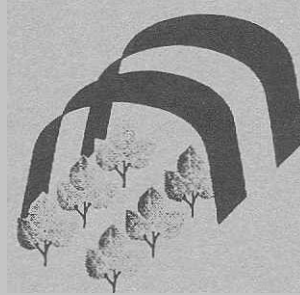
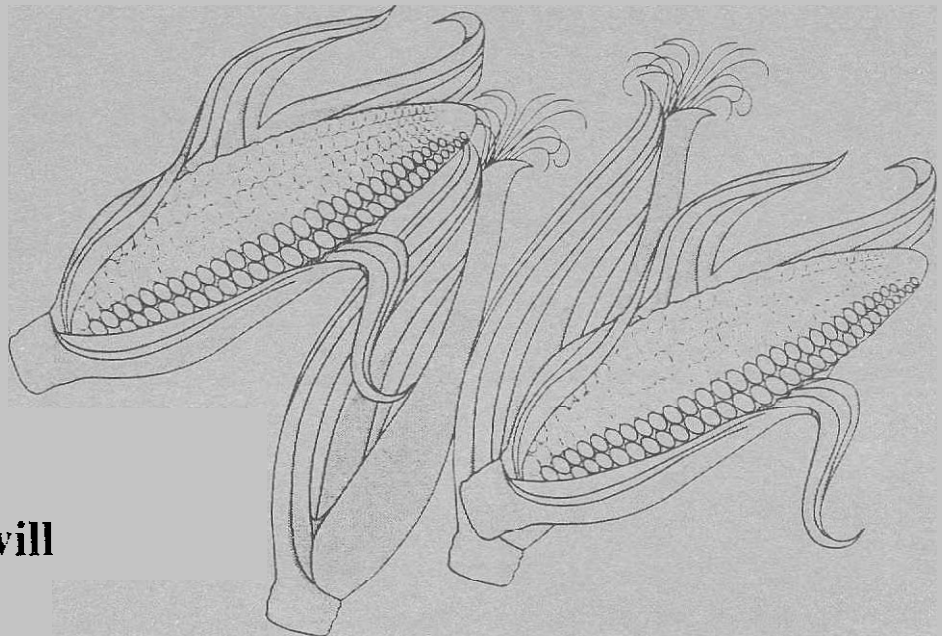
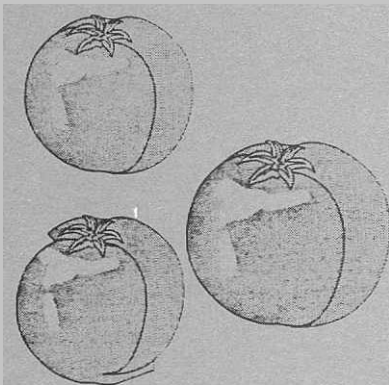


1997 FRESH MARKET VEGETABLE RESEARCH REPORT



**Agriculture & Agri-Food Canada
Greenhouse & Processing Crop
Research Centre
Harrow, ON
NOR 1G0**



William (Bill) Balkwill

1997 Fresh Market Vegetable Variety Trials Research Report

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FORWARD

The information contained in this report is a summary of fresh market vegetable variety trial research conducted at the Greenhouse and Processing Crops Research Centre at Harrow, Ontario, during the 1997 growing season.

The south Essex county area is an important producer of fresh market vegetable crops. Early-season production of vegetables is emphasized, to take advantage of the traditional early market window. Field vegetables are very important to the agricultural economy of Ontario, with a major portion of the provincial production being located in Southern Ontario. Ontario-grown produce must compete with produce from areas having lower labour costs and climates which allow year round production. Ontario growers need to provide superior quality produce at a low price to maintain their markets. Therefore, development of cultural practices and cultivars to optimize early production and quality, is the major aim of this research.

Weather conditions for the 1997 season are summarized on pages 3-5. A cold, wet, spring delayed planting and harvesting two to three weeks for most crops. There were only 12 days in May when there was no rainfall. Soil temperature was slow in warming (see page 5). Cooler than average summer temperatures affected the performance of some crops. Corn Heat Units were well below normal all season.

1997 vegetable trials included early cabbage, sweet corn (SE & Sh2), bell peppers, fresh market and processing snap beans and tomatoes including roma types for the fresh market. Snap bean and sweet corn trials contained 4 replications. All other advanced trials contained 3 replicates. Observation trials were 1 replicate.

All cultural practices used in these trials were representative of those used in the area. Pesticide applications were according to the Ontario Ministry of Agriculture, Food and Rural Affairs, Publication 363 recommendations.

The support of the Ontario Fruit and Vegetable Growers Association, Ontario Agri-Food Research Foundation, and the Seed Companies listed on page 2 is gratefully acknowledged. We hope the information contained in this report will be beneficial to the fresh market vegetable growers of Ontario.

Bill Balkwill

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Greenhouse & Processing Crops Research Centre
Harrow Ontario
(519) 738-2251, ext. 488

1997 Seed Sources

We thank the seed companies listed below for their cooperation in supply seed samples:

- AS** Asgrow Seed Co., 7000 Portage Rd., Kalamazoo, MI 49001
- BJ** Bejo Seeds, Inc. P. O. Box 859, 1972 Silver Spur Place, Oceana, CA 93445
- BK** (Berkop) Greygo Distributors, Ridge Road, Harrow, ON NOR 1G0
- DR** DeRuiter Seeds Inc., P.O. Box 20228, Columbus, Ohio 43220
- EZ** Enza Zaden, 1188 Padre Dr. Suite 150, Salinas, CA 93901
- FM** Ferry-Morse Seed Co., P.O. Box 4938, Modesto, CA 95352
- HM** Harris Moran Seed Co., RR #1 Kettleby, Ont. LOG 1J0
- HR** Agriculture and Agri-Food Canada, Harrow, Ont. NOR 1G0
- PS** PetoSluis Co. Inc., 1905 Lirio Ave., Saticoy, CA 93004
- RO** Rogers Seed Co., P.O. Box 4188, Boise, ID 83711
- SA** Sakata Seed America Inc., P.O. Box 880, Morgan Hill, CA 95038
- SH** Shamrock Seed Company, Inc., P. O. Box 4443, Salinas CA 9391-4443
- SS** Sunseeds Inc., 7087 E. Peltier Road, Acampo, CA 95220
- ST** Stokes Seeds Ltd., 39 James Street, Box 10, St. Catharines, Ont. L2R 6R6
- SW** Seedway Inc., 1225 Zeager Rd., Elizabethtown, PA 17022
- VM** Vilmorin Inc., P.O. Box 707, Empire, CA 95319

1997 TEMPERATURE AND PRECIPITATION DATA
Harrow, Ontario

Date	APRIL			MAY			JUNE		
	High (°C)	Low (°C)	Precip. (mm)	High (°C)	Low (°C)	Precip. (mm)	High (°C)	Low (°C)	Precip. (mm)
1	11.9	-2.9		12.8	5.0		16.1	11.1	25.8
2	16.4	-0.3		13.1	0.1	7.8	16.1	13.8	19.5
3	18.0	3.5	3.8	9.1	6.7	11.8	18.7	12.4	
4	16.8	5.2	1.3	16.0	4.0		21.6	8.3	
5	16.5	8.8	10.8	16.1	3.1	5.8	24.1	10.5	
6	19.1	10.7		15.1	6.0		23.8	13.3	
7	6.5	6.4		14.2	0.8	0.8	20.7	14.4	
8	2.9	-0.8		12.7	6.6	1.5	22.7	11.9	
9	3.2	-6.4		10.6	8.6	0.3	25.1	11.2	
10	5.8	-6.6		14.0	3.0	0.3	27.2	13.2	
11	7.5	1.8	4.5	17.3	2.9	1.8	28.6	16.6	
12	4.4	2.2	3.0	15.0	9.8		23.1	18.5	
13	7.1	1.3		17.3	2.3		27.4	17.8	
14	10.6	-0.9		14.8	5.2	6.8	22.4	13.1	
15	14.5	1.4	0.5	11.9	5.5	0.8	24.1	8.1	
16	13.9	6.9	6.8	13.7	2.4	4.3	23.2	18.7	11.3
17	3.9	0.1		14.4	7.0		20.5	14.6	2.3
18	11.2	-2.5		19.0	6.3	9.8	23.3	14.6	
19	10.8	-3.8		22.0	9.9	1.5	25.3	13.5	2.5
20	11.4	-1.9		14.0	3.1		29.2	17.8	2.5
21	14.8	6.2		16.0	4.2		30.0	19.8	19.8
22	8.9	3.2	2.0	15.0	4.0		27.0	19.0	
23	14.9	1.0		17.7	4.9		29.2	19.1	
24	16.3	2.7		22.9	9.5	8.3	31.9	22.9	
25	16.3	3.5		13.0	10.8	4.5	32.8	24.0	5.0
26	16.2	1.0		16.1	6.1		28.7	21.4	
27	14.3	4.7	3.3	17.9	6.2		26.4	15.4	
28	14.7	5.8		20.3	8.0	4.8	28.6	17.3	
29	18.0	5.4		14.7	11.8	15.0	28.5	18.9	
30	21.2	9.7	1.3	21.6	13.4	0.5	26.5	21.4	
31									
Month ¹	12.3	1.8	37.3	15.6	6.2	104.7	25.1	15.8	88.7
Norm ²	14.5	2.2	75.6	21.3	8.4	67.5	25.9	14.2	80.1
Cumulative CHU's ³ to end of month					245			986	
Normal cumulative CHU's (1986-1996 ave.)					403			1131	

1 = Mean High & Low Temp & Total Precipitation
2 = Normals based on 1987-1996 (10 year ave.)
3 = Corn Heat Units (10°C base temp.)

1997 TEMPERATURE AND PRECIPITATION DATA
Harrow, Ontario

Date	JULY			AUGUST			SEPTEMBER		
	High (°C)	Low (°C)	Precip. (mm)	High (°C)	Low (°C)	Precip. (mm)	High (°C)	Low (°C)	Precip. (mm)
1	28.5	21.6		25.8	16.9		25.4	17.8	
2	30.6	19.8		29.3	21.5		27.2	15.8	14.5
3	22.8	19.0		24.7	17.1	4.0	19.3	10.2	
4	21.4	15.7		25.1	16.0	3.3	21.4	6.6	
5	23.3	10.1		22.6	14.7		22.1	7.4	0.3
6	26.0	14.6		23.3	9.4		26.1	17.3	
7	22.0	13.6		25.9	12.7		23.9	15.3	
8	27.5	17.3	6.8	26.7	16.1		23.1	16.0	
9	21.9	14.2		28.0	16.5		22.4	13.8	43.5
10	23.5	11.4	0.3	25.2	20.6		22.0	17.5	0.3
11	24.7	12.4		20.3	15.6	9.3	19.3	14.4	1.0
12	27.9	14.7		25.2	14.1	7.8	18.8	14.7	
13	29.7	18.0		24.8	19.9		22.0	13.6	
14	33.9	23.4		22.9	13.2		22.8	14.4	
15	30.5	21.9		28.0	17.6	31.3	25.0	16.5	
16	32.3	18.6		30.0	19.5	15.0	26.1	14.7	2.8
17	31.2	23.0		22.0	18.6	0.5	25.6	18.7	11.8
18	33.6	19.2		22.3	14.5		25.0	12.9	
19	26.0	16.9		23.3	12.1		26.3	18.1	19.8
20	26.7	9.7		22.2	16.3	3.0	20.5	16.2	
21	25.3	20.6	6.5	21.0	15.5	1.5	15.7	5.9	
22	24.6	16.8		20.6	13.5	0.3	17.8	6.4	0.8
23	25.5	17.5		23.3	10.9	0.5	19.1	12.3	
24	26.8	18.5		17.6	13.8	4.0	16.6	5.1	
25	27.8	16.0	16.5	22.6	16.2		23.6	11.1	
26	29.8	20.8		24.1	13.6		18.1	9.1	
27	29.0	21.9		27.2	17.2		19.2	4.7	
28	29.7	23.2		23.5	15.7		23.6	10.7	
29	25.8	14.9		22.3	14.6		23.1	13.0	0.5
30	25.6	11.2		23.4	14.9	0.3	18.6	14.5	
31	27.0	13.8		24.9	17.9				
Month ¹	27.1	17.0	30.1	24.1	15.7	80.8	22.0	12.8	95.3
Norm ²	28.3	18.5	96.2	26.6	15.9	120.6	22.4	11.4	104.1
Cumulative CHU's ³ to end of month		1812			2580			3191	
Normal cumulative CHU's (1986-1996 ave.)		1984			2804			3392	

1 = Mean High & Low Temp & Total Precipitation
2 = Normals based on 1987-1996 (10 year ave.)
3 = Corn Heat Units (10°C base temp.)

1997 Early Season Soil Temperatures

May 16 - June 9

Temperatures were recorded with a CRIO datalogger at a soil probe depth of 1½" from May 16 to June 9. Reported in °Celsius and (°Fahrenheit)

Soil Temp at 1½"

Date	Min.	Max.	Avg.
May 16	7.2 (45)	25.2 (77)	12.8 (55)
May 17	3.9 (39)	17.4 (63)	9.8 (50)
May 18	7.6 (46)	18.1 (65)	12.1 (54)
May 19	7.9 (46)	20.0 (68)	13.2 (56)
May 20	10.1 (50)	20.2 (68)	15.1 (59)
May 21	6.1 (43)	19.1 (66)	12.5 (55)
May 22	5.7 (42)	21.1 (70)	12.9 (55)
May 23	6.3 (43)	23.6 (74)	14.5 (58)
May 24	8.0 (48)	25.2 (77)	15.7 (60)
May 25	9.8 (50)	27.6 (82)	17.7 (64)
May 26	8.8 (48)	16.2 (61)	13.1 (56)
May 27	6.1 (43)	20.8 (69)	12.8 (55)
May 28	7.3 (45)	23.0 (73)	14.8 (59)
May 29	9.1 (48)	24.3 (76)	16.1 (61)
May 30	13.1 (56)	14.8 (59)	13.7 (57)
May 31	12.8 (55)	22.0 (72)	16.6 (62)
June 1	12.9 (55)	16.3 (61)	15.1 (59)
June 2	12.6 (55)	15.5 (60)	13.9 (57)
June 3	13.9 (57)	15.2 (59)	14.4 (58)
June 4	12.7 (55)	21.2 (70)	16.3 (61)
June 5	10.5 (51)	28.8 (84)	19.1 (66)
June 6	12.8 (55)	28.0 (82)	19.9 (68)
June 7	14.0 (57)	29.2 (85)	20.9 (69)
June 8	14.3 (58)	28.3 (83)	20.5 (69)
June 9	13.8 (57)	29.6 (85)	21.0 (70)

1997 Snap Bean Variety Trials: Fresh Market, Standard and Small Sieve Processing

Crop Management:

Soil Type	Fox Sandy Loam
Stand Establishment	Fresh Market : seeded May 22 - soil temp. - 13-14°C Processing : seeded June 6 - soil temp. - 18-20°C
Row Spacing	76 cm (30"0, with 7.5 seeds/foot of row (130,000 plants per acre)
Fertilizer	30 lb/acre actual N + 60 lb/acre potash broadcast preplant
Weed Control	Eptam @ 2.4 kg/ha + Treflan @ 0.6 kg/ha preplant incorporated
Irrigation	Irrigated; 1" of water applied July 22

Harvest and Evaluations:

Yield	: Hand harvested 14-15 days after flowering date, at approx. 10% seed maturity. Yield is shown in 28 lb crates and tons per acre
Plant size	1 = very small plant 5 = large, bushy plant
Colour	: 1 = very light, pale green or yellow 5 = dark green or bright yellow
Straight	: 1 = poor shaped, crooked or bumpy pod 5 = very straight and smooth pod

Summary:

Fresh Market

Very cold soil temperatures after planting delayed emergence (14 days to emergence). Zodiac had the best emergence rate. Valdor continues to perform well. XPB 346 and XPB 323 were among the top yielders in 1996 as well. XPB 323 appears to be 2-3 days earlier than 346. Shade had the poorest germination but still performed well.

Process

With warm, normal soil temperatures, emergence occurred in 6-7 days and was very good overall.

In the standard trial, SB 4136 was tops in yield for green and Gold Mine was the highest yellow wax. Saratoga was the earliest.

SVR #4 was the highest yielder of the wholepack type with mostly #3 sieve.

Table 1: 1997 Fresh Market Snap Bean Advanced Trial: Yield Data

Variety	Source	Harvest Date: July	% Stand	Yield/Acre		Pod Size Distribution (% pods in sieve size)			
				28 lb boxes	tons	1 & 2	3	4	5
Valdor'	ST	18	86	252	3.5	--	3	35	62
XPB346	AS	19	84	236	3.3	--	8	18	74
XPB323	AS	17	85	225	3.2	--	0	43	57
Zodiac	AS	20	91	223	3.1	--	0	58	42
Prosperity	HM	21	75	221	3.1	--	18	62	20
Shade	HM	19	65	216	3.0	--	8	48	44
Seville	ST	22	68	203	2.9	--	20	60	20
SB 4129	RO	18	84	202	2.8	--	3	63	34
Mirada	ST	18	89	199	2.8	--	10	70	20
Goldkist*	ST	22	79	195	2.7	--	5	43	52
MB 8006	RO	17	74	190	2.7	--	0	32	68
Hialeah	ST	17	88	189	2.6	--	10	62	28
Derby	ST	19	72	181	2.5	--	0	45	55
Benchmark	RO	17	79	161	2.3	--	5	58	37
Daytona	FM/ST	17	88	160	2.2	--	0	70	30
Probe	HM	22	74	150	2.1	--	28	60	12
Sable	HM	20	76	127	1.8	--	35	45	20
LSD.05			18.6	50.7	0.7	--	16.7	21.9	23.4
Trial Avg			80	196	2.7	--	9	51	40

*yellow wax

Table 2: 1997 Fresh Market Snap Bean Advanced Trial: Quality Evaluations

Variety	Plant Size	Colour	Straight	Length (cm)	Comments
Valdor	3.5	3.0	3.5	13.4	attractive, med. yellow wax; round, smooth, uniform
XPB 346	3.3	4.0	3.8	12.6	large, round, uniform shape & size; med. dark green
XPB 323	3.3	3.3	3.5	12.3	long, thick, smooth, med. green; good yields
Zodiac	3.8	2.3	3.3	13.1	long, lt. green, uniform maturity; good stand
Prosperity	4.8	3.3	4.0	13.8	long, slender, attractive, med. dark green; nice bean
Shade	3.0	4.0	3.8	12.1	dark green, uniform overall; very smooth bean
Seville	3.8	4.2	3.5	13.1	long, sl. flattened, smooth, dark green
SB 4129	3.3	3.3	3.3	12.3	smooth, round, med. dark green bean
Mirada	3.3	2.0	3.5	11.7	sl. flattened, smooth, lt-med green
Goldkist*	3.5	2.0	3.0	12.8	nice uniform, light yellow wax bean; smooth, round
MB 8006	2.5	1.5	3.8	11.1	attractive, light green; sl. flattened; smooth and uniform
Hialeah	3.0	2.0	3.5	13.5	attractive lt-med green; large, thick, round, smooth
Derby	4.8	4.5	4.0	13.5	long, round, attractive, fairly dark green, straight
Benchmark	3.3	3.6	3.5	12.4	smooth, slender, shiny, med. green; uniform overall
Daytona	3.0	3.0	3.0	12.1	med. green, round, smooth
Probe	3.3	3.8	3.5	13.0	round, slender, smooth; med. green
Sable	2.0	5.0	3.5	10.4	small, round, glossy dark green
LSD .05	0.9	0.6	0.7	1.1	
Trial Average	3.4	3.2	3.5	12.5	

**Table 4: 1997 Processing Snap Bean Advanced Trial - Standard Varieties:
Quality Evaluations**

Variety	Plant Size	Colour	Straight	Length (cm)	Comments
SB 4136	3.0	2.0	4.0	12.6	long, attractive, smooth, med. dark, straight
Gold Mine	5.0	2.7	3.5	12.2	smooth, attractive, lt. yellow wax
FM 533	3.5	3.0	4.0	12.6	med. green, very smooth, straight, round, slender
HMX 4989	4.0	3.8	3.0	11.1	large, thick bean; sl. flattened
Nicello	3.0	3.7	3.0	12.0	med. dark green, fairly smooth
Saratoga	3.5	3.5	2.5	13.2	long, thick, med. dark green; attractive overall; nice bean
Concerto	3.0	4.0	3.5	12.8	med. dark green, smooth, round
SB 4079	3.0	4.0	3.8	12.1	shiny dark green, very straight, sl. flattened; uniform
SB 4095	3.0	4.5	3.5	13.3	attractive, shiny dark green; good size; smooth
Envy	4.0	4.0	3.5	13.0	straight, smooth, dark green; sl. flattened
Valdor	4.0	2.7	2.4	13.3	med. yellow wax; large, round; some crooked beans
Symphony	3.0	5.0	3.0	12.4	very dark green; large, round
HMX 6999	3.0	4.8	4.0	11.6	dark green, shiny, smooth, attractive promising bean
Matador	3.5	4.0	4.0	11.6	flattened-round; large; standard
Sable	3.5	4.5	4.3	11.2	dark green; smooth, straight; uniform shape & color
LSD .05		0.5	0.6	0.8	
Trial Average		3.7	3.5	12.3	

**Table 5: 1997 Processing Snap Bean Advanced Trial - Wholepack Varieties:
Yield Data**

Variety	Source	Harvest Date: July	% Stand	Yield/Acre		Pod Size Distribution (% pods in sieve size)			
				28 lb crates	tons	1 & 2	3	4	5
SVR #4*	AS	July 30	99	335	4.7	0	70	30	0
Carlo	AS	July 31	100	315	4.4	3	22	75	0
EX351	AS	July 31	98	307	4.3	10	85	5	0
SB4087	RO	July 29	96	297	4.2	0	48	52	0
FM 646	FM	July 30	98	270	3.8	0	15	85	0
XP 366	AS	Aug 1	93	242	3.4	0	35	65	0
Soleil*	VM	Aug 1	100	212	3.0	20	60	18	2
Impact*	AS	July 29	93	198	2.8	0	58	42	0
Xavo	RO	Aug 1	94	186	2.6	35	63	2	0
Minuette	HM	July 31	100	176	2.5	0	45	55	0
Banquet	AS	Aug 1	94	164	2.3	3	15	72	10
Pix	AS	Aug 1	94	160	2.2	30	52	18	0
Nickel	VM	Aug 1	84	154	2.2	35	62	3	0
SB 4123	RO	July 29	86	145	2.0	15	75	10	0
Marseille	FM	Aug 1	70	137	1.9	28	64	8	0
MV-152	VM	July 31	97	135	1.9	55	45	0	0
HMX 5991	HM	Aug 1	95	133	1.9	18	48	34	0
Normandie	FM	Aug 1	94	132	1.9	62	38	0	0
Flevoro	AS	July 31	94	119	1.7	32	58	10	0
MV-185	RO	Aug 1	87	90	1.3	38	62	0	0
LSD .05			14.7	43.8	0.6	23.3	27.0	24.6	3.2
Trial Avg			93	195	2.7	19	51	29	0.6

'yellow wax

**Table 6: 1997 Processing Snap Bean Advanced Trial - Wholepack Varieties:
Quality Evaluations**

Variety	Plant Size	Colour	Straight	Length (cm)	Comments
SVR #4	3.0	3.8	3.4	9.6	dark yellow wax; attractive, slender, smooth; color could be more uniform
Carlo	3.0	2.0	2.5	12.5	large, banquet type; lt. green; flattened
EX 351	3.0	3.5	4.3	9.0	med. green; nice round bean; uniform shape & size
SB 4087	3.0	4.0	3.7	10.3	large, dark green, smooth; uniform overall; nice bean
FM 646	2.5	3.0	3.5	10.2	lt. yellow wax; smooth, round; small upright plant
XP 366	3.0	3.5	4.0	9.4	med. green, straight, smooth, round; may be susc. to air pollution
Soleil	4.0	2.8	4.0	10.6	attractive, lt. yellow wax, smooth, uniform, straight
Impact	1.5	2.0	4.0	10.4	slim, round; uniform size, shape & length; small plant
Xavo	3.5	3.5	3.5	10.3	med. green; smooth, fairly straight; 2-3 sieve size
Minuette	3.0	4.6	3.4	10.1	very dark green; pods high on plant, smooth, round
Banquet	3.5	3.8	3.7	11.1	for cut or whole; med. dark green; large round bean
Pix	3.0	3.8	4.0	10.0	small round bean; smooth, straight
Nickel	3.5	3.4	3.4	10.3	uniform smooth, round, med. green; nice bean
SB 4123	2.0	4.3	3.7	10.7	small bush; thin, slender; sl. flattened
Marseille	1.5	3.3	4.0	9.7	small compact plant; fairly straight; avg. bean
MV-152	2.0	4.0	4.0	9.8	dark green; round, slender; uniform overall
HMX 5991	2.5	4.8	4.0	9.7	dark green; pods high on plant
Normandie	3.0	4.0	4.0	10.5	round, slender, smooth, avg. green bean
Flevoro	1.5	3.5	3.5	8.9	dark green but not uniform; some rough beans
MV-185	3.0	4.0	4.0	9.1	small, med. dark, late, may have been harvested too early
LSD .05		0.5	0.5	0.6	
Trial Average		3.6	3.7	10.1	

1997 Early Cabbage Variety Trials

Crop Management:

- Soil Type : Fox Sandy Loam
- Stand Establishment : Seeded in 200 cell transplant trays on March 18
Transplants grown in a double-poly greenhouse
Transplanted to the field on May 7
Starter fertilizer applied at 1 kg per 200 L of transplant water.
- Row Spacing : Planted in twin row beds on 1.5 m (5') centres on flat ground 45 cm (18") between twin rows; 45 cm (18") between plants in row. (12,000 plant per acre population)
- Fertilizer : 150 kg/ha actual nitrogen + 300 kg/ha K₂O broadcast and incorporated preplant.
- Herbicide : Treflan @ 0.6 kg/ha, pre-plant incorporated.

Harvest and Evaluations:

Plots were harvested as heads matured. Harvested every 2 to 3 days starting on July 2 and finishing on July 18.

- Yield : Expressed in 45 lb. cases per acre harvested up to July 11, total yield July 18 and total tonnes per hectare.
- % Unmarketable : Based on total number of heads per plot. Most unmarketable heads had not matured by harvest completion on July 18.
- Growth Habit : 1 = very small plant, 3 = medium size plant, 5 = large spreading plant
- External Colour : 1 = very light green, 5 = dark blue-green
- Uniformity : 1 = variable maturity, 5 = very uniform maturity
- % Splitting : 1 rep was not harvested. Counts were made of split heads to check field holding ability

Summary:

Transplanting and harvesting was delayed at least 2 weeks. Low June temperatures and cool nights when heads were developing caused most varieties to be smaller than usual.

Stokes Early 711 and Parel are very early, small heads but do not hold long after maturing. Regalia is uniform in maturity but has tendency to split.

Table 7: 1997 Early Cabbage Advanced Variety Trial: Yield Data

Variety	Source	Date of Peak Harvest: July	Cases / acre by July 11	Total Yield	t/ha	Ave. Head Weight (g)	% Unmarketable	Reason Unmarketable
Morris	SW	14	240	486	26.3	933	1	small
Head Start	AS	11	225	448	24.3	860	7	small
Balbro	SH	14	185	435	23.5	892	8	small
Polar Green	ST	10	238	407	22.0	793	2	small
NIZ 94-13	SH	18	15	370	20.1	841	20	small
Greenstart	ST	10	293	370	20.0	711	5	small
Dynamo	ST	18	4	309	16.8	650	12	small
Regalia	ST	10	303	303	16.4	690	18	splits, small
FMX 551	FM	18	0	263	14.3	961	51	small
Parel	SW	2	237	237	12.8	593	27	splits
St. Early 711	ST	2	231	231	12.5	556	25	small, splits
SSC 16076	SH	18	0	228	12.3	988	55	small
Castello	SH	18	0	227	123	759	44	small
NIZ 94-20	SH	18	0	136	74	974	76	small
Red Baron	SH	18	0	47	2.5	778	89	small
LSD .05			132	121	6.6	131	24	
Trial Avg			131	300	16.2	799	29	

1 rep of the following cultivars was seeded 2 weeks after main trial:

Winner	ST	18	0	465	25.2	1016	17	small
Polar Green	ST	10	381	404	21.9	789	7	small
Atlantis	PS	10	303	360	19.5	756	10	splits
Columbia	PS	18	70	335	18.1	851	27	small
Discovery	PS	14	16	296	16.0	916	18	small

Table 8: Early Cabbage Advanced Variety Trial: Quality Evaluation Data

Variety	Growth Habit	External Color	Uniformity	% Splitting July			Comments
				11	18	25	
Morris	2.7	4.0	4.5	0	0	0	round, sl. flattened, tight, uniform head; med. size, open plant
Head Start	3.0	3.3	4.0	0	0	27	s. pointed head; loose wrap; med. size, upright plant
Balbro	3.0	4.0	4.3	0	10	33	sl. pointed, tight, firm head; fairly open plant
Polar Green	2.0	3.4	4.0	7	27	53	round, sl. tapered head; small-med sized, open plant
NIZ 94-13	3.0	4.5	4.5	0	0	7	head sits high on plant; very tight wrap
Greenstart	2.0	3.5	4.3	10	50	90	small, tight, round head; short compact plant
Dynamo	1.5	4.0	4.0	0	0	0	small, round, tight head; small, open plant
Regalia	2.0	2.5	3.5	50	77	97	small, tight heads; splits easily
FMX 551	3.0	5.0	4.5	0	0	0	late; firm, solid head, large, leafy plant
Parel	1.0	2.0	4.0	10 0	100	100	early, tapered, small head; doesn't hold well
St. Early 711	1.0	2.5	3.5	60	100	100	early, small, doesn't hold well
SSC 16076	4.0	5.0	4.0	0	0	0	late, flat, large head, very leafy
Castello	3.0	--		0	0	0	small, tight, sl. ovate head; good wrapper leaves
NIZ 94-20	4.3	3.0	5.0	0	0	0	late; large, loose, sl. flattened head
Red Baron	4.7	--	3.0	0	0	0	late season red; large upright plant
Winner	3.0	5.0	4.0				large, tight, uniform head; good wrapper leaves
Atlantis	2.0	3.5	4.3				round, dark green head; small, open plant
Columbia	3.0	3.0	2.0				med. size tight head, var. shape and size
Discovery	2.5	4.0	3.0				attractive, tight head but var. shape and size

1997 Fresh Market Sweet Corn Variety Trials

Crop Management:

Soil Type	: Fox Sandy Loam
Stand Establishment	: Seeded on bare soil with 75 cm (30") between rows and 20 cm (8") between seeds (28,500 plants/acre). Early Trial, May 13; Supersweet Trial, June 6
Fertilizer	: 150 kg/ha actual nitrogen + 300 kg/ha potash, broadcast and incorporated prior to seeding
Herbicide	: Metolachlor @ 2.0 kg/ha + Atrazine @ 1.0 kg/ha preplant incorporated.
Irrigation	: Irrigated twice; 2.5 cm of water applied July 16 and Aug. 1

Harvest and Evaluations:

Plots were harvested as a once-over harvest at 18-19 days from half silk date

Yield	: expressed in dozens of marketable ears per acre and tons per acre
Ear Removal	: 1 = very difficult - stalk comes with cob 5 = very easy - 1 yank

(The following evaluations are based on the average of 10 ears per rep.)

Tip cover	: 1 = tip exposed; 5 = greater than 2" cover
Tip Fill	: 1 = 1" or more not filled; 5 = perfectly filled
Row Straightness	: 1 = crooked rows; 5 = very straight rows
Ear length	: Average length of husked ear (cm)
Predominant Row Number	: Predominant numbers of rows from sample of 10 ears per rep.

Sweetness readings were done with a hand refractometer.

Summary (Early Trial):

Soil temperatures were very cool and wet from seeding to germination (see page 5). Final germination did not occur until around June 3. Varieties with good or poor cold soil germination show up in percent stand.

Sweet Chorus and Sweet Rhythm were the earliest to germinate. Kandy King had the best stand. Aladdin was again the earliest harvested by 3 days.

SH2 Trial:

Soil conditions were much better for this trial.

Average soil temperatures were 20 - 21°C. Most varieties had over 75% germination by June 12 and had final germination by June 16.

Candy Corner again this year gave the best results in yield and quality. HMX 6361 and Colossal Yellow were the earliest.

Table 9: 1997 Early SE Sweet Corn Advanced Variety Trial: Yield and Quality Evaluations

Variety	Source	Type	Harvest Date: Aug.	% Stand	Yield		Wt/ear (grms)	Ear Removal	Tip Cover	Tip Fill	Row Straight-ness	Ear Length (cm)	Predom. Row Number	Sweet-ness (Brix)
					doz/ac	tons/ac								
HMX 5345	HM	yse	8	91	2228	8.1	274	3.3	4.4	4.0	3.5	20.4	14-16	21.8
Sweet Rhythm	HM	bcse	6	88	2213	9.2	315	4.1	4.3	4.4	3.0	18.8	16	22.8
Sweet Symphony	HM	bcse	11	90	2198	9.0	308	4.1	5.0	5.0	4.5	19.2	16	23.6
Kandy King	RO	yse	7	94	2110	8.0	286	2.9	4.1	4.0	4.8	21.2	16	20.3
Breeders Choice	SW	yse	11	81	2007	7.9	299	4.1	4.0	5.0	3.3	19.3	18-20	22.6
Temptation	AS	bcse	6	88	1918	7.7	304	3.8	5.0	4.9	4.5	18.4	16	22.6
Sweet Chorus	HM	bcse	6	87	1918	7.0	276	4.6	3.5	4.4	4.6	18.8	12-14	22.4
HMX 5347	HM	bcse	11	86	1844	7.1	292	4.0	4.3	5.0	3.8	20.3	14	25.1
HMX 5346	HM	yse	5	79	1830	6.1	254	1.8	3.5	4.9	4.4	20.0	14-16	25.3
Precious Gem	ST	bcse	13	78	1771	7.4	323	4.5	5.0	4.0	2.5	19.6	16	21.0
Jester II	ST	bcse	5	88	1741	6.8	294	3.9	4.5	3.6	2.8	17.6	14-16	23.7
Genie	ST	bcse	4	86	1682	5.2	234	3.6	4.6	4.9	4.5	18.2	14-16	23.1
Tecumseh II	ST	bcse	13	83	1653	6.4	295	4.5	3.8	4.5	3.8	20.8	14-16	20.2
Sweet Riser	HM	yse	7	77	1638	6.2	287	3.5	5.0	5.0	4.5	18.0	14-16	24.4
Ectase II	SW	bcse	5	83	1638	5.4	248	3.8	2.5	4.5	4.0	18.4	12	25.3
July Gem	ST	bcse	6	82	1594	7.3	349	4.5	5.0	2.0	2.8	19.3	14-16	20.9
Table Treat	SW	bcse	13	66	1594	6.5	306	3.0	5.0	3.4	2.5	20.5	16	21.8
Aladdin	ST	bcse	1	81	1549	4.1	199	3.8	3.3	4.5	3.3	16.6	12-14	23.3
Cochise	ST	bcse	8	67	1387	6.4	347	4.5	5.0	4.5	3.5	19.5	16	21.0
Native Gem	ST	bcse	7	63	1239	4.4	271	3.3	2.9	4.4	4.6	19.1	12-14	22.6
Geronimo	ST	bcse	5	71	1225	4.9	300	4.5	4.8	4.5	3.5	18.4	14-16	21.1
Ivanhoe	ST	bcse	10	60	1121	4.8	319	4.1	4.1	3.8	3.9	20.3	16	19.2
LSD .05				13	356	1.4	26.9	0.9	0.7	0.9	0.9	1.0		
Trial Avg				80	1731	6.6	290	3.8	4.2	4.3	3.7	19.2		

Comments on Early Sweet Corn Varieties

Aladdin	: earliest in trial; attractive, uniform, tapered ear
Breeders Choice	: golden yellow, 18-20 rows; blocky with slight taper at tip
Cochise	: large attractive ear; large flag leaves
Ectase II	: attractive unhusked and husked, straight rows, large kernels
Genie	: slightly tapered, long, straight ear; early; good tip fill
Geronimo	: large, round, fat ear; blocky rounded tip
HMX 5345	: best yield in trial; uniform shape and size, slightly tapered end
HMX 5346	: long tapered ear; very uniform overall; long shanks
HMX 5347	: long attractive ear; nice blend of yellow and white kernels
Ivanhoe	: poor stand this year; long, blocky, uniform ear
Jester II	: large, round, blocky ear; early; large kernels
July Gem	: early, very large, blocky ear; good tip cover but poor tip fill
Kandy King	: best stand; straight, tight rows; very uniform; attractive
Native Gem	: poor stand; long shanks, long, attractive, uniform ear
Precious Gem	: late; long slender ear; good tip cover
Sweet Chorus	: attractive long ear with medium green husks; nice mix of light yellow and white kernels
Sweet Rhythm	: dark green husks; attractive, large, fat ears tapered at tip
Sweet Riser	: good tip cover and fill; large, fat, attractive ears; nice yellow corn
Sweet Symphony	: attractive; very uniform, large ear, nice colors
Table Treat	: main season; long slender ear; poor stand
Tecumseh II	: late; large, round, long ears; tapered
Temptation	: standard for comparison; attractive, long fat ear; straight rows

Table 10: 1997 Supersweet (SH2) Sweet Corn Advanced Variety Trial: Yield and Quality Evaluations

Variety	Source	Color	Harvest Date: Aug.	% Stand	Yield		Wt/ear (grms)	Ear Removal	Tip Cover	Tip Fill	Row Straightness	Ear Length (cm)	Predom. Row Number
					doz/ac	tons/ac							
Candy Corner	HM	bc	15	93	2007	8.2	306	4.0	5.0	5.0	4.3	18.9	16
Confection	HM	bc	15	96	1903	8.1	320	3.5	4.4	4.0	4.5	20.4	16
HMX 6361	HM	bc	12	83	1844	8.1	332	3.6	4.3	5.0	4.3	20.8	14-16
First Star	SW	bc	15	90	1790	7.2	304	4.8	4.0	3.5	3.3	20.8	12
Fortune	ST	Y	18	94	1785	6.9	292	4.5	3.9	4.8	4.5	20.7	14
Swiftly	HM	Y	13	87	1771	6.4	274	2.6	4.6	4.9	3.8	18.9	12-14
Saturn	SW	Y	18	93	1756	7.1	307	2.9	4.8	4.8	4.3	19.3	14-16
Monte Carlo	ST	bc	15	86	1741	7.0	304	3.5	3.8	4.9	3.0	21.0	12-14
HMX 5352	HM	bc	15	92	1741	8.0	349	3.8	4.0	4.3	4.0	21.3	14-16
Seneca Appaloosa	ST	bc	15	85	1712	7.6	331	3.9	4.8	5.0	4.5	19.5	16
GSS 3587	RO	Y	18	83	1672	6.4	291	3.6	4.8	4.7	3.7	20.1	16
Impulse	RO	Y	15	96	1653	7.0	317	5.0	4.0	3.6	4.0	20.2	14
Twosome	SH	bc	18	91	1564	6.7	326	4.4	5.0	4.3	4.4	20.1	18
Fantasy	FM	bc	13	83	1520	5.2	258	4.3	4.0	4.3	3.0	18.8	14
Double Dots	FM	bc	18	90	1505	7.4	372	3.9	5.0	2.5	3.8	21.4	16-18
A-Maizingly Sweet	FM	bc	18	78	1461	5.8	301	3.3	4.3	3.7	3.3	20.5	16-18
Colossal Bicolor	ST	bc	13	83	1254	4.4	263	3.4	5.0	4.0	2.8	16.7	14
Colossal Yellow	ST	Y	12	90	1239	4.6	283	4.4	5.0	2.3	3.5	21.3	12-14
LSD .05				9.6	366	1.8	27	1.1	0.7	0.8	0.7	0.8	
Trial Avg				89	1662	6.8	307	3.8	4.5	4.2	3.8	20.0	

Comments on SH2 Corn Varieties

Variety	Plant ht. (cm)	Ear ht. (cm)	Comments
A-maizingly Sweet	168	36	long, tapered, attractive ear; long shanks
Candy Corner	163	43	attractive, dark green husks, very nice corn overall; best performer
Colossal Bicolor	151	40	early; short, blocky ears, long tip cover; few short flag leaves
Colossal Yellow	154	34	early; large dark yellow kernels; tapered, uniform ears; poor tip fill
Confection	183	37	large, long ear; straight rows; uniform; medium dark green husks
Double Dots	177	36	long, uniform, attractive ear; large kernels; poor tip fill
Fantasy	150	24	ears low to ground; fairly short, attractive ear; uniform shape and size
First Star	161	25	ears low; dark green husks; long, uniform ear; sl. tapered
Fortune	171	38	long, slender, uniform ear; tapered; many long flag leaves
GSS 3587	173	34	dark green husks; long shanks and flags; average overall
HMX 5352	170	35	long, large ears; attractive husked and unhusked; nice corn
HMX 6361	165	30	uniform, med. green husks; good tip fill; large ears; very uniform
Impulse	162	42	nice, tight, dark green husks; easy to harvest; tapered
Monte Carlo	160	33	dark green husks; large kernels; good tip fill; long, slender ear
Saturn	160	39	large golden yellow kernels; nice flags; rounded tip
Seneca Appaloosa	175	37	dark green husks; large, fat, attractive ear, good tip fill
Swiftly	144	36	not many flags; early; med. long, fairly slender ear; hard to snap
Twosome	163	35	long shanks; nice flags; uniform shape and size; tapered

1997 Pepper Variety Trials

Crop Management:

Soil Type	:	Fox Sandy Loam
Stand Establishment	:	Seeded in 98 cell plug trays on April 8. Transplants grown in a double-poly greenhouse. Field planted on May 27
Row Spacing	:	76 cm (30") between rows 56 cm (22") between plants within row (9,500 plant per acre population)
Fertilizer	:	75 kg/ha actual N + 150 kg/ha K ₂ O broadcast and incorporated preplant. 34 kg/ha actual N side dressed on June 24
Weed Control	:	Treflan at 0.6 kg/ha a.i. pre-plant incorporated
Irrigation	:	2.5 cm of water applied on July 17, and August 1

Harvest and Evaluations:

Two row plots. One row was harvested at the mature green stage; the remaining row was harvested when the fruit was fully ripe (red or yellow). Yields of green fruit are expressed in cumulative cases (28 lb/bushel) per acre August 14, August 20 and total yield August 27. Yields of ripe fruit are expressed in cumulative tons per acre to Sept. 3 and total yield Sept. 25.

Green Fruit Harvests	:	August 14, 20 and 27
Ripe Fruit Harvests	:	August 28, Sept. 3, 15 & 25
Plant Type	:	1-5; higher rating = vigorous, larger plant type.
Fruit length, diameter wall thickness and lobe number	:	Average of a sample of 10 fruit per plot.

Summary:

Yields for both green and ripe fruit were at least 2 weeks later than average. After a very good first set of green fruit, the plants seemed to stop flowering. This could have been a result of the cool night temperatures or the number of fruit on the plants.

Emerald Isle (HMX 2647) and E-417 had the top green fruit yields and had good ripe fruit yields.

Red Start and Crispy were good early reds and performed well.

In the observation trial, Red. North had the top yield. Martindale III had good yields overall and has good early red potential.

Table 11: 1997 Pepper Advanced Variety Trials: Yield data for fruit harvested at the mature green and ripe maturity stages

Variety	Source	Green Fruit Harvest				Ripe Fruit Harvest				
		Aug. 14 (28 lb cases/acre)	Aug. 20	Aug. 27 Total	Ave. Fruit Size (g)	Culls (tons/acre)	Sept. 3 Yield (tons/acre)	Total Yield (tons/acre)	Ave. Fruit size (g)	Culls (tons/acre)
Emerald Isle	HM	281	700	1085	164	0.2	3.9	14.8	208	1.7
E-417	VM	271	643	987	186	1.1	0.9	12.0	280	1.4
Merlin	PS	253	497	896	159	0.2	3.0	13.0	201	0.6
Acapulco	VM	305	497	887	176	0.9	0.5	8.2	227	0.9
CA 74	SH	383	631	875	174	0.5	2.5	12.3	233	0.8
Lantern	EZ	360	621	846	177	0.6	2.4	10.2	230	0.7
North Star	PS	273	561	844	147	0.1	5.3	13.6	174	0.4
Boynton Bell	HM	267	443	821	167	0.4	1.8	9.3	212	0.5
Crispy	SW	328	374	787	141	0.3	6.1	15.3	163	0.2
Enterprise	AS	376	562	762	187	0.5	3.4	11.9	245	0.9
King Arthur	PS	385	523	732	182	0.3	5.2	12.1	229	1.0
Red Start	ST	269	436	723	117	0.4	7.5	14.0	135	1.6
XPH 12205	AS	185	374	592	164	0.8	1.3	7.6	228	1.3
LSD .05		166	241	199	19	0.5	1.7	5.4	25.2	1.1
Trial Avg.		303	539	833	165	0.5	3.4	11.9	213	0.9

Table 12: 1997 Pepper Advanced Variety Trials: Quality Evaluation Data

Variety	Plant Type	Length (cm)	Diameter (cm)	# of lobes	Wall thickness (cm)	Comments
Emerald Isle	4.0	13.7	8.6	3.4	0.69	long, blocky; very uniform; attractive red; good yield green and red
E 417	4.0	13.6	8.6	3.7	0.81	elongated, sl. tapered; thick walls; some rough fruit
Merlin	4.5	10.9	9.0	3.2	0.72	square blocky bell; nice red fruit, standard
Acapulco	5.0	12.8	8.7	3.8	0.80	elongated, square blocky, good plant cover; slow to red
CA 74	4.0	9.3	9.5	3.6	0.87	sl. rounded bell; thick walls, uniform overall, attractive
Lantern	4.3	13.3	8.9	3.3	0.75	med. long, tapered; firm; some rough fruit
North Star	3.5	9.8	8.2	3.2	0.65	square blocky; med. size; uniform dark red; fairly early red
Boynton Bell	4.3	9.5	9.8	3.6	0.73	large, blocky bell; smooth, attractive; not uniform ripening
Crispy	3.8	10.0	8.2	3.2	0.72	square, sl. long blocky; very nice uniform red color, good ripe yield
Enterprise	4.0	9.2	9.9	3.1	0.73	large sq. blocky; very uniform size and shape; attractive
King Arthur	3.0	9.9	9.4	3.5	0.72	sq. blocky; large, uniform, smooth; uniform ripening
Red Start	3.0	9.8	7.8	3.0	0.62	small, blocky, early red; good uniformity; some tapered fruit
XPH 12205	4.3	9.9	9.0	3.2	0.70	round-square, large, blocky; firm; nice green color

Table 13: 1997 Pepper Observation Cultivar Trials: Yield data for fruit harvested at the mature green and ripe maturity stages

Variety	Source	Green Fruit Harvest					Ripe Fruit Harvest			
		Aug. 14 Early	Aug. 20 Mid	Aug. 27 Total	Ave. Fruit Size (g)	Culls (tons/acre)	Sept. 3 Yield (tons/acre)	Total Yield (tons/acre)	Ave.Fruit size (g)	Culls (tons/acre)
Red North	EZ	278	485	1056	155	0.3	2.2	12.4	191	3.6
Martindale III	ST	357	486	1014	144	0.5	5.7	18.4	211	0
Magician	BK	443	693	992	165	0.5	2.4	10.4	224	0.8
Lady Bell	HM	424	639	945	159	0.1	2.1	14.7	218	0.2
Jetta	SH	530	606	936	195	0	2.5	18.8	242	0.2
Merlin	PS	350	451	920	164	0.1	3.3	11.1	195	0.8
SPP 6112	SA	291	515	905	161	0.5	3.4	13.6	202	0
Agio	SH	310	415	842	122	0.5	1.0	4.8	158	0.2
E 123	VM	137	405	818	163	0.2	1.5	7.4	235	0.9
Karma	FM	230	467	815	178	0.7	2.2	12.0	248	0.2
E 4741	EZ	472	544	794	171	0.1	0	14.4	236	0
Primadonna	FM	436	540	759	174	0.4	1.6	11.2	243	0.5
Blockbuster	ST	245	344	756	194	0.6	2.0	13.9	254	1.4
Gold Coast	AS	298	612	752	154	0.1	0.9	9.2	218	1.9
Guardian	RO	347	418	731	184	2.2	0.3	8.4	285	3.6
Green Beauty	BK	344	517	721	166	0.3	1.6	10.7	192	0.4
Early Dawn	BK	344	558	703	125	0.7	4.0	14.2	157	0.2
E 2312	EZ	314	402	698	163	1.8	0.7	8.3	209	2.7
ISSA	SH	119	365	691	159	0.8	3.1	11.3	220	0.8
Red Dawn	ST	300	320	667	114	0.5	4.7	11.3	128	0.1
Bruppa	SH	362	421	635	173	0.3	0	11.3	216	2.2
Flamingo	HM	215	341	575	107	1.2	4.0	10.2	137	1.0
X3R Wizard	PS	136	231	567	164	0.2	1.0	6.7	236	1.3
XPH 12222	AS	64	303	542	148	0.4	3.0	10.2	211	0.6
X3R Aladdin	PS	183	300	504	177	2.9	0	5.8	275	4.4
Hialeah	HM	11	199	493	131	0.5	1.9	11.3	167	1.2
CA 46	SH	173	258	482	161	0.7	1.2	8.8	239	0.2

Table 14: 1997 Pepper Observation Cultivar Trial: Quality Evaluation Data

Variety	Plant Type	Length (cm)	Diam. (cm)	# of lobes	Wall thickness (cm)	Comments
Red North	3.0	10.3	8.8	3.0	.76	square blocky; good cover; nice attractive, uniform red
Martindale III	3.5	15.1	7.2	2.6	.64	extra long, tapered; early red; some rough fruit
Magician	4.0	10.6	9.0	3.2	.75	large, dark green, blocky bell; thick walls but not uniform red
Lady Bell	4.0	10.4	9.0	2.8	.66	med. size, square, blocky; uniform, attractive red
Jetta	5.0	14.0	8.8	3.0	.75	elongated, tapered; large plant, good cover; early
Merlin	3.0	9.4	8.5	3.2	.63	standard for comparison
SPP 6112	4.0	8.8	8.8	3.3	.72	square, blocky bell; uniform but some variable shapes
Agio	5.0	13.0	5.5	2.0	.59	long yellow to red, frying type
E 123	4.0	14.1	8.5	3.2	.84	very long and tapered; thick walls; late red; not uniform ripening
Karma	4.0	11.7	10.0	3.6	--	large, mostly tapered bell, variable shape and size
E 4741	4.0	8.1	9.7	4.0	.63	sl. rounded blocky bell; shinny dark green, late red
Primadonna	4.0	10.7	10.0	3.3	.74	sl. tapered, blocky bell, variable shape; late red
Blockbuster	5.0	17.6	8.3	3.4	.65	very long, tapered, blocky; tall erect plant; some rough fruit
Gold Coast	4.0	11.4	9.8	3.0	.89	some blocky, some pointed green to yellow fruit; thick walls
Guardian	4.0	9.8	9.7	3.6	.75	attractive, dark green, blocky bell; suscep. to sun scald?
Green Beauty	4.0	9.4	9.7	3.6	.69	square, blocky; uniform late red; concentrated set
Early Dawn	4.0	9.8	8.3	2.8	.67	small tapered, blocky; similar to Red Start, attractive uniform red
E 2312	5.0	9.0	10.0	3.7	.70	sl. rounded block, firm; good cover; smooth uniform fruit
ISSA	4.0	17.4	7.7	2.4	.64	long, tapered; similar to Blockbuster but smaller
Red Dawn	2.5	10.2	7.1	2.6	.73	small, tapered blocky; very early uniform attractive early red
Bruppa	4.0	8.5	9.0	3.8	.70	square blocky, firm, smooth, chocolate brown bell
Flamingo	2.5	11.0	7.0	2.9	.65	small, mostly tapered yellow to red; productive for small pepper
X3R Wizard	3.0	10.2	9.7	3.5	.84	large, attractive square blocky but low yields
XPH 12222	4.0	10.5	8.7	3.2	.73	elongated, pointed blocky; uniform, attractive red
X3R Aladdin	4.0	8.9	9.2	3.6	.78	green to yellow rounded blocky; thick walls, susceptible to BER?
Hialeah	3.0	8.8	8.5	3.4	.65	square blocky; uniform shape and size; nice deep red
CA 46	3.0	11.5	8.7	3.7	.78	elongated; tapered bell, late red, very firm

1997 Fresh Market Tomato Cultivar Trials

Crop Management:

- Soil Type : Fox Sandy Loam
- Stand Establishment : Seeded in 288 plug trays on March 24. Transplanted into 38 cell trays on April 7, grown in a double-poly greenhouse. Field planted on May 20. Planted on bare soil, using a mechanical pot transplanter.
- Row Spacing : 1.5 m (60") between rows; 45 cm (18") between plants within row. (6,050 plant per acre population).
- Fertilizer : 75 kg/ha actual N + 150 kg/ha K₂O broadcast and incorporated preplant. 34 kg/ha actual N side-dressed on June 24.
- Weed Control : Treflan at 0.6 kg/ha a.i. pre-plant incorporated.
- Irrigation : Irrigated twice; 2.5 cm of water applied on July 17 and Aug. 1.

Harvest and Evaluations:

Plots were harvested twice weekly. Fruit was harvested at the breaker stage. Harvest started on July 22 and continued until August 26. Cumulative yields are given for harvests up to August 6, August 19, and August 26 (Total Yield).

Yields of #1 fruit (fruit greater than 65mm diameter, without cracks or other defects) is expressed in # of 20 lb cases per acre. Yield of culls and small fruit (less than 65m in diameter) are expressed in % of total weight of fruit harvested.

Quality Evaluations:

Relative Maturity is the date on which a cultivar had 1 ripe #1 fruit per plant.

- Vine Spread : 1 - 5 rating; higher rating = larger plant type.
- Appearance : 1 - 5 rating; higher rating = more attractive fruit.
- Firmness : 1 - 5 rating; higher rating = firmer fruit.
- Blossom Scar : 1 - 5 rating; higher rating = smaller blossom scar
- Crack Resistance (radial and concentric) : 1 - 5 rating; higher rating = less fruit cracking

Summary:

Yields were down this season. When harvest was stopped on August 26, some of the varieties (Shady Lady, Emperor and Sunbeam) still had good yield potential in green fruit left on the plant. Fruit size was down and there were a lot of small fruit. Sun Start was the earliest but the difference in maturity was not as long as usual. Sunrise was only a few days later than Sun Start this year.

Observation:

XPH10074 had good early and total yields. Royal Mountie was good early but fruit may have been a little rough this year. Red color seemed to be poor overall on all cultivars.

TABLE 15: 1997 Fresh Market Tomato Advanced Trial: Yield Data

Variety	Source	Relative Maturity Date	Cumulative Yield (20 lb cases/acre)			Average Fruitsize (g)		Cull Fruit (% of total harvest)	Small Fruit (% of total harvest)
			Aug. 6	Aug. 19	Aug. 26	To Aug. 6	Overall		
Sunbrite	AS	Aug. 7	164	799	1566	244	225	5	10
Sunrise	AS	July 30	469	1010	1544	222	204	6	21
XPH 10053	AS	Aug. 4	275	876	1520	250	236	10	16
Sunbeam	AS	Aug. 8	70	609	1296	207	209	6	16
Shady Lady	SS	Aug. 9	62	484	1258	158	185	5	32
Red Rider	AS	July 31	204	629	1202	222	206	17	27
Sun Start	AS	July 26	417	799	1144	201	197	10	24
Mountain Spring	RO	Aug. 9	87	631	1115	225	206	7	20
Emperator	PS	Aug. 8	89	463	1093	201	204	12	22
Ultra Sweet	ST	Aug. 1	234	439	672	183	182	11	47
LSD .05			162	359	552	52	22	5	11
Trial Average			207	674	1241	211	205	9	23

Table 16: 1997 Fresh Market Tomato Advanced Trial: Quality Evaluation Data

Variety	Vine spread	Appearance	Firmness	Crack Resistance			Blossom Scar	Comments
				Radial	Conc.	Conc.		
Sunbrite	3.7	3.8	4.2	4.7	4.7	4.7	3.0	late season; large, attractive, flattened globe
Sunrise	3.0	3.7	3.3	5.0	5.0	5.0	4.0	early standard; round, smooth fruit; med. stem scar
XPH 10053	3.3	3.7	3.3	4.3	3.8	3.8	4.0	similar to Sunrise but sl. later; large, smooth, attractive fruit
Sunbeam	4.2	3.3	3.0	4.0	4.3	4.3	3.0	late season; uniform, smooth, attractive fruit, large vine
Shady Lady	4.7	4.0	3.3	4.7	4.7	4.7	3.3	late season; very smooth, attractive fruit; good color
Red Rider	2.7	3.3	3.0	4.7	5.0	5.0	3.3	early; round, smooth fruit; med. size, open plant
Sun Start	2.2	3.0	2.3	5.0	4.7	4.7	3.0	very early; small open plant; some early rough fruit
Mountain Spring	4.0	3.5	4.3	5.0	5.0	5.0	4.0	late; large vine; small blossom scar; sl. flattened globe
Emperor	5.0	3.7	3.3	4.7	4.2	4.2	3.5	late; large spreading vine; uniform, smooth, attractive fruit
Ultra Sweet	3.7	3.3	1.7	4.8	4.5	4.5	3.7	early; spreading open vine; soft, too many small fruit
0.05	0.8	1.1	0.9	0.8	0.9	0.9	0.7	
Overall Average	3.6	3.5	3.2	4.7	4.6	4.6	3.5	

Table 17: 1997 Fresh Market Tomato Observation Trial: Yield Data

Variety	Source	Relative Maturity Date	Cumulative Yield (20 lb cases/acre)			Average Fruitsize (g)		Cull Fruit	Small Fruit
			Aug. 6	Aug. 19	Aug. 26	To Aug. 6	Overall	(% of total harvest)	(% of total harvest)
XPH 10074	AS	July 27	608	1205	1919	232	209	4	27
HRS 95.0156	HR	July 31	639	1220	1761	184	192	4	32
HRS 95.0153	HR	Aug. 2	341	818	1676	194	189	5	32
HRS 95.0622	HR	Aug. 10	64	715	1610	198	188	7	28
Sunrise	AS	Aug. 2	489	938	1498	254	212	10	20
Sun Gem	AS	Aug. 10	51	624	1467	192	199	8	16
Acclaim	SA	Aug. 8	128	487	1274	200	198	9	20
Royal Mountie	SW	July 30	436	752	1206	204	201	18	21
Fabulous	SW	Aug. 9	183	616	1158	244	210	14	17
ST 108 x 103	ST	Aug. 3	227	615	1123	157	198	8	31
SRT 6611	SS	Aug. 12	57	281	1022	214	208	10	29
FT 4029	RO	Aug. 3	222	458	882	189	192	8	32
HRS 95.0616	HR	Aug. 8	90	448	867	211	208	15	33
ST 9887	ST	July 30	318	548	845	238	216	40	18
Teresa	HM	July 31	215	393	802	192	197	31	21
Springfield	FM	Aug. 4	146	294	781	171	203	8	42
ST 9886	ST	Aug.7	100	283	763	172	169	8	28
PS 537292	PS	Aug. 5	113	386	746	162	179	5	45
Hybeef 9904	ST	Aug.6	132	382	743	225	224	12	32
SXT 6590	SS	Aug. 11	52	237	715	196	206	6	27
ST 9885	ST	Aug.3	177	303	701	207	211	10	29
Scarlet Express	ST	Aug. 1	229	452	674	165	170	8	56
Affirm	SA	Aug. 6	61	139	655	144	211	15	15
Enterprise	SW	Aug. 4	155	223	645	208	194	16	21
ST 9888	ST	July 31	199	351	644	186	188	6	50
Sultan	SW	July 31	214	451	597	182	183	5	61
STM 5206	SA	Aug. 9	69	247	535	215	185	0	21
SRT 6631	SS	Aug. 10	48	221	455	223	198	19	31
Leading Lady	SS	Aug. 5	101	166	412	158	167	10	47
Lenor	SS	Aug. 9	67	224	409	158	178	9	41
Joker	VM	Aug. 13	0	101	190	--	178	16	24

Table 18: 1997 Fresh Market Tomato Observation Trial: Quality Evaluation Data

Variety	Vine spread	Appearance	Firmness	Crack Resistance		Blos. Scar	Comments
				Radial	Conc.		
XPH 10074	2.0	4.0	3.0	5.0	5.0	3.0	very early; similar to Sun Start; small open vine
HRS 95.0156	3.0	3.0	1.0	5.0	5.0	3.0	a lot of small fruit; soft, sl. flattened, round fruit
HRS 95.0153	3.0	2.0	1.0	4.0	4.0	2.0	open vine; soft; too many small fruit
HRS 95.0622	4.0	3.0	4.0	5.0	5.0	3.0	late, smooth
Sunrise	3.0	3.5	3.5	5.0	5.0	4.0	standard for comparison
Sun Gem	4.0	4.0	4.0	5.0	5.0	3.0	late mid-season; good fruit quality, large, open vine
Acclaim	4.0	2.0	2.0	5.0	5.0	3.0	large, open vine; soft fruit; var. shape
Royal Mountie	2.5	1.5	2.0	4.0	5.0	4.0	early; small open plant; some rough fruit
Fabulous	4.5	3.0	3.0	5.0	5.0	4.0	fairly large, sl. open plant, good cover; some rough fruit
ST 108 x 103	4.0	3.0	3.0	5.0	5.0	4.0	large sprawling vine; some large fruit; attractive
SRT 6611	4.0	3.0	4.0	4.0	5.0	3.0	late; globe shape; open vine; large stem scar
FT 4029	5.0	3.0	3.0	4.0	5.0	3.0	very large, upright plant; green sh.; several small fruit
HRS 95.0616	4.0	3.0	4.0	4.0	5.0	3.0	late; large, flattened-round fruit; some rough fruit
ST 9887	4.5	3.0	2.0	4.0	2.0	3.0	early; large bushy plant; large stem scar
Teresa	3.0	2.0	3.0	3.0	5.0	3.0	early; med. open plant; jointless, rough fruit
Springfield	3.0	2.0	2.0	4.0	5.0	4.0	upright plant; rounded-globe; soft; too many small fruit
ST 9886	4.0	3.0	2.0	5.0	4.5	4.0	large spreading open vine; deep globe; sl. soft
PS 537292	3.0	3.0	2.0	5.0	5.0	3.0	smooth, round fruit; sl. soft; med. size plant
Hybeef 9904	4.0	4.5	4.5	5.0	5.0	4.0	upright vine, good cover; extra large, firm, globe fruit
SXT 6590	4.0	2.0	3.0	5.0	5.0	3.0	sl. flattened globe, late; green sh.; small blossom scar
ST 9885	5.0	4.0	4.0	5.0	4.0	3.0	large open sprawling plant; firm, solid fruit
Scarlett Express	3.0	3.0	3.0	5.0	5.0	4.0	early; small plant; lots of small fruit
Affirm	5.0	2.0	2.0	4.0	5.0	3.0	very large, upright vine; some rough fruit
Enterprise	4.0	2.0	3.0	5.0	5.0	2.0	med. large upright plant; some rough fruit
ST 9888	5.0	4.0	3.0	5.0	4.0	4.0	large bushy plant; elongated globe; some pointed fruit
Sultan	4.0	3.0	3.0	5.0	5.0	3.0	too many small fruit; green sh.
STM 5206	4.0	4.0	3.0	4.5	5.0	4.0	late; attractive, smooth, flattened round fruit
SRT 6631	4.0	3.0	4.0	5.0	5.0	4.0	very late; green sh.
Leading Lady	4.0	2.0	3.0	5.0	5.0	3.0	good vine cover; too many small fruit
Lenor	5.0	3.0	4.0	5.0	5.0	3.0	late; large open vine; flattened globe
Joker	5.0	3.0	3.0	5.0	5.0	4.0	very late; too much vine

1997 Fresh Market Roma Tomato Cultivar Observation Trial

Crop Management:

This was a single replicate observation trial. All management practices were the same as in the "Fresh Market Tomato Cultivar Trial" on page

Harvest and Evaluations:

Plots were harvested 3 times during the season; August 14, 25, and Sept. 5. Fruit were harvested at the breaker to fully ripe stage. Yields are expressed in 20 lb cases per acre accumulated by Aug. 25 and Sept. 5 (total) and tonnes per hectare (total yield).

Percent culls to Aug. 25 are percent culls for Aug. 14 and Aug. 25.

On Sept. 5, all remaining fruit was harvested and divided into:

- % mature - ½ breaker to fully red
- % breaker - less than ½ breaker
- % green - fully green fruit

There were very few culls on Sept. 5 and they were not included.

Table 19: 1997 Roma Tomatoes for Fresh Market Observation Trial

Variety	Source	Cumulative Yield (20 lb cases/acre)		Tons/acre Total	% Culls to Aug 25	Ave. Size (g)	Firmness	Sept. 5 %			Comments
		Aug. 25	Sept 5 Total					Mature	Breakers	Green	
Yaqui	PS	1721	2925	29.3	1.1	116	3	56	20	24	sq. round; large, very uniform; jointless
Early Pear	PS	1226	2237	22.4	6.1	53	3	61	18	21	pear shaped; small stem scar; jointed
HMX 2867	HM	1022	2149	21.5	1.5	90	3	56	10	34	large, sq. round; smooth, uniform, jointless
Marina	SA	1058	2108	21.1	1.2	68	3	53	7	40	elongated; small B.E. scar; jointless
Dandy	FM	1006	2018	20.2	1.5	73	3	45	10	45	elongated plum; uniform overall, jointed
V.104	VM	867	1879	18.8	2.3	80	4	47	11	42	long oval; smooth; var. stems
DRW 3410	DR	949	1820	18.2	2.5	76	4	41	9	50	round-elongated; var. shape, sprawly plant
Mingo	AS	596	1735	17.4	12.0	74	3	43	9	48	elongated; jointless; early fruit susc. to BER?
Ronco	SW	1191	1678	16.8	0.9	80	3	33	27	40	sq. round, plum; very uniform, attractive
Puebla	PS	794	1665	16.6	3.5	92	4	39	18	43	elongated; smooth, attractive, jointless
Veronica	SA	758	1629	16.3	2.2	84	3	40	15	45	elongated; some small fruit, jointless
APTX 534	AS	804	1598	16.0	11.9	73	5	50	11	39	elongated plum; firm, solid fruit; jointed
APTX 535	AS	590	1564	15.6	11.7	80	4	36	11	53	small, elongated; susc. to BER
APTX 531	AS	721	1285	12.9	7.2	80	4	31	14	55	small, elongated; var. shape, sl. late