

RESEARCH REPORT TO THE  
OREGON PROCESSED VEGETABLE COMMISSION

1. Title: Evaluation of supersweet corn varieties for the Treasure Valley.
2. Project Leader: Clinton Shock, Malheur Experiment Station.
3. Researchers: Charles Burnett - Malheur Experiment Station  
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4. Project Status: Continuing project 304 of Oregon State University Agricultural Experiment Station.
5. Funding for this reporting period: \$0.00.
6. Objectives: A. The project evaluates new supersweet and sugary-enhanced sweet corn varieties to identify superior plant materials. Varieties are evaluated for
  1. Reliability in plant stand establishment.
  2. Uniformity of maturity date.
  3. Resistance to lodging.
  4. Acceptability for yield and ear conformation.
  5. Processing quality.B. Determine the length of harvest period possible with a limited number of varieties.
7. Progress and Summary: Twenty four sweet corn varieties from nine companies were planted in replicated four row plots at the Malheur Experiment Station (Table 1). Varieties were evaluated for stand establishment, plant lodging, uniformity of maturity, yield, ear characteristics, and processing quality (Table 2). Processing quality was evaluated at Ore-Ida Foods in Ontario.

Supersweet varieties are rapidly approaching characteristics needed by processors. Yields and ear uniformity are approaching Golden Jubilee.

The data on harvest maturity indicate that supersweet corn varieties maintain high levels of sugar over an extended period of time (Table 3). Frozen samples will provide data on cooking quality in January or February.

Table 1. Sources of super sweetcorn varieties at the Malheur Experiment Station, O.S.U., in 1987.

ENTRY #	SEED COMPANY	VARIETY
1	ASGROW	XPH 2606
2		XPH 2671
3		XPH 2623
4		XPH 2670
5	ABBOTT & COBB	SS 7700
6		SS 7600
7	CROOKHAM	CRISP 'N' SWEET 710 (LOT A)
8	SUN SEEDS	SUNEX 2574
9	HARRIS-MORAN	HMX 6399S
10		HMX 4379S
11		HMX 7371S
12		HMX 7372S
13		HMX 5384S
14	ILLINOIS FOUNDATION	SCH 5429
15		SCH 5288 16R
16		SCH 4055
17	MUSSER	85-3147A sh2
18		85-3154 sh2
19		85-3158B sh2
20		85-3161 sh2
21	ROGERS BROTHERS	GSS 3376
22	HARRIS-MORAN	PINNACLE
23	ASGROW	XPH 2672
24	SUN SEEDS	SUNEX 2609

Table 2. Yield and quality of supersweet corn varieties. Malheur Experiment Station, O.S.U., Ontario, Oregon, 1987.

Variety	Days to Harvest	Stand % Emerged	T/A	Ears/T	Ear Length	Max. Diameter	Rows #	Taper	Maturity Index	Quality			Final Moisture	Sucrose
										A's	B's	Culls		
					inches	inches				%	%	%		
1. XPH 2606	94	79.3	10.5	2562	7.75	1.86	17	0.25	2.94	81.0	9.0	10.0	75.5	9.5
2. XPH 2671	95	84.2	9.2	3123	7.15	1.84	16	0.38	3.01	57.5	36.3	6.0	75.0	9.1
3. XPH 2623	87	82.1	12.2	2314	8.66	1.88	13	0.24	2.90	90.0	3.3	6.7	77.0	5.3
4. XPH 2670	94	76.6	10.9	2766	8.19	1.82	17	0.27	2.92	67.7	19.2	13.1	74.0	9.7
5. SS 7700	96	82.4	9.7	2892	8.04	1.87	18	0.33	2.90	71.0	22.0	7.0	75.9	8.2
6. SS 7600	95	89.8	7.9	3232	7.60	1.87	16	0.37	2.87	56.0	19.5	24.5	76.5	7.5
7. C'N'S 710	91	79.0	10.2	2557	8.10	1.85	17	0.29	2.97	66.0	16.0	18.0	77.4	8.7
8. SUNEX 2574	94	69.8	10.9	2509	6.77	2.07	17	0.50	2.87	72.0	7.0	21.0	77.2	10.1
9. HMX 6399S	96	84.4	9.6	2798	8.50	1.84	16	0.21	2.92	76.0	14.0	10.0	76.5	8.0
10. HMX 4379S	96	55.5	6.8	3277	8.27	1.76	18	0.26	2.78	55.5	28.3	16.3	75.2	8.8
11. HMX 7371S	92	74.2	10.5	2406	8.04	1.96	16	0.28	2.92	82.0	11.0	7.0	NA	NA
12. HMX 7372S	91	66.5	8.8	2632	7.88	1.85	17	0.36	2.89	63.5	12.1	24.4	76.6	10.1
13. HMX 5384S	92	80.1	11.6	2758	7.55	1.77	16	0.25	2.92	56.0	33.0	8.0	NA	NA
14. SCH 5429	90	75.2	9.2	3089	7.81	1.83	16	0.32	2.88	76.1	10.3	13.7	76.9	9.2
15. SCH 5288	90	78.0	9.5	3058	7.96	1.77	16	0.35	2.86	74.2	10.8	15.0	76.5	8.9
16. SCH 4055	91	79.0	11.4	2503	7.70	1.85	17	0.34	3.07	78.0	11.0	11.0	76.6	9.1
17. 85-3157A	92	81.0	6.8	3077	7.33	1.76	15	0.32	2.85	50.0	30.0	20.0	NA	NA
18. 85-3154	94	66.4	7.5	2791	7.57	1.88	16	0.29	3.04	51.0	25.0	24.0	75.0	8.6
19. 85-3158B	92	88.4	5.8	3266	7.44	1.76	16	0.30	2.94	46.0	22.0	22.0	NA	NA
20. 85-3161	91	86.7	9.7	2496	7.75	1.91	16	0.40	3.07	78.0	1.0	21.0	75.5	10.6
21. GSS 3376	94	82.3	11.1	2625	7.99	1.87	17	0.28	2.99	89.0	6.0	5.0	77.7	9.7
22. PINNACLE	89	79.9	8.9	2451	9.07	1.81	15	0.15	2.92	94.0	1.0	5.0	76.6	9.3
23. XPH 2672	95	91.5	9.2	3302	7.57	1.81	16	0.34	2.98	53.0	23.0	24.3	75.6	8.6
14. SUNEX 2609	95	71.1	9.0	3010	7.56	1.83	17	0.34	2.95	77.0	7.0	16.0	76.4	8.1

Table 3. Change in the yield and quality of three supersweet corn varieties with advancing harvest date. Malheur Experiment Station, O.S.U., Ontario, Oregon, 1987.

Variety	Season Length		Water Content*	Yield Relative to 8/19	Sugar Content	
	Harvest Date				Dextrose	Sucrose
	days		%	%	- - - - - % - - - - -	
XPH 2606	8/19	90	78.2	100	0.75	8.2
	8/21	92	75.9	101	0.90	9.1
	8/24	95	74.7	108	0.60	9.1
	8/27	98	74.2	115	-	-
	9/1	102	73.8	-	0.65	7.5
GSS 3376	8/19	90	79.9	100	1.18	7.6
	8/21	92	77.4	107	1.50	8.5
	8/24	95	75.0	118	0.68	10.0
	8/27	98	74.1	128	-	-
	9/1	102	73.8	-	0.70	9.6
FMX 85	8/19	90	83.1	100	1.62	5.8
	8/21	92	80.7	106	0.94	8.4
	8/24	95	78.5	125	0.65	8.8
	8/27	98	76.5	129	-	-
	9/1	102	75.0	-	0.55	9.5
LSD (.05) not calculated yet						
G. Jubilee	9/1	-	70.4	-	0.72	2.6

\*presented for sugar and percent water comparison.

\* G. Jubilee at 70% water and supersweet corn at 77-78% water are considered ideal for harvesting.