6 sieve, 5.6 inch pod length, deep green pod color; Breeder Comments: This line is similar to Labrador without the split sets. FORC6V 0954 line exhibits wide adaptation and excellent sets under many conditions. Pss reaction is similar to Matador.*

ACX6137 – *Abbott & Cobb*

GB63 – *Pure Line Seeds, a very good yielding 3-4 sieve variety that sets the pods high on the bush. Pod color is medium dark green.*

ACX6094 – *Abbott and Cobb, midseason maturity, 3-4 sieve, 5.3 inch pod length, dark green pod color.*

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.*

EX15350958 – *Seminis, 57 days to maturity, 90% 1-4 sieve, 10% 5 sieve, 5.8 inch pod length, medium green pod color; dual purpose either processing or fresh market; NOTES: 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. Seed available for small strip trials in 2011.*

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

GB19 – Pure Line Seeds, 3-4 sieve bean with dark green pods; excellent yield, very nice, upright plant.

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.

BSC890 – Brotherton, mid season, very dark, 50% 3's, 50% 4's, resistant to BCMV

Barron – Harris Moran, upright plant habit, high pod position, 5.5 inch pod length, 30% sieve 3, 60% sieve 4, 10% sieve 5, dark green pod color, smooth and straight, excellent yield potential, HR for Bean Common Mosaic, Curly Top, Halo Blight and Bacterial Brown Spot, IR for common blight.

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.

FMGC6V1006 – Seminis, 55 days to maturity, 90% 1-4 sieve, 10% 5 sieve, medium green pod color, dualpurpose (processing or fresh); Breeder Comments: Sister line to the 0958. 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 or 2 days earlier than FMGC6V0958. Compact plant habit makes this line less prone lodging under high fertility conditions. Seed available for PCM4 trials in 2011.

PV819 – Crites, 57 day bean; 50% three sieve, 50% four sieve; Venice type bean.

C6V1007 – Seminis, 56 days to maturity, deep green pod color, 4 sieve, 5.6 inch pod length; HR for Bean Common Mosaic virus; IR for Bacterial Brown Spot and Beet Curly top.

Tambora – Crites, wax bean mid early maturity; uniform pod set and color; 60% three sieve, 40% 4 sieve.

Flavor Sweet – Harris Moran, 57 days to maturity

Pike (HMX 6108) – Harris Moran, 55 days to maturity, 20% 2 sieve, 70% 3 sieve, 10% 4 sieve, dark green pods.

Dynasty – Brotherton, large sieve, late season, dark green pods, 5-6 inch pods, 10%3'S, 50%4'S, 40%5'S, R for BCMV and AN, T for heat.

ACX6096 – Abbott & Cobb,

Cassidy(HMX6109) – 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.

Venice – Crites, A medium late variety with a very upright solid plant. The pods are very straight, 30% 2 sieve and 70% 3sieve; 12 cm long (-5.3 inch) and have nice very dark green color; HR for Psp, BCMV and Antracnose.

PV818 – Crites, 54 day bean; 45% three sieve, 55 % four sieve; good on Brown Spot; light pod color than Venice

Rimember – Crites, 57 days; very similar to Venice (see above); better heat tolerance.

Table 6. Yield Characteristics (Whole bean - planting date 6/18)

cultivar	Days to harv.	Heat units Harv.	% 2 sieve	% 3 sieve	% 4 sieve	2 sve sd length (mm)	3 sve sd length (mm)	4 sve sd length (mm)	Plts per foot	T/A
MV242	55	1282	47	32	22	56	77	87	6.6	5.3
	57	1319	26	40	34	64	89	106	6.6	5.9
	59	1362	22	36	42	70	97	104	6.9	6.5
Puncher	55	1282	49	48	4	62	79		6.2	5.8
	57	1319	38	46	16	72	82	90	7.3	6.7
	59	1362	20	48	32	64	80	102	7.4	7.0
HMX8102	57	1319	42	43	15	58	72	59	6.7	5.8
	59	1362	35	41	24	57	79	92	8.4	6.3
	61	1402	31	45	24	74	84		8.0	5.9
Borsalino	56	1301	79	21	0	45	73		6.5	3.0
(wax)	58	1341	73	20	7	53	80		7.4	4.7
	60	1380	69	24	7	66	92	102	7.9	5.6
TWSC6V1194	57	1319	85	15	0	67	81		7.2	5.8
	59	1362	72	28	0	75	91		7.5	6.2
	61	1402	71	29	0	97	104		7.4	5.9
TWS08061276	55	1282	96	4	0	62	72		7.5	4.6
	57	1319	95	5	0	72	81		8.6	5.6
	59	1362	90	10	0	81	99		9.6	6.6
Masai (std)	57	1319	98	2	0	65	77		6.1	5.3
	59	1362	95	5	0	78	99		6.4	5.8
	61	1402	100	0	0	96			7.0	5.5
HMX 9126	57	1319	97	3	0	72	84		7.5	4.8
	59	1362	96	4	0	87	96		8.3	5.3
	61	1402	95	5	0	95	102		7.4	5.4
Banga	56	1301	100	0	0	64			7.5	6.2
	58	1341	100	0	0	78			7.4	6.2
	60	1380	100	0	0	90			8.0	6.0
TWS08061159	55	1282	100	0	0	72			6.7	4.4
	57	1319	100	0	0	79			8.0	5.0
	59	1362	99	1	0	93			7.2	5.3
Granderon	56	1301	100	0	0	66			7.4	6.4
	58	1341	100	0	0	82			6.9	6.6
	60	1380	100	0	0	85			8.5	7.0
Fashion	57	1319	100	0	0	63	78		5.8	3.7
	59	1362	100	0	0	69			6.9	3.8
	61	1402	100	0	0	77			7.5	4.6

Column descriptions on page 5.

Table 7. Plant and Pod Characteristics - Whole 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
MV242	18.5	21.0	3.5	DG	4.5-5.5	R	M-H	4.5
Puncher	19.0	19.0	3.8	DG	4.25-5.0	R-O	M-H	4.5
HMX8102	18.0	20.0	4	VDG	4-5.5	R	M-H	4.5
Borsalino	18.5	19.0	3.8	GY	4-4.75	R-O	H	4
TWSC6V1194	19.0	21.0	3.5	DG	4-5.25	R-O	M-H	4
TWS08061276	17.0	18.5	4	DG	4-4.5	R	M-H	4.5
Masai (std)	20.0	20.0	3.8	DG	3.5-4.25	R	M-H	4.5
HMX 9126	189.0	19.0	3.8	VDG	3.75-4.5	R	M-H	4.5
TWS08061159	17.0	18.0	4	DG	4-4.75	R	M-H	4
Banga	17.0	19.5	3.5	DG	4.25-5.25	R	M-H	4.5
Granderon	18.0	18.5	4	DG	3.75-5.0	R-O	M-H	4.5
Fashion	18.5	16.0	4.3	MG	3.5-4	R-O	M-H	4.5

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)

: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

MNV242 – Midseason; dark green, long, very straight pods; a three four sieve bean; very good yield.

Puncher – Midseason; good plant habit; dark green, round to oval, very straight pods; a three four sieve bean just a bit smaller than 242; very good to excellent yield.

HMX8102 – Mid to mainseason; good plant habit; very dark green, round, very straight pods; a distribution of two three and four sieve beans; good yield. Although seed size increased over three harvests, yield and sieve distribution varied little. This cultivar may be one that could be harvested early without sacrificing yield.

Borsalino – Midseason; good plant habit; golden yellow, short, round to oval, straight pods located high on the plant; a mostly two sieve wax bean with some three sieve pods; decent yield.

TWSC6V1194 – Midseason; dark green, round to oval, straight pods; a mostly two sieve wax bean with some three sieve pods; Although seed size increased over three harvests, yield and sieve distribution varied little. This cultivar may be one that could be harvested early without sacrificing yield.

TWS08061276 – Midseason; good plant habit; dark green, short, round, very straight pods; a two sieve bean; good yield.

Masai – Industry standard; midseason; good plant habit; dark green, short, round, very straight pods; two sieve bean; decent yield.

HMX9126 – Midseason; good plant habit; very dark green, short, round, very straight pods; decent yield.

Banga – Midseason; dark green, long, round, very straight pods; a two sieve bean; very good yield that could be harvested early without sacrificing yield.

TWS08061159 – Early to midseason; good plant habit; dark green, round, straight pods; a one to two sieve bean; decent yield.

Granderon – Early to midseason; good plant habit; dark green, variable length, round to oval, very straight pods; a one to two sieve bean; very good yield.

Fashion – Mid to mainseason (probably could have been harvested again); very good plant habit; medium green, short, round to oval, very straight pods; a one to two sieve bean; decent yield.

Descriptions Provided by the Seed Source - Whole Beans

MV242 – Vilmorin, vigorous plant with semi-upright habit, average plant height is 18-20 inches, good distribution of pods in the upper (1/3) part of the plant; round, straight, fleshy dark green pods; pod length is 4.5-5.0 inches; good pod set concentration; high yielding; HR for *Pseudomonas savastanoi* p.v. *phaseolicola* and Bean Common Mosaic Virus, IR for *Xanthomonas axonopodis* p.v. *phaseoli*.

Puncher (MV 5004-05) – 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 Anthracnose; intermediate resistance to *Xanthomonas axonopodis* pv *phaseoli*, high yielding variety 2-3 sieve.

HMX8102 – Harris Moran, 55 days to maturity, upright plant habit, 5.3 inch pod length, 40% 2 sieve, 60% 3 sieve, excellent quality dark green pods, R for Bean common mosaic, Halo blight, Curly Top, rust and bacterial brown spt and IR for common blight diseases.

TWSC6V1194 – Seminis, 57 days, medium green pods, 2 sieve, HR for Bean Common Mosaic virus, 5.0 inch pod

TWS08061276 – Seminis, 57 days, medium green pods, two sieve, HR for Bean Common Mosaic Virus and Anthracnose; IR for Halo Blight; 4-4.5 inch pods

Masai - Rogers, - 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.

HMX 9126 – Harris Moran, 55 day, upright, dark, 12.5, 2-100%BCMV (US1)-R, Rust Races 38, 53 & 72-R, BBS-R, Halo-IR

Banga - Seminis, 55 days, whole bean type, has exhibited a lot of flexibility in harvest as a 2 or 2/3 short (10cm) pod type, Whole bean Two sieve (80% 2's). Compact plant habit, concentrated set and broad adaptation. 4 in. pods.

TWS08061159 – Seminis, 55 days, 2 sieve, 4-4.5 inch pod, medium green pods, HR for Bean Common Mosaic Virus and Anthracnose; IR for Halo Blight.

Granderon – Syngenta, one two sieve

Fashion – Syngenta, one two sieve

Wax type

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

Table 8. Yield Characteristics - Romano type (planting date 6/18)

cultivar	Days to harv.	Heat Units to Harv.	Seed Length (largest pods) (mm)	Plants per foot	T/A
Bogota	56	1301	71	6.6	4.7
	58	1341	109	7.4	4.6
	60	1380	117	7.3	4.9
Roma II (std)	56	1301	74	6.5	4.3
	58	1341	110	6.8	4.8
	60	1380	113	7.6	4.9
Navaho	56	1301	94	5.5	5.0
	58	1341	99	5.8	5.8
	60	1380	114	6.7	5.0
Roma 5210	56	1301	74	6.4	3.1
	58	1341	103	6.1	4.3
	60	1380	109	6.3	5.5
Riberia	55	1282	83	6.1	5.8
	57	1319	91	6.8	6.4
	59	1362	111	6.6	7.0
Beronia	55	1282	68	5.9	3.9
	57	1319	78	7.5	5.1
	59	1362	90	6.9	6.2
Furano	56	1301	70	5.8	4.6
	58	1341	72	5.9	5.4
	60	1380	84	6.2	6.3

A sample of 50 large pods were taken from the harvest to obtain the data for the following table.

Table 9. Romano Type Pod Characteristics

Cultivar	Plant Habit	Pod Length (in.)	Pod Thickness (mm)	Flatness rating	Unk. Blemishes	Insect Blem.	Blem. Free	Pod Color	Pod Loc.	Canopy Ht. (in)	Canopy Width (in)	Pod Width (mm)
Bogota	3.8	4.75-6.0	16 - 19	4	34	10	6	M-DG	M-H	19.5	20.5	7 to 10
Roma II	2.5	4.5-5.5	17- 19	4	22	16	12	LG	M-H	15	23	9 to 11
Navaho	3.8	4.5-5.5	17-20	4	17	23	10	MG	M-H	20	19.5	10 to 12
Roma 5210	3.5	5-6.0	17 - 20	4	18	14	18	MG	M-H	18	19.5	10 to 12
Riberia	3.5	4.5-5.5	18 - 20	4	33	11	6	DG	M-H	18	20	10 to 11
Beronia	3.8	4.75-6.0	18-22	4	20	16	14	DG	M-H	21	23.5	9 to 11
Furano	3.5	4.5-5.5	17 - 20	4	25	4	21	MG	M-H	20.5	21.5	7 to 11

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

Pod Length - The average length in inches of 10 of the largest unsnipped pods

Pod Thickness - Average measurement in millimeters of ten of the largest pods.

Flatness Rating - 5= very flat, 1=very twisted or bumpy

Unknown Blemishes - Blemishes which did not appear to be disease or insect related.

Insect Blemishes - Sting or chew marks on the pods.

Pod Color - Uncooked pod color.

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

Canopy Height - Average height in inches of the canopy at harvest.

Canopy Width - Average width in inches of the canopy at harvest.

Pod Width - The average pod width of 10 of the largest pods in millimeters.

Additional Comments Romano Type:

Bogota – Midseason; good plant habit; medium to dark green, long, pods; decent yield.

Roma II – Midseason; plant habit quite recumbent; light green pods; decent yield.

Navaho – Midseason; good plant habit; medium green pods; decent yield.

Roma 5210 – Midseason; decent plant habit; medium green pods; decent yield.

Riberia – Early to midseason; decent plant habit; dark green pods; very good yield.

Beronia – Mid to mainseason; good plant habit; long, dark green pods; could have been harvested one more time which may have increased yield; good yield.

Furano – Mid to mainseason; decent plant habit; medium green pods; texture seemed a bit better than others; could have been harvested another time; good yield.

Descriptions Provided by the Seed Source – Romano Type

Bogota – *Seminis, 53 days, dark green pods, HR for Bean common Mosaic Virus and Anthracnose; IR for Halo Blight; 5.7 inch pod length, .74 inch pod width and .28 inch pod thickness.*

Roma II – *Pure Line, standard romano type.*

Navaho – *Crites Seeds, Roma II maturity, wider pods than Poseidon, strong sturdy plant.*

Roma 5210 – *Pure Line Seeds, pods are little more narrow and darker in color than Roma II. It has good plant habit and has shown to have good yield.*

Riberia – *Seminis, medium green pods, 52 days to maturity; 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.*

Beronia – *Seminis, dark green pod color, 56 days to maturity, HR for Bean common Mosaic Virus and Anthracnose; IR for Halo Blight; Breeder Comments: Medium-late maturity, medium upright plant, low fiber, slow seed development. Less susceptible to scarring and blotching of pods. More pods/plant compared to Ebro and Tapia. Pod length 5.5 inches, width .75 inch and .3 inch thickness.*

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

Table 10. 2012Weather summary for Geneva NY.

Day	Max. Temp.	Min. Temp.	Mean Temp.	Precip.	Acc Precip.	Degree Days Base 50	acc dd units base 50
5/23/12	78	60	69	0	0	19	0
5/24/12	77	57	67	0	0	17	17
5/25/12	81	64	72.5	0	0	22.5	39.5
5/26/12	87	63	75	0	0	25	64.5
5/27/12	81	54	67.5	0	0	17.5	82
5/28/12	80	59	69.5	0	0	19.5	101.5
5/29/12	90	66	78	0.11	0.11	28	129.5
5/30/12	89	62	75.5	0.41	0.52	25.5	155
5/31/12	74	52	63	0	0.52	13	168
6/1/12	65	48	56.5	0	0.52	6.5	174.5
6/2/12	64	52	58	0.31	0.83	8	182.5
6/3/12	66	54	60	0.01	0.84	10	192.5
6/4/12	64	51	57.5	0.13	0.97	7.5	200
6/5/12	58	49	53.5	0.14	1.11	3.5	203.5
6/6/12	66	47	56.5	0	1.11	6.5	210
6/7/12	73	51	62	0.1	1.21	12	222
6/8/12	76	52	64	0	1.21	14	236
6/9/12	80	60	70	0.22	1.43	20	256
6/10/12	73	60	66.5	0.42	1.85	16.5	272.5
6/11/12	87	64	75.5	0	1.85	25.5	298
6/12/12	89	65	77	0.46	2.31	27	325
6/13/12	76	51	63.5	0.47	2.78	13.5	338.5
6/14/12	67	49	58	0	2.78	8	346.5
6/15/12	75	52	63.5	0	2.78	13.5	360
6/16/12	81	57	69	0.02	2.8	19	379
6/17/12	82	61	71.5	0	2.8	21.5	400.5
6/18/12	83	64	73.5	0	2.8	23.5	424
6/19/12	74	63	68.5	0.2	3	18.5	442.5
6/20/12	88	63	75.5	0	3	25.5	468
6/21/12	92	68	80	0	3	30	498
6/22/12	90	67	78.5	0	3	28.5	526.5
6/23/12	80	60	70	0	3	20	546.5
6/24/12	80	58	69	0	3	19	565.5
6/25/12	81	55	68	0.03	3.03	18	583.5
6/26/12	67	53	60	0.08	3.11	10	593.5
6/27/12	73	58	65.5	0	3.11	15.5	609
6/28/12	78	57	67.5	0	3.11	17.5	626.5
6/29/12	87	64	75.5	0	3.11	25.5	652
6/30/12	88	65	76.5	0	3.11	26.5	678.5
7/1/12	88	67	77.5	0	3.11	27.5	706
7/2/12	84	62	73	0	3.11	23	729
7/3/12	83	61	72	0	3.11	22	751
7/4/12	89	66	77.5	0	3.11	27.5	778.5
7/5/12	92	67	79.5	0	3.11	29.5	808
7/6/12	83	60	71.5	0	3.11	21.5	829.5
7/7/12	92	68	80	0	3.11	30	859.5

7/8/12	80	66	73	0.24	3.35	23	882.5
7/9/12	82	61	71.5	0	5.5	21.5	904
7/10/12	79	57	68	0	5.5	18	922
7/11/12	82	56	69		5.5	19	941
7/12/12	85	57	71		5.5	21	962
7/13/12	90	62	76		5.5	26	988
7/14/12	91	67	79		5.5	29	1017
7/15/12	89	72	80.5	0.01	5.51	30.5	1047.5
7/16/12	83	69	76	0.34	5.85	26	1073.5
7/17/12	86	70	78		5.85	28	1101.5
7/18/12	94	72	83		5.85	33	1134.5
7/19/12	82	60	71		5.85	21	1155.5
7/20/12	80	58	69	0.05	5.9	19	1174.5
7/21/12	68	58	63	0.12	6.02	13	1187.5
7/22/12	82	62	72		6.02	22	1209.5
7/23/12	87	66	76.5	0.16	6.18	26.5	1236
7/24/12	92	73	82.5		6.18	32.5	1268.5
7/25/12	83	59	71		6.18	21	1289.5
7/26/12	83	63	73	0.98	7.16	23	1312.5
7/27/12	81	65	73	0.52	7.68	23	1335.5
7/28/12	78	62	70	0.26	7.94	20	1355.5
7/29/12	78	63	70.5	0.12	8.06	20.5	1376
7/30/12	82	57	69.5		8.06	19.5	1395.5
7/31/12	85	63	74		8.06	24	1419.5
8/1/12	88	64	76	0.62	8.68	26	1445.5
8/2/12	81	61	71		8.68	21	1466.5
8/3/12	84	65	74.5		8.68	24.5	1491
8/4/12	87	69	78		8.68	28	1519
8/5/12	91	73	82		8.68	32	1551
8/6/12	88	61	74.5	0.11	8.79	24.5	1575.5
8/7/12	76	56	66		8.79	16	1591.5
8/8/12	84	58	71		8.79	21	1612.5
8/9/12	87	63	75		8.79	25	1637.5
8/10/12	84	65	74.5	0.21	9	24.5	1662
8/11/12	77	64	70.5	0.08	9.08	20.5	1682.5
8/12/12	79	58	68.5		9.08	18.5	1701
8/13/12	76	60	68	0.03	9.11	18	1719
8/14/12	82	63	72.5	0.02	9.13	22.5	1741.5
8/15/12	79	63	71	0.32	9.45	21	1762.5
8/16/12	77	58	67.5		9.45	17.5	1780
8/17/12	82	63	72.5		9.45	22.5	1802.5
8/18/12	76	54	65		9.45	15	1817.5
8/19/12	72	50	61		9.45	11	1828.5
8/20/12	77	50	63.5		9.45	13.5	1842
8/21/12	76	51	63.5	0.08	9.53	13.5	1855.5
8/22/12	77	54	65.5		9.53	15.5	1871
8/23/12	81	55	68		9.53	18	1889
8/24/12	83	57	70		9.53	20	1909
8/25/12	87	60	73.5		9.53	23.5	1932.5