



Figure 1. Yellow selections and cultivars growing on July 22, 2025, near St. Thomas, ND. (Robinson, NDSU/UMN)

North Dakota Fresh Market Potato

Cultivar/Selection Trial Results for 2025

Andy Robinson

Extension Potato Agronomist and
Professor, NDSU/UMN

Eric Brandvik

Research Specialist, NDSU

Anderson Melo

Research Scientist, NDSU

Potato cultivars or selections included in this report were selected from recently released cultivars, advancing selections with release potential (numbered lines progressing through the trial process) or cultivars new to the U.S. Standard potato cultivars used by growers served as checks. For comparison, studies conducted in 2019, 2020, 2021 and 2024 evaluated several red- and yellow-skinned fresh potatoes.

In 2025, two trials were conducted to identify traits of red- and yellow-skinned potato cultivars and advanced selections near St. Thomas, North Dakota. Thirteen red-skinned cultivars and 14 yellow-skinned clones were evaluated. Plots were established in a commercial, nonirrigated potato field utilizing common potato production practices. The authors acknowledge J.G. Hall and Sons for hosting these trials.

Prior to planting, urea at 120 pounds of nitrogen (N) per acre was broadcast and incorporated. A randomized complete block design with four replicates was utilized. Plots were 3 feet wide and 30 feet long. Seed tubers were hand-cut to approximately 2-ounce seed pieces and suberized prior to planting.

Tubers were planted on May 30, 2025, in a single row with 9-inch within-row spacing. The number of emerged plants in the entire plot was counted to determine the emergence rate. The number of stems per plant was determined by counting the stems on 10 plants in a row in each plot. Vines were killed with diquat on Sept. 6 and 16, 2025. Plots were harvested on Oct. 2, 2025, with a single-row lifter and thereafter bagged by hand.

After harvest, potatoes were stored at 55 degrees Fahrenheit until grading. The tuber size profile distribution was determined by sorting all potatoes harvested into C size (less than 1.875 inches), B size (1.875 to 2.25 inches), A size (2.25 to 3.5 inches) and Chef size (greater than 3.5 inches). Total yield is the sum of C + B + A + Chef.

UNIVERSITY OF MINNESOTA
EXTENSION

NDSU

EXTENSION

The 2025 agronomic data presented in Tables 1 and 2 were analyzed statistically. These analyses allow the reader to ascertain, at a predetermined level of confidence, whether the differences observed among cultivars/selections are reliable or due to error inherent in the experimental process.

The LSD (least significant difference) values beneath the columns apply only to the numbers in the column in which they appear. If the difference between two cultivars/selections exceeds the LSD value at 0.05 or 0.10, it means that with 95% or 90% confidence, respectively, the higher-yielding cultivar/selection has a significant yield advantage. When the difference

between two cultivars/selections is less than the LSD value, no significant difference was found between the two under these growing conditions.

The CV stands for coefficient of variation and is expressed as a percentage. The CV is a measure of variability in the trial. Large CVs indicate a large amount of variation that could not be attributed to differences among the cultivars/selections.

The data provided does not indicate endorsement or approval by the authors, NDSU Extension, or University of Minnesota Extension. Reproduction of the tables is permissible if presented with all

the same information found in this publication (meaning no portion is deleted, and the order of the data is not rearranged).

The authors acknowledge the contribution of cultivars and advanced selections for this work from public and private breeding programs and industry partners.



Figure 2. Red selections and cultivars growing on July 22, 2025, near St. Thomas, ND.
(Robinson, NDSU/UMN)

Table 1. Agronomic performance and yield of yellow-skinned potato cultivars/selections grown near St. Thomas, ND, in 2025.

Cultivar	Stand ¹	Stems/plant ²	C ³	B	A	Chef	Total yield	Specific gravity
	%	number			cwt/a			
Actrice	84	2.4	0.1	55	230	74	370	1.068
Agata	77	2.8	0.4	80	228	45	367	1.071
Alegria	78	2.6	1.1	69	219	39	340	1.090
Bernice	89	2.7	0.1	59	241	65	379	1.071
Caledonia Pheonix	83	2.9	0.5	77	194	74	359	1.072
Camelia	67	3.1	0.0	72	238	92	418	1.075
Columba	82	2.4	0.5	89	189	42	332	1.067
Decibel	82	3.0	1.6	132	172	19	339	1.076
Fontaine	84	3.0	2.5	149	152	32	350	1.093
Mondak Gold	79	3.2	0.8	116	178	12	323	1.090
MSHH224-1Y	76	2.3	1.8	117	118	32	281	1.069
Musica	82	3.6	2.5	147	210	18	395	1.079
ND1241-1Y	80	2.3	1.9	119	153	9	295	1.106
Vincenta	89	2.6	1.9	108	153	13	288	1.073
Mean	81	2.8	1.1	99	191	41	345	1.079
CV	10	21	97	40	35	96	21	0.5
LSD p=0.05	11	<i>ns</i> ⁴	1.6	56	<i>ns</i>	<i>ns</i>	<i>ns</i>	0.007
LSD p=0.1	9	<i>ns</i>	1.3	47	<i>ns</i>	46	<i>ns</i>	0.006

¹ Stand count was taken on July 7 (five weeks after planting) by counting every emerged plant and dividing by the number planted.

² Stems per plant were counted on 10 plants on July 7 (five weeks after planting) and are shown as the average number of stems per plant.

³ Harvested potato tubers were sorted on a Kerian Speed sizer as C = less than 1.875, B = 1.875-2.25, A = 2.25-3.5 and Chef = greater than 3.5 inches.

⁴ *ns* indicates that no significant differences between the cultivars/selections were found.



Figure 3. Harvest of yellow tubers from plots on October 1, 2025, near St. Thomas, ND.

(Robinson, NDSU/UMN)

Table 2. Agronomic performance and yield of red-skinned potato cultivars/selections grown near St. Thomas, ND, in 2025.

Cultivar	Stand ¹	Stems/plant ²	C ³	B	A	Chef	Total yield	Specific gravity
	%	number			cwt/a			
AAF11546-3	86	2.4	1.3	98	120	4	223	1.079
AG 1540	89	3.4	3.3	167	102	0	273	1.075
Becca Rose	79	3.3	3.1	136	139	2	280	1.072
Dark Red Norland	83	3.7	0.8	54	192	15	261	1.076
Dark Red Norland (NE)	83	4.0	0.6	67	186	18	272	1.076
Malbec	93	2.9	1.1	111	159	6	277	1.088
Modoc	74	2.2	0.5	85	109	2	197	1.076
ND113207-1R	86	2.5	2.5	111	164	1	279	1.075
Red LaSoda (NY)	91	2.8	0.6	65	214	38	318	1.081
Red Norland	88	2.9	0.5	45	212	56	314	1.078
Red Port	91	2.1	0.5	44	153	12	210	1.076
Sangre	86	2.4	0.2	60	160	22	243	1.081
Spartan Red	86	3.4	0.4	106	171	14	291	1.087
Mean	86	2.9	1.2	88	160	15	264	1.078
CV	13	19	99	20	30	131	23	0.3
LSD p=0.05	<i>ns</i>	0.8	2	25	69	29	<i>ns</i>	0.0069
LSD p=0.1	<i>ns</i>	0.7	1	21	57	24	<i>ns</i>	0.0058

¹ Stand count was taken on July 7 (five weeks after planting) by counting every emerged plant and dividing by the number planted.

² Stems per plant were counted on 10 plants on July 7 (five weeks after planting) and are shown as the average number of stems per plant.

³ Harvested potato tubers were sorted on a Kerian Speed sizer as C = less than 1.875, B = 1.875-2.25, A = 2.25-3.5 and Chef = greater than 3.5 inches.

⁴ *ns* indicates that no significant differences between the cultivars/selections was found.



Figure 4. Harvest of red tubers from plots on October 1, 2025, near St. Thomas, ND.

(Robinson, NDSU/UMN)

NDSU Extension does not endorse commercial products or companies even though reference may be made to tradenames, trademarks or service names.

For more information on this and other topics, see www.ndsu.edu/extension

County commissions, North Dakota State University and U.S. Department of Agriculture cooperating. NDSU does not discriminate in its programs and activities on the basis of age, color, gender expression/identity, genetic information, marital status, national origin, participation in lawful off-campus activity, physical or mental disability, pregnancy, public assistance status, race, religion, sex, sexual orientation, spousal relationship to current employee, or veteran status, as applicable. Direct inquiries to Vice Provost, Title IX/ADA Coordinator, Old Main 100, 701-231-7708, ndsu.eoaa@ndsu.edu. This publication will be made available in alternative formats for people with disabilities upon request, 701-231-7881. 100-12-19; web-2-20; web-1-21; web-2-21; 100-2-22; web-2-25; 50-12-25