

NEW YORK STATE 2021 PROCESSING SNAP BEAN CULTIVAR TRIAL REPORT (Large Sieve – 3/4 Sieve – Whole/Extra-Fine)

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PROCEDURE AND MATERIALS:

Location: Cornell AgriTech (Research North) – Geneva NY

Soil Type: Honeoye silt loam

Planting Dates: Large Sieve – 6/11; 3-4 sieve beans – 6/24; Whole/Fine – 7/27

Row Width: 30 inches, Row length: 30 ft.

In-row Spacing: 1 5/8 inches (6-8 plants/ft.)

Fertilizer: 300#/A of 15-5-10 with Zn and Mn

Tillage: Conventional

Herbicide: Dual post plant

Planter – Two Row Monosem Vacuum Planter

Plot Size: 1 row – 4 replications (Replicated entries)

Objectives and Season Summary:

The objective of this trial was to compare various 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 field day was held for processors and seed companies to view varieties in the field.

For replicated 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 for later evaluation by the processors and seed company representatives at our programs annual cutting event.

The large sieve bean trial was planted on June 11th with relatively good field conditions. Emergence was satisfactory and June weather was mild. In July we experienced consistent heavy rains that left standing water on the east side of the field for several weeks which ended up drowning most of the 1st rep. Therefore, we harvested reps 2, 3, and 4. The 3-4 sieve trial was planted on June 24th and the field conditions were also satisfactory. The intense July rains likely limited expansive root development and kept root systems shallow. During our harvest window in August, we experienced a few dry spells, and the beans dried down faster than expected. The whole/extra-fine bean trial was planted later than anticipated because of extremely wet field conditions on July 27th. The whole/extra-fine bean trial received more evenly dispersed rainfall over the growing season than the other trials. The whole bean trial was slow to mature because of cooler September temperatures and less sunlight. See the weather insert at the end of the summary for a breakdown of temperatures and precipitation over the growing season.

A socially distanced, vegetable “cutting”, was held on November 4th, where frozen peas, snap beans, and sweet corn were put on display for processors and seed companies to evaluate. Large and 3-4 sieve snap beans were canned and also put on display. Our vegetable cutting is the final step of our program’s evaluation. We evaluate the horticultural characteristics in the field and in raw products, but our vegetable cutting takes us all the way to quality evaluation on the plate.

Table 1: Processing Snap Bean Cultivar List

Large Sieve	
RR2006	Pure Line
Bridger	Harris Moran
GVS B17	GVS
HMC016203	Harris Moran
PLS524	Pure Line
GVS B59	GVS
PV857	Crites
Macallan	Syngenta
BA1001	Seminis
SVGV2089	Seminis
Huntington	Syngenta
RR2015	Pure Line

Whole	
Flavor Sweet	Harris Moran
Rimember	Crites
HMX0186401	Harris Moran
Contada	Pure Line

Extra-Fine	
Astute	Seminis
SV1286GW	Seminis
Cavani	Crites
Mustang	Crites

3-4 Sieve	
Cabot	Harris Moran
HMX0175722	Harris Moran
HMX164423	Harris Moran
HMX0175756	Harris Moran
PV857	Crites
SVGF2091	Seminis
Jaguar	Crites
HMC017711	Harris Moran
GVS WB1	GVS
Affirmed	Seminis
Wav74	Pure Line
BEX069	Brotherton
PV958	Crites
SVGF2074	Seminis
World Cup	Brotherton
BEX174	Brotherton
Sybaris	Seminis
PV907	Crites
BEX100	Brotherton
Jackson	Brotherton
SB4810	Syngenta

Column Descriptions for Tables 2, 4, 6, and 7.

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

Seed Source –Brotherton=Brotherton Seed Co.; Crites=Crites Moscow Growers; HM=Harris Moran; Pure Line Seeds; Syngenta=Syngenta Seeds; Seminis=Seminis Vegetable Seeds-Processor Division; Vilmorin=Vilmorin North America vegetable seeds; GVS=Gallatin Valley Seed Company.

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.

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 6-8 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 2. Yield Characteristics (Large Sieve Trial, planted 6/11/21)

Cultivar	Days to Harv.	DD to Harvest*	% 2 Sieve	% 3 Sieve	% 4 Sieve	% 5 Sieve	% 6 Sieve	% 2-4 Sieve	4 Sieve Sd. Length (mm)	5 Sieve Sd. Length (mm)	Tons per Acre	Plants per foot
RR2006	60	1208	7	11	61	19	2	79	96	111	4.9	6.2
RR2006	62	1269	7	10	52	28	3	69	111	112	5.5	6.3
Bridger	60	1208	17	18	50	13	2	85	95	104	4.2	6.1
Bridger	62	1269	6	10	53	27	4	69	111	130	6.0	6.9
GVSb17	60	1208	12	18	49	19	2	79	77	99	4.6	6.4
GVSb17	62	1269	9	14	62	15	0	85	95	110	5.0	7.0
HMC016203	60	1208	11	14	44	27	4	69	85	99	4.5	6.3
HMC016203	62	1269	9	10	42	32	7	61	94	104	4.7	6.9
PLS524	61	1237	9	30	50	11	0	89	86	101	5.8	7.6
PLS524	63	1299	7	9	66	18	0	82	110	116	5.6	7.0
GVSb59	61	1237	14	18	55	12	1	87	92	106	4.8	7.1
GVSb59	63	1299	14	18	56	12	0	88	99	111	5.0	6.5
PV857	60	1208	32	28	36	4	0	96	76	x	3.6	7.0
PV857	63	1299	15	22	55	8	0	92	93	110	5.2	6.9
Macallan	63	1299	11	17	58	14	0	86	95	111	5.2	7.0
BA1001	63	1299	9	14	59	18	0	82	98	109	4.9	7.0
SVGV2089	61	1237	14	22	56	8	0	92	94	91	4.0	6.9
SVGV2089	63	1299	8	15	63	12	2	86	97	109	4.4	6.7
Huntington	63	1299	17	19	52	10	2	88	89	109	5.3	7.0
Huntington	64	1327	12	12	60	14	2	84	104	118	5.6	7.0
RR2015	61	1237	16	24	49	11	0	89	83	91	4.2	7.2
RR2015	63	1299	8	14	60	17	1	82	94	102	5.1	7.5
RR2015	64	1327	8	15	61	14	2	84	97	112	4.7	6.1

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

Cultivar	Plt Ht. (in.)	Plt. Width (in.)	Plant Habit Rating	Pod Color (raw) Rating	Unsnipped Pod Length (in.)	Pod Straight . Rating	Pod Location Rating
RR2006	20	19	3.5	M	4.5-5.25	3.0	L-H
Bridger	21	18	4.0	L	4.75-6.0	3.0	M-H
GVS17	18	19	3.0	L	4.75-6.0	3.0	M-H
HMC016203	17	17	4.0	L-M	5.0-6.0	3.5	M-H
PLS524	21	21	3.0	L-M	5.0-5.5	4.0	L-H
GVS59	21	21	3.0	L-M	5.0-6.0	3.0	M-H
PV857	17	18	3.0	L-M	5.0-6.0	3.5	L-H
Macallan	22	20	4.0	L	5.0-6.0	3.5	L-H
BA1001	21	19	3.5	L-M	5.5-7.0	3.0	L-H
SVG2089	22	19	3.5	L-M	5.5-7.0	3.5	M-H
Huntington	19	18	3.5	L	5.0-5.75	3.0	L-H
RR2015	21	19	3.0	L	5.0-6.0	3.5	L-H

Column Descriptions for Tables 3, 5, and 8:

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

Average Canopy Width – The average plant width at harvest in inches.

Pod Color Rating – DG = dark green, MG = medium green, LG = light green (raw color recorded), Y=yellow

Raw Pod Length – The average length of the pods before they are snipped.

Pod Location Rating – H = pods high on plant, M = pods located at center of plant, L = pods touching the ground.

Pod Straightness Rating – 5=very straight, 3=acceptable, 1=very curved or irregular

Plant Habit Rating – 5=Very erect plant, 3=acceptable, 1=totally recumbent

Snap Bean Descriptions Provided by the Seed Source (Large Beans)

RR2006 – Pure Line, 54 days to maturity.

Bridger – Harris Moran, 52 days to maturity. 5% 3 sieve, 55 % four sieve, 40% five sieve, good quality pod interiors, good yields, medium dark green, uniform, medium long, straight pods, HR for BCMV, Curly Top and Bacterial Brown spot; IR for Halo Blight.

GVS17 – Gallatin Valley Seed Co., 54-55 days maturity, 18% 3 sieve, 32% 4 sieve and 50% 5 sieve.

HMC016203 – Harris Moran, 55 days to maturity. 10% 3 sieve, 45% 4 sieve and 45% 5 sieve. Medium to dark green pods(5.8in) with a dense sturdy flesh for processing. Good disease package, (HR for bean common mosaic, HR for curly top, HR for halo blight, and IR for Bacterial brown spot).

PLS524 – Pure Line, 56 days to maturity. 20% 3 sieve, 55% 4 sieve and 15% 5 sieve.

GVS59 – Gallatin Valley Seed Co., 56-57 days to maturity, 20% 3 sieve, 32% 4 sieve, and 48% 5 sieve.

PV 857 – Crites, mid early (54 days) 4-5 sieve with pods sitting high on the plant. Erect plant habit. Very good heat tolerance and concentrated setting. 80% 4 sv, 20% 5 sv, 5.5 in pods, dark green. HR for BCMV/Cl; IR for Pss/Ua

Macallan – Syngenta, Huntington type, 57 days. Upright bush with straight pods and high yield. Average sieve size 5.8 with a light to medium green pod color. Responds well to high inputs. HR - BCMV and IR – Pss.

BA1001 – Seminis, 58 days to maturity, 20% three sieve, 30% four sieve, 50% five sieve, 5.9 inch pod length, fresh color 7; blanched color 4; plant type 5, 90% clean yield, 60% easy harvest wo ped., 5% clusters, 0% strings; S for Psp2, Xap, CO2, Ua38, Ua90, BCTV, CYVV and BGYMV; R for Ae, BCMV.

SVGV2089 – Seminis, 56 days to maturity. 20% 3 sieve, 40% 4 sieve and 40% 5 sieve.

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.

RR2015 – Pure Line, 56 days to maturity. 20% 3 sieve, 55% 4 sieve and 15% 5 sieve.

Table 4. Yield Characteristics (3-4 Sieve Trial, planted 6/24/21)

Cultivar	Days to Harv.	DD to Harvest*	% 2 Sieve	% 3 Sieve	% 4 Sieve	% 5 Sieve	% 6 Sieve	% 2-4 Sieve	3 Sieve Sd. Length (mm)	4 Sieve Sd. Length (mm)	Tons per Acre	Plants per foot
Cabot	61	1325	18	34	46	2	0	98	90	106	5.9	7.4
HMX0175722	58	1247	8	9	71	12	0	88	68	91	5.7	8.0
HMX0175722	61	1325	6	10	65	19	0	81	86	101	5.3	7.6
HMX164423	61	1325	19	35	45	1	0	99	86	95	5.4	8.2
HMX164423	64	1409	8	23	65	4	0	96	95	102	4.6	7.3
HMX0175756	61	1325	9	18	60	13	0	87	78	99	6.1	8.4
HMX0175756	64	1409	6	15	72	6	1	93	102	110	4.4	7.6
PV857	58	1247	20	26	50	4	0	96	70	81	4.7	8.4
PV857	61	1325	10	14	63	13	0	87	83	94	4.8	7.4
SVGF2091	62	1352	20	15	64	1	0	99	100	110	4.9	7.8
SVGF2091	64	1409	4	15	79	2	0	98	116	130	4.5	7.2
Jaguar	62	1352	15	40	44	1	0	99	93	106	4.6	8.0
Jaguar	64	1409	7	34	57	2	0	98	108	117	4.7	7.5
HMC017711	61	1325	16	26	56	2	0	98	84	89	4.6	8.0
HMC017711	62	1352	9	20	65	6	0	94	84	101	4.4	7.1
HMC017711	64	1409	5	10	70	15	0	85	93	108	4.7	7.3
GVS WB1	61	1325	16	33	50	1	0	99	82	95	5.0	7.7
GVS WB1	62	1352	14	35	51	0	0	100	91	94	5.1	8.4
GVS WB1	64	1409	10	36	51	3	0	97	96	111	4.4	7.6
Affirmed	62	1352	13	30	53	4	0	96	85	93	5.8	8.1
Affirmed	64	1409	12	28	55	5	0	95	91	99	4.4	6.4
Wav74	62	1352	45	48	6	1	0	99	91	92	4.8	8.4
Wav74	64	1409	33	53	14	0	0	100	98	103	4.5	8.5

Table 4. Yield Characteristics (3-4 Sieve Trial, planted 6/24/21) Cont.

Cultivar	Days to Harv.	DD to Harvest*	% 2 Sieve	% 3 Sieve	% 4 Sieve	% 5 Sieve	% 6 Sieve	% 2-4 Sieve	3 Sieve Sd. Length (mm)	4 Sieve Sd. Length (mm)	Tons per Acre	Plants per foot
BEX069	63	1380	3	15	62	20	0	80	100	126	4.7	6.9
BEX069	68	1505	5	14	66	15	0	85	113	133	4.4	7.9
PV958	63	1380	8	23	61	8	0	92	93	104	5.3	8.4
PV958	65	1431	4	19	49	28	0	72	109	128	5.0	8.0
SVGF2074	63	1380	9	20	68	2	1	97	88	103	4.9	6.6
SVGF2074	64	1409	6	15	78	1	0	99	106	116	5.2	7.5
World Cup	63	1380	16	11	51	21	1	78	80	103	5.1	7.5
World Cup	65	1431	3	8	60	26	3	71	92	115	4.8	7.8
BEX174	63	1380	12	31	52	5	0	95	85	100	4.8	7.0
BEX174	65	1431	6	17	68	9	0	91	94	114	4.7	6.4
Sybaris	63	1380	10	27	60	3	0	97	86	98	5.2	7.6
Sybaris	64	1409	6	22	70	2	0	98	106	116	4.8	7.4
PV907	62	1352	8	14	56	22	0	78	75	91	4.8	7.8
PV907	63	1380	14	19	50	17	0	83	73	89	4.6	7.3
PV907	64	1409	4	13	57	26	0	74	103	116	3.8	7.3
BEX100	64	1409	19	39	41	1	0	99	103	111	5.4	7.9
BEX100	68	1505	20	42	38	0	0	100	118	127	5.0	8.0
Jackson	64	1409	15	34	45	6	0	94	87	103	4.9	7.7
Jackson	68	1505	8	24	47	19	2	79	85	106	4.2	7.7
SB4810	64	1409	5	10	56	26	3	71	80	93	5.6	7.4
SB4810	68	1505	6	11	56	26	1	73	93	110	3.8	7.5

*Degree Days base 50F, See Page 4 for Column Descriptions

Table 5: Plant and Pod Characteristics (3-4 Sieve Beans)

Cultivar	Plt Ht. (in.)	Plt. Width (in.)	Plant Habit Rating	Pod Color (raw) Rating	Unsnipped Pod Length (in.)	Pod Straight. Rating	Pod Shape Rating	Pod Location Rating
Cabot	16	16	4.0	M	4.0-5.0	3.0	R-O	M-H
HMX0175722	17	16	4.0	L	4.5-5.0	3.5	R	M-H
HMX164423	16	16	4.0	L-M	4.5-5.0	3.5	R	M-H
HMX0175756	19	18	3.5	L-M	4.5-5.25	4.0	R	M-H
PV857	18	17	4.0	L	4.5-5.25	4.0	R	M-H
SVGF2091	19	18	4.0	L-M	4.5-5.5	3.5	R-O	L-H
Jaguar	16	16	4.0	M	4.5-5.5	4.0	R	L-H
HMC017711	19	18	4.0	L	4.5-5.0	3.5	R-O	L-H
GVSWB1	17	17	3.0	Y	4.5-5.0	3.5	R-O	M-H
Affirmed	16	17	4.0	L-M	4.5-5.5	3.0	R	M-H
Wav74	16	16	4.0	L	4.0-5.0	3.5	R-O	L-H
BEX069	15	16	3.5	L-M	4.5-5.25	3.5	R-O	M-H
PV958	17	16	4.0	M	4.5-5.5	4.0	R	H
SVGF2074	18	17	3.5	M	4.5-5.0	3.5	R-O	M-H
World Cup	16	17	3.5	M-D	4.5-5.5	4.0	R-O	M-H
BEX174	18	18	3.0	M-D	5.5-6.0	3.5	R-O	M-H
Sybaris	16	17	4.0	M-D	4.5-5.5	3.5	R-O	M-H
PV907	18	18	3.0	L	5.0-6.0	3.5	R-O	L-H
BEX100	18	19	3.0	L-M	4.5-5.25	3.5	R-O	H
Jackson	16	17	3.5	M-D	5.0-5.5	3.0	R-O	M-H
SB4810	19	17	3.5	L-M	5.0-5.5	3.5	R-O	M-H

*See Page 6 for Column Descriptions

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

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, 65% four sieve, 10% 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.

HMx0175722 – Harris Moran, 54 days to maturity. 10% 3 sieve, 65% 4 sieve and 25% 5 sieve.. Medium to light green pods (5.5in), with upright structure and strong yields. Dense pods good for processing with a good disease package (*HR for bean common mosaic, HR for curly top, HR for halo blight, and IR for Bacterial brown spot*).

HMx164423 – Harris Moran, 54 days, 30% 3 sieve, 60% 4 sieve, and 10% 5 sieve. Upright habit with strong yields across a range of growing conditions. Dark green pod. HR for bean common mosaic, HR for Anthracnose, HR for curly top, HR for halo blight, and IR for Bacterial brown spot.

HMx 0175756 (Joliet) – Harris Moran, green bush type, early maturity (54 days), upright plant habit, mid pod position, 5.5 inch pods, medium dark green pod color, 10% 3 sieve, 70% 4 sieve, 20% 5 sieve. HR for bean common mosaic, HR for curly top, HR for halo blight, and IR for Bacterial brown spot.

PV 857 – Crites, mid early (54 days) 4-5 sieve with pods sitting high on the plant. Erect plant habit. Very good heat tolerance and concentrated setting. 80% 4 sv, 20% 5 sv, 5.5 in pods, dark green. HR for BCMV/Cl; IR for Pss/Ua

SVGF2091 – Seminis, 56 days, round green type. 15% 3 sieve, 65% 4 sieve, and 20% 5 sieve.

Jaguar (PV-905) – Crites, 57 days to maturity, very erect plant habit. 5% 3 sieve, 90% 4 sieve and 5% 5 sieve, dark green, 6 inch pods. HR for BCMV and CL; IR for Rust. Pods pick very easy and clean.

HMC017711 (Peary) – Harris Moran, 55 days, 25 % 3 sieve, 60% 4 sieve, and 15% 5 sieve. Medium to dark green pod (5.25in) with dense sturdy flesh. Reliable yields even with virus presence. HR for bean common mosaic, HR for curly top, HR for halo blight, and IR for Bacterial brown spot.

GVSWB1 – Gallatin Valley Seed Co., 56 days to maturity, wax type. 30% 3 sieve, 42% 4 sieve, and 28% 5 sieve.

Affirmed – Seminis, 56 days, (10% 2 sv, 30% 3 sv, 50% 4 sv and 10% 5sv), 5.8 inch pod length, 100% clean yield, 55% without ped., 1% clusters, 0% strings, S for Xap, Ua38, Ua90, Ae, CYVV and BGYMV; R for Psp2, CO2, BCTV and BCMV; improved plant, pod quality and product homogeneity.

Wav74 – Pure Line, 56 days to maturity. 20% 2 sieve, 40% 3 sieve, and 40% 4 sieve.

BEX069 – Brotherton, sieve size 4-5, and beans are 13.9-16 centimeters in length.

PV958 – Crites, 58 days to maturity. 20% 3 sieve, 70% 4 sieve, and 10% 5 sieve.

SVGF2074 – Seminis, 57 days to maturity. 20% 3 sieve, 65% 4 sieve, and 15% 5 sieve.

World Cup – Brotherton, 4-5 sieve size, and beans are 14.6-15.2 centimeters in length.

BEX174 – Brotherton, 4-5 sieve size, and beans are 13.5-15.3 centimeters in length.

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

Sybaris – *Seminis*, 57 days to maturity, 10% 2sv, 30% 3 sv, 50% 4 sv, 10% 5sv; 5.7 inch pod length, fresh color – 3, Blanched color – 3, plant type 5; 100% clean yield, 50% easy harvest wo ped., 1% clusters, 5% strings; S for Psp2, Xap, CO2, Ae, CYVV and BGYMV; IR for Ua90; R for Ua38, BCTV and BCMV.

PV907 – *Crites*, 57 days to maturity. 80% 4 sieve and 20% 5 sieve.

BEX100 – *Brotherton*, 3-5 sieve size, and beans are 13.2-14.2 centimeters in length.

Jackson – *Brotherton*, 4-5 sieve size, and beans are 13.4-15.3 centimeters in length.

SB4810 – *Syngenta*, 3-4 sieve size.

Table 6. Yield Characteristics (Whole/Extra-Fine Trial, planted 7/27/21)

Cultivar	Days to Harv.	HU to Harvest	% 1 Sieve	% 2 Sieve	% 3 Sieve	% 4 Sieve	% 2-4 Sieve	2 Sieve Sd. Length (mm)	3 Sieve Sd. Length (mm)	Tons per Acre	Plants per foot
Astute	63	1231	100	0	0	0	100	54 [^]	x	2.3	8.8
Astute	65	1241	100	0	0	0	100	53 [^]	x	2.4	8.5
SV1286GW	63	1231	30	58	12	0	100	71	x	3.2	8
SV1286GW	65	1241	0	89	11	0	100	59	76	3.1	8.3
Cavani	62	1222	38	48	14	0	100	51	65	2.5	9
Cavani	64	1238	37	56	7	0	100	65	x	2.3	8.2
Cavani	66	1245	31	52	17	0	100	67	x	2.9	8.1
Mustang	64	1238	41	57	2	0	100	67	x	3.3	8.4
Mustang	66	1245	58	40	2	0	100	69	x	3.3	8.2
Flavor Sweet	63	1231	0	46	37	17	100	68	77	3.3	8.2
Flavor Sweet	65	1241	0	50	38	12	100	64	76	3.4	8.1
Rimember	63	1231	0	64	31	5	100	56	66	3.1	7.9
Rimember	65	1241	0	66	31	3	100	60	71	3.9	8.1
HMX0186401	62	1222	0	69	31	0	100	55	70	2.5	8.3
HMX0186401	64	1238	0	54	34	12	100	56	69	3.5	8.1
HMX0186401	66	1245	0	48	35	17	100	66	79	3.6	7.9
Contada	64	1238	0	76	21	3	100	59	78	2.4	8.2
Contada	66	1245	0	84	15	1	100	56	76	2.2	8.1

[^] 1 sieve seed length (mm)

*See Page 4 for Column Descriptions

Table 8: Plant and Pod Characteristics (Whole/Extra-Fine Snap Beans)

Cultivar	Plt Ht. (in.)	Plt. Width (in.)	Plant Habit Rating	Pod Color (raw) Rating	Unsnipped Pod Length (in.)	Pod Straight. Rating	Pod Shape Rating	Pod Location Rating
Astute	13	13	4.0	M	4.0-5.0	4.5	R-O	M-H
SV1286GW	12	13	4.0	M	4.0-4.75	4.0	R	M-H
Cavani	14	13	4.0	M	4.0-5.0	3.5	R-O	M-H
Mustang	12	11	4.5	M	4.25-5.0	3.5	R-O	M-H
Flavor Sweet	13	14	3.5	M	3.0-3.75	4.0	R	M-H
Rimember	11	10	4.5	M-D	4.0-5.0	3.5	R-O	M-H
HMX0186401	12	13	4.0	M	3.75-4.25	3.5	R	M-H
Contada	11	11	4.5	M	4.5-5.0	3.5	R	M-H

Column Descriptions:

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

Average Canopy Width – The average plant width at harvest in inches.

Pod Color Rating – DG = dark green, MG = medium green, LG = light green (raw color recorded), Y=yellow

Raw Pod Length – The average length of the pods before they are snapped.

Pod Location Rating – H = pods high on plant, M = pods located at center of plant, L = pods touching the ground.

Pod Straightness Rating – 5=very straight, 3=acceptable, 1=very curved or irregular

Plant Habit Rating – 5=Very erect plant, 3=acceptable, 1=totally recumbent

Descriptions Provided by the Seed Source - Whole Beans/ Extra Fine

Astute – Seminis, 55 days, (70% 1 sv, 30% 2 sv), 4.8 inch pod length, fresh color – 6; blanched color – 4; 100% clean yield; 65% without ped., 1% clusters, 0 % strings; S for Xap, Ua90, Ae, CYVV and BGYMV; R for Ua38, Psp2, CO2, BCTV and BCMV; improved plant type, more suitable for clay soils.

SV1286GW – Seminis, 57 days, (70% 2 sv, 30% 3 sv), 4.8 inch pod length, fresh color – 4; blanched color – 5, plant type 2; 100% clean yield, 65% without ped., 1% clusters, 0% strings, S for Xap, Ua90, Ae, CYVV and BGYMV; R for Psp2, Ua38, CO2 and BCMV; improved plant type, very flexible, smaller sieve size than Cadillac.

Cavani – Crites, 56 days to maturity. 90% 2 sieve and 10% 3 sieve.

Mustang – Crites, 58 days to maturity. 100% 2 sieve beans.

Flavor Sweet – Harris Moran, 55 days to maturity, upright plant, strong emergence vigor, pod position – mid high, 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.

Rimember – Crites, 56 days to maturity. 90% 3 sieve and 10% 4 sieve.

HMX0186401 – Harris Moran, 56 days to maturity. 85% 3 sieve and 15% 4 sieve.

Contada – Pure Line, 58 days to maturity. 40% 2 sieve, 55% 3 sieve and 5% 4 sieve.

Table 9: Weather Summer for Research North Farm, Geneva NY

Day	Avg. Temp (F)	Min Temp. (F)	Max Temp. (F)	Precipitation (in.)	Monthly Acc. Precip. (F)	Degree Days (base 50F)	Acc. DD (base 50F)
6/11/21	68.2	54.7	82.2	0.00	0.00	18	18
6/12/21	68.1	60.6	79.2	0.00	0.00	19	37
6/13/21	71.8	56.5	83.8	0.00	0.00	20	57
6/14/21	67.5	59.7	74.5	0.49	0.49	17	74
6/15/21	62.6	59.2	70.3	0.01	0.50	15	89
6/16/21	60.6	51.8	68.9	0.01	0.51	10	99
6/17/21	63.9	52.7	75.4	0.00	0.51	14	113
6/18/21	68.3	54.9	79.2	0.01	0.52	18	131
6/19/21	74.7	63.7	85.5	0.20	0.72	25	156
6/20/21	71.2	58.1	84.2	0.00	0.72	21	177
6/21/21	75.0	66.4	89.1	0.81	1.53	27	204
6/22/21	58.2	52.7	64.4	0.00	1.53	7	211
6/23/21	60.6	48.6	73.9	0.00	1.53	11	222
6/24/21	67.4	52.9	78.4	0.00	1.53	16	238
6/25/21	72.2	61.9	82.9	0.00	1.53	22	260
6/26/21	77.3	68.2	88.9	0.00	1.53	29	289
6/27/21	81.9	71.6	92.3	0.00	1.53	32	321
6/28/21	83.8	75.7	93.0	0.00	1.53	34	355
6/29/21	79.8	70.5	95.4	0.24	1.77	33	388
6/30/21	76.3	70.7	83.5	0.12	1.89	27	415
June Totals			>	2.20 inches		415 DD	

Table 9: Weather Summer for Research North Farm, Geneva NY

Day	Avg. Temp (F)	Min Temp. (F)	Max Temp. (F)	Precipitation (in.)	Monthly Acc. Precip. (F)	Degree Days (base 50F)	Acc. DD (base 50F)
7/1/21	70.5	64.8	75.0	0.00	0.00	19	434
7/2/21	63.5	58.8	70.3	0.80	0.80	15	449
7/3/21	65.1	60.3	72.5	0.07	0.87	16	465
7/4/21	67.0	59.2	74.3	0.00	0.87	16	481
7/5/21	72.2	55.0	89.1	0.00	0.87	22	503
7/6/21	79.8	73.6	85.6	0.00	0.87	30	533
7/7/21	70.3	61.0	76.6	0.84	1.71	19	552
7/8/21	68.5	61.2	77.5	0.38	2.09	20	572
7/9/21	69.0	63.9	77.9	0.40	2.49	21	593
7/10/21	67.2	61.5	74.1	0.01	2.50	17	610
7/11/21	64.5	59.4	70.9	0.28	2.78	15	625
7/12/21	67.0	61.7	74.5	0.39	3.17	18	643
7/13/21	75.5	68.0	85.3	0.13	3.30	27	670
7/14/21	73.4	68.5	82.8	0.19	3.49	26	696
7/15/21	76.3	64.2	87.1	0.00	3.49	26	722
7/16/21	72.0	66.0	76.5	0.00	3.49	21	743
7/17/21	64.0	61.7	67.3	1.62	5.11	15	758
7/18/21	67.5	61.3	75.9	0.08	5.19	19	777
7/19/21	73.0	61.5	83.1	0.00	5.19	22	799
7/20/21	74.5	64.6	85.8	0.05	5.24	25	824
7/21/21	65.7	61.7	72.9	0.00	5.24	17	841
7/22/21	66.5	58.6	74.0	0.00	5.24	16	857
7/23/21	68.5	59.9	77.5	0.00	5.24	18	875
7/24/21	68.7	54.7	78.8	0.00	5.24	17	892
7/25/21	75.9	67.5	83.8	0.26	5.50	26	918
7/26/21	75.4	64.0	85.3	0.00	5.50	25	943
7/27/21	71.6	65.1	85.3	0.05	5.55	25	968
7/28/21	66.3	58.3	75.2	0.00	5.55	16	984
7/29/21	65.3	56.3	77.0	0.04	5.59	17	1001
7/30/21	65.0	57.2	68.4	0.00	5.59	13	1014
7/31/21	63.3	51.8	73.4	0.00	5.59	13	1027
July Totals			>	5.59 inches		612 DD	

Table 9: Weather Summer for Research North Farm, Geneva NY

Day	Avg. Temp (F)	Min Temp. (F)	Max Temp. (F)	Precipitation (in.)	Monthly Acc. Precip. (F)	Degree Days (base 50F)	Acc. DD (base 50F)
8/1/21	62.9	58.1	67.8	0.37	0.37	13	1040
8/2/21	64.5	55.2	72.9	0.03	0.40	14	1054
8/3/21	65.5	50.9	79.2	0.00	0.40	15	1069
8/4/21	68.1	53.6	80.2	0.00	0.40	17	1086
8/5/21	70.0	55.8	83.7	0.00	0.40	20	1106
8/6/21	73.4	57.9	87.1	0.00	0.40	23	1129
8/7/21	74.9	64.8	85.5	0.21	0.61	25	1154
8/8/21	73.4	64.2	85.8	0.01	0.62	25	1179
8/9/21	77.9	70.3	87.8	0.00	0.62	29	1208
8/10/21	78.6	71.8	85.5	0.00	0.62	29	1237
8/11/21	81.1	72.7	91.6	0.00	0.62	32	1269
8/12/21	79.2	71.8	88.2	0.00	0.62	30	1299
8/13/21	78.2	69.3	87.4	0.00	0.62	28	1327
8/14/21	69.0	58.1	76.5	0.13	0.75	17	1344
8/15/21	65.3	57.0	76.5	0.00	0.75	16	1360
8/16/21	66.4	53.4	79.5	0.00	0.75	16	1376
8/17/21	72.5	67.6	81.5	0.88	1.63	25	1401
8/18/21	71.9	70.5	73.9	1.52	3.15	22	1423
8/19/21	72.6	69.8	79.5	1.36	4.51	25	1448
8/20/21	75.1	68.2	82.6	0.00	4.51	25	1473
8/21/21	73.6	69.6	81.9	0.31	4.82	26	1499
8/22/21	74.7	66.4	83.7	0.01	4.83	25	1524
8/23/21	76.2	71.6	82.4	0.00	4.83	27	1551
8/24/21	76.2	68.9	85.5	0.00	4.83	27	1578
8/25/21	78.6	66.6	89.6	0.00	4.83	28	1606
8/26/21	78.2	71.2	86.0	0.00	4.83	29	1635
8/27/21	73.2	67.1	77.2	0.00	4.83	22	1657
8/28/21	73.3	62.2	84.2	0.00	4.83	23	1680
8/29/21	74.8	70.0	82.4	0.15	4.98	26	1706
8/30/21	74.6	68.9	81.5	0.00	4.98	25	1731
8/31/21	70.6	64.0	79.5	0.00	4.98	22	1753
August Totals			>	4.98 inches		726 DD	

Table 9: Weather Summer for Research North Farm, Geneva NY

Day	Avg. Temp (F)	Min Temp. (F)	Max Temp. (F)	Precipitation (in.)	Monthly Acc. Precip. (F)	Degree Days (base 50F)	Acc. DD (base 50F)
9/1/21	63.7	58.5	66.9	0.00	0.00	13	1766
9/2/21	61.7	55.8	68.5	0.00	0.00	12	1778
9/3/21	61.2	54.3	68.4	0.00	0.00	11	1789
9/4/21	65.5	54.7	76.1	0.00	0.00	16	1805
9/5/21	67.9	62.8	76.5	0.02	0.02	20	1825
9/6/21	64.9	60.1	72.5	0.07	0.09	16	1841
9/7/21	66.8	54.5	76.5	0.00	0.09	16	1857
9/8/21	67.5	62.2	72.1	0.07	0.16	17	1874
9/9/21	64.2	57.7	73.9	0.01	0.17	16	1890
9/10/21	62.1	55.4	71.2	0.00	0.17	13	1903
9/11/21	66.7	57.2	78.8	0.00	0.17	18	1921
9/12/21	70.8	64.0	76.1	0.00	0.17	20	1941
9/13/21	65.6	59.5	74.3	0.26	0.43	17	1958
9/14/21	70.9	58.8	84.9	0.00	0.43	22	1980
9/15/21	67.2	60.1	74.3	0.54	0.97	17	1997
9/16/21	63.8	53.8	73.9	0.00	0.97	14	2011
9/17/21	70.0	59.7	78.8	0.00	0.97	19	2030
9/18/21	68.1	58.5	73.6	0.00	0.97	16	2046
9/19/21	61.2	51.1	71.6	0.00	0.97	11	2057
9/20/21	63.5	49.6	77.7	0.00	0.97	14	2071
9/21/21	67.2	61.3	74.1	0.00	0.97	18	2089
9/22/21	68.8	65.8	72.1	0.22	1.19	19	2108
9/23/21	66.2	55.6	72.3	0.89	2.08	13	2121
9/24/21	57.5	50.5	67.1	0.00	2.08	9	2130
9/25/21	60.7	50.2	72.9	0.00	2.08	12	2142
9/26/21	59.2	49.1	69.8	0.01	2.09	9	2151
9/27/21	65.2	53.8	76.1	0.05	2.14	16	2167
9/28/21	59.2	50.0	66.6	0.00	2.14	8	2175
9/29/21	56.3	49.6	64.9	0.00	2.14	7	2182
9/30/21	53.2	47.5	59.0	0.00	2.14	3	2185
10/1/21*	52.9	43.7	64.4	0.00	2.14	4	2189
September Totals			>	2.14 inches		436 DD	