

## 2025 University of Delaware Snap Bean Variety Trials

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### **Introduction**

The 2025 Snap Bean Variety Trials included twenty-three round-podded varieties from five participating companies. Varieties in the trials are listed below. The purpose of the trials was to evaluate varieties for yield, quality characteristics, and heat tolerance in a once-over harvest situation.

#### **varieties Tried in 202 5**

| <b>Name</b>        | <b>Entering Company</b> |
|--------------------|-------------------------|
| Bass               | HM Clause               |
| Kriter             | HM Clause               |
| Earhart (HMC 0522) | HM Clause               |
| HMC 9396           | HM Clause               |
| Affirmed           | Seminis                 |
| SVGV2138           | Seminis                 |
| Justify            | Seminis                 |
| Raptor (PV-966)    | KWS/Crites              |
| PV-4041            | KWS/Crites              |
| PV-4042            | KWS/Crites              |
| PV-4043            | KWS/Crites              |
| BEX 162            | Brotherton              |
| BSC 907            | Brotherton              |
| BEX 150            | Brotherton              |
| BEX 100            | Brotherton              |
| BSC 955            | Brotherton              |
| BSC 932            | Brotherton              |
| SB4780             | Syngenta                |
| Caprice            | HM Clause (check)       |
| HM 5101            | HM Clause (check)       |
| PV 857             | KWS/Crites (check)      |
| Silverado          | KWS/Crites (check)      |
| Greenback          | Syngenta (check)        |

## **Materials and Methods**

### **Trial Setup and Cultural Practices**

#### ***Location***

Field 1E (early)&1B (late) at the University of Delaware Research and Education Center Farm, Georgetown, DE.

#### ***Planting Dates***

June 6, 2025

July 23, 2025

#### ***Cultural Practices and Trial Design***

For both trials, varieties were planted in single-row plots arranged in a randomized complete block design with four replications. Plots were 20 feet long. Border rows of a standard variety (Caprice) were planted on the outside of the plot. The seeding rate was 5.15 seeds/foot, for an in-row spacing of 2.3 inches, ~90,000 seeds per acre.

The field was fertilized with potassium before planting according to soil test results. An application of 1.25 pt/A Dual Magnum 18 gpa N SUL 33 (27-0-0-6S) (52 lbs/a of N) was made pre-emergence. Trials were cultivated and sidedressed with 30 gpa N-SUL 33 (87 lb/A of N) 41 (early trial) and 28 (late trial) days after planting. Additional hand weeding was done as necessary. Weed control in both trials was excellent.

The trials were overhead irrigated with a traveling linear system.

#### **Plant Measurements**

The size of fully mature plants was measured on the first day of harvest. Plant canopy height and width was measured to the nearest centimeter at a randomly selected location in each replicate.

#### **Harvest Procedures**

Harvest of the June 6-planted trial began on July 28 (52 DAP) and was completed on August 7 (62 DAP). At harvest, plants were pulled from a 10-foot section of each 20-foot plot. All replications for a variety were harvested on the same day. The harvested plants were weighed to determine fresh biomass. Pods were removed from the plants and weighed to determine yield. A 200 g sub-sample of pods from each replicate was then evaluated for quality based on the USDA standard and graded as U.S. Fancy, U.S. No. 1 or Cull. Fancy and No. 1 grade beans were considered marketable and were further graded by diameter sieve size. The beans in each quality and size grade were weighed. Pod length and seed length was recorded for 10 marketable grade pods.

Harvest of the July 23-planted trial began on September 15 (54 DAP) and was completed on September 25 (64 DAP). Harvest procedures were the same as for the June 6-planted trial.

## **Results**

Yields from the two trials are reported separately in Tables 1 and 2. Figure 1 shows marketable and cull yields from both trials. The percent of yield in each quality grade is reported in Tables 3 and 4. Tables 5 and 6 report the percent of marketable pods in each sieve size and Figure 2 is a chart showing the same

data for both trials. Table 7 reports the pod length for each variety for both trials. Table 8 reports the seed length of marketable pods for both trials. Table 9 reports plant height and width for both trials.

Figures 3 and 4 are charts showing high and low temperatures and rainfall for each trial. Figures 5 and 6 are photos of the trials in the field. Appendix A includes photos of all pods from each of the varieties in the trials.

## **Discussion**

The first trial, planted June 6, had excellent emergence and stand establishment for most varieties. There were significant differences in percent stand among the varieties (Table 1), but total yield was weakly correlated with percent stand ( $R^2$  value =0.11). Plants in this trial established well but experienced heat stress during the early flowering period. The first open flowers were noted on July 11 (35 DAP) and all plants were in full flower by July 25 (49 DAP). Damage to flower structures from high night temperatures can occur beginning 10 days before anthesis. In the 25-day period from July 1 (25 DAP) to July 25 there were 19 nights where the temperature did not fall below 68°F, the threshold for damage to floral structures in heat sensitive varieties. High night temperatures in the bud development and flowering stage cause poor pollination which results in poor pod set and misshapen pods.

The varieties with the highest marketable yield in the first trial were Raptor (PV 966) and Greenback. Raptor had significantly higher marketable yield than all other varieties, except Greenback. PV 857 was the third ranked variety in terms of marketable yield and had significantly higher yield than the standard varieties HM 5101, Silverado and Caprice. Many of the varieties had low yields in this trial. PV 857 has performed well in many past heat-stressed trials in Delaware. Greenback was previously tested in 2023 and 2024 and performed well under heat stress. Raptor was previously trialed in 2024 and performed well under heat stress.

The overall average marketable yield was higher in the second trial, planted on July 23, (4,096 lbs/a) than in the first trial (3,279 lbs/a) but the top yielding varieties in the second trial had lower yields than the first trial. The second trial had higher average stands than the first trial, but average plant height and width was smaller, compared to the first trial. The second trial experienced no heat stress during the bud formation and flowering period with nighttime lows averaging 60°F. Very cool temperatures in August may have slowed plant growth resulting in the lower yields that we observed.

The varieties with the highest marketable yield in the second trial were BSC 907, Earhart (HMC 0522), Raptor (PV-966) and Kriter. Only BSC 907 produced significantly higher marketable yield than check varieties HM 5101, Greenback, Silverado, and Caprice.

There were significant differences in sieve size between the varieties. The largest sieve size varieties were SVG2138, SB4780 and HM 5101. The smallest sieve size varieties were Kriter, BSC 907 and Earhart.

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**Table 1. June 6 Planted Trial: Days to Harvest; % Stand; Total and Marketable Yields; Percent Marketable; Plant Weight; Harvest Index; Seed Length**

| Variety        | Days to Harvest | % Stand           | Total Yield (lbs/ acre) | Marketable Yield (lbs/acre) | Percent Marketable | Plant Weight      | Mkt Harvest Index | Seed Length (mm)  |
|----------------|-----------------|-------------------|-------------------------|-----------------------------|--------------------|-------------------|-------------------|-------------------|
| Raptor         | 52              | 86.3 b-g          | 11,295 a                | 8,457 a                     | 74.2 a-c           | 22,921 ab         | 0.37 a            | 8.8               |
| Greenback      | 52              | 115.3 ab          | 10,173 a                | 7,750 ab                    | 75.7 ab            | 24,307 a          | 0.31 ab           | 8.7               |
| PV 857         | 52              | 77.3 efg          | 9,261 ab                | 5,860 bc                    | 60.3 b-g           | 19,541 a-d        | 0.29 abc          | 8.6               |
| SVGV2138       | 52              | 85.0 b-g          | 6,568 bc                | 5,153 cd                    | 75.8 ab            | 17,476 b-e        | 0.28 bc           | 8.9               |
| BSC 932        | 59              | 45.8 hi           | 6,008 c                 | 4,009 cde                   | 68.0 a-e           | 17,781 b-e        | 0.22 cd           | 9.2               |
| Affirmed       | 54              | 101.0 b-f         | 5,455 cd                | 3,890 c-f                   | 66.0 a-e           | 16,901 cde        | 0.22 cde          | 8.8               |
| Bass           | 54              | 138.3 a           | 5,402 cd                | 3,689 c-f                   | 68.6 a-d           | 18,627 a-e        | 0.20 def          | 10.9              |
| Justify        | 61              | 69.0 gh           | 5,538 cd                | 3,560 c-f                   | 64.9 a-f           | 20,534 abc        | 0.19 d-g          | 8.0               |
| PV-4041        | 53              | 80.5 d-g          | 4,194 cde               | 3,284 d-g                   | 78.3 a             | 15,769 cde        | 0.21 c-f          | 9.4               |
| HMC 9396       | 56              | 83.0 c-g          | 6,016 c                 | 3,150 d-h                   | 51.0 e-h           | 19,585 a-d        | 0.15 d-h          | 10.8              |
| HM 5101        | 54              | 93.5 b-g          | 4,871 cde               | 3,134 d-h                   | 59.1 b-h           | 16,814 cde        | 0.18 d-g          | 9.3               |
| Earhart        | 59              | 88.3 b-g          | 4,634 cde               | 2,996 d-h                   | 64.2 a-f           | 16,754 cde        | 0.18 d-g          | 9.5               |
| SB4780         | 54              | 114.0 abc         | 6,097 c                 | 2,872 d-h                   | 47.9 f-h           | 20,316 abc        | 0.14 d-i          | 9.8               |
| Silverado      | 53              | 96.0 b-g          | 3,795 cde               | 2,738 e-h                   | 71.8 a-c           | 15,908 cde        | 0.17 d-g          | 8.1               |
| Caprice        | 54              | 111.0 a-d         | 4,695 cde               | 2,594 e-h                   | 57.2 c-h           | 16,387 cde        | 0.16 d-h          | 9.8               |
| BEX 100        | 59              | 72.3 fgh          | 3,807 cde               | 2,504 e-h                   | 52.9 d-h           | 13,112 e          | 0.16 d-h          | 10.0              |
| Kriter         | 59              | 90.3 b-g          | 4,078 cde               | 2,278 e-i                   | 42.8 hi            | 14,306 de         | 0.13 f-j          | 7.2               |
| BEX 150        | 61              | 74.0 fgh          | 4,665 cde               | 2,177 e-i                   | 46.0 gh            | 19,341 a-d        | 0.11 g-j          | 7.3               |
| PV-4042        | 53              | 68.3 gh           | 2,461 ef                | 1,918 e-i                   | 73.6 a-c           | 13,138 e          | 0.14 e-i          | 9.3               |
| BEX 162        | 61              | 106.3 b-e         | 2,764 def               | 1,514 f-i                   | 52.4 d-h           | 17,903 b-e        | 0.08 h-k          | 8.1               |
| BSC 907        | 62              | 76.8 e-h          | 4,543 cde               | 920 ghi                     | 19.3 j             | 13,469 e          | 0.06 ijk          | 6.7               |
| PV-4043        | 52              | 71.3 fgh          | 2,931 def               | 854 hi                      | 28.5 ij            | 17,563 b-e        | 0.05 jk           | 6.5               |
| BSC 955        | 61              | 29.8 i            | 370 f                   | 106 i                       | 21.9 j             | 6,482 f           | 0.01 k            | 5.8               |
| <i>p-value</i> |                 | <b>&lt;0.0001</b> | <b>&lt;0.0001</b>       | <b>&lt;0.0001</b>           | <b>&lt;0.0001</b>  | <b>&lt;0.0001</b> | <b>&lt;0.0001</b> | <b>&lt;0.0001</b> |
| <b>LSD</b>     |                 | <b>31.19</b>      | <b>2,896</b>            | <b>2,386</b>                | <b>17.2</b>        | <b>5,834</b>      | <b>0.081</b>      | <b>0.93</b>       |
| <b>CV</b>      |                 | <b>25.8</b>       | <b>38.6</b>             | <b>50.2</b>                 | <b>20.7</b>        | <b>23.8</b>       | <b>32.4</b>       | <b>22.8</b>       |

<sup>1</sup>Means followed by the same letter are not significantly different according to Fisher's SD.

**Table 2. July 23 Planted Trial: Days to Harvest; % Stand; Total and Marketable Yields; Percent Marketable; Plant Weight; Harvest Index; Seed Length**

| Variety        | Days to Harvest | % Stand           | Total Yield (lbs/ acre) | Marketable Yield (lbs/acre) | Percent Marketable | Plant Weight  | Mkt Harvest Index | Seed Length (mm)  |
|----------------|-----------------|-------------------|-------------------------|-----------------------------|--------------------|---------------|-------------------|-------------------|
| BSC 907        | 64              | 98.5 d-h          | 9,491 a                 | 6,310 a                     | 66.8 a-e           | 20,003 a      | 0.32 a-d          | 9.9               |
| Earhart        | 57              | 122.3 a           | 7,517 abc               | 5,898 ab                    | 78.6 a             | 16,413 a-e    | 0.36 a            | 7.9               |
| Raptor         | 54              | 84.0 i            | 6,811 b-e               | 5,302 a-c                   | 77.7 a             | 15,621 a-e    | 0.34 a-c          | 7.7               |
| Kriter         | 57              | 105.0 b-g         | 6,773 b-e               | 5,200 a-d                   | 75.3 ab            | 14,601 de     | 0.34 ab           | 7.0               |
| PV 857         | 54              | 93.3 ghi          | 7,397 abc               | 4,918 a-d                   | 66.8 a-e           | 17,442 a-e    | 0.28 c-g          | 7.2               |
| Justify        | 55              | 103.0 c-h         | 7,032 b-d               | 4,662 b-f                   | 67.0 a-e           | 17,860 a-e    | 0.27 d-h          | 5.2               |
| BEX 150        | 61              | 107.8 b-e         | 7,268 abc               | 4,617 b-f                   | 64.8 b-f           | 19,271 a-c    | 0.25 e-j          | 8.1               |
| PV-4041        | 54              | 118.8 ab          | 6,689 b-e               | 4,601 b-g                   | 69.2 a-d           | 17,633 a-e    | 0.26 d-i          | 7.1               |
| HM 5101        | 54              | 97.5 e-i          | 7,510 abc               | 4,512 b-g                   | 60.5 c-g           | 19,602 ab     | 0.23 f-k          | 8.1               |
| BEX 100        | 64              | 95.0 f-i          | 6,670 b-e               | 4,371 c-g                   | 65.1 b-e           | 13,974 ef     | 0.31 a-e          | 10.9              |
| Greenback      | 55              | 109.3 a-e         | 7,772 ab                | 4,273 c-g                   | 55.2 e-h           | 18,652 a-d    | 0.23 g-l          | 7.8               |
| Affirmed       | 61              | 113.0 a-c         | 6,055 b-f               | 4,148 c-i                   | 69.0 a-d           | 15,534 a-e    | 0.27 d-h          | 8.9               |
| BSC 955        | 64              | 99.0 d-h          | 5,399 c-f               | 4,055 c-i                   | 75.9 ab            | 13,852 ef     | 0.29 b-f          | 10.3              |
| HMC 9396       | 55              | 96.3 e-i          | 6,604 b-e               | 3,756 d-i                   | 57.0 d-h           | 14,863 c-e    | 0.25 e-i          | 8.1               |
| Silverado      | 55              | 117.8 a           | 7,192 a-d               | 3,689 d-i                   | 52.6 f-i           | 19,933 ab     | 0.18 k-m          | 6.3               |
| Bass           | 61              | 105.0 b-g         | 5,593 b-f               | 3,587 e-i                   | 65.0 b-f           | 14,575 de     | 0.24 f-k          | 10.4              |
| PV-4042        | 57              | 90.8 hi           | 4,902 def               | 3,458 e-i                   | 69.0 a-d           | 15,499 b-e    | 0.21 h-l          | 7.3               |
| BEX 162        | 64              | 117.8 ab          | 4,628 ef                | 3,349 f-i                   | 71.0 a-c           | 16,021 a-e    | 0.21 i-m          | 9.0               |
| Caprice        | 57              | 111.5 a-d         | 5,556 b-f               | 3,340 f-i                   | 60.6 c-g           | 15,839 a-e    | 0.22 h-l          | 7.6               |
| PV-4043        | 55              | 90.3 hi           | 4,564 ef                | 3,092 g-j                   | 69.9 a-c           | 16,413 a-e    | 0.18 k-m          | 7.2               |
| BSC 932        | 57              | 96.0 e-i          | 5,263 c-f               | 2,767 h-j                   | 44.7 hi            | 15,682 a-e    | 0.15 m            | 7.1               |
| SVGV2138       | 54              | 98.5 d-h          | 5,584 b-f               | 2,678 ij                    | 48.9 g-i           | 15,978 a-e    | 0.17 lm           | 6.9               |
| SB4780         | 64              | 89.8 hi           | 4,101 f                 | 1,625 j                     | 41.2 i             | 9,557 f       | 0.19 j-m          | 11.0              |
| <i>p-value</i> |                 | <b>&lt;0.0001</b> | <b>0.0028</b>           | <b>&lt;0.0001</b>           | <b>&lt;0.0001</b>  | <b>0.0059</b> | <b>&lt;0.0001</b> | <b>&lt;0.0001</b> |
| <b>LSD</b>     |                 | <b>13.95</b>      | <b>2299.7</b>           | <b>1519.2</b>               | <b>12.54</b>       | <b>4481.9</b> | <b>0.0625</b>     | <b>0.65</b>       |
| <b>CV</b>      |                 | <b>9.6</b>        | <b>25.6</b>             | <b>26.3</b>                 | <b>13.9</b>        | <b>19.5</b>   | <b>17.8</b>       | <b>18.1</b>       |

<sup>1</sup>Means followed by the same letter are not significantly different according to Fisher's LSD.

**Table 3. June 6 Planted Trial: Percent of Yield in Each Quality Grade**

| <b>Variety</b>                  | <b>% Marketable</b>      | <b>% Fancy</b>           | <b>% No. 1</b>       |
|---------------------------------|--------------------------|--------------------------|----------------------|
| PV-4041                         | 78.3 a                   | 29.0 ab                  | 49.3 a-c             |
| SVGV238                         | 75.8 ab                  | 35.8 a                   | 39.9 b-e             |
| Greenb                          | 75.7 ab                  | 30.9 ab                  | 44.8 bc              |
| Raptor                          | 74.2 a-c                 | 29.0 ab                  | 45.2 bc              |
| PV-4042                         | 73.6 a-c                 | 23.0 b-e                 | 50.7 ab              |
| Silverad                        | 71.8 a-c                 | 24.4 a-d                 | 47.4 a-c             |
| Bass                            | 68.6 a-d                 | 21.1 b-f                 | 47.5 a-c             |
| BSC 932                         | 68.0 a-e                 | 6.8 g-j                  | 61.2 a               |
| Affirme                         | 66.0 a-e                 | 22.5 b-f                 | 43.5 b-d             |
| Justify                         | 64.9 a-f                 | 11.1 f-j                 | 53.8 ab              |
| Earhart                         | 64.2 a-f                 | 17.1 c-g                 | 47.1 a-c             |
| PV 857                          | 60.3 b-g                 | 26.4 a-c                 | 33.8 c-f             |
| HM 5101                         | 59.1 b-h                 | 13.9 d-h                 | 45.2 bc              |
| Caprice                         | 57.2 c-h                 | 15.9 c-g                 | 41.3 b-e             |
| BEX 100                         | 52.9 d-h                 | 6.7 g-j                  | 46.2 a-c             |
| BEX 162                         | 52.4 d-h                 | 12.8 e-h                 | 39.6 b-e             |
| HMC                             | 51.0 e-h                 | 12.0 e-i                 | 39.1 b-e             |
| SB4780                          | 47.9 f-h                 | 1.1 ij                   | 46.8 a-c             |
| BEX 150                         | 46.0 g-i                 | 6.1 g-j                  | 39.9 b-e             |
| Kriter                          | 42.8 h-j                 | 14.1 d-g                 | 28.7 d-f             |
| BSC 955                         | 29.3 i-k                 | 6.8 g-j                  | 22.5 f               |
| PV-4043                         | 28.5 jk                  | 2.4 h-j                  | 26.1 ef              |
| BSC 907                         | 19.3 k                   | 0.4 j                    | 18.9 f               |
| <b><i>p-value</i></b>           | <b><i>&lt;0.0001</i></b> | <b><i>&lt;0.0001</i></b> | <b><i>0.0001</i></b> |
| <b>Fisher' LSD <sup>1</sup></b> | <b>17.12</b>             | <b>11.58</b>             | <b>15.61</b>         |
| <b>Coefficient of Variation</b> | <b>20.3</b>              | <b>48.9</b>              | <b>25.7</b>          |

<sup>1</sup>Means followed by the same letter are not significantly different according to Fisher's LSD.

**Table 4. July 23 Planted Trial: Percent of Yield in Each Quality Grade**

| <b>Variety</b>                  | <b>% Marketable</b>      | <b>% Fancy</b>           | <b>% No. 1</b>       |
|---------------------------------|--------------------------|--------------------------|----------------------|
| Earhart                         | 78.6 a                   | 51.9 a                   | 26.8 i               |
| Raptor                          | 77.7 a                   | 34.5 bc                  | 43.2 b-g             |
| BSC 955                         | 75.9 ab                  | 21.9 d-h                 | 53.9 ab              |
| Kriter                          | 75.3 ab                  | 38.7 b                   | 36.6 e-i             |
| BEX 162                         | 71.0 a-c                 | 25.3 c-g                 | 45.7 a-f             |
| PV-4043                         | 69.9 a-c                 | 20.2 e-i                 | 49.8 a-c             |
| PV-4041                         | 69.2 a-d                 | 37.3 b                   | 31.8 g-i             |
| PV-4042                         | 69.0 a-d                 | 29.3 b-e                 | 39.7 c-h             |
| Affirme                         | 69.0 a-d                 | 13.2 h-k                 | 55.9 a               |
| Justify                         | 67.0 a-e                 | 23.7 d-g                 | 43.3 b-g             |
| BSC 907                         | 66.8 a-e                 | 25.7 c-f                 | 41.1 c-h             |
| PV 857                          | 66.8 a-e                 | 24.8 c-g                 | 42.0 b-h             |
| BEX 100                         | 65.1 b-e                 | 16.1 f-j                 | 49.0 a-d             |
| Bass                            | 65.0 b-f                 | 17.0 f-j                 | 48.0 a-e             |
| BEX 150                         | 64.8 b-f                 | 20.5 e-i                 | 44.3 a-f             |
| Caprice                         | 60.6 c-g                 | 30.9 b-d                 | 29.7 hi              |
| HM 5101                         | 60.5 c-g                 | 33.9 bc                  | 26.6 i               |
| HMC                             | 57.0 d-h                 | 20.3 e-i                 | 36.8 d-i             |
| Greenb                          | 55.2 e-h                 | 15.4 g-k                 | 39.7 c-h             |
| Silverad                        | 52.6 f-i                 | 12.6 h-k                 | 39.9 c-h             |
| SVGV238                         | 48.9 g-i                 | 9.1 jk                   | 39.8 c-h             |
| BSC 932                         | 44.7 hi                  | 11.0 i-k                 | 33.7 f-i             |
| SB4780                          | 41.2 i                   | 6.1 k                    | 35.1 f-i             |
| <b><i>p-value</i></b>           | <b><i>&lt;0.0001</i></b> | <b><i>&lt;0.0001</i></b> | <b><i>0.0001</i></b> |
| <b>Fisher' LSD <sup>1</sup></b> | <b>12.5</b>              | <b>9.98</b>              | <b>12.37</b>         |
| <b>Coefficient of Variation</b> | <b>13.9</b>              | <b>30.1</b>              | <b>21.6</b>          |

<sup>1</sup>Means followed by the same letter are not significantly different according to Fisher's LSD.

**Table 5. June 6 Planted Trial: Varieties by Percent of Marketable Pods in Each Diameter Size Grade**

| Variety                 | % Grade 2     | % Grade 3         | % Grade 4     | % Grade 5         | % Grade 6     | Seed Length (mm)  |
|-------------------------|---------------|-------------------|---------------|-------------------|---------------|-------------------|
| Bass                    | 5.7 a-d       | 30.9 b-d          | 39.3 a-f      | 19.3 f-i          | 4.7 bc        | 10.9              |
| HMC                     | 0.0 e         | 10.9 e-h          | 26.4 d-g      | 57.3 a            | 5.3 bc        | 10.8              |
| BEX 100                 | 0.7 de        | 36.8 bc           | 43.5 a-e      | 19.1 f-j          | 0.0 c         | 10.0              |
| SB4780                  | 7.6 ab        | 6.6 gh            | 38.0 b-g      | 37.8 b-f          | 10.0 a-c      | 9.8               |
| Caprice                 | 1.7 c-e       | 25.7 b-f          | 35.1 c-g      | 36.0 c-f          | 1.5 c         | 9.8               |
| EarhartMC               | 5.4 a-e       | 68.6 a            | 25.3 e-g      | 0.7 ij            | 0.0 c         | 9.5               |
| PV-4041                 | 3.0 a-e       | 21.4 b-g          | 51.0 a-c      | 24.7 e-h          | 0.0 c         | 9.4               |
| PV-4042                 | 1.8 c-e       | 8.9 f-h           | 32.6 c-g      | 46.4 a-d          | 10.3 a-c      | 9.3               |
| HM 5101                 | 7.1 a-c       | 18.8 d-g          | 28.1 d-g      | 41.0 a-e          | 5.1 bc        | 9.3               |
| BSC 93                  | 0.5 de        | 22.6 b-g          | 25.2 e-g      | 40.8 a-e          | 10.9 a-c      | 9.2               |
| SVGV238                 | 0.0 e         | 0.5 h             | 28.4 d-g      | 55.6 ab           | 15.6 ab       | 8.9               |
| Raptor (V -966)         | 0.9 de        | 22.9 b-g          | 60.4 a        | 15.8 g-j          | 0.0 c         | 8.8               |
| Affirme                 | 5.4 a-e       | 21.9 b-g          | 39.7 a-f      | 31.0 d-g          | 2.0 c         | 8.8               |
| Greenb                  | 5.1 a-e       | 37.3 b            | 49.6 a-c      | 8.0 h-j           | 0.0 c         | 8.7               |
| PV 857                  | 1.1 de        | 27.3 b-e          | 47.2 a-d      | 24.3 e-h          | 0.0 c         | 8.6               |
| BEX 162                 | 0.6 de        | 12.3 e-h          | 40.2 a-f      | 47.0 a-d          | 0.0 c         | 8.1               |
| Silvera                 | 0.0 e         | 8.6 gh            | 20.8 fg       | 51.0 a-c          | 19.6 a        | 8.1               |
| Justify                 | 0.0 e         | 8.5 gh            | 36.6 b-g      | 55.0 a-c          | 0.0 c         | 8.0               |
| BEX 150                 | 0.0 e         | 20.2 c-g          | 35.5 c-g      | 44.3 a-d          | 0.0 c         | 7.3               |
| Kriter                  | 2.1 b-e       | 55.9 a            | 42.0 a-e      | 0.0 j             | 0.0 c         | 7.2               |
| BSC 90                  | 8.1 a         | 58.8 a            | 33.1 c-g      | 0.0 j             | 0.0 c         | 6.7               |
| PV-4043                 | 0.0 e         | 23.1 b-g          | 17.7 g        | 54.7 a-c          | 4.5 bc        | 6.5               |
| BSC 95                  | 3.8 a-e       | 26.1 b-e          | 56.9 ab       | 13.3 g-j          | 0.0 c         | 5.8               |
| <i>p-value</i>          | <i>0.0217</i> | <i>&lt;0.0001</i> | <i>0.0104</i> | <i>&lt;0.0001</i> | <i>0.0138</i> | <i>&lt;0.0001</i> |
| Fisher'sSD <sup>1</sup> | 5.67          | 17                | 21.2          | 19.2              | 0             | 0.93              |
| C.V.                    | 146.7         | 47.1              | 39.6          | 42.5              | 199.1         | 22.8              |

<sup>1</sup>Means followed by the same letter are not significantly different according to Fisher's LSD.

**Table 6. July 23 Planted Trial: Varieties by Percent of Marketable Pods in Each Diameter Size Grade**

| Variety                       | % Grade 2                | % Grade 3                | % Grade 4                | % Grade 5                | % Grade 6        | Seed Length (mm)         |
|-------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------|--------------------------|
| SB4780                        | 3.5 gh                   | 19.8 h                   | 39.8 bc                  | 36.9 a                   | 0.0 a            | 11.0                     |
| BEX 100                       | 4.2 gh                   | 56.8 e-g                 | 37.6 b-d                 | 1.4 e                    | 0.0 a            | 10.9                     |
| Bass                          | 13.2 c-e                 | 79.6 ab                  | 7.2 h-j                  | 0.0 e                    | 0.0 a            | 10.4                     |
| BSC 95                        | 8.8 e-g                  | 68.9 b-e                 | 15.9 g-i                 | 6.4 cd                   | 0.0 a            | 10.3                     |
| BSC 90                        | 26.0 a                   | 66.2 b-e                 | 7.8 h-j                  | 0.0 e                    | 0.0 a            | 9.9                      |
| BEX 162                       | 17.3 b-d                 | 63.9 c-f                 | 18.8 f-i                 | 0.0 e                    | 0.0 a            | 9.0                      |
| Affirme                       | 3.7 gh                   | 67.2 b-e                 | 29.0 c-g                 | 0.0 e                    | 0.0 a            | 8.9                      |
| BEX 150                       | 11.3 d-f                 | 69.4 a-e                 | 19.3 e-i                 | 0.0 e                    | 0.0 a            | 8.1                      |
| HM 5101                       | 0.0 h                    | 17.8 h                   | 57.4 a                   | 24.9 b                   | 0.0 a            | 8.1                      |
| HMC                           | 2.6 gh                   | 61.5 d-f                 | 32.6 c-f                 | 3.3 de                   | 0.0 a            | 8.1                      |
| EarhartMC                     | 22.9 ab                  | 77.1 a-c                 | 0.0 j                    | 0.0 e                    | 0.0 a            | 7.9                      |
| Greenb                        | 0.8 h                    | 73.8 a-d                 | 21.8 e-h                 | 3.6 de                   | 0.0 a            | 7.8                      |
| Raptor (V -966)               | 0.0 h                    | 49.8 fg                  | 48.8 ab                  | 1.4 de                   | 0.0 a            | 7.7                      |
| Caprice                       | 0.8 h                    | 57.8 e-g                 | 31.7 c-f                 | 9.7 c                    | 0.0 a            | 7.6                      |
| PV-4042                       | 18.7 bc                  | 74.0 a-d                 | 7.2 h-j                  | 0.0 e                    | 0.0 a            | 7.3                      |
| PV 857                        | 0.0 h                    | 66.6 b-e                 | 32.0 c-f                 | 1.4 de                   | 0.0 a            | 7.2                      |
| PV-4043                       | 5.5 f-h                  | 45.7 g                   | 37.7 b-d                 | 11.0 c                   | 0.0 a            | 7.2                      |
| BSC 93                        | 5.1 f-h                  | 71.2 a-e                 | 23.7 d-g                 | 0.0 e                    | 0.0 a            | 7.1                      |
| PV-4041                       | 1.7 h                    | 62.9 c-f                 | 34.5 b-e                 | 0.9 e                    | 0.0 a            | 7.1                      |
| Kriter                        | 8.4 e-g                  | 84.9 a                   | 6.8 h-j                  | 0.0 e                    | 0.0 a            | 7.0                      |
| SVGV238                       | 2.5 gh                   | 28.4 h                   | 49.2 ab                  | 19.9 b                   | 0.0 a            | 6.9                      |
| Silvera                       | 4.6 gh                   | 70.2 a-e                 | 25.2 c-g                 | 0.0 e                    | 0.0 a            | 6.3                      |
| Justify                       | 16.6 cd                  | 78.0 a-c                 | 5.4 ij                   | 0.0 e                    | 0.0 a            | 5.2                      |
| <b><i>p-value</i></b>         | <b><i>&lt;0.0001</i></b> | <b><i>&lt;0.0001</i></b> | <b><i>&lt;0.0001</i></b> | <b><i>&lt;0.0001</i></b> | <b><i>NA</i></b> | <b><i>&lt;0.0001</i></b> |
| <b>Fisher'sSD<sup>1</sup></b> | <b>6.36</b>              | <b>15.52</b>             | <b>15.34</b>             | <b>5.02</b>              | <b>NA</b>        | <b>0.65</b>              |
| <b>C.V.</b>                   | <b>58.2</b>              | <b>17.9</b>              | <b>42.4</b>              | <b>67.8</b>              | <b>NA</b>        | <b>18.1</b>              |

<sup>1</sup>Means followed by the same letter are not significantly different according to Fisher's LSD.

**Table 7. Pod Length in Centimeters of Marketable Pods for Both Trials and Overall Average**

| Variety                       | Jun 6 Trial       | Jul 23 Trial      | Overall Average Pod Length (cm) |
|-------------------------------|-------------------|-------------------|---------------------------------|
|                               | Pod Length (cm)   | Pod Length (cm)   |                                 |
| Silverado                     | 13.4 ab           | 14.0 a            | 13.7                            |
| SVGV238                       | 13.6 a            | 12.5 bcde         | 13.1                            |
| PV-4041                       | 13.0 bc           | 13.1 b            | 13.0                            |
| BSC 907                       | 12.0 def          | 13.9 a            | 12.9                            |
| BSC 932                       | 13.0 bc           | 12.3 def          | 12.6                            |
| PV-4042                       | 12.3 de           | 13.0 bc           | 12.6                            |
| Greenb                        | 12.3 de           | 12.5 cde          | 12.4                            |
| Raptor                        | 12.2 de           | 12.3 def          | 12.3                            |
| HM 5101                       | 12.5 cd           | 11.8 fghi         | 12.2                            |
| PV-4043                       | 12.2 de           | 12.1 defgh        | 12.1                            |
| Affirme                       | 11.6 fgh          | 12.6 bcd          | 12.1                            |
| PV 857                        | 11.8 efg          | 12.0 dghi         | 11.9                            |
| Justify                       | 12.2 def          | 11.6 ghijk        | 11.9                            |
| Kriter                        | 11.3 ghi          | 12.0 efghi        | 11.7                            |
| Caprice                       | 10.8 ij           | 12.3 def          | 11.6                            |
| BEX 162                       | 12.0 def          | 11.0 kl           | 11.5                            |
| HMC                           | 11.3 ghij         | 11.7 ghij         | 11.5                            |
| SB4780                        | 11.8 efg          | 11.1 jkl          | 11.5                            |
| BEX 100                       | 10.7 j            | 12.2 defg         | 11.4                            |
| BEX 150                       | 10.9 ij           | 11.5 hijk         | 11.2                            |
| Bass                          | 11.0 hij          | 11.0 kl           | 11.0                            |
| Earhart                       | 11.0 hij          | 10.8 l            | 10.9                            |
| BSC 955                       | 9.9 k             | 11.4 ijk          | 10.7                            |
| <i>p-value</i>                | <i>&lt;0.0001</i> | <i>&lt;0.0001</i> |                                 |
| <b>Fisher'sSD<sup>1</sup></b> | <b>0.60</b>       | <b>0.60</b>       |                                 |
| <b>C.V.</b>                   | <b>11.1</b>       | <b>11.2</b>       |                                 |

**Table 8. Seed Length in Millimeters from Marketable Pods for Both Trials and Overall Average**

| Variety                       | Jun 6 Trial              | Jul 23 Trial             | Overall Average<br>Seed Length (mm) |
|-------------------------------|--------------------------|--------------------------|-------------------------------------|
|                               | Seed Length (mm)         | Seed Length (mm))        |                                     |
| Bass                          | 10.9 a                   | 10.4 abc                 | 10.7                                |
| BEX 100                       | 10.0 ab                  | 10.9 ab                  | 10.4                                |
| SB4780                        | 9.8 bc                   | 11.0 a                   | 10.4                                |
| HMC                           | 10.8 a                   | 8.1 e                    | 9.4                                 |
| Affirme                       | 8.8 def                  | 8.9 d                    | 8.8                                 |
| Earhart                       | 9.5 bcd                  | 7.9 ef                   | 8.7                                 |
| HM 5101                       | 9.3 bcde                 | 8.1 e                    | 8.7                                 |
| Caprice                       | 9.8 bc                   | 7.6 efghi                | 8.7                                 |
| BEX 162                       | 8.1 fg                   | 9.0 d                    | 8.5                                 |
| BSC 907                       | 6.7 hi                   | 9.9 c                    | 8.3                                 |
| PV-4042                       | 9.3 bcde                 | 7.3 fghij                | 8.3                                 |
| Raptor                        | 8.8 def                  | 7.7 efgh                 | 8.3                                 |
| Greenb                        | 8.7 def                  | 7.8 efg                  | 8.3                                 |
| PV-4041                       | 9.4 bcde                 | 7.1 hij                  | 8.2                                 |
| BSC 932                       | 9.2 bcde                 | 7.1 ghij                 | 8.2                                 |
| BSC 955                       | 5.8 i                    | 10.3 bc                  | 8.1                                 |
| SVGV238                       | 8.9 cdef                 | 6.9 jk                   | 7.9                                 |
| PV 857                        | 8.6 ef                   | 7.2 ghij                 | 7.9                                 |
| BEX 150                       | 7.3 gh                   | 8.1 e                    | 7.7                                 |
| Silverado                     | 8.1 fg                   | 6.3 k                    | 7.2                                 |
| Kriter                        | 7.2 gh                   | 7.0 ij                   | 7.1                                 |
| PV-4043                       | 6.5 hi                   | 7.2 ghij                 | 6.9                                 |
| Justify                       | 8.0 fg                   | 5.2 l                    | 6.6                                 |
| <b><i>p-value</i></b>         | <b><i>&lt;0.0001</i></b> | <b><i>&lt;0.0001</i></b> |                                     |
| <b>Fisher'sSD<sup>1</sup></b> | <b>0.93</b>              | <b>0.65</b>              |                                     |
| <b>CV</b>                     | <b>22.8</b>              | <b>18.1</b>              |                                     |

**Table 9. Plant Height and Width in Centimeters for Both Trials and Overall Average**

|                                 | May 23 Trial  |               | June 6 Trial      |               | Overall |       |
|---------------------------------|---------------|---------------|-------------------|---------------|---------|-------|
| Variety                         | Height (cm)   | Width (cm)    | Height (cm)       | Width (cm)    | Heigt   | Width |
| BEX 162                         | 53 a          | 45 a          | 47 a              | 39 c-d        | 50      | 42    |
| Caprice                         | 48 a          | 50 a          | 45 a-c            | 37 cd         | 47      | 43    |
| PV-4041                         | 43 a          | 51 a          | 44 a-d            | 40 c-d        | 44      | 45    |
| Silverado                       | 45 a          | 41 a          | 46 a-c            | 46 a          | 45      | 44    |
| PV-4043                         | 42 a          | 43 a          | 48 a              | 44 ab         | 45      | 43    |
| HM 5101                         | 45 a          | 45 a          | 42 b-f            | 44 ab         | 43      | 45    |
| BSC 907                         | 44 a          | 48 a          | 42 b-g            | 42 a-c        | 43      | 45    |
| SVGV2138                        | 45 a          | 41 a          | 44 a-e            | 42 a-c        | 44      | 42    |
| Greenback                       | 40 a          | 43 a          | 44 a-d            | 45 ab         | 42      | 44    |
| Earhart                         | 41 a          | 40 a          | 47 ab             | 42 a-c        | 44      | 41    |
| PV-4042                         | 40 a          | 41 a          | 46 a-c            | 40 c-d        | 43      | 40    |
| BSC 955                         | 41 a          | 38 a          | 47 ab             | 41 a-d        | 44      | 39    |
| BEX 150                         | 47 a          | 37 a          | 43 a-e            | 39 c-d        | 45      | 38    |
| Affirmed                        | 45 a          | 45 a          | 37 g-i            | 38 cd         | 41      | 41    |
| BEX 100                         | 42 a          | 42 a          | 42 b-f            | 37 cd         | 42      | 40    |
| Raptor                          | 42 a          | 46 a          | 41 c-h            | 35 de         | 41      | 40    |
| BSC 932                         | 42 a          | 44 a          | 38 f-i            | 39 c-d        | 40      | 41    |
| Justify                         | 42 a          | 41 a          | 40 d-h            | 39 c-d        | 41      | 40    |
| PV 857                          | 40 a          | 38 a          | 41 c-h            | 40 c-d        | 40      | 39    |
| HMC 9396                        | 39 a          | 42 a          | 39 e-h            | 37 c-e        | 39      | 39    |
| Kriter                          | 45 a          | 35 a          | 40 d-h            | 37 c-e        | 43      | 36    |
| Bass                            | 44 a          | 40 a          | 36 hi             | 35 de         | 40      | 37    |
| SB4780                          | 45 a          | 44 a          | 34 i              | 30 e          | 39      | 37    |
| <i>p-value</i>                  | <i>0.1563</i> | <i>0.2869</i> | <i>&lt;0.0001</i> | <i>0.0008</i> |         |       |
| <b>Fisher's LSD<sup>1</sup></b> | <b>NA</b>     | <b>NA</b>     | <b>5.17</b>       | <b>6.31</b>   |         |       |
| <b>C.V.</b>                     | <b>12.4</b>   | <b>16.7</b>   | <b>8.7</b>        | <b>11.4</b>   |         |       |

<sup>1</sup>Means followed by the same letter are not significantly different according to Fisher's LSD.

Figure 1. Chart showing total and marketable yield in lbs/acre for the June 6 and July 23 planted trials.

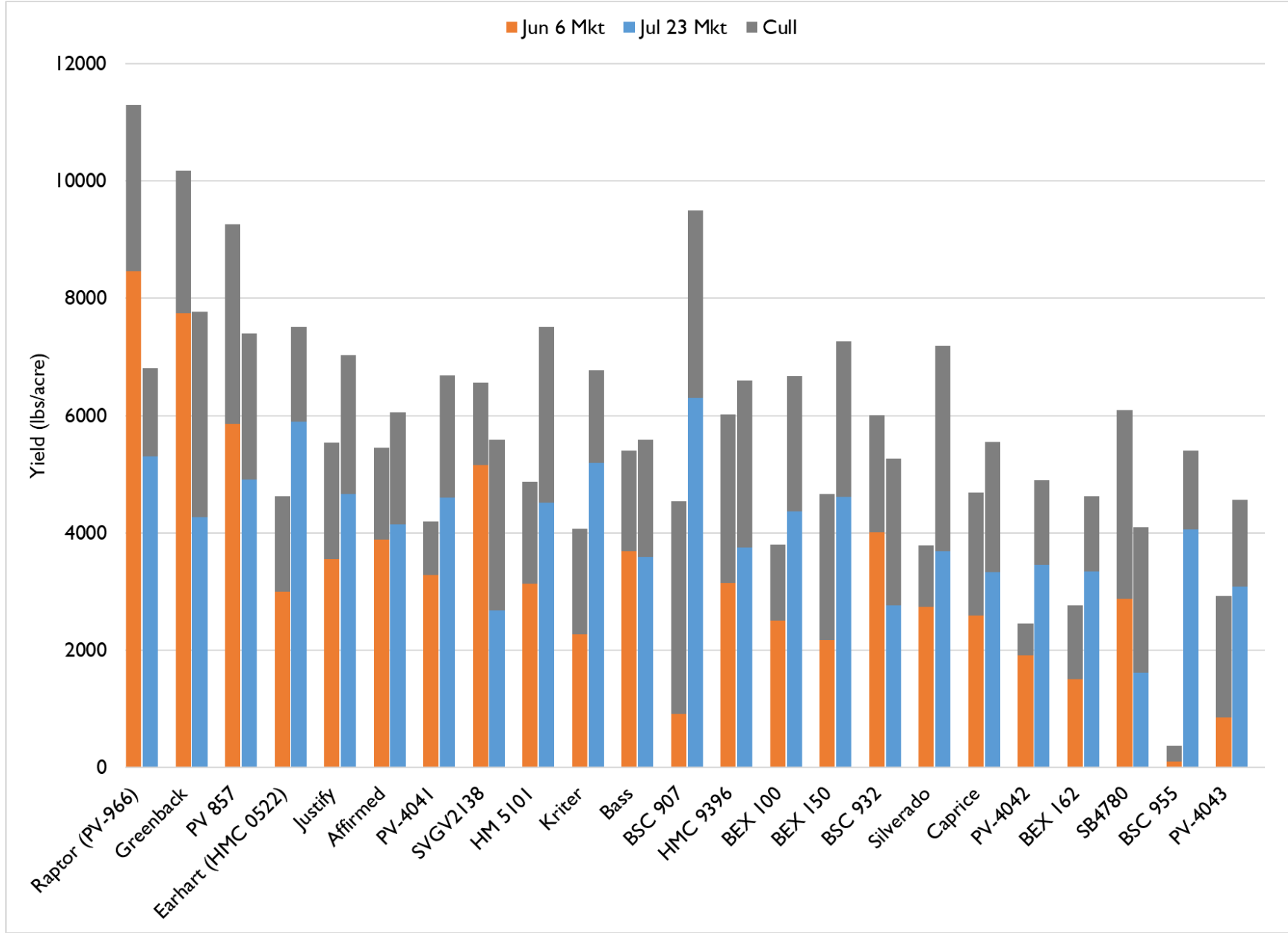


Figure 2. Chart showing percent of harvest in each diameter size grade for round podded varieties in the June 6 (left column) and July 23 (right column) trials.

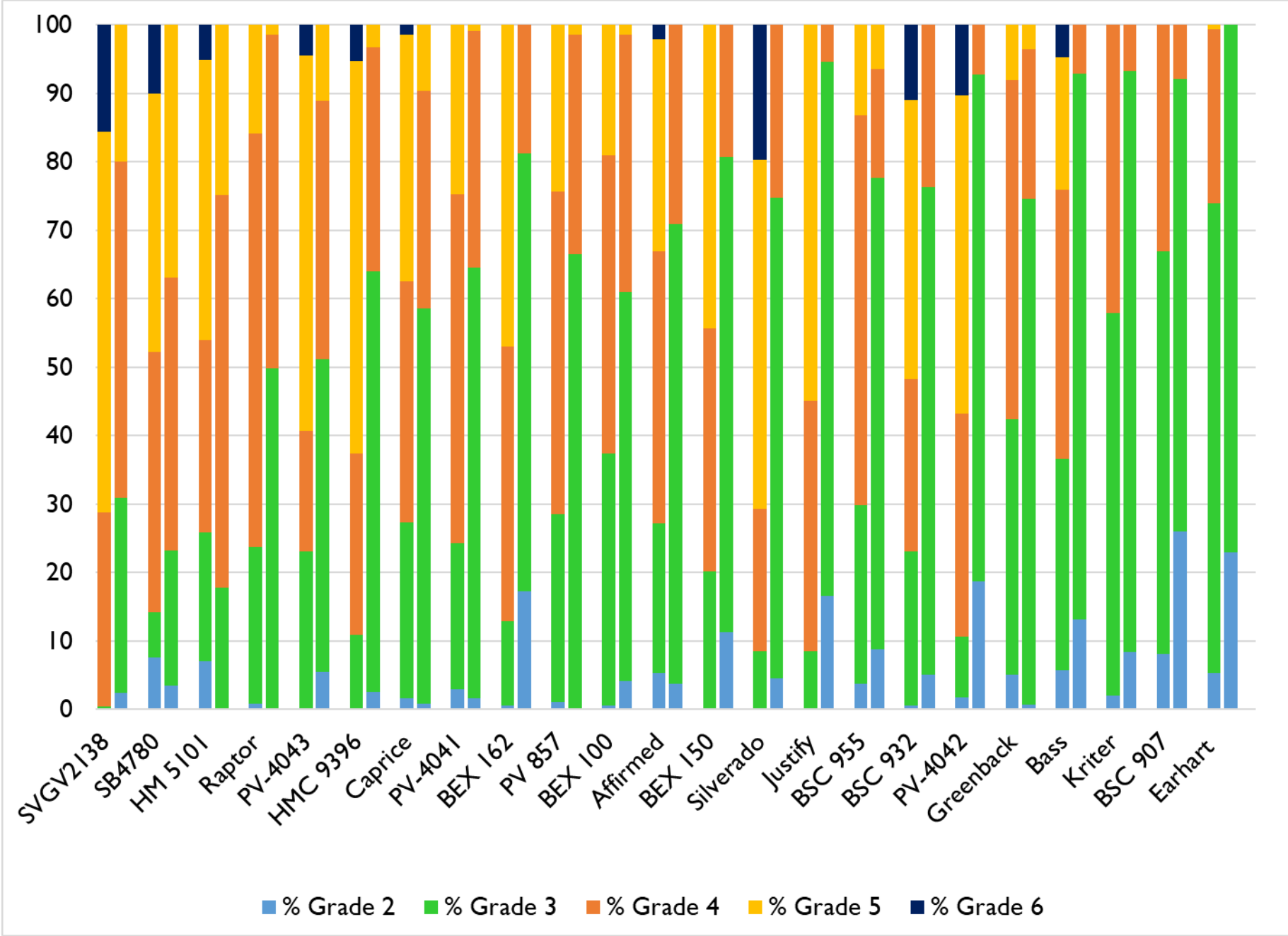


Figure 3. Temperature and Rainfall for the June 6 Planted Round Snap Bean Trial from June 6 (planting) August 7 (final harvest)

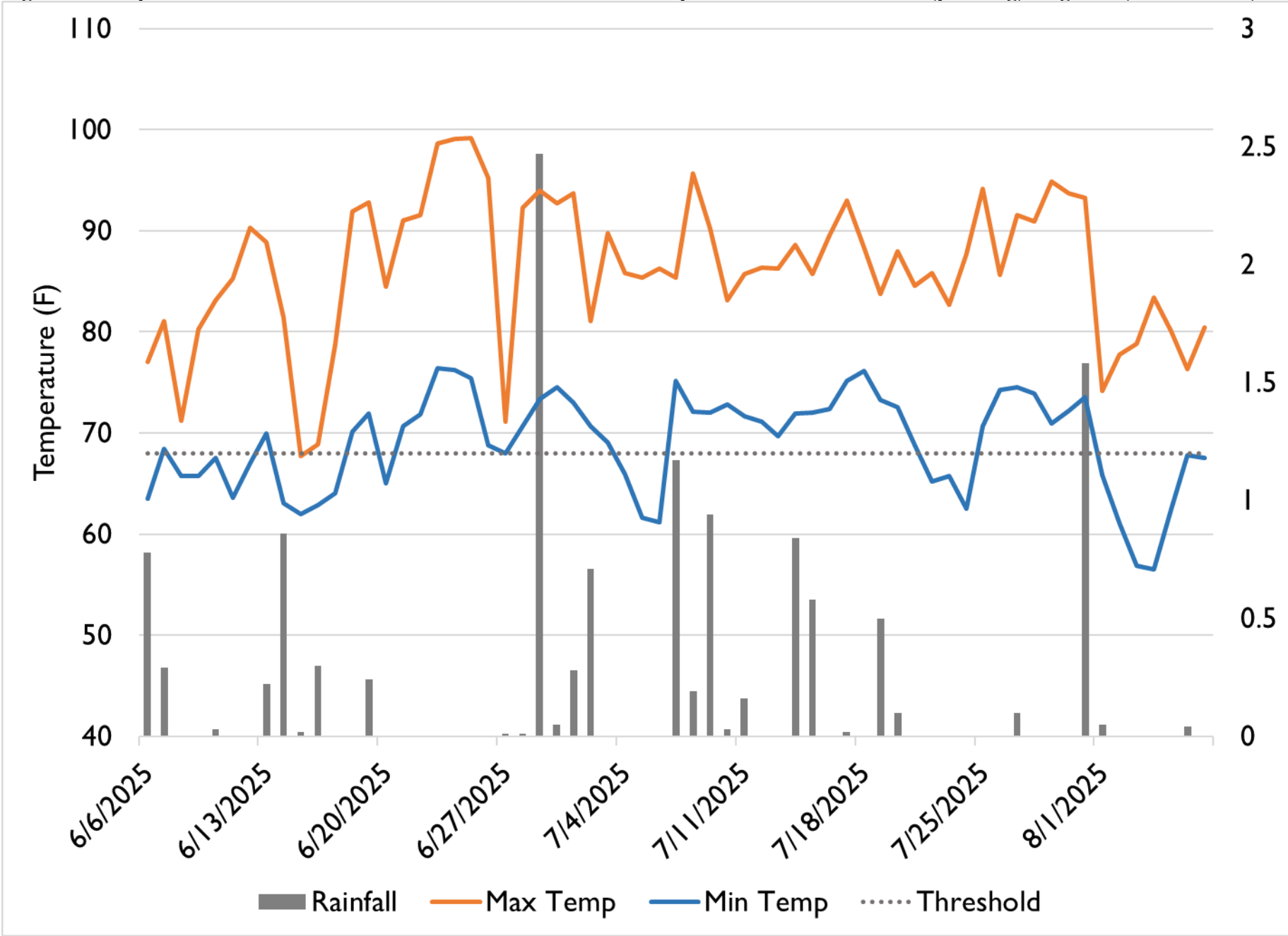
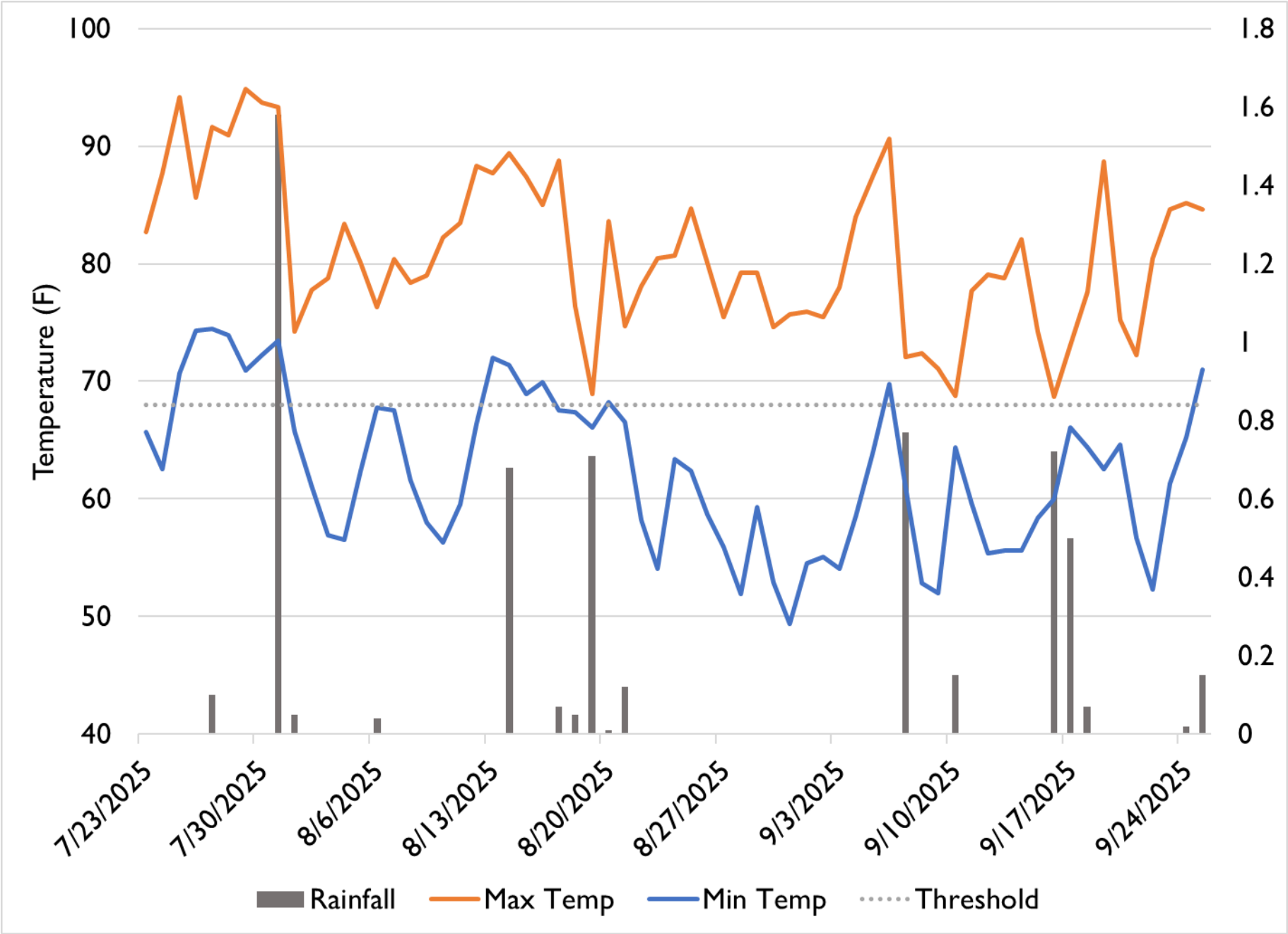


Figure 4. Temperature and Rainfall for the July 23 Planted Round Snap Bean Trial from July 23 (planting) September 25 (final harvest)



**Figure 5. June 6 planted trial on July 16, 2025, 40 DAP, and 12 days before the first day of harvest.**



**Figure 6. July 23 planted trial on September 18, 2025, 57 DAP, during harvest.**



**Appendix A: Photos of Pods from the 2025 Trial Varieties\***



**SVGV2138**



**SB4780**



**HM 5101**



**Raptor**



**PV-4043**



**HMC 9396**



**Caprice**



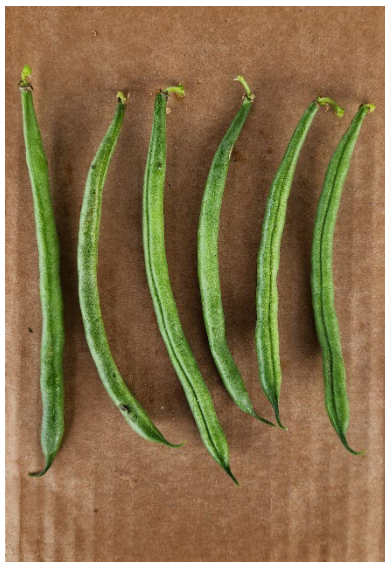
**PV-4041**



**BEX 162**



**PV 857**



**BEX 100**



**Affirmed**



**BEX 150**



**Silverado**



**Justify**



**BSC 932**



**PV-4042**



**Greenback**



**Bass**



**Kriter**



**BSC907**



**Earhart**

\*Varieties are ordered by average percent 4 & 5 grade pods, from highest to lowest, i.e. largest to smallest diameter size grade.

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