

CORNELL/NYS 2024 PROCESSING SNAP BEAN CULTIVAR TRIAL REPORT

(Large Sieve – 3/4 Sieve – Whole/Extra-Fine)

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PROCEDURES AND MATERIALS:

Location: Cornell AgriTech (Research North) – Geneva NY

Soil Type: Honeoye silt loam

Planting Dates: Large Sieve – 6/04; 3-4 sieve beans – 7/03; Whole/Fine – 7/23

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, Assure post emergence

Planter – Two Row Monosem Vacuum Planter

Harvest Sample Size: Five feet of row – 4 replications (3 reps for harvest, 1 rep for observation)

Objectives and Season Summary:

The objective of this trial was to compare various snap bean cultivars for yield and other quality characteristics. This was accomplished in cooperation with the snap bean processors in New York and Ontario Canada, as well as seed companies, to find new, higher quality, and disease resistant cultivars that are adapted to our climate and soil conditions. A field day was held for processors and seed companies to view cultivars 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 evaluate 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 4th, with relatively good field conditions. Emergence and stand were strong. Weed control was also very good. June experienced slightly above average precipitation and weather swings from cool, to hot, back to cool. Overall, July was more seasonable than June with regards to precipitation and heat. There were two large rain events in July on the 10th and 15th, with 1.35” and 1.85” of rain, respectively. The large sieve trial had above average yields and overall was one of the best trials of the season. **The 3-4 sieve trial** was planted on July 3rd and field conditions and emergence were also satisfactory. Weed control was very good. Seven days after planting, 1.35” of precipitation occurred, and five days later, another 1.85” of precipitation occurred, negatively impacting the trial. Yields in the 3-4 sieve trial were down this year due to excessive rains early on when plants were emerging. **The whole/extra-fine bean trial** was planted on July 23rd with good soil conditions. 17 days after planting, 4.2” of rain occurred stemming from the remnants of a tropical storm in a 24-hour period, stunting the beans. Additional rains kept the field wet most of August and into September, and the beans never fully recovered. Yields from this trial were poor due to excessive rain events. See the weather insert at the end of the summary for a breakdown of temperatures and precipitation over the growing season.

A vegetable “cutting”, was held on November 12th, 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 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

Cultivar	Company
Bridger	HM Clause
PV966	Crites
SB4845	Syngenta
RR2006	Pure Line
SB4780	Syngenta
HMC019396	HM Clause
SVG2138	Seminis
Huntington	Syngenta
PV981	Crites
RR3006	Pure Line
RR2015	Pure Line
PL0008	Pure Line

Whole to Extra-fine

Cultivar	Company
PV994	Crites
Elegance	Pure Line
Bass	HM Clause
Flavor Sweet	HM Clause
HMC010522	HM Clause
Blavet	Storm Seeds
Kriter	Vilmorin
Trailer	Vilmorin
RR4050	Pure Line
Spyker	Crites
BEX041	Brotherton
BEX162	Brotherton
BEX179	Brotherton
BSC907	Brotherton
BSC903	Brotherton

3 to 4 Sieve

Cultivar	Company
Colter	HM Clause
Byrd	HM Clause
Tunis	Seminis
PV4043	Crites
R302088	Syngenta
Nyquist	Seminis
SVGF2123	Seminis

Column Descriptions for Tables 2, 4, and 6.

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

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

GDD Base 50°F – The number of growing degree days (GDD) base 50°F 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 1 sieve pods – One seed from ten 1 sieve pods were collectively measured in millimeters as a maturity index.

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.

Tons/Acre – The yield from the harvest sample (prior to being snipped) extrapolated to a per acre basis.

Plants/Foot– Plants per foot recorded from harvest samples. Desired population was 6-8 plants per foot.

Table 2: Large Sieve Yield Characteristics (plant date 6/04/24)

Cultivar	Days to Harvest	GDD Base 50°F	% 2 Sieve	% 3 Sieve	% 4 Sieve	% 5 Sieve	% 6 Sieve	% 7 Sieve	% 2-4 Sieve	4 Sieve Seed Size (mm)	5 Sieve Seed Size (mm)	Tons per Acre	Plants per Foot
Bridger	58	1270	3%	3%	28%	47%	18%	1%	35%	84.7	99.3	6.2	5.5
Bridger	61	1345	3%	2%	14%	42%	39%	0%	18%	112.3	116.3	6.5	6.0
PV966	59	1294	3%	4%	48%	38%	7%	0%	55%	85.3	106.3	7.1	6.4
PV966	61	1345	2%	3%	44%	45%	5%	0%	50%	96.0	97.7	8.1	6.1
PV966	63	1386	2%	1%	28%	57%	11%	0%	32%	101.3	109.0	8.9	6.7
SB4845	59	1294	4%	4%	31%	47%	15%	0%	39%	79.3	98.3	6.9	5.3
SB4845	63	1386	4%	3%	22%	52%	19%	0%	29%	85.7	108.3	7.2	5.8
RR2006	59	1294	3%	5%	27%	41%	24%	0%	35%	77.3	95.0	5.7	4.8
RR2006	61	1345	2%	2%	13%	43%	39%	1%	17%	83.0	100.3	6.7	4.7
SB4780	61	1345	3%	5%	35%	45%	12%	0%	42%	86.7	106.3	7.6	5.1
SB4780	63	1386	2%	2%	25%	47%	23%	1%	29%	98.7	106.7	9.4	5.8
HMC019396	61	1345	7%	9%	43%	36%	5%	0%	59%	79.7	96.3	6.2	5.5
HMC019396	64	1403	5%	7%	41%	41%	7%	0%	52%	90.0	108.3	7.0	6.2
SVG2138	58	1270	3%	3%	10%	24%	52%	8%	16%	72.3	87.0	7.5	4.7
SVG2138	63	1386	1%	0%	4%	12%	52%	30%	5%	96.3	113.7	11.0	6.3
Huntington	61	1345	5%	6%	40%	41%	7%	0%	51%	90.0	101.7	7.7	6.8
Huntington	64	1403	8%	7%	43%	36%	6%	0%	58%	89.7	96.0	7.6	6.5
PV981	61	1345	7%	9%	49%	31%	4%	0%	65%	84.3	98.7	6.2	5.5
PV981	64	1403	3%	4%	42%	40%	11%	0%	49%	88.3	100.0	6.8	5.1
RR3006	63	1386	1%	2%	24%	43%	29%	1%	27%	94.0	119.3	9.4	6.0
RR3006	64	1403	1%	1%	20%	45%	31%	1%	22%	92.0	111.3	8.0	5.9
RR2015	63	1386	5%	6%	37%	42%	10%	0%	48%	84.0	92.0	5.6	6.5
RR2015	64	1403	2%	4%	31%	43%	20%	0%	37%	84.3	99.3	7.1	5.7
PL0008	63	1386	1%	1%	27%	61%	9%	0%	29%	96.0	111.3	7.3	6.5
PL0008	64	1403	1%	1%	18%	54%	26%	0%	20%	103.0	115.3	8.1	6.5

Table 3: Large Sieve Plant and Pod Characteristics

Cultivar	Plant Height (in)	Canopy Width (in)	Raw Pod Color Rating	Un-snipped Pod Length (in)	Pod Shape	Pod Straight. Rating	Pod Location
Bridger	17-19	16-19	M	5.0-6.0	R M-C	3.0	M-H
PV966	17-19	19-21	M	5.0-6.0	R M-C	4.0	M-H
SB4845	17-20	20-22	M	4.75-6.0	R L-C	3.5	L-H
RR2006	16-18	19-21	M-L	5.0-6.0	R-O M-C	3.0	L-H
SB4780	17-20	18-20	L	5.0-6.0	R M-C	4.0	L-H
HMC019396	17-19	16-18	M	4.5-5.5	R M-C	3.5	M-H
SVG2138	19-22	20-22	M	5.0-6.5	R-O M-C	4.0	M-H
Huntington	18-20	17-19	M-L	4.75-5.75	R M-C	3.5	L-H
PV981	17-19	18-20	M-D	5.0-6.0	R L-C	4.5	M-H
RR3006	16-19	18-20	M-L	5.0-6.0	R M-C	3.0	L-H
RR2015	18-20	20-22	M	5.0-6.0	R-O M-C	3.0	M-H
PL0008	17-19	19-22	M-D	5.0-6.0	R L-C	3.5	M-H

Table 3 Column Descriptions:

Plant Height - Height measurements taken from each replication and a range recorded in inches

Canopy Width - Width measurements taken from each replication and a range recorded in inches

Raw Pod Color Rating - L = light green, M = medium green, D = dark green

Un-snipped Pod Length - Pods from each replication measured and a range recorded in inches

Pod Shape - R= Round, O=Oval, F=Flat,
L-C=Light Crease, M-C=Medium Crease, H-C=Heavy Crease

Pod Straight. Rating - Straightness of pods were visually evaluated from each replication
1=extremely curved/disfigured, 3=acceptable, 5=extremely uniform and straight

Pod Location - L=Pods close to or touching the ground, M=Pods located in middle of the plant, H=Pods located high on the plant

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

Bridger – HM Clause, 52 days to maturity. 5% 3 sieve, 55% 4 sieve, and 40% 5 sieve. Disease package: HR – BCMV, and BCTV, IR – PSP and PSS. Strong yields and early maturity. Consistent pod length and ability to hold in the field.

PV966 – Crites, 54 days to maturity. Large sieve bean.

SB4845 – Syngenta, 54 days to maturity.

RR2006 – Pure Line, 54 days to maturity. 10% 2 and 3 sieves, 60% 4 sieve, and 20% 5 sieve. Treated with LSV + Cruiser. Disease package: UR4, BCTV, and BCMV. This cultivar is a 5-sieve processing bean. It is an early maturing variety similar to Venture. It is a high yielder with a good plant habit.

SB4780 – Syngenta, 56 days to maturity.

HMC019396 – HM Clause, 56 days to maturity. 35% 3 sieve, 50% 4 sieve, and 15% 5 sieve. Disease package: HR – BCMV, BCTV and IR: Pss and Xap. Shows high yield potential and uniform pods.

SVG2138 – Seminis, 56 days to maturity. 10% 3 sieve, 30% 4 sieve, and 60% 5 sieve. Treated with Maxim, Allegiance, and Cruiser. Anticipated disease package: HR - BCMV, IR - Psp2/PSS.

Huntington – Syngenta, 56 days to maturity.

PV981 – Crites, 56 days to maturity. Large sieve bean.

RR3006 (Blue Lake Superior) – Pure Line, 63 days to maturity. 10% 3 sieve, 70% 4 sieve, and 20% 5 sieve. Treated with LSV + Cruiser. Disease package: BCMV, BCTV, Ua, and WMT. Newest Blue Lake type bean, upright plant habit and uniform pods.

RR2015 – Pure Line, 65 days to maturity. 10% 2 sieve, 15% 3 sieve, 60% 4 sieve, and 15% 5 sieve. Treated with LSV + Cruiser. Disease package: UR4, BCTV, and BCMV. Flex market bean. US sieve 4.

PL0008 – Pure Line, 66 days to maturity. 6% 3 sieve, 25% 4 sieve, and 63% 5 sieve. Treated with LSV + Cruiser. Disease package: UR4, BCTV, BCMV, and CO-2. Upright habit, flex market bean. Durable and tolerant to heat stress. US 4-5 sieve.

Table 4: 3 to 4 Sieve Yield Characteristics (plant date 7/03/24)

Cultivar	Days to Harvest	GDD Base 50°F	% 2 Sieve	% 3 Sieve	% 4 Sieve	% 5 Sieve	% 6 Sieve	% 2-4 Sieve	3 Sieve Seed Size (mm)	4 Sieve Seed Size (mm)	Tons per Acre	Plants per Foot
Colter	57	1255	16%	36%	45%	2%	0%	98%	83.0	97.0	7.1	6.5
Colter	58	1274	13%	34%	50%	3%	0%	97%	81.0	100.7	6.9	6.7
Colter	61	1327	10%	28%	62%	1%	0%	99%	85.3	110.0	5.3	6.5
Byrd	57	1255	8%	23%	61%	7%	1%	92%	69.3	87.3	6.5	7.2
Byrd	61	1327	4%	7%	72%	15%	2%	83%	91.7	102.0	7.5	7.1
Tunis	57	1255	59%	36%	5%	0%	0%	100%	68.3	75.0	4.1	7.1
Tunis	61	1327	28%	53%	19%	0%	0%	100%	82.3	93.3	4.8	7.5
Tunis	64	1363	18%	47%	35%	0%	0%	100%	87.7	92.7	4.6	6.9
PV4043	57	1255	6%	21%	65%	7%	0%	92%	72.0	88.7	5.4	6.9
PV4043	61	1327	2%	4%	69%	23%	2%	75%	71.0	100.7	6.1	6.9
R302088	58	1274	58%	37%	4%	0%	0%	100%	73.3	83.0	6.0	6.9
R302088	61	1327	27%	51%	13%	1%	8%	90%	88.0	102.7	6.1	6.9
Nyquist	58	1274	16%	49%	35%	0%	0%	100%	81.7	92.3	5.9	6.7
Nyquist	61	1327	13%	46%	40%	1%	0%	99%	92.3	106.0	6.5	6.9
SVGF2123	61	1327	10%	22%	62%	5%	1%	94%	67.3	87.3	7.0	6.1
SVGF2123	64	1363	11%	17%	64%	8%	0%	92%	66.7	93.7	6.5	6.5
SVGF2123	69	1421	4%	6%	66%	24%	0%	76%	70.3	95.3	7.0	5.9

Table 5: 3 to 4 Sieve Plant and Pod Characteristics

Cultivar	Plant Height (in)	Canopy Width (in)	Raw Pod Color Rating	Un-snipped Pod Length (in)	Pod Shape	Pod Straight. Rating	Pod Location
Colter	15-17	15-18	M-L	5.0-6.0	R-O M-C	3.5	L-H
Byrd	16-18	16-18	L	4.75-5.5	R M-C	4	M-H
Tunis	17-19	17-19	M-L	4.0-4.5	R L-C	4	L-H
PV4043	16-18	17-20	M	5.0-6.0	R-O M-C	4	M-H
R302088	16-19	17-20	M-L	4.0-5.0	R-O M-C	3	L-H
Nyquist	16-19	17-21	M-D	4.5-5.5	R-O M-C	3	L-H
SVGF2123	18-21	20-22	M	5.0-5.5	R-O M-C	3	L-H

Table 5: Column Descriptions:

Plant Height - Height measurements taken from each replication and a range recorded in inches

Canopy Width - Width measurements taken from each replication and a range recorded in inches

Raw Pod Color Rating - L = light green, M = medium green, D = dark green

Un-snipped Pod Length - Pods from each replication measured and a range recorded in inches

Pod Shape - R= Round, O=Oval, F=Flat,
L-C=Light Crease, M-C=Medium Crease, H-C=Heavy Crease

Pod Straight. Rating - Straightness of pods were visually evaluated from each replication
1=extremely curved/disfigured, 3=acceptable, 5=extremely uniform and straight

Pod Location - L=Pods close to or touching the ground, M=Pods located in middle of the plant, H=Pods located high on the plant

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

Colter – HM Clause, 53 days to maturity. 20% 3 sieve, 70% 4 sieve and 10% 5 sieve. Disease package: HR – BCMV, MCTV, Psp, and Ua. Sets beans very consistently and has an impressive yield potential. Straight and uniform pods.

Byrd – HM Clause, 54 days to maturity. 10% 3 sieve, 65% 4 sieve, and 25% 5 sieve. Disease package: HR – BCMV, BCTV, IR – Pss. Handles sandy soils and dry conditions well. Nice upright plant structure with dense and fleshy pods.

Tunis – Seminis, 56 days to maturity. 30% 2 sieve, 60% 3 sieve, and 10% 4 sieve. Treated with Maxim, Allegiance, and Cruiser. Disease package: HR – BCMV, Psp:2,6, and CL:6,55.

PV4043 – Crites, 3 to 4 sieve bean.

R302088 – Syngenta.

Nyquist – Seminis, 56 days to maturity. 15% 3 sieve, 65% 4 sieve, and 20% 5 sieve. Treated with Maxim, Allegiance, and Cruiser. Anticipated disease package: HR – BCMV, IR – Psp2/PSS.

SVGF2123 – Seminis, 57 days to maturity. 20% 3 sieve, 60% 4 sieve, and 10% 5 sieve. Treated with Maxim, Allegiance, and Cruiser. Anticipated disease package: HR – BCMV, BCT, Aw, CL:6/55, and Ua:38, IR – Psp:2, Pss, and UA:90.

Table 6: Whole to Extra-fine Yield Characteristics (plant date 7/23/24)

Cultivar	Days to Harvest	GDD Base 50°F	% 1 Sieve	% 2 Sieve	% 3 Sieve	% 4 Sieve	% 1-3 Sieve	1 Sieve Seed Size (mm)	2 Sieve Seed Size (mm)	3 Sieve Seed Size (mm)	Tons per Acre	Plants per Foot
PV994	64	1184	40%	52%	8%	0%	100%	65.0	71.3	-	1.9	8.4
PV994	68	1237	0%	69%	30%	1%	99%	-	95.0	100.0	2.2	8.1
Elegance	64	1184	32%	65%	3%	0%	100%	52.3	62.7	-	1.4	8.9
Elegance	66	1207	23%	76%	1%	0%	100%	62.0	73.3	-	2.3	9.1
Bass	64	1184	0%	60%	33%	7%	93%	-	62.5	75.0	1.7	7.9
Bass	68	1237	0%	25%	50%	25%	75%	-	82.3	103.3	2.4	8.4
Flavor Sweet	64	1184	0%	63%	36%	1%	99%	-	67.3	79.0	1.8	8.1
Flavor Sweet	70	1265	0%	40%	48%	13%	87%	-	81.7	92.0	1.9	8.6
HMC010522	64	1184	4%	83%	13%	0%	100%	-	75.0	-	1.6	8.6
HMC010522	70	1265	0%	61%	37%	2%	98%	-	87.7	103.0	2.0	8.6
Blavet	64	1184	46%	53%	1%	0%	100%	63.3	67.7	-	1.9	8.9
Blavet	66	1207	41%	59%	0%	0%	100%	62.7	73.3	-	2.5	8.5
Blavet	68	1237	25%	73%	2%	0%	100%	67.7	80.7	-	2.6	7.6
Kriter	64	1184	3%	83%	13%	1%	99%	-	70.7	-	2.6	7.7
Kriter	70	1265	0%	69%	30%	1%	99%	-	86.3	98.3	2.7	8.2
Trailer	65	1195	100%	0%	0%	0%	100%	53.0	-	-	1.6	8.2
Trailer	68	1237	89%	11%	0%	0%	100%	59.0	65.0	-	1.7	8.1
RR4050	65	1195	18%	75%	5%	1%	99%	54.3	66.0	-	1.8	8.3
RR4050	68	1237	0%	64%	31%	5%	95%	-	78.3	89.3	2.5	8.2
Spyker	65	1195	0%	93%	7%	0%	100%	-	67.7	-	3.4	8.0
Spyker	68	1237	0%	78%	15%	7%	93%	-	81.7	89.7	3.0	8.3
BEX041	65	1195	61%	39%	0%	0%	100%	66.7	68.3	-	1.4	8.2
BEX041	66	1207	62%	38%	0%	0%	100%	65.3	71.3	-	1.5	8.0

Table 6: Whole to Extra-fine Yield Characteristics (plant date 7/23/24) (Continued)

Cultivar	Days to Harvest	GDD Base 50°F	% 1 Sieve	% 2 Sieve	% 3 Sieve	% 4 Sieve	% 1-3 Sieve	1 Sieve Seed Size (mm)	2 Sieve Seed Size (mm)	3 Sieve Seed Size (mm)	Tons per Acre	Plants per Foot
BEX162	65	1195	0%	46%	39%	15%	85%	-	60.0	69.0	2.0	7.4
BEX162	68	1237	0%	30%	38%	33%	67%	-	66.0	80.3	2.4	7.5
BEX179	65	1195	0%	57%	32%	11%	89%	-	59.0	66.7	2.2	7.5
BEX179	68	1237	0%	31%	40%	29%	71%	-	58.3	80.0	2.2	8.1
BSC907	65	1195	0%	56%	35%	10%	90%	-	67.7	80.0	2.6	7.8
BSC907	70	1265	0%	46%	38%	17%	83%	-	73.0	90.7	2.2	7.9
BSC903	65	1195	27%	71%	1%	0%	100%	61.0	75.7	-	2.3	7.7
BSC903	70	1265	18%	75%	6%	1%	99%	73.3	91.7	-	2.1	8.1

Table 7: Whole to Extra-fine Plant and Pod Characteristics

Cultivar	Plant Height (in)	Canopy Width (in)	Raw Pod Color Rating	Un-snipped Pod Length (in)	Pod Shape	Pod Straight. Rating	Pod Location
PV994	9-11	11-13	M-L	4.0-4.5	R-O L-C	4.5	M-H
Elegance	9-11	10-13	L	4.0-5.0	R-O L-C	4	L-H
Bass	9-11	11-13	M-L	3.0-4.0	R L-C	4	L-H
Flavor Sweet	9-11	10-12	M	3.0-4.0	R L-C	4	L-H
HMC010522	10-12	10-13	M	3.0-4.0	R L-C	4	L-H
Blavet	10-13	10-13	L	3.5-4.25	R-O L-C	4	L-H
Kriter	9-12	10-12	M-L	3.5-4.0	R L-C	4	L-H
Trailer	8-11	9-11	M	3.5-4.25	R-O L-C	3.5	L-H
RR4050	8-11	10-12	M-L	4.0-5.0	R-O M-C	3.5	L-H
Spyker	10-12	11-13	M	4.0-5.0	R M-C	3.5	L-H
BEX041	7-9	7-9	M	4.0-4.75	R L-C	4	M-H
BEX162	7-9	7-9	M	4.0-5.0	R L-C	4	M-H
BEX179	9-11	7-9	M	4.0-5.0	R-O M-C	3.5	M-H
BSC907	8-10	8-10	M	4.5-5.5	R-O M-C	3.5	M-H
BSC903	7-9	7-9	M-L	4.0-5.0	R L-C	3.5	L-H

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

PV944 – Crites, 54 days to maturity. 2 to 3 sieve bean.

Elegance – Pure Line, 54 days to maturity. 90% 2 sieve. Treated with LSV + Cruiser.

Disease package: BCMV, BCTV, and Ua. A true US 2 sieve, consistent straight pods, upright and refined. Great for fancy packages.

Bass – HM Clause, 55 days to maturity. 70% 3 sieve, and 30% 4 sieve.

Disease package: HR – BCMV, BCTV, CL, Psp, IR – Pss. Nice stem detachment and length for processing bean.

Flavor Sweet – HM Clause, 55 days to maturity. 85% 3 sieve, and 15% 4 sieve.

Disease package: HR – BCMV, Cl, and Psp.

HMC010522 – HM Clause, 56 days to maturity. 90% 3 sieve and 10% 4 sieve.

Disease package: HR – BCMV, BCTV, Psp, and Ua, IR – Pss, Xap. Beautiful darker color with straight pods. Very impressive disease package.

Blavet – Storm, 56 days to maturity.

Kriter – Vilmorin, 57 days to maturity. 55% 2 sieve, and 45% 3 sieve.

Disease package: HR – Psp, Xap, BCMV, and Cl. Very good vigor at emergence. High yield potential and a slow seed development.

Trailer – Vilmorin, 57 days to maturity. 25% 1 sieve, and 75% 2 sieve.

Disease package: HR – BCMV, CL, and Psp, IR – Xap.

Upright habit, slow to seed formation. Good emergence vigor and flexible harvest window.

RR4050 – Pure Line, 58 days to maturity. 60% 2 sieve, and 40% 3 sieve.

Treated with LSV + Cruiser. Disease package: BCMV, BCTV, and Ua. Experimental whole bean.

Spyker – Crites, 60 days to maturity. 2 to 3 sieve bean.

BEX041 – Brotherton, 61 days to maturity. 63% 1 sieve and 37% 2 sieve. Treated with Captan, Allegiance, and Cruiser. Disease package: BCMV:R, HB:T, and HEAT:T.

BEX162 – Brotherton, 62 days to maturity. 24% 2 sieve, 56% 3 sieve, and 20% 4 sieve. Treated with Captan, Allegiance, and Cruiser. Disease package: BCMV:T, BBS:MT.

BEX179 – Brotherton, 62 days to maturity. 7% 3 sieve, 67% 4 sieve, and 26% 5 sieve. Treated with Captan, Allegiance, and Cruiser. Disease package: BCMV:MT, BBS:T, YMV:T.

BSC907 – Brotherton, 63 days to maturity. 3% 1 sieve, 34% 2 sieve, 56% 3 sieve, and 7% 4 sieve. Treated with Captan, Allegiance, and Cruiser. Disease package: BBS:T.

BSC903 – Brotherton, 63 days to maturity. 80% 2 sieve, and 20% 3 sieve. Treated with Captan, Allegiance, and Cruiser. Disease package: BCMV:T, HB:T, HEAT:T.

Table 8: Large Sieve Weather Data

Date	Avg. Air Temp. (°F)	Max. Air Temp. (°F)	Min. Air Temp. (°F)	Daily Precip. (in)	Accumulated Precip. (in)	GDD Base 50°F	Accumulated GDD Base 50°F
6/4/24	73.1	86.2	60.0	0.0	0.0	23	23
6/5/24	74.1	81.7	66.4	0.0	0.0	24	47
6/6/24	71.2	77.7	64.6	0.3	0.3	20	68
6/7/24	63.5	68.9	58.1	0.4	0.7	14	81
6/8/24	63.6	70.9	56.3	0.0	0.7	14	95
6/9/24	60.0	67.8	52.3	1.1	1.8	10	105
6/10/24	56.2	60.6	51.8	0.0	1.8	6	111
6/11/24	56.7	60.6	52.7	0.0	1.8	7	118
6/12/24	65.2	75.2	55.2	0.0	1.8	15	133
6/13/24	71.6	88.3	54.9	0.0	1.8	22	154
6/14/24	69.5	77.7	61.3	0.0	1.8	19	173
6/15/24	63.3	71.1	55.6	0.0	1.8	13	186
6/16/24	64.2	79.7	48.7	0.0	1.8	14	200
6/17/24	78.5	89.2	67.8	0.6	2.5	29	229
6/18/24	78.7	89.8	67.5	0.0	2.5	29	257
6/19/24	82.8	92.3	73.4	0.0	2.5	33	290
6/20/24	80.3	90.7	70.0	0.0	2.5	30	321
6/21/24	76.8	86.7	66.9	0.5	3.0	27	347
6/22/24	77.7	86.2	69.1	0.3	3.2	28	375
6/23/24	75.3	82.2	68.4	0.0	3.3	24	399
6/24/24	69.1	78.8	59.4	0.1	3.3	19	419
6/25/24	71.2	83.1	59.2	0.0	3.3	21	440
6/26/24	72.0	82.0	62.1	0.2	3.5	22	462
6/27/24	64.3	71.2	57.4	0.0	3.5	14	476
6/28/24	60.9	74.1	47.8	0.0	3.5	11	487
6/29/24	69.4	75.6	63.3	0.8	4.3	19	506
6/30/24	69.2	79.0	59.4	0.4	4.7	18	524

Table 8: Large Sieve Weather Data (Continued)

Date	Avg. Air Temp. (°F)	Max. Air Temp. (°F)	Min. Air Temp. (°F)	Daily Precip. (in)	Accumulated Precip. (in)	GDD Base 50°F	Accumulated GDD Base 50°F
7/1/24	64.2	72.1	56.3	0.0	4.7	13	536
7/2/24	64.0	78.3	49.6	0.0	4.7	14	550
7/3/24	76.5	86.9	66.0	0.0	4.7	26	577
7/4/24	78.9	87.1	70.7	0.0	4.7	29	606
7/5/24	78.7	87.1	70.3	0.0	4.7	29	634
7/6/24	76.9	86.0	67.8	0.1	4.8	27	661
7/7/24	73.8	84.0	63.7	0.0	4.8	24	685
7/8/24	75.8	88.3	63.3	0.0	4.8	26	711
7/9/24	76.7	88.2	65.1	0.0	4.8	27	738
7/10/24	80.5	91.6	69.4	1.4	6.2	31	768
7/11/24	70.3	75.0	65.7	0.1	6.2	20	788
7/12/24	73.7	84.4	63.0	0.0	6.2	24	812
7/13/24	75.2	84.6	65.7	0.0	6.2	24	836
7/14/24	76.7	91.0	62.4	0.0	6.2	27	863
7/15/24	77.8	87.4	68.2	1.9	8.1	28	891
7/16/24	76.4	87.6	65.3	0.2	8.3	26	917
7/17/24	72.0	79.5	64.4	0.0	8.3	22	939
7/18/24	68.0	74.8	61.2	0.0	8.3	18	957
7/19/24	68.2	77.7	58.6	0.0	8.3	18	975
7/20/24	68.9	81.1	56.7	0.0	8.3	19	994
7/21/24	71.3	81.7	60.8	0.0	8.3	22	1016
7/22/24	72.8	83.5	62.1	0.0	8.3	23	1038
7/23/24	72.8	81.1	64.4	0.0	8.3	23	1061
7/24/24	76.5	86.5	66.4	0.0	8.3	26	1088
7/25/24	69.5	76.6	62.4	0.1	8.4	20	1107
7/26/24	68.7	78.6	58.8	0.0	8.4	18	1125
7/27/24	67.9	82.4	53.4	0.0	8.4	18	1143
7/28/24	71.2	84.7	57.7	0.0	8.4	21	1164
7/29/24	72.8	85.6	60.1	0.0	8.4	23	1187
7/30/24	77.3	87.3	67.3	0.1	8.5	27	1214
7/31/24	77.0	83.7	70.2	0.1	8.6	27	1241

Table 8: Large Sieve Weather Data (Continued)

Date	Avg. Air Temp. (°F)	Max. Air Temp. (°F)	Min. Air Temp. (°F)	Daily Precip. (in)	Accumulated Precip. (in)	GDD Base 50°F	Accumulated GDD Base 50°F
8/1/24	78.5	89.4	67.5	0.0	8.6	28	1270
8/2/24	74.8	80.2	69.3	0.4	8.9	25	1294
8/3/24	74.2	80.1	68.2	0.1	9.0	24	1319
8/4/24	76.9	86.0	67.8	0.0	9.0	27	1345
8/5/24	73.8	83.7	64.0	0.4	9.4	24	1369
8/6/24	66.8	69.8	63.9	0.4	9.8	17	1386
8/7/24	67.2	76.5	57.9	0.0	9.8	17	1403

Table 9: 3 to 4 Sieve Weather Data

Date	Avg. Air Temp. (°F)	Max. Air Temp. (°F)	Min. Air Temp. (°F)	Daily Precip. (in)	Accumulated Precip. (in)	GDD Base 50°F	Accumulated GDD Base 50°F
7/3/24	76.5	86.9	66.0	0.0	0.0	26	26
7/4/24	78.9	87.1	70.7	0.0	0.0	29	55
7/5/24	78.7	87.1	70.3	0.0	0.0	29	84
7/6/24	76.9	86.0	67.8	0.1	0.1	27	111
7/7/24	73.8	84.0	63.7	0.0	0.1	24	135
7/8/24	75.8	88.3	63.3	0.0	0.1	26	161
7/9/24	76.7	88.2	65.1	0.0	0.1	27	187
7/10/24	80.5	91.6	69.4	1.4	1.5	31	218
7/11/24	70.3	75.0	65.7	0.1	1.5	20	238
7/12/24	73.7	84.4	63.0	0.0	1.5	24	262
7/13/24	75.2	84.6	65.7	0.0	1.5	24	286
7/14/24	76.7	91.0	62.4	0.0	1.5	27	313
7/15/24	77.8	87.4	68.2	1.9	3.4	28	340
7/16/24	76.4	87.6	65.3	0.2	3.6	26	367
7/17/24	72.0	79.5	64.4	0.0	3.6	22	388
7/18/24	68.0	74.8	61.2	0.0	3.6	18	406
7/19/24	68.2	77.7	58.6	0.0	3.6	18	425
7/20/24	68.9	81.1	56.7	0.0	3.6	19	443
7/21/24	71.3	81.7	60.8	0.0	3.6	22	465
7/22/24	72.8	83.5	62.1	0.0	3.6	23	488
7/23/24	72.8	81.1	64.4	0.0	3.6	23	511
7/24/24	76.5	86.5	66.4	0.0	3.6	26	537
7/25/24	69.5	76.6	62.4	0.1	3.7	20	557
7/26/24	68.7	78.6	58.8	0.0	3.7	18	575
7/27/24	67.9	82.4	53.4	0.0	3.7	18	593
7/28/24	71.2	84.7	57.7	0.0	3.7	21	614
7/29/24	72.8	85.6	60.1	0.0	3.7	23	637
7/30/24	77.3	87.3	67.3	0.1	3.8	27	664
7/31/24	77.0	83.7	70.2	0.1	3.9	27	691

Table 9: 3 to 4 Sieve Weather Data (Continued)

Date	Avg. Air Temp. (°F)	Max. Air Temp. (°F)	Min. Air Temp. (°F)	Daily Precip. (in)	Accumulated Precip. (in)	GDD Base 50°F	Accumulated GDD Base 50°F
8/1/24	78.5	89.4	67.5	0.0	3.9	28	720
8/2/24	74.8	80.2	69.3	0.4	4.2	25	744
8/3/24	74.2	80.1	68.2	0.1	4.3	24	768
8/4/24	76.9	86.0	67.8	0.0	4.3	27	795
8/5/24	73.8	83.7	64.0	0.4	4.7	24	819
8/6/24	66.8	69.8	63.9	0.4	5.1	17	836
8/7/24	67.2	76.5	57.9	0.0	5.1	17	853
8/8/24	69.8	76.1	63.5	0.0	5.1	20	873
8/9/24	73.5	78.6	68.4	4.2	9.3	24	896
8/10/24	67.7	75.4	59.9	0.0	9.3	18	914
8/11/24	65.8	73.0	58.6	0.6	9.9	16	930
8/12/24	65.1	71.6	58.6	0.0	9.9	15	945
8/13/24	69.0	76.6	61.5	0.0	9.9	19	964
8/14/24	71.3	80.4	62.1	0.0	9.9	21	985
8/15/24	73.2	83.3	63.1	0.0	9.9	23	1008
8/16/24	70.9	83.3	58.5	0.0	9.9	21	1029
8/17/24	72.1	77.5	66.7	0.0	9.9	22	1051
8/18/24	74.7	81.9	67.5	0.7	10.6	24	1075
8/19/24	61.1	67.3	55.0	0.6	11.1	11	1087
8/20/24	59.0	64.6	53.4	0.0	11.1	9	1096
8/21/24	59.6	67.5	51.8	0.2	11.4	10	1105
8/22/24	65.0	73.4	56.5	0.0	11.4	15	1120
8/23/24	67.6	77.5	57.7	0.0	11.4	17	1138
8/24/24	67.7	81.9	53.4	0.0	11.4	18	1155
8/25/24	68.6	80.2	57.0	0.0	11.4	19	1174
8/26/24	70.5	83.5	57.6	0.0	11.4	21	1194
8/27/24	73.3	86.2	60.4	0.0	11.4	23	1218
8/28/24	71.3	78.3	64.2	0.0	11.4	21	1239
8/29/24	66.5	72.3	60.6	0.0	11.4	16	1255
8/30/24	68.7	75.9	61.5	0.0	11.4	19	1274
8/31/24	73.8	81.5	66.2	0.6	12.0	24	1298

Table 9: 3 to 4 Sieve Weather Data (Continued)

Date	Avg. Air Temp. (°F)	Max. Air Temp. (°F)	Min. Air Temp. (°F)	Daily Precip. (in)	Accumulated Precip. (in)	GDD Base 50°F	Accumulated GDD Base 50°F
9/1/24	70.7	81.0	60.4	0.2	12.2	20	1318
9/2/24	59.7	64.4	54.9	0.0	12.2	9	1327
9/3/24	61.4	72.1	50.7	0.0	12.2	11	1338
9/4/24	61.5	74.7	48.4	0.0	12.2	12	1350
9/5/24	63.9	76.5	51.3	0.0	12.2	14	1363
9/6/24	68.0	80.8	55.2	0.3	12.5	18	1381
9/7/24	58.5	66.6	50.5	1.1	13.6	8	1390
9/8/24	56.4	65.1	47.7	0.0	13.6	6	1396
9/9/24	63.1	73.6	52.7	0.1	13.7	13	1409
9/10/24	62.4	72.3	52.5	0.0	13.7	12	1421

Table 10: Whole to Extra-fine Weather Data

Date	Avg. Air Temp. (°F)	Max. Air Temp. (°F)	Min. Air Temp. (°F)	Daily Precip. (in)	Accumulated Precip. (in)	GDD Base 50°F	Accumulated GDD Base 50°F
7/23/24	72.8	81.1	64.4	0.0	0.0	23	23
7/24/24	76.5	86.5	66.4	0.0	0.0	26	49
7/25/24	69.5	76.6	62.4	0.1	0.1	20	69
7/26/24	68.7	78.6	58.8	0.0	0.1	18	87
7/27/24	67.9	82.4	53.4	0.0	0.1	18	105
7/28/24	71.2	84.7	57.7	0.0	0.1	21	126
7/29/24	72.8	85.6	60.1	0.0	0.1	23	149
7/30/24	77.3	87.3	67.3	0.1	0.2	27	176
7/31/24	77.0	83.7	70.2	0.1	0.3	27	203

Table 10: Whole to Extra-fine Weather Data (Continued)

Date	Avg. Air Temp. (°F)	Max. Air Temp. (°F)	Min. Air Temp. (°F)	Daily Precip. (in)	Accumulated Precip. (in)	GDD Base 50°F	Accumulated GDD Base 50°F
8/1/24	78.5	89.4	67.5	0.0	0.3	28	232
8/2/24	74.8	80.2	69.3	0.4	0.6	25	256
8/3/24	74.2	80.1	68.2	0.1	0.7	24	280
8/4/24	76.9	86.0	67.8	0.0	0.7	27	307
8/5/24	73.8	83.7	64.0	0.4	1.1	24	331
8/6/24	66.8	69.8	63.9	0.4	1.5	17	348
8/7/24	67.2	76.5	57.9	0.0	1.5	17	365
8/8/24	69.8	76.1	63.5	0.0	1.5	20	385
8/9/24	73.5	78.6	68.4	4.2	5.7	24	408
8/10/24	67.7	75.4	59.9	0.0	5.7	18	426
8/11/24	65.8	73.0	58.6	0.6	6.3	16	442
8/12/24	65.1	71.6	58.6	0.0	6.3	15	457
8/13/24	69.0	76.6	61.5	0.0	6.3	19	476
8/14/24	71.3	80.4	62.1	0.0	6.3	21	497
8/15/24	73.2	83.3	63.1	0.0	6.3	23	520
8/16/24	70.9	83.3	58.5	0.0	6.3	21	541
8/17/24	72.1	77.5	66.7	0.0	6.3	22	563
8/18/24	74.7	81.9	67.5	0.7	7.0	24	587
8/19/24	61.1	67.3	55.0	0.6	7.5	11	599
8/20/24	59.0	64.6	53.4	0.0	7.5	9	608
8/21/24	59.6	67.5	51.8	0.2	7.8	10	617
8/22/24	65.0	73.4	56.5	0.0	7.8	15	632
8/23/24	67.6	77.5	57.7	0.0	7.8	17	650
8/24/24	67.7	81.9	53.4	0.0	7.8	18	667
8/25/24	68.6	80.2	57.0	0.0	7.8	19	686
8/26/24	70.5	83.5	57.6	0.0	7.8	21	706
8/27/24	73.3	86.2	60.4	0.0	7.8	23	730
8/28/24	71.3	78.3	64.2	0.0	7.8	21	751
8/29/24	66.5	72.3	60.6	0.0	7.8	16	767
8/30/24	68.7	75.9	61.5	0.0	7.8	19	786
8/31/24	73.8	81.5	66.2	0.6	8.4	24	810

Table 10: Whole to Extra-fine Weather Data (Continued)

Date	Avg. Air Temp. (°F)	Max. Air Temp. (°F)	Min. Air Temp. (°F)	Daily Precip. (in)	Accumulated Precip. (in)	GDD Base 50°F	Accumulated GDD Base 50°F
9/1/24	70.7	81.0	60.4	0.2	8.6	20	830
9/2/24	59.7	64.4	54.9	0.0	8.6	9	838
9/3/24	61.4	72.1	50.7	0.0	8.6	11	850
9/4/24	61.5	74.7	48.4	0.0	8.6	12	861
9/5/24	63.9	76.5	51.3	0.0	8.6	14	875
9/6/24	68.0	80.8	55.2	0.3	8.9	18	893
9/7/24	58.5	66.6	50.5	1.1	10.1	8	902
9/8/24	56.4	65.1	47.7	0.0	10.1	6	908
9/9/24	63.1	73.6	52.7	0.1	10.1	13	921
9/10/24	62.4	72.3	52.5	0.0	10.1	12	933
9/11/24	62.7	77.4	48.0	0.0	10.1	13	946
9/12/24	67.8	80.4	55.2	0.0	10.1	18	964
9/13/24	68.8	80.4	57.2	0.0	10.1	19	982
9/14/24	69.7	83.7	55.6	0.0	10.1	20	1002
9/15/24	70.5	82.9	58.1	0.0	10.1	21	1022
9/16/24	69.6	81.3	57.9	0.0	10.1	20	1042
9/17/24	67.0	77.7	56.3	0.0	10.1	17	1059
9/18/24	64.2	72.0	56.3	0.0	10.1	14	1073
9/19/24	69.3	80.1	58.6	0.0	10.1	19	1093
9/20/24	67.9	79.9	55.9	0.0	10.1	18	1110
9/21/24	70.3	80.2	60.3	0.0	10.1	20	1131
9/22/24	68.5	76.6	60.4	0.0	10.1	19	1149
9/23/24	60.6	63.5	57.7	0.1	10.2	11	1160
9/24/24	60.7	64.0	57.4	0.2	10.4	11	1171
9/25/24	63.1	67.5	58.8	0.1	10.5	13	1184
9/26/24	61.6	69.1	54.1	1.5	12.0	12	1195
9/27/24	61.9	72.7	51.1	0.0	12.0	12	1207
9/28/24	65.0	70.5	59.4	0.1	12.1	15	1222
9/29/24	64.7	68.0	61.3	0.1	12.2	15	1237
9/30/24	63.9	72.1	55.8	0.0	12.2	14	1251
10/1/24	64.3	71.1	57.6	0.0	12.2	14	1265