

1984-'86

SANGRE SELECTIONS STUDIES

AND

GROWER EVALUATIONS OF NEW POTATO SELECTIONS

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SANGRE SELECTION STUDIES

Background Information

Seventeen line selections of Sangre were made from a tuber-unit seed lot at the San Luis Valley Research Center in 1982. Seven selections were made for typical vine and 10 for larger vines. Progeny rows of each selection were grown for increase and observational purposes in 1983. During the three year interval of 1984-1986 comparative performance trials were conducted.

Results

Data was collected from the three comparative trials on yield, grade, stand, plant height, and vine maturity. This data is summarized in Table 1. Additionally in 1986 data was collected on virus X and S content of the selections and the standard.

Total yield of the clones ranged from 334 to 437 cwt/a. Clones 10, 11, and 14 yielded an average of 54 cwt/a more than the standard clone. Yield of US #1 potatoes ranged from 281 to 386 cwt/a. Again clones 10, 11, and 14 yield an average of 55 cwt/a more than the clone 18, the standard. Most of the yield advantage of these clones is associated with >10 oz yield. These clones yielded 38 cwt/a more of >10 oz tubers than the standard. There were no differences among clones 10, 11, and 14 compared to the standard for <4 oz or US #2 and cull yields.

Plant height ranged from 47 to 81 cm. Clones 10, 11, and 14 were an average of 14 cm taller than the standard. Also these three clones were classified as medium maturing compared to early for clone 18.

All 18 clones were checked for PVX and PVS content. None of the clones tested positive for PVX. PVS infection varied from 0 to 100%. PVS infection was not correlated with yield.

Seed stocks of these selections will be released to growers for planting in 1987.

GROWER EVALUATIONS OF NEW POTATO SELECTIONS

Four potato clones were evaluated by growers in 1986. Two clones, TC582-1 and WNC567-1, were evaluated for the second year. The other clones, AC77513-1 and AC77652-1, were grower tested for the first time. All of these clones will be retested in 1987. Data collected at the San Luis Valley Research Center comparing these clones with Centennial Russet and Russet Burbank is summarized in Table 2. Data is also included for AC79100-1 which will be released for initial grower testing in 1987.

Growers compared each of these clones with Centennial Russet and Russet Burbank for seven characteristics. These characteristics were: Stand, emergence uniformity, vine vigor, tuber type, tuber size, uniformity of tuber size, grade defects, and skin set at harvest. Yield was also estimated. The rating scale used was: 1 = poor; 2 = fair; 3 = average; 4 = good; and 5 = excellent. An average rating would mean that a given clone was equivalent to Centennial Russet or Russet Burbank for the characteristic of interest. Tables 3-6 present the results of the grower evaluations. The clones were rated equivalent to or better than the standard cultivars for most characteristics.

TC582-1 will be named in 1988 pending results of trials in 1987. TC582-1 resulted from a cross of Krantz and AND71609-1 made in Texas. It was selected in 1979 from a population of seedlings grown in Colorado.

Table 1. Yield, grade, stand, PVS content, plant height, and vine maturity of 18 Sangre clones, 1984-1986 summary.

Clone	Yield (Cwt/A)					% Stand	% Virus S ¹	Plant Height (cm)	Vine Maturity ²
	Total	Total	US #1		US #2 & Culls				
			%	>10 oz					
1	342	290	84.8	53	50	95	15	49	2.1
2	344	285	83.1	55	54	97	30	49	1.8
3	335	281	84.5	51	49	94	50	47	2.1
4	358	301	83.9	48	55	98	0	51	1.9
5	363	306	84.4	73	53	98	5	50	1.8
6	376	314	83.4	118	35	100	40	81	4.9
7	370	312	83.9	92	46	99	5	74	4.2
8	404	351	87.1	93	45	99	30	64	3.3
9	356	294	82.5	95	48	96	45	78	4.4
10	437	386	88.3	125	45	99	10	64	3.5
11	425	369	86.9	109	50	98	5	65	3.4
12	386	342	88.9	96	37	97	100	64	3.1
13	362	307	84.7	100	46	98	50	75	4.5
14	414	370	89.4	127	34	97	25	63	3.2
15	387	329	85.1	87	53	98	100	61	3.2
16	381	322	84.6	62	56	99	5	49	1.8
17	388	316	81.7	51	66	99	5	51	2.1
18 ³	371	320	85.9	82	46	98	20	50	2.2
Mean	378	322	85.2	84	48	98	30	60	3.0
LSD (0.05)	47	46	4.1	39	17	NS ⁴	24	5	0.5

¹Percent virus S content based on 1986 data only.

²Vine maturity is rated on the following basis: 1 = Very Early; 2 = Early; 3 = Medium; 4 = Late; and 5 = Very Late.

³Clone 18 is the standard Sangre produced at the San Luis Valley Research Center.

⁴Not significant.

Table 2. Comparison of advanced numbered selections with Centennial Russet and Russet Burbank for yield, grade, maturity, and grade defects.

Clone	Yield (Cwt/A)		% US #1	Vine Maturity ¹	% External Defects ²	% Hollow Heart ³
	Total	US #1				
AC79100-1	371	299	80.8	4.0	5.6	0.5
AC77513-1	333	256	76.6	3.6	6.6	2.4
AC77652-1	256	200	77.8	2.2	3.8	1.4
TC582-1	351	268	77.1	4.0	2.6	0.5
WNC567-1	305	231	75.0	2.5	3.6	0.1
Centennial Russet	280	213	74.9	3.1	1.6	0.8
Russet Burbank	352	227	63.7	2.8	10.0	0.9

¹Vine maturity: 1 = Very Early; 2 = Early; 3 = Medium; 4 = Late; 5 = Very Late.

²Includes defects such as growth crack, second growth, misshapen, and alligator hide.

³Based on tubers greater than 10 ounces.

Table 3. TC582-1 grower evaluation - 1986.

Characteristic	Compared to CR	Compared to RB
Stand	4.8	4.3
Emergence Uniformity	4.8	3.7
Vine Vigor	4.8	4.7
Tuber Type	4.4	4.3
Tuber Size	4.0	4.3
Uniformity of Tuber Size	4.1	4.3
Grade Defects	3.5	4.3
Skin Set at Harvest	2.4	3.3
Yield = 360 Cwt/A		

Table 4. WNC567-1 grower evaluation - 1986.

Characteristic	Compared to CR	Compared to RB
Stand	3.8	2.8
Emergence Uniformity	3.7	2.4
Vine Vigor	3.2	2.2
Tuber Type	3.3	3.4
Tuber Size	4.0	2.8
Uniformity of Tuber Size	3.5	3.0
Grade Defects	3.7	4.0
Skin Set at Harvest	3.7	4.4
Yield = 280 Cwt/A		

Table 5. AC77513-1 grower evaluation - 1986.

Characteristic	Compared to CR	Compared to RB
Stand	4.0	3.5
Emergence Uniformity	3.8	4.0
Vine Vigor	4.8	3.5
Tuber Type	3.0	3.0
Tuber Size	3.8	3.0
Uniformity of Tuber Size	3.5	4.0
Grade Defects	2.3	3.5
Skin Set at Harvest	3.8	5.0
Yield = 385 Cwt/A		

Table 6. AC77652-1 grower evaluation - 1986.

Characteristic	Compared to CR	Compared to RB
Stand	3.3	2.0
Emergence Uniformity	3.8	3.0
Vine Vigor	3.0	1.5
Tuber Type	3.3	3.5
Tuber Size	3.5	3.5
Uniformity of Tuber Size	3.8	3.5
Grade Defects	3.3	4.5
Skin Set at Harvest	4.0	4.5
Yield = 315 Cwt/A		