1964
SWEET POTATO VARIETY TRIALS

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Research Report No. 94 May 1965

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VIRGINIA POLYTECHNIC INSTITUTE
BLACKSBURG, VIRGINIA

IN COOPERATION WITH

VIRGINIA TRUCK EXPERIMENT STATION
NORFOLK, VIRGINIA

SWEET POTATO VARIETY TRIALS - 1964
Eastern Shore, Virginia

The sweet potato variety trials described herein were conducted by the Virginia Agricultural Experiment Station in cooperation with the Virginia Truck Experiment Station. The trials participated in the National Sweet Potato Cooperators variety testing program. Four entries in the replicated trials and 9 entries in the observational plantings were supplied by the National Sweet Potato Cooperators. The 1964 trials were the sixth in this series.

Seven varieties or numbered selections of sweet potatoes were grown in the replicated trials for evaluation at the Eastern Shore Branch of the Virginia Truck Experiment Station. Also, there were observational trials of 14 entries.

Acknowledgments

The cooperators are most grateful for valuable advice and assistance received from T. J. Nugent, plant pathologist of the Virginia Truck Experiment Station and from W. P. Judkins, head, Horticulture Department, P. H. Massey, Jr., professor of horticulture, F. D. Schales, assistant Extension horticulturist, C. B. Wood, associate professor of horticulture in food technology, and R. W. Young, assistant professor of biochemistry of the Virginia Agricultural Experiment Station.

Experimental Procedure, Growing Conditions, and Comments on Data Recorded

Location: Accomack County, 2 miles west of Painter, Virginia.

Elevation: 30 feet.

Soil: Sassafras sandy loam. Soil reaction was pH 4.8 on May 25. One ton per acre of limestone was plowed under in early spring. It is possible that the soil sampling did not go deep enough to reach the lime.

Plot size: Five rows, each 30 feet long. Yield records taken on center row.

Replications: Four.

Spacing: Plants 12 inches apart in rows 36 inches apart.

Fertilization: Beds were fertilized 24 hours after bedding by broadcasting 8-8-8 over the soil covering the roots at the rate of 6 ounces per square yard. Field was fertilized 17 days after field setting by sidedressing 3-9-12 at the rate of 1000 pounds per acre.

Certain Disease-Control Measures: Just before bedding roots were dipped momentarily in a solution of 4 lb. of captan 50% wettable powder in 30 gals.of water. Immediately after pulling, ½ inch of the lower parts of the sprouts were clipped off and the remaining lower parts were dipped in a solution of 6 lb. of Fermate in 30 gals. of water.

Roots bedding date: April 8.

Field planting date: May 20.

Harvest date: September 22.

Cultivation: Frequently enough to control weeds.

Growing conditions: See Table No. 4.

Processing procedure: Roots were carried out of the field and graded at harvest time. The canning size roots (1-2 1/4 x 3-7) were segregated and hauled directly from Painter to Blacksburg, a distance of 350 miles, and canned within 3 days of harvest. All varieties were processed separately to maintain identity. The raw stock was washed and preheated for 30 minutes by submersion in 130°F water, then lye peeled in 10% lye solution (212°F) for 4 minutes in a ferris wheel type lye peeler. The loosened peeling and lye were removed under strong water sprays in a rod reel washer. Ends were pared off at 1/2" diameter; a minimum of trimming was performed to allow identification of defects, such as lateral roots. After trimming, roots were kept under water to retard color change until packed in No. 3 (404 x 307) vacuum cans with plain bodies and enameled ends.

Each can received 16 ounces of roots. Sirup pack cans were filled with 25% sucrose solution. Both sirup and vacuum packs were exhausted - the sirup pack to a center can temperature of 180°F and vacuum packs were exhausted for the same length of time.

A vacuum of 27 inches was attained mechanically in the vacuum packs just before sealing. Sirup packs were processed 35 minutes and vacuum packs 45 minutes, both at 240°F. All samples were stored 6 weeks at room temperature then evaluated by eight trained panelists. During evaluation the identity of the samples was unknown to panelists and each variety was evaluated independently by each panelist in 4 separate tests. Each sample was rated on color (chromaticity, uniformity, attractiveness), shape (wholeness, surface smoothness), texture (firmness, moisture, fibrousness), and flavor. A weighted over-all score was given for sirup and vacuum packs of each variety.

Notes on Data Recorded

Size classification of roots: Yields of total marketable roots are noted which includes all marketable sizes except oversize. (Dimensions of root classifications will be found in the footnotes to Table No. 1.) Oversize yield is also recorded. Five other size classifications were selected, yields of which, it was thought, would be of most interest. Among the sizes is a class called "fresh market medium size." This size might be considered a prime size and could qualify as a U.S. Extra No. 1 if the minimum diameter of 2.5 inches were specified, as permitted. The amount of such a prime size that an entry produced may be revealing. Yields also are noted for a class "canning, small for whole pack" with a maximum length of 5 inches, which may be of interest to certain processors.

Ratings: All ratings for fresh market qualities are from 1 to 9 and are related only to other entries in this trial. A rating of 1 means very poor and/or very small; 5, unless otherwise noted, means average; and 9 means very good and/or very large.

Yield ratings: Weighted yield ratings are noted in this report under the heading, "Comments on Individual Entries." The ratings were based on statistically significant yield groupings at the 1% level with values of 5 x total marketable ratings plus 2 x fresh market medium ratings plus canning ratings. "Fresh market medium size" yield ratings called "Prime size yields" are also noted.

Fresh market visual quality comments: Noted under the heading, "Comments on Individual Entries." These visual quality comments were based on subjective evaluations of general appearance, shape, and smoothness. The skin colors were measured with a U.S.D.A. sweet potato skin color fan.

Sprout production ratings: Given under the heading, "Comments on Individual Entries". Sprout production ratings were based on fairly accurate estimates of the number of sprouts at the first pulling. This trial did not participate in the regional sprouting tests of the National Sweet Potato Cooperators and accurate sprout counts were not made. The sprout ratings do not express completely objective measurements.

Notes on Entries Tested in the Replicated Trials

For Fresh Market

In total marketable yield, not including oversize, Gem was highest and Goldrush was lowest. In yield of fresh market medium size, Gem was again highest with Nemagold next. In total canning size yield, Julian (L8-3) and Nemagold were high and Goldrush lowest.

The general appearance of Gem was considered best and Goldrush poorest.

Sprout production (see warning in notes on data recorded) of Nemagold was rated highest. Production was very low in L8-92.

For Canning

In overall canning quality Julian (L8-3) rated highest mainly because of its deep orange color, uniformity of color and good flavor. Goldrush was the second highest rating entry being less orange and less uniform in color than Julian, but having good flavor and freedom from fibrousness. The third highest rating entry was Gem (NC 188) because it performed so well in vacuum, although it was slightly below average in flavor. L8-92 and L9-66 were only rated average. Nemagold and Centennial were rated below average mainly because of unattractive color.

Comments on Individual Entries
(As related to other entries in this trial)

Centennial - This variety was used as a check. The general appearance was rather poor. The skin was light copper color and the shape lacked uniformity, but was generally medium thick fusiform although some roots were too long. The weighted and prime size yields were average. When canned, this variety had very good flavor but color and uniformity of color were below average. Generally, inferior to Nemagold for canning. Sprout production was low, being about 22% of Nemagold. Vines were rugged and large.

Copperskin Goldrush - This variety was included as a check, but results, as compared to those of other seasons, were unusually poor. The general appearance was poor. The skin was copper color and the shape was rough, but a fairly uniform medium thick fusiform. The weighted yield was rather low, but the yield of prime size was average. When canned this variety was above average in most attributes scored except in the vacuum pack where color and firmness were below average. It was free of objectionable fiber and had good flavor. Sprout production was low, about 29% of Nemagold.

Gem (NC 188) - This North Carolina selection was released as a variety in 1964. The general appearance was considered to be excellent. The skin color was uniform, being a little lighter than medium tan, and the shape was medium to thick uniform fusiform. The weighted and prime size yields were high. When canned this variety had a ridged and/or pitted exterior. It lacked color uniformity when packed in sirup. It was quite moist and free of objectionable fiber. Sprout production was low, being about 32% of Nemagold. Cracked roots caused 51% of the culls, but the total of all culls, including cracked roots, was only about average for the trials. This would have been the best entry in the trial, except for low sprout production and an inclination to crack.

Julian (L8-3) - This Louisiana selection was not included in the National Sweet Potato Cooperators advanced trials, but was included in this trial because a more elaborate evaluation was desired. The general appearance was fairly good. The skin color was medium rose and the shape a uniform, medium thick fusiform. The weighted yield was fairly high and the prime size yield was average. This entry also produced 54 cwt. per acre of small roots, 3 to 5 inches in length, which was the highest in the trials of this size classification. When canned, this was the outstanding entry in the trials, being above average in every attribute evaluated, except firmness. It was a deep orange, very uniform color and of good flavor.

Sprout production was low, being about 23% of Nemagold. Comment: Cracked roots caused 12% of the culls, but the total of all culls, including cracked roots, was only 67% of the average total culls for the trial.

L8-92 - The general appearance of this Louisiana selection was rather poor. The skin color varies from medium rose to a little darker than medium rose. The shape is variable but generally medium thick fusiform, although there were a considerable number of cracked roots and others with depressed areas. The weighted yield was fairly high and the prime size yield was average. When canned, this entry lacked uniformity of color and was considered below average quality for vacuum packing. Sprout production was very low, being about 14% of Nemagold.

L9-66 - The general appearance of this Louisiana selection was good. The skin color was predominantly copper but varied from light copper to light rose. The shape was a fairly uniform, medium thick, fusiform. The weighted yield was rather low, but the prime size yield was average. When canned, this entry was rated average in weighted overall score, but below average in surface smoothness with a lighter streaked exterior layer and internal cracks which may predispose it to breakdown. Sprout production was medium for the trial, being 34% of Nemagold. Comments: Cracked roots caused 23% of the culls. The vines were fairly small with short runners which did not cover the area between the 3-foot rows.

Nemagold - This variety was used as a check. The general appearance was only average as the roots were marred by rather prominent "eyes". The skin color was light tan and the shape was medium thick fusiform. The weighted and prime size yields were fairly high. When canned, the color of this entry was rather light and lacking in attractiveness, moisture, and flavor. It was rather high in objectionable fiber and rated below average in overall weighted score. Sprout production was very high. Comments: Cracked roots caused 18% of the culls. As noted in other seasons, the small deeply lobed leaves and the fast-growing, sparsely leaved branches may cause a weed control problem.

Table No. 1 - Seven Sweet Potato varieties or Numbered Selections Tested in 1964 Replicated Trials on Eastern Shore (Accomack County), Virginia. Yields, culls, carotene, dry matter, plant stand.

Variety or selection number	Average Yields per Acre*										
		Size Selections**									
	Total marketable (1)	Fresh market large size (2)	Fresh market medium size (3)	Fresh market small or canning large (4)	Total canning (5)	Canning small for whole pack (6)	Oversize (7)	Culls per acre (8)	Carotene mg./100 g. (dry basis)	Percent dry matter	Plant stand
	cwt	cwt	cwt	cwt	cwt	cwt	cwt	cwt	mg	%	plt
Gem (NC 188)	243 a	111 a	109 a	73 b	121 b	39 b	14 a	54 cms	31.3	22.40	120
Nemagold (ck)	232 ab	85 a	79 ab	90 a	141 a	45 ab	10 a	37 mcvs	21.9	25.76	117
Julian (L8-3)	228 ab	66 a	62 b	98 a	161 a	54 a	17 a	36 cms	65.2	24.61	119
L8-92	212 ab	90 a	69 b	63 bc	107 bc	31 b	21 a	61 mls	50.1	26.05	118
Centennial (ck)	204 b	80 a	67 b	65 bc	110 bc	35 b	23 a	46 ms	34.9	26.74	118
L9-66	196 bc	77 a	66 b	59 bc	109 bc	33 b	12 a	70 st	38.8	25.19	118
CS Goldrush (ck)	163 c	55 a	49 b	53 c	99 c	35 b	10 a	67 st	27.6	25.11	116

* Means of 4 replications. Statistically adjusted for missing plants. Letters following the yield figures indicate the statistical significance at the 1% level.

** Size selections are 5 sizes most likely to be of interest. They are not necessarily "grade" sizes. As each of the 5 sizes was re-selected from the "total marketable" roots, the sum of the 5 sizes will not equal the "total marketable" amount.

(1) Total marketable: Diameter 1 to 3.5 inches, length 3 to 9 inches, weight not over 20 oz.

(2) Fresh market, large size: Diameter 2.25 to 3.5 inches, length 3 to 9 inches.

(3) Fresh market, medium size: Diameter 2.5 to 3.25 inches, length 3 to 7 inches. This is not a "grade" size, but is considered a prime size for the Virginia fresh market.

(4) Fresh market small or canning large: Diameter 1.75 to 2.25 inches, length 3 to 7 inches.

(5) Total canning: Diameter 1 to 2.25 inches, length 3 to 7 inches.

(6) Canning small for whole pack: Diameter 1 to 1.75 inches, length 3 to 5 inches.

(7) Oversize: Diameter more than 3.5 inches and/or length more than 9 inches and/or weight more than 20 oz.

(8) Culls: The letters following the numbers indicate the main causes of culls. The first letter indicates the most important cause. Letters are: c, cracking; l, long; m, misshapened; s, small size; t, strings; v, veins.

Table No. 2 - Mean Evaluation of Canned Sweet Potatoes from 1964 Replicated Variety Trials on Eastern Shore of Virginia.

Variety or selection number	Weighted over-all score	Color			Shape		Texture			Flavor
		Chromaticity	Uniformity	Attractiveness	Wholeness	Surface smoothness	Firmness	Moisture	Freedom from fibrousness	
Sirup Packed										
Julian (L8-3)	8.74	9.5	9.0	9.3	9.5	9.3	7.4	7.9	8.7	8.6
Goldrush	7.98	6.9	7.6	7.1	9.0	8.3	8.2	7.6	9.1	8.0
L8-92	7.67	7.7	7.1	7.3	9.2	8.1	8.2	7.3	7.5	7.4
Centennial	7.56	5.8	7.4	6.8	8.9	7.5	8.8	6.6	8.6	7.7
L9-66	7.56	7.3	7.1	6.4	8.9	6.7	7.6	7.5	8.3	7.7
NC-188	7.40	7.3	6.6	6.7	8.8	6.2	8.2	7.0	8.1	7.4
Nemagold	6.72	5.0	6.8	5.1	8.4	6.5	8.1	6.5	7.1	6.8
Average	7.66	7.1	7.4	7.0	9.0	7.5	8.1	7.2	8.2	7.7
Vacuum Packed										
Julian (L8-3)	8.44	9.5	9.2	9.2	9.5	8.2	7.5	7.4	8.7	6.6
NC-188	7.96	7.7	8.2	7.5	9.2	6.8	8.6	7.8	8.6	6.3
L9-66	7.38	7.9	7.3	7.4	8.3	7.0	8.4	6.3	7.7	6.3
Goldrush	7.16	6.1	6.6	5.7	7.9	7.5	7.8	7.2	8.6	6.7
L8-92	6.80	7.9	7.1	6.6	8.3	7.6	8.8	6.4	8.2	6.9
Nemagold	6.65	5.0	6.8	5.2	8.2	6.9	8.1	6.4	7.5	5.5
Centennial	6.64	6.5	5.0	4.2	8.2	5.7	9.0	5.6	8.4	7.1
Average	7.29	7.2	7.2	6.5	8.5	7.1	8.3	6.7	8.2	6.5

All samples were canned within three days of the harvest on September 25. The canned samples were stored 6 weeks then opened and evaluated by a technical panel of 8 trained judges during 2 replications. Samples were rated using a scale 1 (low) to 10 (high). A weighted over-all score below 6 indicates an unacceptable entry. Factors for over-all score are: Chromaticity 10, Uniformity 15, Attractiveness 10, Wholeness 10, Surface smoothness 5, Firmness 10, Moisture 15, Freedom from fibrousness 15, Flavor 10.

Table No. 3 - Percent Yield after Peeling. Sweet Potato Replicated Trial.

Variety or selection number	Weight before peeling	Weight after peeling	Percent yield by weight
L8-92	40.3	30.2	74.9
Centennial	42.6	33.0	77.5
L9-66	41.6	31.7	76.2
Nemagold	44.9	33.0	73.5
NC-188	45.7	33.6	73.5
Copperskin Gold-rush	45.6	33.4	73.2
Julian (L8-3)	43.4	31.2	71.9

Table No. 4 - Climatological and Irrigation Data in 1964 for the Sweet Potato Variety Trials at the Eastern Shore Branch of the Virginia Truck Experiment Station, Two Miles West of Painter, Virginia.

For week ending	Temperature			Precip-itation (inches)
	Max	Min	Avg	
Apr 11	69	30	49	1.08
Apr 18	85	44	61	0.57
Apr 25	77	32	54	0.53
May 2	77	36	54	0.53
May 9	89	39	61	0
May 16	84	42	66	1.52
May 23	91	45	68	0.13
May 30	89	43	67	0.20
Jun 6	79	45	62	0.18
Jun 13	98	55	74	0.23
Jun 20	93	50	75	2.44
Jun 27	91	57	77	1.97
Jul 4	90	56	77	0.25

For week ending	Temperature			Precip-itation (inches)
	Max	Min	Avg	
Jul 11	85	58	72	0.06
Jul 18	90	63	77	1.77*
Jul 25	88	65	76	0.91
Aug 1	90	55	73	0.87
Aug 8	89	53	70	0.51
Aug 15	88	52	69	1.46*
Aug 22	91	55	72	0
Aug 29	92	65	78	1.67
Sep 5	88	54	73	0.77
Sep 12	89	53	71	0
Sep 19	80	47	66	3.12
Sep 26	84	45	65	0

* Including 1-inch irrigation.

Observational Sweet Potato Plantings

One 30-foot row per entry was field set May 20 and harvested September 22. The description of growing conditions and kind of data recorded are the same as they are for the replicated trials. The very small plantings resulted in the yield data having very little meaning. Information obtained from the observational plantings gives only a vague indication of the characteristics of the entries and is given in this report only as a matter of interest in the possibility of future more elaborate testing.

Notes on Entries in Observational Planting
(As related to other entries in this planting)

For Fresh Market

C56-35 and L9-56 were considered best in general appearance while Centennial, L9-89, and V2158 were rather poor and Goldrush was poorest. A high over-all rating was given to E1097-57, Porto Rico, and Nemagold and a low rating to Goldrush, L9-39, M-0-36-2, and NC 210 and the lowest over-all rating to NC 198.

For Canning

For canning, L9-89, C56-35, L9-56 and E1097-57 were rated above average. Those rating poor for canning in order of decreasing desirability were NC 198, V2158, M-0-36-2 and Porto Rico.

Comments on Individual Observational Entries
(As related to other entries in this planting)

C56-35 - General appearance: Very good. Skin: Little lighter than medium rose color. Shape: Fairly uniform, medium thick, fusiform. Weighted yield: Average. Prime size yield: Average. When canned, this entry was quite firm but lacked moistness, desirable color and surface smoothness. Rated above average for vacuum packing. Sprouts: Little above average for trial; about 55% of Nemagold.

Centennial (Check entry, also in advanced trials). General appearance: Rather poor. Skin: Light copper color. Shape: Irregular but predominantly medium thick fusiform, some roots elongated. Weighted yield: High. Prime size yield: High. Sprouts: Very low; about 22% of Nemagold. (See replicated trial report for canning evaluation.)

Copperskin Goldrush (Check entry, also in advanced trials). General appearance: Poor. Skin: Copper color. Shape: Rough but fairly uniform medium thick fusiform. Weighted yield: Rather low. Prime size yield: Little below average. Sprouts: Low; about 29% of Nemagold. (See replicated trial report for canning evaluation.)

E1097-57. General appearance: Fairly good. Skin: Uniform light tan. Shape: Medium thick fusiform. Weighted yield: Fairly high. Prime size yield: Very high. When canned, this entry lacked moistness. The color was rather uniform but somewhat dull in vacuum packs. Sprouts: Little above medium for trial; about 55% of Nemagold.

Julian (L8-3) (Also in the replicated trials). General appearance: Fairly good. Skin: Medium rose color. Shape: Uniform, medium thick fusiform. Weighted yield: Fairly high. Prime size yield: Little above average. Sprouts: Low; about 23% of Nemagold. (See replicated trial report for canning evaluation.)

L9-39. General appearance: Average. Skin: Little lighter than medium rose color. Shape: Some roots were medium thick fusiform but many approached globular. Weighted yield: Average. Prime size yields: Fairly high. Sprouts: Entirely inadequate; about 2% of Nemagold. (Not enough roots were available for canning evaluation.)

L9-56. General appearance: Very good. Skin: Uniform dark rose color. Shape: Thin to medium thick fusiform, some crooked roots, but generally fairly uniform. Weighted yield: Rather low. Prime size yield: Rather low. When canned, this entry was an attractive uniform color, but when vacuum packed, it was somewhat lacking in wholeness and had some objectionable fiber. Sprouts: Low; about 24% of Nemagold.

L9-89. General appearance: Rather poor and skin was marred by prominent "eyes". Skin: Color varied from dark rose to light purple. Shape: Thin fusiform and rather long. Weighted yield: Fairly high. Prime size yield: Little below average. When canned, this entry was above average in weighted over-all score having an attractive bright color although lacking in surface smoothness. It was better in the vacuum pack than in the sirup pack which is unusual. Sprouts: Low; about 27% of Nemagold.

M-0-36-2. General appearance: Average. Skin: Light copper color, somewhat russet. Shape: Medium thick fusiform, but some crooked roots. Weighted yield: Low. Prime size yield: Little below average. This entry had an unattractive variation in color when canned and was lacking in surface smoothness. It had considerable objectionable fiber. Sprouts: Very low; about 20% of Nemagold.

NC 198. General appearance: Average. Skin: Copper color. Shape: Thin to medium thick fusiform, very rough, some elongated roots. Weighted yield: Low. Prime size yield: Very low. Below average over-all rating because of light unattractive color and lack of moisture and flavor. It was less desirable for vacuum packing. Sprouts: Very low; about 13% of Nemagold.

NC 210. General appearance: Fairly good. Skin: Light tan. Shape: Medium thick fusiform, but rough and with some objectional rootlets. Weighted yield: Rather low. Prime size yield: Little below average. When canned in sirup pack, this entry was rated slightly better than average having a light but attractive color, smooth surface, and adequate firmness. It was less desirable for vacuum packing. Sprouts: Very low;

about 21% of Nemagold. Comment: Cracked roots caused 18% of the culls, but the total amount of culls, including cracks, was less than the average for the planting.

Nemagold (Check entry, also in advanced trials). General appearance: Average, but would have been higher except for prominent "eyes". Skin: Light tan. Shape: Medium thick fusiform. Weighted yield: Average. Prime size yield: Little above average. Sprouts: Very high. Comments: Cracked roots caused 18% of the culls. See advanced trial notes for comments on vines. (See replicated trial report for canning evaluation.)

Porto Rico (Check entry). General appearance: Average, which would have been higher except for prominent "eyes". Skin: Light rose color. Some roots had slight shrively, rough skin. Shape: Medium thick fusiform. Weighted yield: Average. Prime size yield: Average. When canned, this entry was of variable light unattractive color, had a dull greenish cast, and was thought to be unsuited for sirup or vacuum packing. Sprouts: Very high; about equal to Nemagold.

V2158. General appearance: Rather poor. Skin: Copper color. Shape: Medium thick fusiform and some crooked roots. Weighted yield: Rather low. Prime size yield: Average. This entry was rated about average, but lacked firmness. It was moist and low in fiber. Sprouts: Very high; about equal to Nemagold.

Table No. 5 - Sweet Potato Observational Plantings of Fourteen Varieties or Numbered Selections in 1964 on Eastern Shore (Accomack County), Virginia. Yield, culls, carotene, dry matter, plant stand.

Variety or Selection Number	Yield per acre*							Culls per acre*		Carotene mg/100 g. (dry basis)	Percent dry matter	Plant stand
		Size selections**										
	Total marketable (1)	Fresh mkt large size (2)	Fresh mkt med. size (3)	Fresh mkt small or canning large (4)	Total canning (5)	Canning small for whole pack (6)	Oversize (7)	Cracked	Other (8)			
	cwt	cwt	cwt	cwt	cwt	cwt	cwt	cwt	cwt	mg	%	plt
L9-89	323	66	47	67	203	60	41	0	40	42.9	26.78	26
Centennial (ck)	294	123	105	80	136	41	38	0	35	34.9	26.74	30
Julian (L8-3)	259	66	58	120	193	64	0	0	25	65.2	24.61	29
E1097-57	246	140	129	54	108	41	39	0	35	29.9	28.64	29
C56-35	245	108	64	61	138	56	33	7	33	24.8	24.91	30
Porto Rico (ck)	223	70	64	70	132	49	0	1	63	11.7	28.09	30
Nemagold (ck)	219	82	76	86	138	46	7	14	23	21.9	25.76	29
L9-39	207	110	87	62	92	23	21	2	52	24.7	25.58	29
M-0-36-2	206	81	47	58	106	35	0	0	105	45.6	23.79	28
NC 210	205	64	53	86	138	42	7	14	35	19.2	27.83	29
L9-56	197	52	37	63	126	34	47	0	58	36.5	28.94	26
V2158	196	65	65	67	123	44	7	0	63	38.4	23.21	29
CS Goldrush (ck)	183	44	45	75	135	44	7	0	58	27.6	25.11	28
NC 198	157	33	13	40	81	15	88	0	105	24.2	24.48	24

* Amount per acre based on plant stand.

** Size selections are 5 sizes most likely to be of interest. They are not necessarily "grade" sizes. As each of the 5 sizes was re-selected from the "total marketable" roots, the sum of amounts for the 5 sizes will not equal the "total marketable" amount.

(1) Total marketable: Diameter 1 to 3.5 inches, length 3 to 9 inches, weight not over 20 oz.

(2) Fresh market, large size: Diameter 2.25 to 3.5 inches, length 3 to 9 inches.

(3) Fresh market, medium size: Diameter 2.5 to 3.25 inches, length 3 to 7 inches. This is not a "grade" size but is considered a prime size for the Virginia fresh market.

(4) Fresh market small or canning large: Diameter 1.75 to 2.25 inches, length 3 to 7 inches.

(5) Canning total: Diameter 1 to 2.25 inches, length 3 to 7 inches.

(6) Canning small for whole pack: Diameter 1 to 1.75 inches, length 3 to 5 inches.

(7) Oversize: Diameter more than 3.5 inches and/or length more than 9 inches and/or weight more than 20 oz.

(8) Culls: See "comments on individual observational entries" for notations on culls.

Table No. 6 - Mean Evaluation of Canned Sweet Potatoes from 1964 Observational Variety Trails on Eastern Shore of Virginia.

Variety or selection number	Weighted over-all score	Color			Shape		Texture			Flavor
		Chromaticity	Uniformity	Attractiveness	Wholeness	Surface smoothness	Firmness	Moisture	Freedom from fibrousness	
Syrup Packed										
E1097-57	7.88	7.2	7.7	7.3	9.4	8.5	8.8	6.6	8.3	8.0
NC-210	7.86	5.7	8.1	7.6	9.4	9.4	7.9	7.3	8.2	7.9
L9-89	7.84	7.7	7.8	6.8	9.3	6.4	8.6	7.1	8.6	7.5
L9-56	7.80	7.5	8.0	7.8	9.2	7.4	8.1	7.1	7.6	7.6
C56-35	7.76	6.5	7.7	7.0	8.8	7.9	9.5	6.0	8.9	7.9
NC-198	7.42	5.7	7.4	6.2	9.3	7.9	9.1	6.3	8.4	6.8
V2158	7.25	5.7	7.5	6.2	8.5	6.8	5.1	9.0	8.3	6.4
Porto Rico	7.06	3.0	7.0	6.3	9.3	7.4	8.1	7.7	7.7	6.6
M-0-36-2	6.94	6.2	6.1	4.8	8.5	5.8	6.8	8.6	7.2	7.4
Average	7.53	6.1	7.5	6.6	9.1	7.5	8.0	7.3	8.1	7.3
Vacuum Packed										
L9-89	7.73	8.1	8.1	8.3	7.9	5.8	8.7	7.0	8.2	6.4
C56-35	7.47	6.2	7.6	7.0	8.7	8.1	9.7	5.3	8.5	6.9
L9-56	7.37	7.4	7.8	7.6	6.9	8.0	8.2	6.4	7.8	6.6
V2158	7.24	6.4	6.7	6.6	7.2	7.8	7.1	8.0	8.3	6.7
M-0-36-2	7.21	6.6	7.3	6.3	8.3	7.4	6.9	8.0	7.3	6.4
E1097-57	7.16	7.2	6.1	6.2	8.6	8.4	7.9	6.2	8.3	6.6
NC-198	7.07	5.7	6.8	6.1	8.3	7.4	8.8	5.9	8.9	5.7
NC-210	6.82	4.4	5.6	5.0	9.0	8.5	8.7	6.6	7.8	6.8
Porto Rico	6.49	2.8	5.5	4.5	8.1	8.3	8.5	6.6	8.0	6.7
Average	7.17	6.1	6.8	6.4	8.1	7.7	8.3	6.7	8.1	6.5

All Samples were canned within three days of the harvest on September 25. The canned samples were stored 6 weeks than opened and evaluated by a technical panel of 8 trained judges during 2 replications. Samples were rated using a scale 1 (low) to 10 (high). A weighted over-all score below 6 indicates an unacceptable entry. Factors for over-all score are: Chromaticity 10, Uniformity 15, Attractiveness 10, Wholeness 10, Surface smoothness 5, Firmness 10, Moisture 15, Freedom from Fibrousness 15, Flavor 10.

Table No. 7 - Objective Quality Tests on Canned Sweet Potatoes Virginia Agricultural Experiment Station 1964 Variety Trials.

Variety or selection	Firmness (1) Sirup	Firmness (1) Vacuum	Color (2) Sirup	a_L/b_L Vacuum
Replicated				
L8-92	34	41	.73	.96
L9-66	36	48	.75	.72
NC-188	37	39	.70	.63
Centennial	36	47	.67	.62
Copperskin Gold-rush	49	54	.57	.55
Nemagold	48	57	.58	.43
L8-3	35	38	.92	.90
Average	39	46	.70	.69
Observational Plantings				
C56-35	41	43	.66	.54
E1097-57	38	30	.60	.61
L9-56	65	46	.79	.72
L9-89	41	39	.75	.76
M-0-36-2	60	50	.69	.69
NC-198	42	38	.53	.51
NC-210	36	43	.46	.48
V2158	66	50	.75	.61
Porto Rico	54	36	.26	.32
Average	49	42	.61	.58

(1) Firmness was determined by the ASCO Firmness Meter, using the fiberglass-teflon belt, with a 250 g. prestress weight and a 400 g. test weight for 5 seconds. Lower readings indicate a firmer product.

(2) Color was determined on a Color Difference Meter of the Hunter type on a composite sample of mashed sweet potato in a plexiglas cell, with 1/16 inch thick bottom, through a 2 inch opening. An orange standard tile was used having attributes as follows: L = 58.5 + a_L = 29.4 and + b_L = 32.6. The average a_L was divided by the average b_L and reported. Larger values generally indicate better color.