MICHIGAN DRY BEAN CANNING REPORT

2025

MSU Extension

MICHIGAN BEAN COMMISSION
Production Research Advisory Board

2025

Field Trial Methods

Dry beans were seeded in four-row plots that measured 6.6′ wide by 24′ long, with 20″ rows. Each entry was replicated four times. All trials were designed as randomized complete blocks (RCB). (RCB is a standard agricultural trial design in which entries are randomly assigned to groups or blocks, and the blocks are randomly repeated. The goal of the replication is to control for variables that might affect an entry's yield, such as soil nutrient levels [Table 2], pest loads, and variability in soil textures.)

Trials received industry standard seed treatments, fertilization, and weed control applications at labeled rates. Prior to harvest, plots were trimmed to 17' length. Yield data was obtained by direct harvesting the center two rows for small- and medium-seeded beans. Large-seeded beans were pulled by a two-row Pickett bean puller and then mechanically threshed to prevent harvest loss. Following harvest, samples were cleaned, weighed, and moisture tested.

Table 2. Soil test information from the 2025 trial locations, including the percentage of organic matter, soil type, soil pH, and soil cation exchange capacity (CEC). All macro- and micronutrients were sufficient for dry bean production.

Location	Percentage of organic matter	Soil type	Soil pH	Soil CEC
Bay	2.7	Sandy clay loam	7.0	12.3
Huron	2.0	Sandy clay loam	7.8	12.0
Montcalm	1.5	Loamy sand	7.3	5.1
Sanilac	2.0	Sandy clay loam	7.7	8.6
Tuscola (Zwerk and Sons)	2.7	Clay loam	7.9	15.5
Tuscola (SVREC)	2.2	Sandy clay loam	7.8	15.1

Yield Trial Results

Tables 5 through 15 provide each entry's yield results in pounds per acre (Lbs./A) adjusted to 18% moisture. This is presented as the combined average yield for each entry across all sites in 2025. (**Note:** If an entry was grown under different production systems [irrigated versus dry land] at different sites, the combined yield was not calculated.) When possible, two- and three-year average yields were also calculated across locations. For example, the three-year average yield of a navy bean entry (Table 5) includes data from 2023, 2024, and 2025 at four locations per year (12 site-years).

The last three rows of the agronomic and yield results tables list the trial average (mean), least significant difference (LSD), and coefficient of variation (CV), respectively, for the data in each column.

The entry with the **highest** value in each yield column is followed by two asterisks (**). Any yields listed in the same column that are not significantly different from the highest yield are noted with one asterisk (*). This means that if two entries in the same column are followed by either one or two asterisks, the difference in values between the entries is not statistically significant.

Table 16 lists the sources of dry bean varieties tested in 2025. The entries are organized by bean market class.

Canning Methods

183 lines were sampled and tested for canning quality. For mesoamerican germplasm (black, navy, s. red, etc.), samples were taken from Bay and Huron trial locations, andean germplasm (kidney, cranberry, etc.) was sampled from the Montcalm and Tuscola trial locations. Samples were processed utilizing the following methods: Each can was filled with 90 grams of dry matter for all mesoamerican market classes. Cans for andean beans were filled with 85 grams of dry matter. Moisture levels prior to soaking ranged from 9.7-13.6%, averaging 11.8% across all cultivars tested. Following subsampling, dry beans were transferred to the Food Processing and Innovation Center (FPIC), an MSU facility in Okemos, MI. At FPIC, two days of sample processing took place in 2026. Dry beans were soaked and blanched by market class according to the protocol in Table 3. Water for soaking included 125ppm of CaCl2 for Andean beans. Immediately following blanching, samples were transferred to individually identifiable cans (size 307x407) and filled with 190ºF brine. Brine is a mixture of tap water, 1.5% sucrose (sugar), 1.2% sodium chloride (salt), and 100ppm of CaCl2. Colored beans had the additional component of disodium EDTA added at a ratio of 0.02%. Cans were then seamed and individually inspected to ensure seam quality prior to thermal processing. Cans were loaded in 552 can batches and transferred to an 'Allpax' retort. Thermal processing parameters were set for a 19-minute cook cycle at 250ºF. Following cool down samples were stored for approximately 4 weeks prior to opening and evaluations to allow for equilibration.

Table 3. Dry Bean Brine, Soaking, Blanching and Thermal Processing by market class

Class	Brine				Rehydration		Thermal Processing
	Salt	Sugar	$CaCl_2$	EDTA	Hot Soak	Blanch	
Navy	1.2%	1.5%	100 ppm	-	30 min (125ºF)	5 min (190ºF)	19min/250ºF
Black	1.2%	1.5%	100 ppm	-	-	90 sec (190ºF)	19min/250ºF
Great Northern	1.2%	1.5%	100 ppm	-	30 min (125ºF)	15 min (190ºF)	19min/250ºF
Pinto	1.2%	1.5%	100 ppm	0.02%	2 hr (130ºF)	5 min (190ºF)	19min/250ºF
Small Red	1.2%	1.5%	100 ppm	0.02%	50 min (125ºF)	15 min (190ºF)	19min/250ºF
Pink	1.2%	1.5%	100 ppm	0.02%	30 min (125ºF)	15 min (190ºF)	19min/250ºF
Dark Red Kidney	1.2%	1.5%	100 ppm	0.02%	2 hr (130ºF)	5 min (190ºF)	19min/250ºF
Light Red Kidney	1.2%	1.5%	100 ppm	0.02%	2 hr (130ºF)	5 min (190ºF)	19min/250ºF
White Kidney	1.2%	1.5%	100 ppm	-	30 min (125ºF)	5 min (190ºF)	19min/250ºF
Cranberry	1.2%	1.5%	100 ppm	0.02%	2 hr (130ºF)	5 min (190ºF)	19min/250ºF
Yellow	1.2%	1.5%	100 ppm	-	30 min (125ºF)	5 min (200ºF)	19min/250ºF

Evaluations: On February 4, 2026, a public meeting was held for the evaluation of all lines tested. Cans were opened and scored by a 19-member panel of trained evaluators. Trained evaluators scored all market classes visually on a scale from 1-5. This scoring system has been created and validated by USDA researchers located at MSU who are also involved in the training of evaluators. Table 4 documents this established scoring system based on physical characteristics of the processed sample for all market classes besides black beans. Black beans were

scored similarly, but color was evaluated on a 1-5 scale independently from general appearance as this is a unique trait of economic interest in black beans.

Table 4. General appearance scale used for scoring all market classes except for black beans.

Category	Score	Bean Splitting	Brine Clarity	Free Starch/Clumps	Color
Excellent Appearance	**5**	None (90% intact)	Very Clear	Very Little Starch/Clumps	Excellent color (exceeds industry standard)
Very Good Appearance	**4**	Moderately Intact (70-89% intact)	Moderately Clear	Moderately little starch/clumps	Very good color (meets industry standard)
Average Appearance	**3**	Average (60-69% intact)	Neither Clear or Cloudy	Neither Little or Much	Average Color
Poor Appearance	**2**	Moderately Broken (badly split but holding together)	Moderately Cloudy	Moderately Many/Big Starch/clumps	Poor color (a little darker or lighter than industry standard)
Unacceptable Appearance	**1**	Severe (Seeds blown apart)	Very Cloudy	Very Big Starch/Clumps	Unacceptable color (a lot darker or lighter than industry standard)

Images from 2026 Can Opening Meeting at Saginaw Valley Research and Extension Center

Table 5. Navy bean yield and quality results.

Navy bean entry	1-year avg. (Lbs./A)	2-year avg. (Lbs./A)	3-year avg. (Lbs./A)	Seed Size (Seeds/lb.)	Bay (1-5)	Huron (1-5)	1-year avg. (1-5)	2-year avg. (1-5)	3-year avg. (1-5)
14092	2,874 [a]	3,011	NA	1,966	2.6	2.9	2.7	2.7	NA
21102	2,608	2,497	NA	2,068	2.7	2.3	2.5	2.4	NA
21106	2,899	NA	NA	2,035	3.5	3.1	3.3	NA	NA
21108	2,692	2,679	NA	2,171	2.9	2.8	2.8	3.2	NA
Argosy	3,295	3,204	3,120*	1,722	3.1	2.3	2.7	2.7	2.3
Armada	3,227	3,041	3,207**	1,805	3.1	2.7	2.9	3.0	2.9
AuSable	2,893	2,821	2,770	1,935	2.9	2.7	2.8	2.9	2.8
Blast	3,381	3,076	NA	2,032	2.9	2.7	2.8	2.8	NA
Blizzard	3,252	2,984	3,156*	1,977	3.3	2.3	2.8	2.9	2.8
EX2111-N	3,104	2,963	2,846	2,081	3.3	3.1	3.2	3.0	2.7
EX-712302	2,900	NA	NA	1,986	2.4	2.6	2.5	NA	NA
EX-712310	2,881	NA	NA	1,971	3.4	3.1	3.3	NA	NA
EX-712315	2,455	NA	NA	1,941	3.3	2.9	3.1	NA	NA
EX-712316	2,993	NA	NA	1,927	3.1	2.5	2.8	NA	NA
EX-712317	3,016	NA	NA	1,933	3.0	2.8	2.9	NA	NA
HMS Bounty	2,656	2,507	2,821	2,345	3.1	3.1	3.1	3.1	2.9
HMS Medalist	2,883	2,900	3,137*	2,034	3.3	3.2	3.3	3.2	3.4
Liberty	2,775	2,742	2,932*	1,990	3.1	2.8	3.0	3.3	3.3
N22610	3,510*	NA	NA	1,856	3.8	3.5	3.7	NA	NA
N22616	3,618*	3,179	3,150*	2,012	2.2	2.3	2.3	2.5	2.4
N22622	3,557*	3,453*	NA	1,776	2.5	1.5	2.0	2.3	NA
N22623	3,529*	3,124	NA	1,978	3.4	2.9	3.2	3.2	NA
N23706	3,805**	3,296*	NA	1,950	3.4	2.6	3.0	3.0	NA
N23717	3,514*	NA	NA	2,091	2.3	2.6	2.5	NA	NA
N24847	3,509*	NA	NA	1,910	2.4	1.7	2.0	NA	NA
N24851	3,542*	NA	NA	2,024	3.0	2.3	2.7	NA	NA
Nautica	3,063	2,986	2,951*	2,032	3.6	3.4	3.5	3.0	2.7
ND Polar	3,355	2,807	2,751	1,785	3.4	3.3	3.4	3.3	3.2
OAC Charm	3,204	2,951	NA	1,857	3.3	3.3	3.3	3.1	NA
Steam	3,692*	3,647**	NA	1,794	3.4	2.8	3.1	2.9	NA
T9905	2,436	2,610	2,854	1,786	2.3	2.2	2.3	2.6	2.4
Valiant	2,883	2,725	2,997*	1,971	3.0	3.7	3.4	3.5	3.5
Victory	3,069	2,993	3,205*	1,884	2.8	2.6	2.7	2.7	2.8
MEAN	3,123	2,967	2,993	1,958	3.0	2.8	2.9	2.9	2.8
LSD(0.05)	356	397	295	NA	NA	NA	NA	NA	NA
CV	16.9%	26.8%	23.6%	NA	NA	NA	NA	NA	NA

Note. The **highest** yield in each column is marked with two asterisks. Any values in a column that are not statistically different from the column's two-asterisk entry are marked with one asterisk. NA = Not available. Lbs./A = Pounds per acre. Canning is Scored from 1 (Poor) to 5 (Excellent). All yield and seed size measurements adjusted to 18% moisture.

[a] Due to poor trial quality this season, Sanilac County yield averages were not included in the one-year average.

Table 6. Black bean yield and quality results.

Black bean entry	1-year avg. *(Lbs./A)*	2-year avg. *(Lbs./A)*	3-year avg. *(Lbs./A)*	Seed Size (Seeds/lb.)	Bay *(1-5)*	Huron *(1-5)*	1-year avg. *(1-5)*	2-year avg. *(1-5)*	3-year avg. *(1-5)*
13505	3,250 [a]	NA	NA	1,968	2.9(3.3)[b]	3.4(3.5)	3.2(3.4)	NA	NA
16598	3,206	NA	NA	2,090	2.5(2.5)	2.1(2.2)	2.3(2.3)	NA	NA
17746	3,398	3,220	NA	2,024	2.0(2.8)	2.3(2.8)	2.1(2.8)	2.5(2.8)	NA
17751	3,742*	3,358*	3,281	1,836	2.9(1.8)	3.4(1.9)	3.1(1.9)	2.9(1.9)	3.2(1.7)
17764	3,542	NA	NA	1,798	1.7(2.2)	1.5(2.0)	1.6(2.1)	NA	NA
21650	3,362	3,137	NA	1,708	2.1(2.6)	2.9(3.1)	2.5(2.8)	2.7(2.9)	NA
21702	3,806*	3,578*	NA	1,674	2.5(3.2)	2.4(3.1)	2.4(3.2)	2.7(3.1)	NA
21703	3,497	NA	NA	1,684	2.7(2.2)	2.6(2.3)	2.6(2.2)	NA	NA
21723	3,317	3,142	NA	1,782	3.6(3.9)	3.7(3.9)	3.7(3.9)	3.7(3.8)	NA
B2002-1-3	3,266	3,285*	NA	2,008	3.0(3.2)	2.8(3.1)	2.9(3.1)	3.1(3.3)	NA
B22041	3,490	3,381*	3,491*	2,020	3.4(3.0)	3.4(3.6)	3.4(3.3)	3.4(3.6)	3.6(3.5)
B22042	3,062	3,365*	NA	1,916	2.6(3.9)	2.8(3.9)	2.7(3.9)	3.1(4.0)	NA
B22062	3,549	3,433*	NA	1,712	2.7(3.0)	2.2(2.8)	2.5(2.9)	2.6(2.9)	NA
B22854	3,481	3,446*	3,358*	1,725	2.8(3.0)	2.7(3.2)	2.8(3.1)	2.8(3.0)	3.2(3.1)
B23911	3,389	3,343*	NA	1,842	3.4(3.6)	3.4(3.7)	3.4(3.6)	3.4(3.7)	NA
B23949	3,134	3,179	NA	1,880	3.2(2.5)	3.1(2.4)	3.2(2.5)	2.9(2.6)	NA
B24120	3,560	NA	NA	1,829	2.4(3.2)	1.9(3.6)	2.2(3.4)	NA	NA
B24122	3,403	NA	NA	1,966	1.8(3.4)	1.8(3.5)	1.8(3.5)	NA	NA
B24180	3,616*	NA	NA	1,783	3.3(3.8)	3.1(3.8)	3.2(3.8)	NA	NA
B24212	3,397	NA	NA	1,595	2.7(3.1)	3.3(3.4)	3.0(3.2)	NA	NA
B7071259	3,417	3,317*	3,478*	1,753	3.4(2.2)	2.8(2.4)	3.1(2.3)	2.9(2.4)	3.3(2.6)
B7072252	3,632*	3,202	3,336*	1,838	3.5(3.7)	3.1(3.7)	3.3(3.7)	3.4(4.0)	3.4(3.8)
B7072269	3,659*	3,185	3,273	1,856	2.9(3.8)	3.1(4.0)	3.0(3.9)	3.1(3.8)	3.3(4.0)
B18094173	3,213	3,016	3,167	1,761	3.1(3.7)	3.1(3.8)	3.1(3.7)	3.2(3.8)	3.3(3.9)
Black Bear	3,328	3,041	3,134	2,085	2.3(1.9)	2.4(2.1)	2.3(2.0)	2.3(2.0)	2.4(2.1)
Black Pearl	3,424	3,277*	3,144	1,882	1.7(4.6)	1.9(4.3)	1.8(4.5)	2.3(4.3)	2.6(4.5)
Black Tails	3,084	3,003	2,930	1,892	2.8(2.5)	3.2(2.9)	3.0(2.7)	3.0(3.1)	2.9(3.1)
BlackBeard	3,195	3,081	3,247	1,712	4.0(3.5)	3.9(3.8)	4.0(3.7)	3.8(3.8)	3.9(3.9)
Kona	3,876**	3,695**	3,614**	1,778	2.9(3.2)	2.8(3.4)	2.9(3.3)	3.0(3.3)	3.2(3.3)
ND Galaxy	3,056	NA	NA	2,008	1.9(2.1)	2.5(2.6)	2.2(2.3)	NA	NA
Nimbus	3,604*	3,288*	3,289*	1,773	2.8(2.2)	2.6(2.2)	2.7(2.2)	2.7(2.4)	2.9(2.2)
Slate	3,249	NA	NA	1,948	3.1(3.6)	3.2(3.8)	3.1(3.7)	NA	NA
Spectre	3,215	3,014	3,092	1,822	2.9(2.5)	2.8(2.3)	2.9(2.4)	2.7(2.6)	2.8(2.7)
Umbra	3,600*	3,422*	3,359*	1,766	2.3(2.8)	2.8(3.1)	2.5(2.9)	2.6(3.0)	2.8(3.1)
Zenith	3,165	3,211	3,096	1,760	3.3(4.1)	3.6(3.9)	3.5(4.0)	3.8(4.3)	3.7(4.2)
MEAN	3,405	3,266	3,269	1,842	2.8(3.0)	2.8(3.1)	2.8(3.1)	3.0(3.2)	3.1(3.2)
LSD$_{(0.05)}$	300	418	326	NA	NA	NA	NA	NA	NA
CV	15.1%	28.2%	26.2%	NA	NA	NA	NA	NA	NA

Note. The **highest** yield in each column is marked with two asterisks. Any values in a column that are not statistically different from the column's two-asterisk entry are marked with one asterisk. NA = Not available. Lbs./A = Pounds per acre. Canning is Scored from 1 (Poor) to 5 (Excellent). All yield and seed size measurements adjusted to 18% moisture.

[a] Due to poor trial quality this season, Sanilac County yield averages were not included in the one-year average.

[b] Canning scores for black beans are notated as general appearance scores followed by color. Example: appearance(color).

Table 7. Small red and pink bean yield and quality results.

Small red & pink bean entry	1-year avg. *(Lbs./A)*	2-year avg. *(Lbs./A)*	3-year avg. *(Lbs./A)*	Seed Size (Seeds/lb.)	Bay *(1-5)*	Huron *(1-5)*	1-year avg. *(1-5)*	2-year avg. *(1-5)*	3-year avg. *(1-5)*
16686	3,634 [a]	3,281*	3,323*	1,171	2.4	2.4	2.4	2.6	2.6
17822	3,824*	3,360*	3,321*	1,255	2.4	2.7	2.5	2.7	2.8
17837	3,567	3,279*	3,345*	1,292	1.7	1.8	1.8	2.1	2.3
17848	3,835*	3,347*	NA	1,099	2.5	2.6	2.6	3.0	NA
17851	3,962*	3,233*	NA	1,122	2.3	2.4	2.4	2.5	NA
19837	3,160	3,120*	3,139*	1,161	1.8	2.4	2.1	2.1	2.1
Coral [b]	3,602	3,341*	3,056*	1,039	2.1	1.7	1.9	2.6	2.5
ND Rosalind [b]	4,000**	3,455**	NA	1,200	2.4	2.5	2.4	2.3	NA
ND151006-2	3,443	NA	NA	1,212	1.5	1.8	1.6	NA	NA
OAC Rosito	3,012	NA	NA	1,712	2.6	2.3	2.4	NA	NA
R22703	3,414	3,297*	NA	1,172	2.5	2.6	2.6	2.9	NA
R22710	3,822*	3,423*	NA	1,159	2.4	2.9	2.7	3.1	NA
R22714	3,724*	NA	NA	1,044	2.0	2.4	2.2	NA	NA
R23804	3,951*	NA	NA	1,212	2.4	2.7	2.5	NA	NA
USDA Lava	2,847	NA	NA	1,306	3.2	2.8	3.0	NA	NA
Viper	3,792*	3,347*	3,346**	1,735	1.7	1.9	1.8	2.4	2.5
MEAN	3,599	3,317	3,256	1,243	2.2	2.4	2.3	2.6	2.5
LSD$_{(0.05)}$	293	412	332	NA	NA	NA	NA	NA	NA
CV	12.0%	24.3%	24.7%	NA	NA	NA	NA	NA	NA

Note. The **highest** yield in each column is marked with two asterisks. Any values in a column that are not statistically different from the column's two-asterisk entry are marked with one asterisk. NA = Not available. Lbs./A = Pounds per acre. Canning is Scored from 1 (Poor) to 5 (Excellent). All yield and seed size measurements adjusted to 18% moisture.

[a] Due to poor trial quality this season, Sanilac County yield averages were not included in the one-year average. [b] Pink bean variety.

Table 8. Conventional and slow darkening pinto bean yield and quality results.

Pinto bean entry	1-year avg. *(Lbs./A)*	2-year avg. *(Lbs./A)*	3-year avg. *(Lbs./A)*	Seed Size (Seeds/lb.)	Bay *(1-5)*	Huron *(1-5)*	1-year avg. *(1-5)*	2-year avg. *(1-5)*	3-year avg. *(1-5)*
Bronco [a]	2,318 [b]	2,527	NA	1,021	2.2	1.7	2.0	2.3	NA
Cancun	3,352	2,881	NA	981	2.2	1.7	2.0	2.6	NA
Charro	3,772**	3,483**	3,603**	1,036	3.4	3.5	3.5	3.2	3.7
Cowboy	3,118	3,023	NA	1,112	1.8	2.0	1.9	2.1	NA
Diamondback [a]	2,693	2,818	2,714	1,119	2.6	2.8	2.7	2.5	2.9
Eternal [a]	3,670*	3,122*	NA	1,163	2.9	2.8	2.9	3.1	NA
Gleam [a]	3,540*	3,029	3,033	1,115	2.2	2.1	2.1	2.4	2.7
Mystic [a]	3,007	2,936	2,976	1,061	1.2	1.6	1.4	1.3	1.3
ND Falcon	3,376	3,029	2,885	1,142	2.3	1.9	2.1	2.2	2.7
ND Rodeo [a]	3,103	3,259*	3,309*	1,064	3.0	2.9	3.0	2.6	2.8
P22103	3,347	NA	NA	1,111	3.1	2.7	2.9	NA	NA
P22204	3,496*	NA	NA	1,126	3.5	3.6	3.6	NA	NA
P23311	3,534*	3,350*	NA	1,164	2.9	3.4	3.2	2.8	NA
P24402	3,541*	NA	NA	1,081	2.6	3.5	3.0	NA	NA
Rattler	3,085	2,950	3,011	1,019	1.4	2.3	1.8	2.4	2.6
Shine [a]	3,063	3,080*	NA	1,143	2.2	2.9	2.5	2.3	NA
SV6139GR	2,865	2,715	2,834	1,200	2.0	2.2	2.1	2.4	2.7
Toast	3,340	NA	NA	1,120	1.4	1.6	1.5	NA	NA
USDA Cody	2,994	NA	NA	1,116	1.7	2.1	1.9	NA	NA
Vibrant [a]	3,104	3,036	3,072	1,199	1.5	2.2	1.9	1.6	1.9
MEAN	3,216	3,018	3,048	1,100	2.3	2.5	2.4	2.4	2.6
LSD$_{(0.05)}$	388	430	323	NA	NA	NA	NA	NA	NA
CV	17.8%	28.3%	25.3%	NA	NA	NA	NA	NA	NA

Note. The **highest** yield in each column is marked with two asterisks. Any values in a column that are not statistically different from the column's two-asterisk entry are marked with one asterisk. NA = Not available. Lbs./A = Pounds per acre. Canning is Scored from 1 (Poor) to 5 (Excellent). All yield and seed size measurements adjusted to 18% moisture.
[a] Slow darkening pinto variety. [b] Due to poor trial quality this season, Sanilac County yield averages were not included in the one-year average.

Table 9. Great northern bean yield and quality results.

Great northern bean entry	1-year avg. *(Lbs./A)*	2-year avg. *(Lbs./A)*	3-year avg. *(Lbs./A)*	Seed Size (Seeds/lb.)	Bay *(1-5)*	Huron *(1-5)*	1-year avg. *(1-5)*	2-year avg. *(1-5)*	3-year avg. *(1-5)*
Eiger	3,500 [a]	3,127*	3,224**	1,172	2.4	2.2	2.3	2.6	2.4
G22004	3,878**	3,526**	NA	1,230	2.8	2.2	2.5	2.5	NA
G23108	3,386	NA	NA	1,203	2.9	2.8	2.9	NA	NA
ND Pegasus	3,057	3,039	2,971*	1,108	2.4	2.4	2.4	2.6	2.4
Powderhorn	2,550	2,506	2,437	1,196	2.6	3.4	3.0	2.9	3.1
MEAN	3,274	3,073	2,890	1,182	2.6	2.6	2.6	2.6	2.6
LSD$_{(0.05)}$	318	480	341	NA	NA	NA	NA	NA	NA
CV	14.2%	29.4%	27.7%	NA	NA	NA	NA	NA	NA

Note. The **highest** yield in each column is marked with two asterisks. Any values in a column that are not statistically different from the column's two-asterisk entry are marked with one asterisk. NA = Not available. Lbs./A = Pounds per acre. Canning is Scored from 1 (Poor) to 5 (Excellent). All yield and seed size measurements adjusted to 18% moisture.

[a] Due to poor trial quality this season, Sanilac County yield averages were not included in the one-year average.

Table 10. Cranberry bean yield and quality results.

Cranberry bean entry	Montcalm (Lbs./A)	Tuscola (Lbs./A)	Irrigated 2-year avg. (Lbs./A)	Irrigated 3-year avg. (Lbs./A)	Dry land 2-year avg. (Lbs./A)	Dry land 3-year avg. (Lbs./A)	Seed Size (Seeds/lb.)	Tuscola (1-5)	Montcalm (1-5)	1-year avg. (1-5)	2-year avg. (1-5)	3-year avg. (1-5)
16756	2,002	2,306	2,668	2,936*	2,489	2,535	1,120	3.8	4.0	3.9	3.5	3.8
16758	1,862	1,878	2,312	2,668	1,857	2,015	975	3.9	4.0	3.9	3.4	3.6
16775	1,807	1,851	2,579	2,490	2,276	2,441	901	3.7	3.3	3.5	3.3	3.3
16816	1,938	2,239	2,764	2,833	2,242	2,240	889	2.8	2.9	2.9	2.4	2.8
151093	2,387*	3,032**	3,315**	3,249**	3,084**	3,246**	902	3.0	2.8	2.9	2.4	2.8
Amaranto	1,753	1,892	2,521	2,672	2,172	2,352	786	1.9	2.4	2.2	2.0	2.1
C24104	2,199	2,112	NA	NA	NA	NA	894	1.5	1.5	1.5	NA	NA
C24114	2,306	1,744	NA	NA	NA	NA	807	2.4	2.8	2.6	NA	NA
CR25-1	904	1,428	NA	NA	NA	NA	960	2.9	2.9	2.9	NA	NA
CR25-2	1,097	1,770	NA	NA	NA	NA	769	2.8	2.6	2.7	NA	NA
CR25-3	985	1,534	NA	NA	NA	NA	711	3.3	3.1	3.2	NA	NA
CR2283-8	1,762	1,877	NA	NA	NA	NA	740	3.4	3.5	3.4	NA	NA
CR22109-6	1,715	2,114	NA	NA	NA	NA	793	3.1	2.7	2.9	NA	NA
Etna	2,310	2,256	2,692	2,864	2,317	2,050	824	2.1	2.4	2.3	2.0	2.0
Jester	2,250	2,354	3,233*	2,758	2,660	3,016*	783	2.3	1.7	2.0	1.9	2.0
OAC Firestripe	2,377*	2,347	2,993*	3,106*	2,468	2,560	680	3.3	3.2	3.2	2.7	2.7
OAC Navabi	2,670**	2,752*	2,870	2,771	2,573	2,443	866	2.1	1.8	2.0	2.0	1.8
MEAN	1,851	2,038	2,795	2,831	2,414	2,528	847	2.8	2.8	2.8	2.5	2.7
LSD(0.05)	298	427	360	314	351	425	NA	NA	NA	NA	NA	NA
CV	13.6%	17.7%	12.9%	13.3%	14.5%	19.1%	NA	NA	NA	NA	NA	NA

Note. The **highest** yield in each column is marked with two asterisks. Any values in a column that are not statistically different from the column's two-asterisk entry are marked with one asterisk. NA = Not available. Lbs./A = Pounds per acre. Canning is Scored from 1 (Poor) to 5 (Excellent). All yield and seed size measurements adjusted to 18% moisture.

Table 12. Light red kidney bean yield and quality results.

Light red kidney bean entry	Montcalm *(Lbs./A)*	Tuscola *(Lbs./A)*	Irrigated 2-year avg. *(Lbs./A)*	Irrigated 3-year avg. *(Lbs./A)*	Dry land 2-year avg. *(Lbs./A)*	Dry land 3-year avg. *(Lbs./A)*	Seed Size (Seeds/lb.)	Tuscola *(1-5)*	Montcalm *(1-5)*	1-year avg. *(1-5)*	2-year avg. *(1-5)*	3-year avg. *(1-5)*
15916	3,215*	2,783*	3,293*	3,132	2,698*	2,926*	841	1.8	2.0	1.9	2.0	2.2
15923	2,873	2,211	3,197*	3,284*	2,422	2,376	745	2.3	2.4	2.4	2.4	2.6
20870	2,669	2,676*	2,927	NA	3,053**	NA	764	3.3	2.4	2.9	2.8	NA
20909	2,140	2,806**	2,813	NA	2,842*	NA	796	3.3	1.9	2.6	2.6	NA
161055	1,952	2,832*	3,051	NA	3,011*	NA	772	2.8	2.2	2.5	2.5	NA
161082	2,383	2,578*	2,936	2,819	2,459	2,974*	912	3.0	2.5	2.8	2.5	2.5
Big Red	2,645	2,183	3,022	2,951	2,265	2,300	793	2.7	2.4	2.6	2.3	2.3
CELRK	2,569	2,205	3,084	2,911	2,299	2,358	799	1.8	2.0	1.9	2.0	2.0
K22601	2,766	2,810*	3,105*	NA	2,841*	NA	848	3.3	2.4	2.8	2.5	NA
K22604	3,238**	2,803*	3,668**	3,624**	2,902*	3,195**	888	3.8	2.5	3.1	2.6	2.5
K23702	2,668	2,657*	NA	NA	NA	NA	811	4.3	2.8	3.6	NA	NA
Pink Panther	2,416	2,444*	2,992	3,009	2,535	2,490	738	2.3	3	2.5	2.4	2.4
Ronnie's Red	1,706	2,756*	2,718	2,714	2,795*	2,751	799	2.7	2.1	2.4	2.4	2.3
Rosie	1,745	2,571*	2,573	NA	2,341	NA	871	2.9	2.3	2.6	2.5	NA
MEAN	2,499	2,594	3,030	3,057	2,655	2,681	813	2.9	2.3	2.6	2.4	2.3
LSD$_{(0.05)}$	350	378	584	409	362	338	NA	NA	NA	NA	NA	NA
CV	11.7%	12.2%	17.5%	16.0%	13.6%	14.6%	NA	NA	NA	NA	NA	NA

Note. The **highest** yield in each column is marked with two asterisks. Any values in a column that are not statistically different from the column's two-asterisk entry are marked with one asterisk. NA = Not available. Lbs./A = Pounds per acre. Canning is Scored from 1 (Poor) to 5 (Excellent). All yield and seed size measurements adjusted to 18% moisture.

Table 13. Dark red kidney bean yield and quality results.

Dark red kidney bean entry	Montcalm *(Lbs./A)*	Tuscola *(Lbs./A)*	Irrigated 2-year avg. *(Lbs./A)*	Irrigated 3-year avg. *(Lbs./A)*	Dry land 2-year avg. *(Lbs./A)*	Dry land 3-year avg. *(Lbs./A)*	Seed Size (Seeds/lb.)	Tuscola *(1-5)*	Montcalm *(1-5)*	1-year avg. *(1-5)*	2-year avg. *(1-5)*	3-year avg. *(1-5)*
15977	2,158	3,018*	2,881	2,503	2,871*	2,541	823	2.5	2.4	2.4	2.2	2.6
161156	3,070**	2,859*	3,846**	3,468**	2,845*	2,795*	1,067	3.3	2.8	3.1	2.6	2.7
161165	2,840*	2,861*	3,471*	3,210*	2,933*	3,109*	878	3.1	2.9	3.0	2.8	2.8
181017	2,765*	3,074**	3,689*	3,354*	3,124**	3,197**	823	3.3	3.4	3.4	2.8	3.2
181021	2,838*	2,546	3,546*	3,296*	2,461	2,191	831	3.5	2.7	3.1	2.7	2.8
Dynasty	2,666	2,880*	3,672*	3,226*	3,045*	2,868*	822	3.4	2.1	2.8	2.3	2.3
Epic	2,728	2,818*	3,564*	3,391*	2,783	2,644	857	2.8	2.6	2.7	2.4	2.4
Gallantry	2,897*	2,715	3,555*	3,335*	2,839*	2,569	885	3.6	3.4	3.5	3.1	3.4
K1920-2-3	2,094	1,857	3,023	NA	1,931	NA	999	3.9	4.1	4.0	3.4	NA
K23212	2,374	2,598	3,401*	NA	2,729	NA	860	3.6	2.7	3.2	2.7	NA
Montcalm	2,685	2,464	3,390*	3,232*	2,335	2,320	763	3.1	2.5	2.8	2.5	2.8
ND Redbarn	2,341	2,324	2,885	2,665	2,283	1,957	942	3.4	3.0	3.2	2.7	2.9
Rampart	2,353	2,323	3,315	3,141*	2,444	2,475	971	3.9	3.6	3.8	3.1	3.2
Red Hawk	2,511	1,972	3,148	2,843	2,114	1,980	958	3.6	3.3	3.4	3.3	3.4
Seattle	2,762*	2,814*	3,363*	3,094*	2,703	2,760*	1,082	3.7	3.1	3.4	3.1	3.2
MEAN	2,605	2,608	3,381	3,135	2,624	2,570	904	3.4	3.0	3.2	2.8	2.9
LSD$_{(0.05)}$	329	288	522	414	305	475	NA	NA	NA	NA	NA	NA
CV	10.6%	9.2%	15.5%	16.3%	11.7%	22.8%	NA	NA	NA	NA	NA	NA

Note. The **highest** yield in each column is marked with two asterisks. Any values in a column that are not statistically different from the column's two-asterisk entry are marked with one asterisk. NA = Not available. Lbs./A = Pounds per acre. Canning is Scored from 1 (Poor) to 5 (Excellent). All yield and seed size measurements adjusted to 18% moisture.

Table 14. White kidney bean yield and quality results.

White kidney bean entry	Montcalm *(Lbs./A)*	Tuscola *(Lbs./A)*	Irrigated 2-year avg. *(Lbs./A)*	Irrigated 3-year avg. *(Lbs./A)*	Dry land 2-year avg. *(Lbs./A)*	Dry land 3-year avg. *(Lbs./A)*	Seed Size (Seeds/lb.)	Tuscola *(1-5)*	Montcalm *(1-5)*	1-year avg. *(1-5)*	2-year avg. *(1-5)*	3-year avg. *(1-5)*
201016	1,886	2,627**	NA	NA	NA	NA	856	2.5	2.0	2.3	NA	NA
201020	2,130	2,406*	NA	NA	NA	NA	797	1.5	1.7	1.6	NA	NA
201030	1,864	2,312	NA	NA	NA	NA	951	2.1	2.3	2.2	NA	NA
231228	1,018	1,736	NA	NA	NA	NA	792	1.9	2.4	2.1	NA	NA
231229	966	1,753	NA	NA	NA	NA	804	1.9	2.2	2.1	NA	NA
231230	1,050	1,716	NA	NA	NA	NA	762	1.7	2.1	1.9	NA	NA
231231	1,168	2,088	NA	NA	NA	NA	853	2.3	2.1	2.2	NA	NA
231232	1,383	2,058	NA	NA	NA	NA	872	2.0	2.3	2.1	NA	NA
231233	1,666	1,990	NA	NA	NA	NA	930	2.6	2.2	2.4	NA	NA
Beluga	2,192	1,985	2,914	2,698	2,416*	2,660*	915	2.4	2.7	2.5	2.5	2.7
Denali	2,309	2,191	3,301*	3,214*	2,545*	2,634*	860	2.8	2.7	2.8	2.6	2.3
K22801	2,001	2,258	3,123*	NA	2,627**	NA	880	2.9	2.6	2.8	2.5	NA
K23908	2,097	2,546*	NA	NA	NA	NA	737	2.7	2.4	2.6	NA	NA
ND Whitetail	2,284	2,453*	3,076*	2,806	2,450*	2,655*	978	2.5	2.2	2.3	2.2	2.2
Snowdon	2,358*	2,270	3,007*	2,754	2,457*	2,415*	760	1.9	2.5	2.2	2.1	1.9
WK1601-1	2,652**	1,987	3,549**	3,459**	2,440*	2,789**	969	3.4	3.0	3.2	2.8	3.2
Yeti	1,873	2,311	NA	NA	NA	NA	938	2.8	2.1	2.5	NA	NA
MEAN	1,648	2,158	3,156	2,979	2,486	2,630	862	2.3	2.3	2.3	2.4	2.4
LSD$_{(0.05)}$	336	284	574	456	285	398	NA	NA	NA	NA	NA	NA
CV	17.2%	11.1%	17.0%	18.1%	11.1%	18.3*%	NA	NA	NA	NA	NA	NA

Note. The **highest** yield in each column is marked with two asterisks. Any values in a column that are not statistically different from the column's two-asterisk entry are marked with one asterisk. NA = Not available. Lbs./A = Pounds per acre. Canning is Scored from 1 (Poor) to 5 (Excellent). All yield and seed size measurements adjusted to 18% moisture.

Table 15. Yellow bean yield and quality results.

Yellow bean entry	Montcalm *(Lbs./A)*	Tuscola *(Lbs./A)*	Irrigated 2-year avg. *(Lbs./A)*	Irrigated 3-year avg. *(Lbs./A)*	Dry land 2-year avg. *(Lbs./A)*	Dry land 3-year avg. *(Lbs./A)*	Seed Size (Seeds/lb.)	Tuscola *(1-5)*	Montcalm *(1-5)*	1-year avg. *(1-5)*	2-year avg. *(1-5)*	3-year avg. *(1-5)*
Claim Jumper	2,261*	2,880*	3,358**	2,993**	2,742**	2,923**	1,228	3.6	2.9	3.3	3.3	3.4
DBY230-2	1,863	2,395	NA	NA	NA	NA	1,038	2.7	2.3	2.5	NA	NA
DBY231-2	1,694	2,755*	NA	NA	NA	NA	1,197	2.7	3.2	2.9	NA	NA
Honeycomb	2,079*	2,239	3,087*	2,904*	2,347	2,401	1,078	4.3	3.8	4.1	2.9	2.9
Motherlode	1,128	1,994	2,680	2,496	2,106	2,352	1,137	3.1	2.2	2.6	3.0	3.4
Y1803-5-3	1,740	2,973**	NA	NA	NA	NA	1,154	3.1	2.4	2.7	NA	NA
Y2115-3	1,459	1,578	NA	NA	NA	NA	1,202	2.3	2.5	2.4	NA	NA
Y2033307	1,836	2,421	NA	NA	NA	NA	1,058	3.9	3.2	3.6	NA	NA
Yellowstone	1,563	2,191	2,843*	2,848*	2,201	2,268	1,271	3.8	2.9	3.4	3.2	3.3
Yukon Gold	1,414	1,853	2,988*	2,927*	2,023	2,419	1,225	3.6	2.1	2.8	3.0	2.9
YW25-1	2,143*	2,879*	NA	NA	NA	NA	949	3.3	2.6	2.9	NA	NA
MEAN	1,842	2,315	2,997	2,835	2,284	2,474	1,140	3.3	2.7	3.0	3.1	3.2
LSD$_{(0.05)}$	412	341	658	435	279	383	NA	NA	NA	NA	NA	NA
CV	18.7%	12.3%	18.3%	17.0%	11.9%	18.6%	NA	NA	NA	NA	NA	NA

Note. The **highest** yield in each column is marked with two asterisks. Any values in a column that are not statistically different from the column's two-asterisk entry are marked with one asterisk. NA = Not available. Lbs./A = Pounds per acre. Canning is Scored from 1 (Poor) to 5 (Excellent). All yield and seed size measurements adjusted to 18% moisture.

2025 Sourcing Information

Table 16. Sources of dry bean entries tested in the 2025 performance trials, organized alphabetically by market class.

Entry	Market class	Source
13505	Black	ProVita
16598	Black	ProVita
17746	Black	ProVita
17751	Black	ProVita
17764	Black	ProVita
21650	Black	ProVita
21702	Black	ProVita
21703	Black	ProVita
21723	Black	ProVita
B2002-1-3	Black	USDA EL [a]
B22041	Black	MSU [b]
B22042	Black	MSU
B22062	Black	MSU
B22854	Black	MSU
B23911	Black	MSU
B23949	Black	MSU
B24120	Black	MSU
B24122	Black	MSU
B24180	Black	MSU
B24212	Black	MSU
B7071259	Black	ADM [c]
B7072252	Black	ADM
B7072269	Black	ADM
B18094173	Black	ADM
Black Bear	Black	ProVita
Black Pearl	Black	MSU
Black Tails	Black	ProVita
BlackBeard	Black	ProVita
Kona	Black	MSU
ND Galaxy	Black	NDSU [d]
Nimbus	Black	ProVita
Slate	Black	ADM
Spectre	Black	ProVita
Umbra	Black	Gentec
Zenith	Black	MSU
16756	Cranberry	ProVita
16758	Cranberry	ProVita
16775	Cranberry	ProVita
16816	Cranberry	ProVita
151093	Cranberry	ProVita
Amaranto	Cranberry	Bayer
C24104	Cranberry	MSU
C24114	Cranberry	MSU
CR25-1	Cranberry	USDA WA [e]
CR25-2	Cranberry	USDA WA
CR25-3	Cranberry	USDA WA
CR2283-8	Cranberry	USDA EL
CR22109-6	Cranberry	USDA EL
Etna	Cranberry	Bayer
Jester	Cranberry	ProVita
OAC Firestripe	Cranberry	TVS [f]
OAC Navabi	Cranberry	TVS
15977	Dark red kidney	ProVita
161156	Dark red kidney	ProVita
161165	Dark red kidney	ProVita
181017	Dark red kidney	ProVita
181021	Dark red kidney	ProVita
Dynasty	Dark red kidney	Gentec
Epic	Dark red kidney	ProVita
Gallantry	Dark red kidney	Gentec
K1920-2-3	Dark red kidney	USDA EL
K23212	Dark red kidney	MSU
Montcalm	Dark red kidney	MSU
ND Redbarn	Dark red kidney	NDSU
Rampart	Dark red kidney	ProVita
Red Hawk	Dark red kidney	MSU
Seattle	Dark red kidney	ProVita
Eiger	Great northern	MSU
G22004	Great northern	MSU
G23108	Great northern	MSU
ND Pegasus	Great northern	NDSU
Powderhorn	Great northern	MSU
15916	Light red kidney	ProVita
15923	Light red kidney	ProVita
20870	Light red kidney	ProVita
20909	Light red kidney	ProVita
161055	Light red kidney	ProVita
161082	Light red kidney	ProVita
Big Red	Light red kidney	ProVita
CELRK	Light red kidney	UC Davis [g]
K22601	Light red kidney	MSU
K22604	Light red kidney	MSU
K23702	Light red kidney	MSU
Pink Panther	Light red kidney	Bayer
Ronnie's Red	Light red kidney	ProVita
Rosie	Light red kidney	NDSU
14092	Navy	ProVita
21102	Navy	ProVita
21106	Navy	ProVita
21108	Navy	ProVita
Argosy	Navy	Gentec
Armada	Navy	ProVita
AuSable	Navy	MSU
Blast	Navy	Gentec
Blizzard	Navy	ProVita
EX2111-N	Navy	TVS
EX-712302	Navy	TVS
EX-712310	Navy	TVS

Entry	Market class	Source
EX-712315	Navy	TVS
EX-712316	Navy	TVS
EX-712317	Navy	TVS
HMS Bounty	Navy	ProVita
HMS Medalist	Navy	ProVita
Liberty	Navy	ProVita
N22610	Navy	MSU
N22616	Navy	MSU
N22622	Navy	MSU
N22623	Navy	MSU
N23706	Navy	MSU
N23717	Navy	MSU
N24847	Navy	MSU
N24851	Navy	MSU
Nautica	Navy	Gentec
ND Polar	Navy	NDSU
OAC Charm	Navy	TVS
Steam	Navy	Gentec
T9905	Navy	TVS
Valiant	Navy	ProVita
Victory	Navy	ProVita
Coral	Pink	MSU
ND Rosalind	Pink	NDSU
Cancun	Pinto	ProVita
Charro	Pinto	MSU
Cowboy	Pinto	ProVita
ND Falcon	Pinto	NDSU
P22103	Pinto	MSU
P22204	Pinto	MSU
P23311	Pinto	MSU
P24402	Pinto	MSU
Rattler	Pinto	Kelley Bean
SV6139GR	Pinto	Bayer
Toast	Pinto	Gentec
USDA Cody	Pinto	Central Bean
Bronco	Slow darkening pinto	TVS
Diamondback	Slow darkening pinto	Kelley Bean
Eternal	Slow darkening pinto	Hensall
Gleam	Slow darkening pinto	ProVita
Mystic	Slow darkening pinto	ProVita
ND Rodeo	Slow darkening pinto	NDSU
Shine	Slow darkening pinto	ProVita
Vibrant	Slow darkening pinto	ProVita
16686	Small red	ProVita
17822	Small red	ProVita
17837	Small red	ProVita
17848	Small red	ProVita
17851	Small red	ProVita
19837	Small red	ProVita
ND151006-2	Small red	NDSU
OAC Rosito	Small red	Gentec
R22703	Small red	MSU
R22710	Small red	MSU
R22714	Small red	MSU
R23804	Small red	MSU
USDA Lava	Small red	Central Bean
Viper	Small red	ProVita
201016	White kidney	ProVita
201020	White kidney	ProVita
201030	White kidney	ProVita
231228	White kidney	ProVita
231229	White kidney	ProVita
231230	White kidney	ProVita
231231	White kidney	ProVita
231232	White kidney	ProVita
231233	White kidney	ProVita
Beluga	White kidney	ADM
Denali	White kidney	MSU
K22801	White kidney	MSU
K23908	White kidney	MSU
ND Whitetail	White kidney	NDSU
Snowdon	White kidney	MSU
WK1601-1	White kidney	USDA EL
Yeti	White kidney	Gentec
Claim Jumper	Yellow	ProVita
DBY230-2	Yellow	OSU [h]
DBY231-2	Yellow	OSU
Honeycomb	Yellow	USDA EL
Motherlode	Yellow	ProVita
Y1803-5-3	Yellow	USDA EL
Y2115-3	Yellow	USDA EL
Y2033307	Yellow	ADM
Yellowstone	Yellow	MSU
Yukon Gold	Yellow	MSU
YW25-1	Yellow	USDA WA

a USDA-EL = U.S. Dept. of Agriculture—Agricultural Research Service, East Lansing, Michigan, site
b MSU = Michigan State University
c ADM = Archer-Daniels-Midland
d NDSU = North Dakota State University
e USDA WA = U.S. Dept. of Agriculture—Agricultural Research Service, Washington State site
f TVS = Treasure Valley Seed
g UC Davis = University of California, Davis
h OSU = Oregon State University