

*Research*

# H.R.I.O.

HORTICULTURAL RESEARCH INSTITUTE OF ONTARIO

Research Report # 37

## MUCK VEGETABLE CULTIVAR TRIALS and RESEARCH REPORTS

1987

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MUCK RESEARCH STATION  
Horticultural Research Institute of Ontario  
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RESEARCH AND CULTIVAR TRIAL REPORT FOR 1987

MUCK RESEARCH STATION, HOLLAND MARSH,

R.R.# 1 KETTLEBY, ONTARIO, LOG 1JO

INDEX

	Page
Index	1
Staff	2
Foreword	3
Seed Sources	4,5
Weather Data: Sunshine Hours	6
Growing Degree Days	7
Precipitation	8,9
Mean Temperatures	10,11
Extreme Temperatures	12,13
 <u>Research Projects</u>	
- Aster Yellows Control in Lettuce Grown on Muck Soil	14
- Pythium Stunt Control in Lettuce	15
- Transplant Methods for Lettuce	16
- Transplant Methods for Celery	17
- Row Cover for Extending the Growing Period of Celery	18
- Nutsedge Control in Onions with Basagran	19
- Nutsedge Control in Onions with Dual	19
- Post-Emergent Pardner Rates on Onions	20
- Application Timing of Pardner on Onions	21
- Post-Emergent Broadleaf Weed Control in Onions	22
- Fertilizer Placement in Onions	23
- Effect of Ridomil on Cavity Spots and Horizontal Lesions in Carrots	24,25
- Cereal Crops for Wind Abatement in Carrots	26,27
 <u>Cultivar Trials</u>	
Beet	28,29
Carrot - Packaging Types - Main	30,31
- Adaptation	32,33,34
- Storage (Coloured page)	35
- L.T.A. Storage (Coloured page)	36,37
- Long Term Average (Coloured page)	38,39,40
- Slicers	41
- Processing Types - Main	42,43
- Adaptation	44
- Storage (Coloured page)	45
- L.T.A. Storage (Coloured page)	46
- Long Term Average (Coloured page)	47,48
Notes	49
Celery - Early	50,51
Lettuce - Head - Main - Early and Late	52,53
- Head - Adaptation - Early and Late	54,55
- Romaine - Early and Late	56,57
Onion - Main	58,59
- Adaptation	60,61,62
- L.T.A. Storage (Coloured page)	63
- Long Term Average (Coloured page)	64,65,66
- Storage	67
- Spanish	68,69
- Red	70
Potato - Ontario Regional Trial	71,72

Staff - 1965-87

MUCK RESEARCH STATION  
H.R.I.O.

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### FOREWORD

Horticultural research and services programs for the fruit and vegetable industry of Ontario are the responsibility of the Horticultural Research Institute of Ontario, Ontario Ministry of Agriculture and Food. First established in 1906, this institute carries on its research efforts in four units, the Vineland Station; the Horticultural Products Laboratory, also situated at Vineland Station; the Horticultural Experiment Station at Simcoe and the Muck Research Station in the Holland Marsh.

The Muck Research Station, established in 1948, conducts research on production problems for vegetable crops grown on organic soils. The Ontario Muck Crops Committee, representing growers, researchers, extension specialists and related industries, sets priorities for research on an annual basis.

A number of research projects are conducted in cooperation with several departments at the University of Guelph; Agriculture Canada and Industry.

In recent years, priorities for research in muck crops have been directed towards the following areas:

1. Control of Allium White rot
2. Control of cavity spot in carrots.
3. Alternative to allidochlor (Radox) herbicide in onions.
4. Screening cultivars of onions, carrots, lettuce, celery, red beets, radish, broccoli, cauliflower, potatoes for resistance to disease.
5. Control of carrot weevil and carrot rust fly.
6. Control of aster leafhoppers in lettuce.
7. Control of subsidence of organic soils.
8. Extending the market season for celery in controlled atmosphere storage.
9. Cereal crops for windabatement in onions and carrots.

The station also provides Advisory Services to growers and the general public in regards to production and marketing of horticultural crops.

The Pest Management Program for growers in the Bradford area is managed by the Plant Industry Branch in cooperation with the Bradford and District Vegetable Growers' Association. Intensive pest monitoring is available to vegetable producers on a fee for service basis.

This report highlights the research projects which were conducted in 1987. The results published in this report should be treated as a progress report. Some of the chemicals used in the trials are not registered for use on the crops they were applied to. Additional trials may be necessary before any firm conclusions and recommendations can be given.

I would like to take this opportunity to express my sincere appreciation to the staff for their efforts in conducting these trials and producing this report. My thanks also to all the cooperating researchers and technicians for their interest in muck crops.

Matthew Valk,  
Senior Muck Crops Specialist

SEED SOURCES - 1987

We wish to express our sincere thanks to all those who provided us with seed for trials.

A&C Abbott & Cobb Inc., Box 307, Feasterville, Pa., U.S.A., 19047.  
A.Ch. Alf. Christianson Seed Co., Box 98, Mount Vernon, Washington, U.S.A., 98273.  
Agw Agway Inc., Seed Division, Syracuse, New York, U.S.A., 13221.  
ARCO Arco Seed Co., See: Sun Seeds.  
Asg Asgrow Seed Co., Box 610, Bradford, Ontario, Canada, L3Z 2B2.  
Asm Asmer Seeds Ltd., Ash St., St. Leicester, England, LE5 ODD.  
BEJO Beemsterboer & Jacob Jong seed Co. Ltd., Box 9 Noordscharwoude, Holland, 1722ZG.  
Cro Crookham Company, Box 520, Caldwell, Idaho, U.S.A., 83605.  
CS Campbell Soup, Route 1, Box 1314, Davis, California, U.S.A., 95616.  
CU Cornell University, Dept of Hort. Hedrick Hall, Geneva, New York 14456.  
E.J. Erie James Produce, P.O. Box 457, Leamington, Ontario, Canada, N8H 3W5.  
FM Ferry-Morse Seed Co., P.O. Box 431, Orchard Park, New York, U.S.A., 14127.  
Glo Global Seeds, P.O. Box 1207, Hollister, California, U.S.A., 95024-1207.  
HM Harris Moran Seeds of Canada, R.R. # 2 Hamilton, Ontario, Canada, L8N 2Z7.  
JHK J.H. Klitgord, Box 87, Mayville, New York, U.S.A., 14757.  
Jung J.W. Jung Seed Co., Randolph, Wisconsin, U.S.A., 49285.  
K.Br. Kees Broersen, Boetmanweg 7, 1747 HV Tuitenhorn, Holland.  
Kru Krummrey & Sons, Inc., P.O. Box 137 Stockbridge, Michigan, U.S.A. 49285.  
MSU Michigan State University, Dept. of Horticulture, East Lansing, Michigan, U.S.A., 48824.

.../ continued

NK Northrup King & Co., 1500 Jackson St., N.E., Minneapolis,  
Minn., U.S.A., 55413.

NZ Nickerson-Zwaan BV., Gebroken Meeldyk 74, Box 19 2900A  
Barendrecht, Holland.

PES Peter Edward Seed Co., 302 South Center St., Eustris, Florida,  
U.S.A., 32726.

PETO Petoseed Co., Inc., Box 4206, Saticoy, California, U.S.A.,  
93004.

RS Royal Sluis Inc., 1293 Harkins Rd., Salinas, California,  
U.S.A., 93901 Royal Sluis Inc., Box 22 1600AA, Enkhuizen,  
The Netherlands.

Sieg Siegers Seed Co., 7245 Imlay City Rd., Imlay City, Mi., 48444,  
U.S.A.

SS Seed Service Inc., See: J.W. Jung Seed.

Sto Stokes Seeds Ltd., 39 James St., P.O. Box 10, St. Catharines,  
Ontario, L2R 6R6.

Sun Sun Seeds, 8850 59th Avenue NE. Brooks, Oregon, U.S.A., 97305.

Swy Seedway Inc., Hall New York, U.S.A, 14463.

Tak Takii Co. Ltd., 301 Natividad Road, Salinas, California,  
U.S.A., 93906.

UF University of Florida, P.O. Drawer 'A', Belle Glade, Florida,  
U.S.A., 33430.

USDA U.S. Department of Agriculture, Dept. of Hort., University of  
Wisconsin, Madison, Wisconsin, 53706, U.S.A.

VDH Vanderhave, Box 1, 4410 AA, Rilland, Holland.

VIL Vilmorin-Andrieux S.A. La Menitre, 49250 Beaufort en Vallee,  
France.

SUNSHINE HOURS

Month	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	LTA
January		75	85	58	69	88	108	82	53	68	52	71	67	73
February		88	105	123	132	110	81	102	102	66	60	85	145	100
March		114	177	141	126	128	102	130	115	135	141	124	174	134
April	185	221	206	191	127	155	158	219	117	152	171	162	194	173
May	256	197	341	230	208	233	221	199	186	164	235	222	240	223
June	272	261	282	281	280	192	245	170	296	335	240	258	253	258
July	292	250	309	303	263	246	265	303	295	268	271	252	295	277
August	227	268	255	253	189	206	201	225	226	218	207	217	256	227
September	160	192	104	179	204	161	119	138	195	168	181	112	145	158
October	127	114	162	144	79	108	106	126	141	105	145	129	114	123
November	73	88	47	107	68	73	116	61	49	77	37	94	103	77
December	58	83	51	58	56	74	33	35	50	39	62	38	67	51
Total Hours		1951	2124	2068	1801	1774	1755	1790	1825	1795	1802	1764	2053	1874

LTA = Long Term Average for Muck Research Station, R.R. # 1 Kettleby, Ontario, LOG 1JO  
12 Years (1976-1987).

## GROWING DEGREE DAYS (5°C Base)

Month	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	LTA
January	0	0	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	6	0	0	0	0
March	0	0	0	0	23	4	18	6	14	0	7	45	26	11
April	25	110	112	17	67	72	86	67	44	82	129	96	129	80
May	306	170	265	242	234	260	180	301	165	163	243	295	276	239
June	382	408	304	356	370	285	377	320	377	413	303	339	407	328
July	464	420	457	467	473	459	467	485	521	473	439	472	516	470
August	411	398	380	452	415	480	429	378	480	507	401	383	427	426
September	215	250	274	280	301	271	274	288	328	254	333	276	307	281
October	145	68	70	112	129	73	48	143	131	175	139	123	62	109
November	74	0	53	33	40	9	19	49	23	28	31	14	30	31
December	0	0	1	0	0	0	0	32	0	10	0	0	3	4
Annual	2022	1824	1916	1959	2052	1913	1898	2069	2083	2111	2025	2043	2183	1979

LTA = Long Term Average for Muck Research Station, R.R. # 1 Kettleby, Ontario, LOG 1JO  
13 Years (1975-1987).

A temperature of at least 5.5°C is considered necessary for plant growth. Accumulated temperature (degree days) above 5.5°C is a measure of plant growth during the month.



PRECIPITATION

Month	1975		1976		1977		1978		1979		1980		1981	
	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm
January	24	31	14	43	0	37	30	44	9	57	27	15	0	33
February	29	55	24	17	11	4	0	12	9	12	4	16	37	21
March	23	28	73	16	42	16	32	8	44	14	44	24	24	13
April	21	30	72	10	20	0	74	5	67	10	110	0	36	0
May	77	0	82	5	50	0	66	0	82	0	23	0	80	0
June	55	0	66	0	67	0	53	0	47	0	88	0	71	0
July	67	0	185	0	118	0	16	0	49	0	129	0	88	0
August	74	0	53	0	155	0	102	0	100	0	48	0	84	0
September	69	0	102	0	114	0	123	0	62	0	84	0	89	0
October	38	0	79	0	86	0	53	0	116	2	71	0	75	17
November	44	0	14	10	73	10	41	7	85	2	20	9	67	6
December	25	41	13	34	11	15	21	32	57	19	42	35	5	43
Annual	546	185	777	135	747	82	611	108	727	116	690	99	656	133
Total Precip.	731		912		829		719		843		789		789	

LTA = Long Term Average for Muck Research Station, R.R. # 1 Kettleby, Ontario, LOG 1JO  
13 Years (1975-1987).

PRECIPITATION

Month	1982		1983		1984		1985		1986		1987		LTA	
	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm	Rain mm	Snow cm
January	5	54	29	7	0	56	16	29	0	35	0	37	12	37
February	0	35	28	6	24	53	63	37	16	33	6	5	19	24
March	30	31	34	12	33	18	47	3	34	19	37	16	38	17
April	22	11	75	4	46	0	42	8	37	3	48	3	52	7
May	42	0	88	0	104	0	77	0	88	0	60	0	71	0
June	141	0	29	0	61	0	43	0	120	0	112	0	73	0
July	80	0	65	0	36	0	72	0	95	0	189	0	92	0
August	71	0	90	0	81	0	158	0	166	0	81	0	97	0
September	73	0	46	0	98	0	59	0	209	0	69	0	92	0
October	47	0	75	0	39	0	73	0	47	0	66	0	67	1
November	101	7	50	24	64	0	75	28	14	17	41	43	53	13
December	58	22	11	41	22	19	0	17	25	35	23	11	24	28
Annual	670	160	620	94	608	146	725	122	851	142	732	115	690	127
Total Precip.	830		714		754		847		993		847		817	

LTA = Long Term Average for Muck Research Station, R.R. # 1 Kettleby, Ontario, LOG 1JO  
13 Years (1975-1987).

MEAN TEMPERATURE (°C)

Month	1975		1976		1977		1978		1979		1980		1981	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
January	- 0.2	- 8.3	- 5.4	-15.8	- 9.5	-18.0	6.4	-14.6	- 4.8	-10.9	- 2.1	- 9.2	- 7.0	-17.4
February	- 1.5	- 8.3	1.0	- 6.9	- 3.1	- 9.4	6.2	-17.5	- 6.3	-16.0	- 4.6	-12.4	0.9	- 6.6
March	0.9	- 6.3	4.3	- 3.8	6.6	- 2.4	0.2	-10.9	- 6.4	2.5	1.9	- 6.3	3.3	- 5.1
April	6.1	- 2.4	12.9	2.3	13.4	1.7	8.3	- 1.0	9.9	0.9	11.3	2.0	11.6	2.1
May	22.1	8.9	16.0	5.6	21.6	5.8	18.5	6.9	17.9	7.2	19.9	6.9	17.0	4.4
June	24.3	12.2	25.7	12.5	22.2	8.9	23.3	10.2	23.7	11.1	20.3	8.7	23.7	11.5
July	27.6	13.2	24.2	13.6	26.0	14.5	27.0	13.2	27.0	16.0	25.8	13.8	26.0	14.1
August	25.3	12.4	24.6	11.9	23.9	12.0	26.4	12.8	24.1	12.7	26.1	14.7	24.5	13.0
September	18.1	7.3	19.7	8.0	18.4	10.9	19.7	8.9	21.6	8.5	19.5	8.6	18.4	9.8
October	14.9	4.6	10.0	1.5	12.2	2.7	12.6	3.6	12.2	5.1	10.3	3.1	10.6	1.7
November	10.5	1.7	3.2	- 4.2	6.6	0.4	6.3	- 1.9	7.7	1.2	4.4	- 1.8	6.8	- 1.5
December	1.7	-10.3	- 4.2	-13.6	- 2.3	- 9.1	0.2	- 6.6	- 1.3	- 4.8	- 3.3	-12.3	- 1.0	- 7.0
Mean	12.5	2.1	11.0	0.9	11.4	1.5	12.9	0.3	10.5	2.8	10.8	1.3	11.2	1.6

LTA = Long Term Average for Muck Research Station, R.R. # 1 Kettleby, Ontario, LOG 1JO  
13 Years (1975-1987).

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

MEAN TEMPERATURE (°C)

Month	1982		1983		1984		1985		1986		1987		LTA	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
January	- 6.2	-15.8	- 2.0	- 7.9	- 6.4	-14.7	- 5.7	-13.3	- 3.2	-10.6	- 2.1	- 8.8	3.7	- 12.7
February	- 3.9	-12.6	- 0.3	- 7.4	1.6	- 5.9	- 3.1	-10.8	- 4.1	-11.7	- 1.8	-12.7	- 1.5	- 10.6
March	- 1.9	- 6.6	3.9	- 4.1	- 0.8	-10.4	3.9	- 4.7	5.1	- 4.1	5.8	- 4.2	2.1	- 5.7
April	9.9	- 1.1	9.7	0.3	12.5	1.5	13.2	2.4	13.3	1.7	14.4	2.8	11.3	1.0
May	21.1	8.5	15.3	5.0	15.8	4.4	19.2	6.4	20.3	8.4	20.6	7.2	18.9	6.6
June	20.6	10.8	25.2	10.0	25.8	11.7	21.1	9.1	22.5	9.8	25.1	12.0	23.4	10.7
July	26.8	14.4	28.6	14.7	26.7	13.5	25.5	12.9	25.7	14.8	27.6	15.7	26.5	14.2
August	23.0	11.4	26.0	14.3	27.6	15.2	23.8	12.1	23.3	11.4	24.5	13.1	24.9	12.9
September	20.1	9.1	22.5	9.2	18.8	7.9	21.9	10.1	19.1	9.3	20.4	10.0	19.9	9.0
October	15.2	3.6	13.7	3.5	15.6	5.5	14.1	4.4	13.1	4.3	11.5	2.0	12.8	3.5
November	6.9	0.4	5.1	- 1.7	6.4	- 1.4	4.9	- 0.4	4.5	-2.4	6.7	-1.4	6.1	- 0.7
December	3.3	- 3.6	- 4.0	- 9.8	3.6	- 3.7	- 2.5	- 9.0	0.4	-4.5	-1.4	-3.8	- 0.6	- 6.9
Mean	11.3	1.5	12.0	2.2	12.3	2.0	11.4	1.6	11.7	2.2	12.8	2.7	12.3	1.8

LTA = Long Term Average for Muck Research Station, R.R. # 1 Kettleby, Ontario, LOG 1JO  
13 Years (1975-1987).

EXTREME TEMPERATURES ( °C )

Month	1975		1976		1977		1978		1979		1980		1981	
	H	L	H	L	H	L	H	L	H	L	H	L	H	L
January	10	-26	6	-35	- 2	-36	8	-25	3.0	-31.5	10.0	-22.0	6.5	-33.5
February	8	-19	9	-26	6	-25	1	-31	6.5	-33.0	3.5	-26.0	10.0	-26.0
March	10	-21	17	-14	23	-14	8	-26	17.0	-16.5	13.0	-27.5	19.0	-17.5
April	18	-10	28	- 7	25	-11	17	- 7	23.0	- 8.0	19.5	- 5.5	21.0	- 6.0
May	30	1	25	1	32	- 2	31	- 4	30.0	- 1.0	31.0	0	27.0	- 3.5
June	32	4	32	3	30	- 2	33	2	31.0	2.5	31.5	- 0.5	34.0	- 1.0
July	34	6	32	6	34	6	33	6	32.0	5.0	29.5	5.0	32.0	6.0
August	36	4	31	2	31	4	33	6	31.5	3.0	30.5	8.0	29.5	4.0
September	26	- 1	29	1	29	4	29	- 2	30.0	- 3.0	26.0	- 1.0	27.0	- 2.5
October	22	- 9	22	- 7	18	- 3	22	- 6	24.5	- 3.0	24.0	- 5.5	17.0	- 5.0
November	19	- 6	13	-13	19	-22	20	-11	14.5	- 8.5	11.5	- 8.0	17.0	-12.0
December	13	-22	3	-23	11	-30	8	-26	9.0	-19.0	8.0	-31.5	5.0	-19.0
Annual	36	-26	32	-35	34	-36	33	-31	32.0	-33.0	31.5	-31.5	34.0	-33.5

LTA = Long Term Average for Muck Research Station, R.R. # 1 Kettleby, Ontario, LOG 1JO  
13 Years (1975-1987).

10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

EXTREME TEMPERATURES (°C)

Month	1982		1983		1984		1985		1986		1987		LT	
	H	L	H	L	H	L	H	L	H	L	H	L	H	L
January	4.5	-30.5	4.5	-20.0	1.0	-33.0	-1.0	-29.5	7.0	-26.0	4.5	-25.0	10.0	-36.0
February	5.0	-28.0	10.0	-23.0	14.5	-28.0	8.5	-28.5	2.0	-23.0	3.0	-26.5	14.5	-33.0
March	17.0	-25.0	14.5	-20.5	9.5	-29.0	16.5	-19.0	24.0	-24.0	17.0	-16.0	24.0	-29.0
April	22.0	-14.0	24.0	-6.0	27.0	-5.0	29.5	-8.0	25.0	-5.5	27.5	-9.0	29.5	-14.0
May	28.0	0	23.0	-2.5	28.0	-3.0	27.0	-1.5	31.0	-3.0	32.0	-4.0	32.0	-4.0
June	25.5	2.0	33.5	-1.0	32.5	2.5	27.0	1.5	32.0	0	32.5	30.0	34.0	-2.0
July	33.0	6.5	34.5	5.0	33.5	2.5	31.0	6.0	32.5	5.0	33.0	8.5	34.5	2.5
August	30.5	0.5	31.5	5.0	32.5	4.0	30.5	5.5	29.0	2.5	32.0	6.0	36.0	.5
September	30.0	-0.5	30.5	0	26.5	-2.0	30.0	1.0	26.0	-0.5	28.0	1.0	30.5	-3.0
October	23.0	-4.0	26.0	-7.0	21.0	-3.5	20.0	-6.0	21.5	-5.0	20.0	-5.0	26.0	-9.0
November	18.0	-9.5	17.0	-11.5	20.0	-11.0	18.5	-7.0	15.0	-12.0	14.5	-17.0	20.0	-22.0
December	20.0	-18.5	3.0	-22.5	16.0	-1.5	6.5	-25.5	3.0	-19.0	12.0	-18.0	20.0	-31.5
Annual	33.0	-30.5	34.5	-23.0	33.5	-33.0	31.0	-29.5	32.5	-26.0	33.0	-26.5	36.0	-36.0

LTA = Long Term Average for Muck Research Station, R.R. # 1 Kettleby, Ontario, LOG 1JO  
13 Years (1975-1987).

ASTER YELLOWS CONTROL IN LETTUCE GROWN ON MUCK SOIL, 1987

The insecticides Disyston 15% G (disulfoton) at 75 g product per 100 m row and Thimet 15% G (phorate) at 7.25 kg product/ha were applied at seeding time on June 9 in a band 4 cm to each side of the lettuce row. This was accomplished by using a triple row precision seeder. The seeds were placed in the centre row only and the insecticide in the outside rows. Each treatment consisted of eight rows, 10 m long plus two guard rows plus 1 m bare soil. The 3 replications were spaced 65 m apart, to minimize the effect of interplot movement of leafhoppers. No insecticide sprays were applied and evaluations were done on August 6 when the lettuce was fully matured. An average of 268 heads were examined per plot. The presence of aster yellows was determined by cutting the heads open.

	<u>% Aster Yellows</u>	<u># Heads/plot</u>
Check	13.1	268
Disyston 15% G	13.4	269
Thimet 15% G	9.1	268

Results: There was no significant difference between the check and the Disyston treatment. It must be concluded that this treatment is not effective when used on organic soils.

Thimet reduced the incidence of aster yellows slightly from 13% in the check to 9%. Replication 1 was surrounded by carrot and lettuce plots not sprayed with insecticides; because of this, a higher aster leafhopper population was observed than in replication 2 and 3. The incidence of aster yellows was 17% for replication 1 and 8% for both replication 2 and 3.

The chemical applications did not have a significant effect on the plant population.

PYTHIUM STUNT CONTROL IN LETTUCE, 1987

The lettuce cultivar Ithaca was seeded on April 22 and on May 4 in a field that had a history of Pythium Stunt. The metalaxyl formulation Apron 35 SD was used as a seed treatment and Ridomil 2G and 5G were used as a seed furrow treatment at 0.2, 0.5 and 1 kg ai/ha. Evaluations took place on July 2. More Pythium Stunt was observed in the April 22 seeding than in the May 4 seeding.

Average Both Seeding Dates:

<u>Treatment</u>	<u>kg/ha</u> <u>Product</u>	<u>kg/ha</u> <u>ai</u>	<u>% Healthy</u> <u>Plants</u>	<u>%</u> <u>Stunt</u>	<u>% Plants</u> <u>Missing</u>
Ridomil 2G	50	1.0	97	0	3.0
2G	25	0.5	88	2.5	9.5
2G	10	0.2	88	2.5	9.5
Ridomil 5G	20	1.0	85	12.0	3.0
5G	10	0.5	82	5.0	10.0
5G	4	0.2	74	12.0	15.0
Apron 35SD	1 g/100	g seed	84	8.0	8.0
Check	--	--	70	12.5	17.5

The best results were obtained with Ridomil 2G at 1 kg ai/ha. No Pythium Stunt was present and only 3% of the plants were missing. In the check plots 12.5% of the plants had stunt and another 17.5% plants were missing for a total loss of 30%. The 2G formulation gave better protection than the 5G and the Apron 35SD formulations. Residue samples were taken but the results were not available at time of publication.



TRANSPLANT METHODS FOR LETTUCE, 1987

One plastic tray of 200 speedling modules (3 X 3 X 8 cm deep) and 190 Jiffy Strip pots (3 X 3 X 5 cm deep) were seeded on April 3, 1987 with Ithaca coated seed at 2 seeds per module. Also, approximately 400 seeds were seeded in rows in two flats (55 X 28 X 7 cm deep). The soilless media used was Pro-Mix Germinating mix.

On April 14, the modules were thinned to one plant/cell and the flats to 100 plants/flat. The area/plant was 10.9 cm<sup>2</sup> for the Speedling and Jiffy Strip compared to 15.3 cm<sup>2</sup> for the plants in flats. On May 4 all plants were fertilized at 3 kg 20-20-20 per 1000 L water. No significant differences in growth were observed, although the speedling plants had to be watered more often at lower rates.

Transplanting to the field took place on May 8 at a spacing of 43 X 30 cm. The lettuce plants grown in flats were planted with a soil clump of approximately 4 cm in diameter. Normal growing and crop protection practices were followed. Harvest took place on June 25 and 29. Data was taken during the growing season and at harvest.

Module	PERCENT PLANT LOSS				Total
	During Transplanting	After Transplanting	Diseased	Type	
Jiffy Strips	0	0.5	0	-	0.5
Soil Clump	0	5.0	2.0	drop, pythium	7.0
Speedling	14*	5.0	1.5	pythium	20.5

\* Loss due to breakage of plants when pulled from the modules.

Module	HARVEST RESULTS						
	1st cut %	2nd cut %	Total Mkb. %	UnMkb. %	Weight/head (g)	* Quality	Uniformity of Size *
Jiffy Strips	76	22	98	2	981	3.98	3.66
Soil Clump	84	15	99	1	1003	3.78	3.38
Speedling	91	6	97	3	1031	3.94	3.94

\* 5 = Most Desirable

Results: The speedling plants were very hard to remove from the modules. 14% of the plants were lost because of breakage.

The soil clump plants were not uniform in size and firmness at harvest.

The Jiffy Strip were easy to transplant without loss of plants but the heads were slightly lighter in weight.

TRANSPLANT METHODS FOR CELERY, 1987

One plastic tray of 200 speedling modules ( 3 X 3 X 8 cm deep) and 196 Jiffy Strip pots (3 X 3 X 5 cm deep) were seeded on March 18, 1987 with Improved Utah 52-70 coated seed at 2 seeds per module. Also, approximately 600 seeds were seeded in rows in two flats ( 55 X 28 X 7 cm deep). The soilless media used was Pro-Mix Germinating mix.

On April 7, the modules were thinned to one plant/cell and the flats to 100 plants/flat. The area/plant was 10.9 cm<sup>2</sup> for the Speedling and Jiffy Strip compared to 15.3 cm<sup>2</sup> for the plants in flats.

After germinating, the Jiffy Strip plants were stunted in growth and had very poor uniformity in size and colour. 20-20-20 at 3 kg per 1000 L water was applied to the Jiffy Strip plants on April 29. On May 4, another application was given to all plants.

Transplanting to the field took place on May 8 at a spacing of 68 X 20 cm. The celery plants grown in flats were planted with a soil clump of approximately 3 cm in diameter. At this time, the Jiffy Strip plants were significantly poorer in colour, quality, and uniformity of size. Normal growing and crop protection practices were followed.

**Average Plant Heights (cm) during Growing Period**

Module	Average Plant Heights (cm) during Growing Period					Harvest Results			
	May 8	May 19	May 27	June 4	June 15	Gross Weight/Plant (g)	% Trim Loss	* Uniformity	* Quality
Jiffy Strips	4	5	9	15	21	1854	40	4.0	4.6
Speedling	7	7	10	17	28	1870	39	3.8	4.6
Soil Clump	10	10	13	19	29	1915	38	4.2	4.6

Harvest took place on July 21, 12, and 29.

**Results:** All module types were easy to transplant and no plant loss occurred during or after transplanting.

The Soil Clump method was the best in the trial. It produced the highest total plot weight and average weight per plant. It also had very good uniformity and quality.

Although all transplant systems required fertilizer applications during the greenhouse period, the Jiffy Strips were especially susceptible to deficiencies and needed extra care.

ROW COVER FOR EXTENDING THE GROWING PERIOD OF CELERY, 1987

On Sept. 30 one half of a field of late celery was covered with Agryl P17, a very light, non-woven sheet of continuous fibre of polypropylene. Temperatures were recorded in the celery canopy at 25 cm above ground level, in the covered as well as the non-covered celery. Temperatures below freezing were recorded on the following dates:

	Min. Temp. at	Hours of	Min. temp. in celery canopy	
	Ground level	Frost	Non-covered	Covered
Oct. 4	- 5°C	8	NA	NA
Oct. 13	- 4°C	9	- 4.0°C	+ 1°C
Oct. 22	- 2°C	9	- 1.5°C	0°C
Oct. 24	- 1°C	6	- 1.0°C	0°C
Oct. 26	- 3°C	12	- 3.0°C	- 1°C
Oct. 28	- 2°C	NA	NA	NA

NA = Not Available

Over the period of the trial, the minimum canopy night temperatures under the row cover were 1°C to 5°C higher than those of the non-covered celery. The covered celery also had daytime temperatures 2°C to 8°C higher than the non-covered celery. The celery was harvested on Oct. 30 and data taken.

	Total Yield (kg)	Trimmed Yield (kg)	Skin Tightness*	Pithiness *
Covered celery	88.6	37.6	3.90	3.60
Non-Covered celery	87.6	32.0	2.95	2.93

\* 5 = Most Desirable

The celery plants were overmature at harvest, especially the non-covered ones. The pithy stems were removed and the stalks were trimmed to 36 cm (14") in length. The non-covered stalks had many stems with a loose epidermis as a result of the freezing temperatures. The celery was placed in a temperature and humidity controlled storage at 1°C and 90% relative humidity. It was evaluated for storage quality on Jan. 12, 1988 after a storage period of 74 days.

	% Weight Loss	% Pithy	% Decay	% Marketable	Colour*	Quality*
Covered	13	8	7	72	3.3	3.3
Non-Covered	15	7	7	71	2.0	1.7

\* 5 = Most Desirable

The non-covered celery received low marks and was only suitable for the processing market, while the majority of the covered celery could have been used for the fresh market.

NUTSEDGE CONTROL IN ONIONS WITH BASAGRAN, 1987

Basagran (bentazon) at 1.4 L product/ha plus 11 L/ha of ammonium nitrate-urea (UAN) 28% N in 330 L/ha water was applied on June 18 to a plot of onions heavily infested with nutsedge. The application was made at 9:00 a.m., when the onion plants were dry and the weather was sunny and clear. The emerged nutsedge was totally controlled, but new growth developed shortly afterwards. Some damage to the onion crop was observed.

On July 22, Basagran was applied to another plot at rates of 1.25, 1.5, and 1.75 L product/ha with 10 L/ha ammonium nitrate-urea (UAN) 28% N in 400 L/ha water. The nutsedge was at least 20 cm high. The applications were made at 2:00 p.m. and the weather was very hot and humid. The nutsedge was completely controlled and no further growth developed. Very little lasting damage was done to the onions.

It appears that after the end of July no more nutsedge will emerge and an application made at this time will clean up the field for the rest of the season.

\* \* \* \* \*

NUTSEDGE CONTROL IN ONIONS WITH DUAL, 1987

Dual (metolachlor) was applied to a plot of onions in the 1st leaf stage, which was infested with 6 cm high nutsedge. The first treatment consisted of Dual at 2.35 L product/ha in 500 L water/ha at 140 kPa. The second treatment consisted of the first treatment applied twice, one immediately following the other. Both treatments were applied on May 28 at 11:00 a.m., which was a hot and very humid day.

Results: The second treatment gave the best nutsedge control; however, new nutsedge plants emerged soon afterward. The onions were slightly injured.

POST-EMERGENT PARDNER RATES ON ONIONS, --

The onion cultivar Taurus was seeded at 46 seeds/m in rows 43 cm apart. Herbicides applied to all plots were: Gramoxone (paraquat) at 4 L product/ha pre-emergence to onions; C.I.P.C. (chlorpropham) at 18 L product/ha at the early loop stage; Goal (oxyfluorfen) at 0.156 L product/ha at the full loop stage.

Pardner (bromoxynil) was applied at 0.4, 0.8, and 1.6 L product/ha. Each rate was applied weekly for five consecutive weeks at the 1st, 2nd, 3rd, 4th, and 5th leaf stage. Records were kept of weather conditions at the time of application.

Pardner Rates	June 2		Yield		
	% Crop Injury	% weed control	t/ha	Stand/m	Quality*
Check hand weeded	0	100	55	38	3.7
0.4 L/ha	6	84	66	38	4.0
0.8 L/ha	24	93	69	37	3.9
1.6 L/ha	33	95	65	35	3.9

\* 5 = Most Desirable

Results: Crop injury always occurred at the high rates. At the earlier applications, weed control was fair to good at the 0.4 L and 0.8 L rates (84% and 93% respectively). However, the last two applications resulted in poor weed control especially of prostrate pigweed and purslane. This led to handweeding being necessary late in the growing season. Humid, wet weather increased the crop injury.

APPLICATION TIMING OF PARDNER ON ONIONS, 1987

The onion cultivar Taurus was seeded at 46 seeds/m in rows 43 cm apart and interplanted with the barley cultivar Bruce, at 45 seeds/m. Pardner (bromoxynil) at 1.2 L product/ha was applied as a spray in 500 L water/ha at a pressure of 140 kPa. Applications were made pre-emergent to the onions when the barley had already emerged, at the loop, 1st, 2nd, 3rd, 4th, and 5th true leaf stages. Radox (allidochlor) at 12.5 L product/ha tank mixed with CIPC (chlorpropham) at 5 L product/ha was applied to all plots at the loop stage.

<u>Onion Stage at Application Time</u>	<u>% Onion injury</u>	<u>% Barley injury</u>	<u>% Weed control</u>	<u>Onion stand/m</u>	<u>Onion yield t/ha</u>
very early loop stage	10	0	80	38	59
loop stage	40	0	85	25	44
flag stage	60	0	85	9	9
late flag stage	20	0	90	32	31
1st true leaf stage	10	0	95	38	43
2nd true leaf stage	20	0	90	37	55
3rd true leaf stage	0	0	80	38	62
4th true leaf stage	5	*	NA	30	54

NA = not applicable: at this time most weeds were over 15 cm high and not controlled.

\* The barley was eradicated by Poast.

Pardner did not injure the barley at any time but severe crop injury occurred to the onions at the loop stage (40%) and flag stage (60%). Generally, crop damage occurred when the humidity was high; prostrate pigweed and purslane were not controlled and applications must be made when weeds are small. Other trials have proven that Gramoxone, CIPC and Goal injure barley to varying degrees, reducing its effectiveness as a windbreak. Pardner maybe a useful alternative, providing its short comings, as outlined above, are considered.

POST-EMERGENT BROADLEAF WEED CONTROL IN ONIONS, 1987

Tank mixtures of Pardner, Goal, and manganese sulfate were applied to plots that were heavily infested with weeds. The rates and dates of the tank mixtures were:

Date	Product/ha Tank Mixed			
	Pardner	Goal	Manganese Sulfate	Water/ha
June 17	187 ml	187 ml	3.75 kg	560 L
June 23	320 ml	320 ml	6.00 kg	330 L
July 16	560 ml	560 ml	5.60 kg	560 L
Aug 05	560 ml	560 ml	5.60 kg	560 L

The rates of these tank mixes have the potential for doing severe damage to the onion crop. For this reason, they were applied only on sunny afternoons after three or more consecutive days of hot, dry weather. Only slight onion injury was observed, which did not affect yield.

NOTE: No Thyme-leaved spurge was present.

### FERTILIZER PLACEMENT IN ONIONS

Trials have been conducted off and on the Muck Station in fields with high pH levels (up to 7.4). Fertilizer high in phosphate and various rates of the micro-nutrient manganese were placed 5 to 6 cm below the seed at seeding time. Results have been promising at times, but not consistent. Better placement methods have to be found and experiments will continue.



EFFECT OF RIDOMIL (METALAXYL) ON CAVITY SPOTS AND HORIZONTAL LESIONS IN CARROTS, 1987

The cultivars Presto and Nantes PW Improved, which are susceptible to cavity spots and horizontal lesions, were seeded on May 27 and 28 at 90 seeds/m. The rows were 5 cm wide, 6 m long, and 43 cm apart. There were 2 rows/plot.

The following formulations of metalaxyl were used:

Apron 35 SD at 1 g product/100 g of seed as a seed treatment

Ridomil 5 G as a seed furrow treatment at 4, 10, and 20 kg/ha (0.2, 0.5, and 1 kg ai/ha).

Ridomil 2 G as a seed furrow treatment at 10, 25, and 50 kg product/ha (0.2, 0.5, and 1 kg ai/ha).

Ridomil MZ 72WP at 15 kg product/ha as a foliar spray in 330 L water/ha (1.2 kg ai/ha metalaxyl plus 9.6 kg ai/ha mancozeb) applied one month after seeding.

All treatments were replicated 3 times. Harvest took place on Oct. 20, 1987. A total number of 120 roots per treatment were evaluated on Oct. 26.

<u>Treatments</u>	<u>Metalaxyl kg ai/ha</u>	<u>Disease Index</u>	<u>% H.L. &amp; Degree</u>	<u>% Roots Unmarketable</u>
Check no-treatment	- - -	31 c	64M	21%
Apron 35SD-seed treatment	0.001	29 c	69L	15%
Ridomil 5G-4 kg/ha in seed furrow	0.2	12 b	33L	4%
Ridomil 2G-10 kg/ha in seed furrow	0.2	10 ab	25L	3%
Ridomil MZ 72WP-15 kg/ha spray	1.2	11 ab	32L	1%
Ridomil 5G-10 kg/ha in seed furrow	0.5	6 ab	22VL	3%
Ridomil 2G-25 kg/ha in seed furrow	0.5	3 a	14VL	0%
Ridomil 5G-20 kg/ha in seed furrow	1.0	2 a	10VL	0%
Ridomil 2G-50 kg/ha in seed furrow	1.0	1 a	6VL	0%

$$\text{Disease Index} = \frac{\text{Disease class} \times \text{number of roots in that class} \times 100}{\text{Total number of roots} \times \text{number of classes.}}$$

Figures in a column followed by the same letter are not significantly different at P = 0.05, Duncan's N.M.R. Test.

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EFFECT OF RIDOMIL (METALAXYL) ON CAVITY SPOTS AND HORIZONTAL LESIONS IN CARROTS, 1987-continued

% Horizontal Lesions and Degree: The % roots that have horizontal lesions and/or cavity spots and to what degree these are present on the roots: 55 VL means that 55% of the roots have very few and very small lesions. L = lightly affected, a few small lesions. M = medium, some roots becoming unmarketable. H = many and large cavity spots, roots not marketable. VH = very heavily affected.

% Roots Unmarketable: Due to cavity spots only.

Results: The best results were obtained with Ridomil 2G at 50 kg product/ha, 25 kg product/ha and Ridomil 5G at 20 kg product/ha. The number and the size of the lesions were greatly reduced and no unmarketable roots due to cavity spots were observed.

The 2G formulation at all rates showed slightly better results than 5G formulations.

The results of the other treatments were not satisfactory.

Conclusion: Ridomil 2G formulation at 25 kg product/ha (0.5 kg ai/ha) showed the greatest promise as it gave good results with a low amount of chemical.

CEREAL CROPS FOR WIND ABATEMENT IN CARROTS, 1987

Barley, white winter wheat, red hard wheat, rye, and oats were broadcasted at 175 seeds/m<sup>2</sup> on May 26 and May 29. The carrot cultivar Imperator 58 was sown on May 29 with a precision seeder at 90 seeds/m. Prometryne at 1.6 kg ai/ha (Gesagard at 2 kg product/ha) was applied to one half of each plot on June 2 when the May 26 seeding of cereal crops had emerged. Sethoxydim at 0.35 kg ai/ha (Poast at 1.9 L product/ha) plus Assist at 3 L/ha was applied to eradicate the cereal crops. Linuron at 1.1 kg ai/ha (2.2 kg product/ha) was applied to all plots on June 30 when the carrots were 8 cm high. All treatments were replicated three times. The usefulness of the cereal crops was evaluated on June 10.

**Results:** The best marks for wind abatement value and burn-off protection were given to red hard winter wheat and white winter wheat, followed by Rye.

Gesagard, applied when the cereal crops had emerged, reduced the wind abatement value as well as the protection for burning-off. Ninety percent of the early seeded oats were killed by the Gesagard. Preferably, the Gesagard should be applied before the cereal crops emerge.

Seeding the cereal crop three days before seeding the carrots reduced the carrot plant population by 3 to 7%.

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COMPARISON OF THE CEREAL CROPS SEEDED MAY 26, 3 DAYS BEFORE SEEDING THE CARROTS

<u>Crop</u>	<u>Gesagard Applied</u>	<u>Height (cm)</u>	<u>Wind Abatement Value *</u>	<u>Burn-off Protection *</u>
Barley**	yes	9	1.0	1.0
	no	10	2.3	1.0
White winter Wheat	yes	12	3.3	2.0
	no	13	4.7	3.3
Red hard wheat	yes	10	3.7	2.0
	no	13	4.7	3.7
Rye	yes	10	3.0	1.3
	no	12	4.0	2.3
Oats	yes	7	1.0	1.0
	no	11	3.7	2.3
Check	yes	0	1.0	1.0
	no	0	1.0	1.0
<u>Average of Seeding Date:</u>				
May 26	no	11.9	3.9	2.5
May 29	no	10.5	3.2	1.6
May 29	yes	10.2	2.6	1.4
May 26	yes	9.7	2.4	1.5

\* 5 = Most Desirable

\*\* The very thin stand of the barley was the main cause for the poor marks given.

Management Procedures.

Fertilizer: 500 kg/ha 10-10-10 + 25 kg/ha Borax.

Seeding: Three replications were seeded on May 28 at 60 seeds/m, in rows 43 cm apart. A V belt seeder was used equipped with a 5cm wide scatter shoe.

Thinning: Cultivars were thinned to 50 plants/m on June 15.

Minor Elements: 3 sprays of 3 kg/ha Manganese Sulfate  
2 sprays of 2 kg/ha Epsom Salt  
1 spray of 1 kg/ha Calcium Nitrate  
1 spray of 1 kg/ha Solubor

Evaluation

On July 22, 29, and August 5 the cultivars were evaluated and packaging yields taken.

Yields for processing were taken on August 19, and September 22.

Yield: The diameter range for packaging was 32-64mm ( 1 1/4" - 2 1/2") and the processing range was 64-102mm (2 1/2" - 4").

Weight/Root(g): The weight in grams of all roots divided by the total number of roots.

Root Attachment: A thin attachment was preferred.

Crown Attachment: A small strong attachment was preferred.

Score: The average of the 7 marks from smoothness to zoning.

Leaf Colour: Green leaves were preferred.

5 = Most Desirable

Cultivar	Source	Yield				Weight/Root (g)	Stand/Meter	Length of Tops	Smoothness	Attachment		Uniformity		Root Colour		Score	Leaf Colour
		Processing t/ha - Sept.	Packaging t/ha - July	Packaging b/a - July	% Marketable Pack. - July					Root	Crown	Shape	Size	External	Zoning		
Pacemaker III	A&C	43	30	538	72	47	39	ML	3.1	3.4	4.2	3.6	3.7	3.3	4.0	3.62	3.2
Big Red	A.Ch.	70	26	466	67	47	36	ML	3.7	3.3	4.0	3.8	4.0	2.9	3.9	3.66	3.1
Crosby Greentop	A.Ch.	61	15	269	57	37	31	ML	3.7	3.4	3.9	3.4	3.4	3.8	3.2	3.55	3.3
Detroit Supreme	A.Ch.	43	22	393	64	36	42	ML	3.3	3.1	4.1	2.1	3.5	3.7	3.4	3.32	3.2
Green Top Bunching	A.Ch.	28	17	300	69	26	40	M	2.2	2.4	4.0	1.9	3.8	2.7	3.0	2.86	3.2
Bikores	BEJO	30	25	438	76	38	37	ML	2.9	3.4	4.4	3.1	4.0	3.2	4.4	3.63	2.8
Det.D.Red Ferry	FM	52	20	352	62	36	38	ML	3.2	2.8	3.8	2.8	3.7	3.8	3.1	3.32	2.9
Det.D.Red Morse	FM	46	13	238	54	34	32	ML	2.7	2.8	4.0	2.0	3.6	3.0	2.6	2.96	3.3
Red Baron	FM	37	22	390	64	41	36	MS	4.1	3.7	4.6	3.9	3.8	4.6	3.0	3.96	2.8
Ruby Queen	FM	30	23	417	78	31	42	ML	3.9	3.7	4.0	3.6	3.8	4.3	3.6	3.85	2.8
Avenger	HM	80	23	404	62	35	45	L	3.6	3.2	3.8	3.8	3.8	3.8	3.7	3.68	4.0
Warrior	HM	45	22	393	57	56	30	ML	3.8	3.0	3.9	4.2	3.5	3.7	3.1	3.60	2.7
Monotop	NZ	42	17	307	57	53	25	MS	3.5	3.2	4.7	3.8	3.3	3.1	4.7	3.76	2.2
Rondoro	NZ	36	20	359	67	35	37	ML	3.4	3.5	3.8	3.2	3.7	3.6	4.1	3.62	3.2
Spinel	NZ	50	18	324	66	28	43	L	2.4	3.2	4.0	3.2	3.7	3.1	3.9	3.36	3.3
Supra	NZ	34	19	345	45	47	40	ML	3.4	3.8	4.1	3.6	3.4	3.8	4.6	3.82	3.2
Tardel	NZ	29	19	342	73	35	33	ML	3.3	3.2	4.1	3.7	3.7	3.3	4.2	3.65	3.2
Sangria	PETO	43	20	359	63	36	38	ML	3.5	3.3	4.2	3.4	3.3	3.1	4.1	3.56	3.9
Garnet	PETO	16	20	352	83	30	35	M	2.8	3.0	4.1	3.3	4.1	2.3	4.3	3.41	3.1
Detroit Rubidus	RS	28	19	331	69	28	42	ML	3.6	3.2	4.2	3.2	3.7	3.1	4.6	3.66	2.9
Red Ace	Sieg	40	30	531	79	39	42	ML	3.1	3.2	3.7	3.3	3.9	3.1	4.1	3.49	2.4
Dwergina	Swy	16	21	366	69	41	31	MS	2.8	3.5	4.3	2.5	3.8	4.1	4.0	3.58	2.8
Vermilion	Sto	34	26	456	75	37	40	M	3.1	4.1	4.0	2.3	3.9	3.1	3.9	3.49	3.4
CX-5033	A.Ch.	21	23	414	59	43	40	ML	3.6	3.6	4.1	3.9	3.8	2.9	3.5	3.63	3.0

5 = Most Desirable

Legend:      Length of Tops:      S = Short, M = Medium, L = Long  
Leaf Colour:      5 = Green, 3 = Red, 1 = Yellow

Management Procedures.

Fertilizer: 500 kg/ha 10-6-24 + 25 kg/ha Borax 11% was applied and rotovated to a depth of 25cm. 11-52-0 was used to lower the pH.

Seeding: The trials were seeded on May 22, at 82 seeds/m, in rows 50cm apart. A V belt seeder equipped with a 5 cm scatter shoe was used. The Main Trial was replicated three times.

Harvest: The Main Trial was harvested on October 9 and Adaptation on October 14. Data was taken for the presence of rusty root and leaf blight.

Storage: The samples were placed in a temperature and relative humidity controlled storage immediately after harvest.

Evaluation.

Main Trial evaluation took place on November 2 after 4 weeks in storage. Adaptation Trial was done on November 18 after 5 weeks in storage.

Yield: The high yields in the Adaptation Trial were caused in part by the high percentage of oversized roots.

% Horizontal Lesions: The % of roots that have horizontal lesions and/or cavity spots and to what degree these are present on the roots. 55 VL means that 55% of the roots have very few and very small lesions. L = lightly affected, a few and small lesions; M = medium, H = many and large cavity spots, roots unmarketable.

Blight: Regular fungicide applications were discontinued on September 1 to enable the cultivars to be evaluated for tolerance to leaf blights at harvest.

Score: The average of the marks given for uniformity, appearance, resistance to greening, colour and core size.

5 = Most Desirable

Note: 91 numbered cultivars were grown in an Observation Trial. These cultivars were evaluated and the data was sent to the seed supplier. This information is available upon request.

CARROT CULTIVAR MAIN TRIAL - 1987 - PACKAGING TYPES

Cultivar	Source	Marketable Yield		% Oversize	% Marketable	Roots		Uniformity		Appearance	Resistance to Greening	Colour		Core Size	Score	% Horizontal Lesions and Degree	Blight
		t/ha	b/a			Length (cm)	Width (cm)	Shape	Size			Internal	External				
Scout	PETO	60	1063	20	74	24	3.5	3.5	3.2	3.3	4.5	3.5	3.9	3.3	3.60	35L	4.0
Spartan Fancy 80	JHK	76	1354	21	81	23	3.6	4.1	3.8	4.0	3.9	4.5	4.5	4.6	4.20	38L	3.0
Orlando Gold	A.Ch.	70	1242	21	91	22	3.2	4.1	3.7	3.8	4.6	4.7	4.5	4.6	4.29	57VL	4.3
Six-Pak	HM	81	1442	10	75	22	3.3	3.9	3.8	4.3	4.3	3.8	3.7	3.9	3.96	43VL	4.3
Six-Pak II	HM	74	1317	14	81	22	3.2	4.1	3.8	4.1	3.9	4.1	4.3	4.2	4.07	23VL	4.7
Gold Pride	HM	77	1365	14	85	22	3.4	4.1	3.8	4.0	4.6	4.9	4.8	4.8	4.43	57M	4.3
Prospector	PETO	86	1526	20	79	21	3.6	4.1	3.6	4.2	4.6	4.7	4.9	4.5	4.37	70VL	3.7
Spec. Nantes 616	Sto	87	1555	49	79	21	4.3	4.6	4.2	4.4	2.7	4.0	4.0	3.5	3.91	36M	4.3
Harvestmore	Cro	82	1462	14	81	21	3.1	4.1	3.8	4.1	4.1	4.0	4.2	4.0	4.04	30L	3.3
Top Pak	HM	93	1651	23	86	21	3.0	4.2	4.0	4.6	3.8	3.8	4.3	3.8	4.07	27L	4.3
Chancellor	Asg	90	1600	13	80	21	3.4	4.2	3.8	4.2	3.5	3.5	4.0	4.1	3.90	40L	4.7
Goldmine	Sun	81	1442	15	87	20	3.4	4.0	3.7	4.1	3.9	4.2	4.5	4.1	4.07	50VL	4.3
Golden State	Asg	84	1502	5	83	20	3.3	3.8	3.1	4.1	4.8	4.7	4.7	4.2	4.20	82L	4.0
Aristo Pak	Cro	89	1588	37	85	20	3.7	4.2	3.9	3.9	4.5	4.3	4.3	3.7	4.11	43L	4.7
Seminole	Sun	79	1402	16	82	20	3.6	3.8	3.3	3.6	3.9	4.3	4.1	4.2	3.89	48L	4.0
Fanci Pak	NK	82	1453	15	80	20	3.1	4.2	3.8	3.9	4.2	3.7	3.8	3.9	3.93	73VL	4.0
Caropak	Asg	82	1465	21	85	20	3.3	3.7	3.4	4.0	3.7	4.1	4.2	4.3	3.91	57VL	4.0
Canada Super X	PES	88	1562	32	89	20	3.4	4.0	3.7	4.1	3.8	4.2	4.0	4.4	4.03	35L	4.3
Orange Sherbet	Sto	96	1704	21	80	19	3.3	3.8	3.5	4.1	3.9	4.7	4.8	4.6	4.20	50L	3.3
Discovery	Sieg	70	1254	11	84	19	3.0	3.5	2.9	3.7	4.8	4.6	4.6	4.6	4.10	43L	4.7
Cello-King	Sieg	85	1520	13	86	19	3.3	4.1	3.7	4.1	4.8	4.9	4.9	4.8	4.47	63L	4.3
Mokum	BEJO	95	1697	13	76	18	3.1	4.6	4.1	4.7	3.0	4.9	4.9	4.7	4.41	57L	4.3
Sierra	NK	82	1455	15	78	18	3.1	4.0	3.6	4.1	4.3	3.9	4.0	3.8	3.96	48L	4.3

5 = Most Desirable

Listed in order of length

Legend:      Yield:    56 t/ha = 1000 bushels/acre  
                  Length:    20 cm = 8 inches

The cultivars Scout and Golden State were susceptible to rusty root.



CARROT CULTIVAR ADAPTATION TRIAL - 1987 - PACKAGING TYPES

Cultivar	Source	Marketable Yield		% Oversize	% Marketable	Type	Roots		Uniformity		Appearance	Resistance to Greening	Colour		Core Size	Score	% Horizontal Lesions and Degree	Blight
		t/ha	b/a				Length (cm)	Width (cm)	Shape	Size			Internal	External				
Britepak	A&C	105	1869	18	89	GI	23	3.3	3.7	3.7	3.7	4.0	3.7	4.0	3.7	3.79	90L	5
Atlantis*	A.Ch.	53	947	3	71	GI	21	3.0	4.3	4.3	2.7	4.7	4.3	4.7	4.0	4.14	50L	4
Gold Pak 28C	A.Ch.	80	1428	32	75	G	21	3.9	4.0	4.0	3.7	4.0	3.7	4.0	3.7	3.87	60L	4
Ingot	A.Ch.	78	1381	23	82	G	21	3.9	4.0	3.7	4.3	4.0	4.3	4.3	4.0	4.09	70VL	4
Diplomat	Asg	95	1687	23	77	IG	26	3.6	3.7	4.0	3.3	4.0	3.0	4.0	3.7	3.67	70L	5
Paramount	Asg	94	1666	35	80	LI	21	4.3	3.0	3.3	3.7	3.3	3.7	4.0	3.7	3.53	40L	5
XPH 3487	Asg	72	1285	15	67	GI	24	3.7	3.7	4.0	3.7	4.7	4.0	4.0	3.7	3.97	100L	5
XPH 3504	Asg	70	1241	4	82	G	22	2.9	3.7	4.7	3.7	4.7	4.3	4.7	4.3	4.30	100M	5
XPH 3622	Asg	69	1232	5	63	G	22	3.1	3.3	4.3	3.7	4.3	4.3	4.0	4.3	4.03	80M	4
XPH 3623	Asg	63	1116	10	67	GI	24	3.2	3.7	4.0	3.3	4.7	4.0	4.3	4.0	4.00	90L	4
Beadle	Asm	114	2022	48	75	LG	20	4.2	3.3	3.0	3.7	3.7	3.7	4.3	3.3	3.57	30L	4
Cardinal	Asm	63	1113	59	79	GL	24	4.7	3.7	3.0	4.0	3.7	4.0	4.7	3.7	3.83	50L	4
Jasper	Asm	70	1237	52	71	LG	20	4.2	3.3	3.3	3.7	3.7	3.7	3.7	3.7	3.59	50VL	4
Sexton	Asm	115	2045	75	90	LG	24	5.0	3.7	2.7	4.0	3.3	4.0	4.0	3.3	3.57	20L	3
Super Elfin	Asm	51	904	66	85	GL	22	4.6	3.3	3.3	3.3	2.7	3.7	4.0	3.7	3.43	50L	4
Barnum*	BEJO	96	1703	15	81	NG	18	3.7	3.3	4.3	3.7	4.0	4.0	3.7	3.3	3.76	100M	4
Bergen	BEJO	146	2592	49	94	GN	23	4.0	3.7	3.7	4.3	3.3	4.0	4.0	2.7	3.67	40VL	5
Nairobi	BEJO	120	2134	33	80	NL	17	4.0	3.7	4.0	4.0	3.7	4.0	4.3	3.3	3.86	50L	3
Nantucket	BEJO	94	1664	11	91	NG	18	3.6	4.3	4.7	4.0	3.7	4.3	4.3	4.0	4.19	40M	4
24 Karat	FM	82	1452	17	80	GI	24	3.6	4.3	4.3	3.3	3.7	4.3	4.3	4.0	4.03	30L	4
Madamoiselle	FM	63	1127	7	71	NG	17	3.5	3.3	3.3	3.7	3.7	4.3	4.3	4.3	3.84	70VL	4
Solid Gold *	E.J.	94	1668	37	80	G	20	4.0	4.0	3.7	3.7	4.0	3.7	4.0	3.3	3.77	80VL	4
Rumba *	NZ	63	1116	28	79	GL	16	3.7	3.0	3.3	3.7	4.0	4.3	3.7	3.7	3.67	40VL	4
Titan	NZ	85	1518	10	80	GN	17	3.7	3.3	4.0	3.7	3.7	3.7	4.0	4.0	3.77	100L	5
Tito	NZ	84	1502	40	78	N	23	4.2	4.0	3.7	4.3	3.0	3.3	4.0	3.3	3.66	70L	4

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CARROT CULTIVAR ADAPTATION TRIAL - 1987 - PACKAGING TYPES- continued

Cultivar	Source	Marketable Yield		% Oversize	% Marketable	Type	Roots		Uniformity		Appearance	Resistance to Greening	Colour		Core Size	Score	% Horizontal Lesions and Degree	Blight
		t/ha	b/a				Length (cm)	Width (cm)	Shape	Size			Internal	External				
Good Pak	PES	94	1675	38	79	GI	23	3.8	4.3	4.0	3.7	3.7	3.7	4.3	3.7	3.91	50L	4
Rondino	RS	67	1187	33	83	GN	22	3.8	4.3	4.0	4.0	3.7	4.3	4.3	3.3	3.99	80L	4
Berjo *	Swy	94	1680	35	87	LN	19	4.1	3.0	3.3	4.0	3.3	3.7	3.7	2.0	3.29	50M	5
Nagano	Swy	83	1477	11	89	NG	19	3.2	4.0	4.7	3.7	3.7	4.0	4.0	4.0	4.01	30L	4
Narbonne*	Swy	99	1757	14	86	NG	16	3.5	4.0	4.3	4.3	4.3	4.3	4.3	3.7	4.17	N.A.	5
Narman	Swy	94	1664	30	88	N	18	3.8	4.0	3.7	4.0	3.7	4.0	4.0	3.0	3.77	20L	5
Napoli	Swy	123	2195	22	81	NG	20	3.8	3.7	4.0	3.7	3.3	4.0	4.0	3.7	3.77	60M	4
Nelson	Swy	123	2197	6	86	N	19	3.7	4.0	4.7	4.0	4.0	4.0	3.7	4.0	4.06	50L	5
Romosa	Swy	123	2186	28	83	GN	20	3.9	3.3	4.0	4.0	3.7	4.0	4.0	2.7	3.67	50L	5
Canuck	Sto	79	1397	28	77	G	22	3.5	4.0	4.0	4.0	4.0	4.0	4.3	4.0	4.04	60VL	3
Earlibird Nantes	Sto	110	1965	29	84	N	18	4.0	3.7	4.0	4.0	3.7	3.7	3.7	3.7	3.79	90L	3
Gold Pak 28	Sto	59	1056	31	80	G	23	3.9	3.7	3.7	3.3	4.0	3.7	4.0	3.7	3.73	30L	4
Imperator 408	Sto	55	970	45	74	G	22	3.5	4.0	3.7	3.3	3.7	3.7	3.7	4.0	3.73	30L	5
Imp. Special 58	Sto	76	1380	30	84	GI	24	3.8	3.7	3.7	3.7	3.3	3.3	3.7	3.3	3.53	60L	4
King Imperator	Sto	62	1104	80	89	LG	24	4.8	4.0	3.7	3.7	3.0	4.0	4.0	3.3	3.67	20L	4
Klondike Nantes	Sto	105	1864	28	82	G	21	3.7	2.3	3.3	3.7	4.0	3.7	3.7	3.7	3.49	70L	4
Scarlet Coreless	Sto	68	1209	32	77	NG	20	4.3	3.7	4.0	4.0	3.0	4.0	4.7	3.7	3.87	40M	4
Scarlet Touchon	Sto	86	1525	31	74	NG	19	4.1	3.7	3.7	3.7	3.3	3.7	3.7	4.0	3.69	60VL	5
Spartan Fancy 80	Sto	83	1483	21	77	GI	24	3.8	4.0	4.0	3.7	4.3	4.0	4.3	4.0	4.04	40L	4
Spartan Premium	Sto	78	1390	36	87	G	22	3.8	2.3	3.0	3.7	4.0	3.3	3.7	3.7	3.39	60L	4

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CARROT CULTIVAR ADAPTATION TRIAL - 1987 - PACKAGING TYPES- continued

Cultivar	Source	Marketable Yield		% Oversize	% Marketable	Type	Roots		Uniformity		Appearance	Resistance to Greening	Colour		Core Size	Score	% Horizontal Lesions and Degree	Blight
		t/ha	b/a				Length (cm)	Width (cm)	Shape	Size			Internal	External				
Touchon Deluxe *	Sto	94	1680	12	81	GN	18	3.7	2.0	2.7	3.3	4.0	3.3	3.7	3.7	3.24	40VL	4
EXP 60138	Sto	82	1456	25	77	GI	24	3.3	4.0	3.7	3.3	4.7	4.7	4.3	4.3	4.14	80L	4
EXP 60143	Sto	106	1880	30	89	G	23	4.0	3.0	3.7	3.3	4.0	3.3	4.0	3.3	3.51	30L	4
Apache *	Sun	97	1718	48	82	LG	21	4.1	4.0	3.3	3.3	4.0	4.0	4.0	3.0	3.66	60L	5
Dagger 78	Sun	44	790	25	63	IG	24	3.3	3.3	3.3	3.7	3.7	4.7	4.7	4.0	3.91	30L	3
Huron *	Sun	53	951	13	60	G	20	3.5	3.3	3.7	3.3	4.3	4.0	4.3	3.7	3.80	100L	3
Impakt *	Sun	73	1292	8	66	GI	22	3.3	4.0	4.0	3.0	4.7	3.7	4.3	3.7	3.91	60M	5

5 = Most Desirable \* These cultivars were susceptible to rusty root

Legend: Types: G = Goldpak, I = Imperator, N = Nantes, L = Long Danvers

Yield: 56 t/ha = 1000 bushels/acre

Length: 20 cm = 8 inches

CARROT CULTIVAR STORAGE TRIAL 1986-87 - PACKAGING TYPES

Cultivar	Source	% Marketable	% Weight		Degree * of Decay
			Loss In Storage	% Decay	
Six Pak II	HM	81	13	6	3.0
Vitasweet 721	A&C	78	13	9	2.7
Orange Sherbet	Sto	78	13	9	2.0
Titan	NZ	77	13	10	3.0
Six Pak	HM	77	14	9	2.3
Top Pak	HM	77	11	12	2.0
Pak Mor	HM	76	13	11	2.3
Cimarron	HM	75	15	10	2.3
Harvestmore	Sieg	73	14	13	2.7
Orlando Gold	A.Ch.	73	14	13	1.7
Gold Strike	Sieg	73	14	13	1.7
Sprinter	HM	71	15	14	2.3
Britepak	A&C	71	15	14	2.0
Arco 178	Sun	71	13	16	1.7
Caropak	Asg	71	14	15	1.3
Cellobunch	Asg	70	16	14	3.0
Canada Super X	PES	70	13	17	2.7
Aristo Pak	Cro	70	15	15	2.0
Vitasweet 500	A&C	70	13	17	2.0
Diplomat	Asg	67	15	18	2.0
Sixpence	HM	67	12	21	1.3
Seminole	Sto	64	17	19	2.0
Chrisna	A.Ch.	60	15	25	2.3
Debut	Asg	52	17	31	1.3
Average		71	14	15	2.2

\* 5 = Most Desirable, no decay

Harvested October 22, 1986, placed in a cold storage where the relative humidity was kept at 95-100%. On February 19, 1987, the samples were moved to a Filacell Storage where the relative humidity was kept at 98%. Replicated: 3 times. Judged: June 29, 1987.

Total storage period = 36 weeks

Listed in order of % marketable

LONG TERM AVERAGES - CARROT CULTIVAR STORAGE TRIAL - PACKAGING TYPES

Cultivar	Source	# Years Tested	% Marketable	% Weight Loss in Storage	% Decay	Degree* of Decay
Spartan Classic 80	Sto	4	90.8	6.8	2.4	3.5
Trophy	HM	5	88.2	9.0	2.8	3.8
King Imperator	Sto	3	88.0	7.3	4.7	3.7
Canuck	Sto	6	87.0	8.6	4.4	4.5
Spartan Fancy 80	Asg	3	87.0	9.7	3.3	3.5
Gold Pak 28	Sto	3	86.7	10.0	3.3	4.2
Hipak	HM	4	86.2	9.3	4.5	4.1
Spartan Sweet 'A'	Cro	4	86.1	7.6	6.3	3.5
Spartan North 'A'	Cro	5	85.8	9.4	4.8	3.6
Spartan Fancy	Sto	3	85.7	9.3	5.0	3.8
Klondike Nantes	Sto	4	85.6	8.1	6.3	3.7
Lance	Sto	4	84.8	8.5	6.7	2.9
Grenadier	HM	5	84.6	8.8	6.6	3.6
Candy Pak	Cro	8	84.6	11.3	4.1	2.9
Cutlass	Sun	4	84.3	9.3	6.4	3.5
Goldpak 263	Asg	4	83.9	9.0	7.1	3.7
Dominator	Sun	4	83.5	9.3	7.2	3.1
Spartan Delite 80	Asg	3	83.3	11.0	5.7	3.5
Saber 78	Sun	4	81.4	10.8	7.8	3.1
Orange Sherbet	Sto	4	81.2	11.4	7.4	3.0
Dagger 78	Sun	5	78.9	13.3	7.8	3.4
Pak Mor	HM	5	78.0	11.8	10.2	2.9
Top Pak	HM	3	77.4	14.0	8.6	2.8
Vitasweet 721	A&C	2	77.0	14.0	9.0	2.7
Six Pak II	HM	4	76.9	14.0	9.1	2.1

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LONG TERM AVERAGES - CARROT CULTIVAR STORAGE TRIAL - PACKAGING TYPES - continued

Cultivar	Source	# Years Tested	% Marketable	% Weight Loss in Storage	% Decay	Degree* of Decay
Six Pak	HM	6	76.5	13.6	9.9	3.1
Chancellor	Asg	5	76.5	12.7	10.8	2.1
Sweet N' Crisp	Cro	3	75.9	15.7	8.4	2.8
Orlando Gold	Sto	4	73.4	16.2	10.4	2.0
Paramount	Asg	3	73.0	13.3	13.7	3.1
Flavor Pak	Cro	3	72.3	15.5	12.2	2.6
Cellobunch	Asg	3	71.8	14.4	13.8	2.0
Aristo Pak	Cro	4	70.4	14.8	14.8	2.1
Diplomat	Asg	4	69.0	15.2	15.8	2.8
Harvestmore	Cro	2	69.0	16.0	15.0	2.2
Cimarron	HM	3	68.4	17.0	14.6	2.1
Britepak	A&C	3	68.0	15.0	17.0	2.2
Caropak	Asg	2	67.5	15.5	17.0	1.7
Debut	Asg	2	66.5	15.2	18.3	1.5

\* 5 = Most Desirable

Storage period was usually 9 months.

Listed in order of % marketable

LONG TERM AVERAGE OF CARROT CULTIVARS - PACKAGING TYPES

Cultivar	Source	‡ Years Tested	LTA Length cm	LTA Length Inches	LTA Mkb. Yield t/ha	LTA Mkb. Yield b/a	% Marketable	LTA Score
Javelin 80	Sun	4	23.60	9.29	55.75	991	85	4.13
Spartan North	Cro	7	23.25	9.15	66.95	1192	85	4.20
Candy Pak	Cro	9	23.06	9.08	67.48	1201	86	4.27
Spartan Delite 80	MSU	4	22.88	9.01	75.25	1376	89	4.08
Dagger 78	Sun	7	22.78	8.98	69.67	1240	84	4.24
Orlando Gold	Sto	6	22.76	8.96	66.77	1188	85	4.20
Cutlass	Sun	6	22.58	8.89	67.57	1203	81	4.02
Saber 78	Sun	5	22.48	8.85	61.32	1091	85	4.10
Six Pak	HM	8	22.12	8.71	73.56	1309	86	4.14
Spartan Fancy 80	JHK	5	22.12	8.71	70.01	1246	83	4.05
Nuggeteer	FM	7	22.05	8.68	65.00	1158	80	3.91
Harvestmore	Cro	6	21.92	8.63	71.44	1272	84	3.89
Sweet-N-Crisp	Cro	4	21.82	8.60	69.68	1240	86	3.92
Flavor Pak	Cro	4	21.73	8.56	73.43	1307	89	3.97
Imperator 58	Cro	9	21.69	8.54	50.34	896	78	3.64
Gold Pak 263	Asg	6	21.58	8.50	60.67	1079	85	3.91
Lance	Sun	6	21.22	8.35	64.98	1156	83	4.08
Spartan Premium 80	Cro	4	21.20	8.35	80.75	1437	86	3.95
Orange Sherbet	Sto	8	21.19	8.34	68.23	1214	84	3.85
Golden State	A.Ch.	3	21.14	8.32	68.46	1219	81	4.15

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LONG TERM AVERAGE OF CARROT CULTIVARS - PACKAGING TYPES - continued

Cultivar	Source	# Years Tested	LTA Length cm	LTA Length Inches	LTA Mkb. Yield t/ha	LTA Mkb. Yield b/a	% Marketable	LTA Score
Caropak	Asg	7	21.00	8.27	71.66	1276	85	3.88
Cimarron	HM	3	21.17	8.33	69.33	1234	84	3.90
Britepak	A&C	6	21.17	8.33	65.43	1165	81	3.88
Grenadier	HM	14	21.11	8.31	65.94	1173	84	3.98
Spartan Winner 80	Cro	3	21.10	8.31	73.33	1306	82	3.78
Chancellor	Asg	6	21.02	8.27	71.65	1275	81	3.88
Canuck	Sto	15	20.94	8.24	62.69	1116	82	3.99
Debut	Asg	3	20.89	8.22	67.53	1202	79	3.89
Six Pak II	HM	5	20.82	8.20	72.78	1296	86	4.04
Goldmine	Sun	3	20.82	8.20	71.68	1276	86	3.80
Diplomat	Asg	6	20.80	8.19	71.17	1267	84	3.93
Vitasweet 721	A&C	3	20.76	8.17	64.20	1143	79	4.09
Gold Pak 28	FM	12	20.76	8.17	55.91	996	85	3.84
Pak Mor	HM	5	20.74	8.16	62.40	1111	81	3.79
Aristo Pak	Cro	5	20.65	8.13	75.24	1339	87	3.91
Paramount	Asg	7	20.55	8.10	82.14	1462	85	3.89
Top Pak	HM	4	20.43	8.04	78.19	1392	87	3.86
Sierra	NK	5	20.38	8.02	70.29	1251	83	3.93
Spartan Sweet 'A'	Cro	13	20.33	8.00	69.68	1240	82	4.12
Cellobunch	Asg	6	20.31	8.00	81.28	1447	85	3.90

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LONG TERM AVERAGE OF CARROT CULTIVARS - PACKAGING TYPES - continued

Cultivar	Source	# Years Tested	LTA Length cm	LTA Length Inches	LTA Mkb. Yield t/ha	LTA Mkb. Yield b/a	% Marketable	LTA Score
Dart	Sun	2	20.30	7.99	70.00	1246	78	3.80
King Imperator	NK	10	20.19	7.95	52.71	938	83	3.75
Spartan Delux	MSU	9	19.96	7.86	70.80	1260	84	3.97
Dominator	Sun	13	19.74	7.77	63.88	1137	85	3.85
Klondike Nantes	Sto	10	19.59	7.71	72.10	1283	85	3.87
Hipak	HM	13	19.26	7.58	65.46	1166	86	3.84
A Plus	Asg	2	19.00	7.48	54.00	961	65	4.08
Spartan Classic 80	Cro	3	17.93	7.05	63.33	1127	78	3.78
Pioneer	HM	10	16.60	6.54	64.00	1139	81	3.61
Vitasweet 500	A&C	3	15.80	6.22	82.25	1464	82	3.76
Scarlet Nantes	Asg	8	14.50	5.71	66.00	1175	75	3.46

5 = Most Desirable

Listed in Order of Length

BEST SLICER TYPE CARROT CULTIVARS IN 1987 TRIALS

Cultivar	Source	Marketable t/ha	% Marketable	Root Length (cm)	Eye Appeal	Resistance to Greening	Colour		Core Size	% Horizontal Lesions & Degree	Rusty Root	Blight	Slicer	Score
							Internal	External						
<u>Cultivars Grown in Processing Trial</u>														
Nandrin	BEJO	102	92	25	4.0	4.0	4.6	4.7	4.3	40M	5.0	4.0	5.0	4.34
Goldini	NZ	81	92	22	3.9	4.0	4.1	4.6	4.0	55L	5.0	5.0	3.7	4.01
Sunre 3129	Sun	107	91	25	4.0	3.3	4.2	4.3	4.3	70L	5.0	4.0	4.0	4.05
Berlanda	Swy	93	87	22	3.5	3.9	4.2	4.6	3.8	70L	5.0	4.7	3.7	3.97
Florence	Swy	78	98	25	3.4	3.7	4.4	4.7	4.3	60M	5.0	5.0	3.7	3.95
Laranda	Swy	111	72	24	3.9	3.3	4.1	4.3	3.7	50L	4.0	4.0	4.0	3.79
<u>Cultivars Grown in Packaging Trials</u>														
Mokum	BEJO	95	76	18	4.5	3.0	4.9	4.9	4.7	57L	5.0	4.3	5.0	4.40
Nairobi	BEJO	120	80	17	3.9	3.7	4.0	4.3	3.3	50L	5.0	3.0	4.0	3.86
Nantucket	BEJO	94	91	18	4.3	3.7	4.3	4.3	4.0	40M	5.0	4.0	4.7	4.19
Mademoiselle	FM	63	71	17	3.4	3.7	4.3	4.3	4.3	70VL	5.0	4.0	3.7	3.84
Good Pak	PES	94	79	23	4.0	3.7	3.7	4.3	3.7	50L	5.0	4.0	3.7	3.91
Rondino	RS	67	83	22	4.1	3.7	4.3	4.3	3.3	80L	5.0	4.0	4.0	3.99
Earlibird Nantes	Sto	110	84	18	3.9	3.7	3.7	3.7	3.7	90L	5.0	3.0	4.0	3.79
Scarlet Coreless	Sto	68	77	20	3.9	3.0	4.0	4.7	3.7	40M	5.0	4.0	4.0	3.87
Special Nantes 616	Sto	87	79	21	4.4	2.7	4.0	4.0	3.5	36M	5.0	4.3	5.0	3.90
Nagano	Swy	83	89	19	4.1	3.7	4.0	4.0	4.0	30L	5.0	4.0	4.3	4.01
Napoli	Swy	123	81	20	3.8	3.3	4.0	4.0	3.7	60M	5.0	4.0	4.3	3.77
Narbonne	Swy	99	86	16	4.2	4.3	4.3	4.3	3.7	NA	4.0	5.0	4.0	4.17
Narman	Swy	94	88	18	3.9	3.7	4.0	4.0	3.0	20L	5.0	5.0	4.3	3.77
Nelson	Swy	123	86	19	4.2	4.0	4.0	3.7	4.0	50L	5.0	5.0	4.3	4.06

5 = Most Desirable

NA = Not Available

Eye Appeal: Average of appearance or smoothness, and uniformity of size and shape.

See Carrot Trial write up for explanation of marks.

More information on these cultivars can be found in the Packaging and Processing Trial Reports

- 42 -

CARROT CULTIVAR TRIALS - 1987 - PROCESSING TYPES

Management Procedures.

Fertilizer: 500 kg/ha 10-6-24 + 25 kg Borax was worked in deeply with a rotovator.

Seeding: Seeding was done on May 20 using a V belt seeder equipped with a 5 cm wide scatter shoe. The seeding rate was 45 to 57 seeds/m, depending on germination. Rows were 50 cm apart. The Main Trial was replicated 3 times.

Weed Control: Pre-emergence - 2 kg/ha Gesagard  
Post-emergence - 2 kg/ha Lorox

Minor Elements: 3 sprays of 1 kg/ha Solubor

Harvest: At harvest, on October 19, data was taken of the presence of rusty root and leaf blights.

Storage: After harvest, the samples were placed in a temperature and humidity controlled storage (0°C).

Evaluation.

The cultivars were evaluated after 3 weeks in storage.

Weight/Root (g): The weight of the roots over 38 mm divided by the number of roots.

Crown Shape: A hollow crown received a lower mark.

Score: The average of the 10 marks from uniformity to uniformity of colour.

% Horizontal Lesions + Degree: The % of roots with horizontal lesions and the degree they were present on the roots. VL = (very light) = very few, very small lesions; L (light) = few, small lesions; M (medium) = medium in size and number, roots marginally marketable; H (heavy) = many, large cavity spots, roots unmarketable.

Blight: In order to establish tolerance to leaf blights, fungicides were not applied after September 1.

NOTE: 32 mm of rain fell shortly after the Gesagard application. This likely caused the reduction in plant stands of most cultivars. Plant stand and vigor were evaluated on July 6. See trials for more information.

Cultivar	Source	Marketable Yield t/ha	Weight/Root (g)	% Marketable	Roots		Uniformity	Smoothness	Crown Shape	Core Size	Resistance to Greening	Colour				Uniformity	Score	% Horizontal Lesions and Degree	Blight
					Length (cm)	Width (cm)						External	Cortex	Camb. Zone	Core				
Camus	CS	81	331	86	21	5.6	3.7	4.1	3.8	3.4	4.3	4.3	4.6	4.3	4.2	4.4	4.11	37VL	4.3
Bonchant	NZ	90	312	87	23	5.3	3.6	3.9	3.3	4.2	3.8	4.3	4.3	4.5	4.3	4.4	4.06	60L	3.3
Processor II	Sto	82	259	89	19	5.3	3.4	4.0	3.6	4.1	4.5	4.1	4.4	4.2	4.3	4.6	4.12	47L	4.3
Berdino	NZ	77	260	87	23	4.6	4.5	4.1	3.7	3.9	4.0	4.3	4.4	4.1	4.1	4.4	4.15	33VL	4.0
Berlanda	Swy	93	305	87	22	5.0	3.8	3.2	3.7	3.8	3.9	4.6	4.5	4.0	4.1	4.1	3.97	70L	4.7
Goldini	NZ	81	232	92	22	4.6	3.9	3.8	3.5	4.0	4.0	4.6	4.3	4.2	3.9	3.9	4.01	55L	5.0
Flamant	NZ	103	246	90	21	4.8	3.6	4.0	3.9	4.0	4.2	4.1	4.1	4.2	4.0	4.1	4.02	47L	4.3
Dess Dan	Sun	85	262	84	22	5.1	3.4	3.5	3.4	4.1	4.2	4.0	4.2	4.0	4.0	4.1	3.89	33L	4.0
Camden	Sto	79	267	80	19	5.7	3.8	3.8	3.7	3.9	4.2	4.0	4.1	3.8	3.9	4.2	3.94	35L	4.3
Giant 114	PES	97	296	84	22	5.5	3.5	3.4	4.6	3.3	3.3	4.3	4.2	4.1	3.6	3.7	3.80	68L	4.3
Oranza	BEJO	67	292	83	21	4.6	3.4	3.3	3.8	3.7	3.6	4.3	4.3	3.8	3.8	3.7	3.77	68L	4.3
Danvers 126	NK	78	300	87	20	5.9	3.5	3.2	4.0	3.9	3.9	4.0	4.3	3.8	3.7	3.8	3.81	51M	4.3
Gold King	NK	69	327	78	17	6.1	4.0	3.8	2.9	3.9	3.9	3.5	4.1	3.8	3.8	3.7	3.74	73M	4.0
Flandria	NZ	73	235	71	19	5.0	3.2	3.8	4.0	3.1	3.8	4.0	3.9	3.7	3.5	3.7	3.67	40L	5.0
Royal Chant.	NK	80	305	75	21	5.9	3.9	3.5	3.9	3.5	3.0	3.8	3.8	4.0	3.6	3.6	3.66	43L	4.0

5 = Most Desirable

Listed in order of colour marks received.

56 t/ha = 25 t/a = 1000 bushels/a

Rusty Root was observed in the cultivars Gold King and Danvers 126. Giant 114 was lightly affected.

The cultivar Oranza developed 20% hollow core in the larger roots.

Berdino had a poor stand.

CARROT CULTIVAR ADAPTATION TRIAL - 1987 - PROCESSING TYPES

Cultivar	Source	Marketable Yield t/ha	Weight/Root (g)	% Marketable	Roots		Uniformity	Smoothness	Crown Shape	Core Size	Resistance to Greening	Colour				Uniformity	Score	% Horizontal Lesions and Degree	Slicer
					Length (cm)	Width (cm)						External	Cortex	Camb. Zone	Core				
Nandrin	BEJO	102	343	92	25	4.9	4.7	3.3	4.0	4.3	4.0	4.7	4.7	4.3	4.7	4.7	4.34	40M	5.0
Ch. Comet	NZ	18	354	74	17	6.0	3.3	3.7	3.3	3.7	3.3	3.3	3.7	3.7	3.3	4.0	3.53	20VL	1.7
Fischenicher	NZ	53	392	53	14	5.3	2.3	3.3	4.0	4.0	3.3	4.3	4.3	3.3	3.3	3.3	3.54	30M	3.3
Flam	NZ	64	312	74	23	5.4	3.3	3.0	4.3	3.7	3.3	4.3	4.7	4.3	4.0	3.7	3.86	40VL	1.3
Flarino	NZ	96	248	86	19	5.8	3.7	4.0	3.0	3.7	4.0	4.3	5.0	4.0	3.0	3.3	3.80	50L	1.3
Karaf	NZ	47	392	75	26	5.6	4.0	2.7	4.3	3.7	3.0	4.3	4.7	4.3	4.3	4.3	3.96	30L	2.7
Prechant	NZ	45	395	67	20	5.8	2.3	3.0	3.0	4.3	2.7	4.3	4.7	4.0	4.0	3.7	3.60	40L	1.3
Rosal	NZ	65	464	66	23	5.5	3.7	2.3	4.3	3.7	2.3	4.3	4.7	3.7	3.7	4.0	3.67	40M	4.0
Flaxton	Swy	119	418	86	25	5.0	3.0	3.0	4.0	3.3	3.0	4.3	4.3	4.3	2.7	3.3	3.52	20L	3.0
Florence	Swy	78	369	98	25	5.1	3.7	3.0	3.0	4.3	3.7	4.7	4.7	4.7	3.7	4.0	3.95	60M	3.7
Laranda	Swy	111	404	72	24	4.6	4.0	3.7	3.3	3.7	3.3	4.3	4.7	4.3	3.3	3.3	3.79	50L	4.0
Eagle	Sun	24	392	98	21	6.0	4.0	3.7	3.7	4.3	3.7	4.3	4.7	3.7	4.0	4.0	4.01	20M	1.7
Falcon	Sun	80	309	88	23	4.3	4.3	4.0	4.0	3.7	3.7	3.7	4.0	3.0	3.0	2.7	3.61	80M	5.0
Sunre 3129	Sun	107	357	91	25	4.7	4.0	4.0	3.7	4.3	3.3	4.3	4.3	4.0	4.3	4.3	4.05	70L	4.0
Mark II	FM	137	297	78	18	6.0	4.0	4.0	3.7	4.3	4.0	4.7	4.7	4.3	4.0	4.3	4.20	20VL	1.0

5 = Most Desirable

Chantenay Comet, and Eagle - poor stand.

Arizona - no stand, not listed

Rusty Root: The cultivar Karaf was severely affected while Laranda and Fischenicher were lightly affected.

Blight: Most cultivars had good tolerance to leaf blights and received a mark of 4 or 5, with the exception of Flarino, which received a mark of 3.

CARROT CULTIVAR STORAGE TRIAL 1986-87 - PROCESSING TYPES

Cultivar	Source	% Marketable	% Weight Loss In Storage	% Decay	Degree * of Decay
Spartan Bonus 80	Asg	85	9	6	3.3
Flarino	NZ	84	9	7	3.3
Casey (XPH 869)	Asg	81	9	10	3.7
Dess Dan	Sun	81	10	9	3.0
XPH 875	Asg	80	10	10	2.3
Camden	Sun	77	10	13	2.7
Mark II (FMX-105)	FM	74	8	18	2.3
Flamant	NZ	73	9	18	2.7
A & C #126	A&C	73	7	20	2.3
Processor II	Sto	71	10	19	3.0
Giant 114	PES	70	7	23	2.3
Red Core Chantenay	Asg	63	8	29	2.3
Arco 294	Sun	63	10	27	2.0
Arco 209	Sun	50	10	40	1.7
Average		73	9	18	2.6

\* 5 = Most Desirable, no decay

Harvested October 23, 1986, placed in a cold storage where the relative humidity was kept at 95-100%. On February 19, 1987, the samples were moved to a Filacell storage where the relative humidity was kept at 98%.

Replicated 3 times.

Judged: June 22, 1987

Total storage period = 34 1/2 weeks.

Listed in order of % marketable.

LONG TERM AVERAGES - CARROT CULTIVAR STORAGE TRIAL - PROCESSING TYPES

Cultivar	Source	# Years Tested	% Marketable	% Weight Loss	% Decay	Degree* of Decay
Spartan Premium	Sto	2	90	7	3	4.00
Danvers Gold	SS	3	87	8	5	3.63
Spartan Winner	Sto	3	85	10	5	4.00
Gold King	NK	2	85	8	7	3.35
Spartan Deluxe	Cro	3	85	7	8	3.13
Can Pak	Sun	3	84	9	7	3.67
Dess Dan	Sun	7	84	10	6	3.58
Spartan Classic	Cro	4	84	7	9	3.43
Spartan Bonus	Sto	6	82	8	10	3.42
Spartan Bonus 80	Asg	5	82	10	8	3.40
Red Cr. Chantenay	Asg	5	82	7	11	3.08
Camden	Sto	3	81	11	8	3.07
XPH 875	Asg	3	79	11	10	2.43
A&C 126	A&C	3	77	11	12	3.27
Oranza	BEJO	2	77	7	16	2.85
Triple Gold	Jung	3	76	10	14	3.67
Casey	Asg	4	76	9	15	3.32
King Midas	FM	2	76	10	14	3.00
Processor II	Sto	3	75	12	13	2.93
Midas Touch	FM	3	74	10	16	3.47
Lucky's Gold	Jung	2	72	12	16	3.35
Danvers 126	Asg	4	72	9	19	2.68
Chantenay Red Cored	A.Ch.	2	68	11	21	3.35
Tahoe	NK	2	67	14	19	3.00
Royal Danvers	Agw	3	66	9	25	2.70
Giant 114	PES	3	63	13	24	3.47

\* 5 = Most Desirable

Listed in Order of % Marketable

Storage period was usually 8 months.

LONG TERM AVERAGE OF CARROT CULTIVARS - PROCESSING TYPES

Cultivar	Source	# Years Tested	LTA		LTA Colour	LTA Score
			Marketable t/ha	Yield t/a		
Berlicum Bierma	NZ	3	64.0	28.7	4.23	3.84
Processor II	Sto	4	88.7	39.9	4.21	3.96
Dess Dan	Sto	12	77.4	34.8	4.13	3.97
Danvers Gold	A.Ch.	2	73.4	32.7	4.12	3.88
Triple Gold	Jung	4	58.0	25.9	4.11	3.98
Spartan Bonus 80	Asg	7	69.1	30.9	4.11	3.97
Tahoe	Agri	3	73.7	32.9	4.10	3.98
Camden	Sto	4	73.7	32.9	4.10	3.98
Spartan Bonus	Sto	11	75.0	33.5	4.08	3.94
A&C 126	A&C	3	71.3	31.9	4.03	3.92
XPH 875	Asg	4	76.8	34.3	4.03	3.88
Casey	Asg	5	66.4	29.6	4.00	3.93
Spartan Delux	Jung	6	69.0	30.8	4.00	3.92
Lucky's Gold	Glo	4	52.9	23.6	3.99	4.20
Spartan Winner	Jung	8	65.0	29.0	3.98	3.89
Midas Touch	FM	7	64.4	28.8	3.95	3.90
All Season Cross	Tak	4	76.0	34.2	3.95	3.84
Mark II	FM	6	77.1	34.4	3.95	3.81
XPH 985	Asg	3	79.7	35.6	3.95	3.77
King Midas	FM	6	61.4	27.4	3.94	3.83

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LONG TERM AVERAGE OF CARROT CULTIVARS - PROCESSING TYPES - continued

Cultivar	Source	# Years Tested	LTA		LTA Colour	LTA Score
			Marketable t/ha	Yield t/a		
Giant 114	PES	4	85.0	38.3	3.92	3.65
Can-Pak	Sun	6	66.3	29.6	3.90	3.81
Spartan Classic	Cro	9	78.7	35.1	3.88	3.86
Ch. Red Cored	A.Ch.	6	71.5	31.9	3.88	3.70
Royal Danvers	Agw	4	70.0	31.2	3.86	3.84
Oranza	BEJO	4	72.2	32.5	3.86	3.69
Berlicum Berlinda	Asm	3	72.0	32.1	3.84	3.62
Spartan Premium	Cro	7	70.6	31.5	3.83	3.79
Danvers 126	Asg	11	65.7	29.5	3.79	3.66
Royal Chantenay	Sto	3	76.0	34.2	3.75	3.66
Gold King	NK	5	70.7	31.8	3.72	3.60
Chanton	Sun	2	79.8	35.6	3.71	3.54
Red Core Chantenay	Asg	9	72.8	32.5	3.66	3.55

5 = Most Desirable

Listed in order of colour

NOTES

EARLY CELERY CULTIVAR MAIN TRIAL - 1987

Cultivar	Source	Marketable t/ha	% Trim Loss	Petiole Length (cm)	Total Length (cm)	Diameter (cm)	Compactness	Boron Deficiency	Nodal Cracking	Yellow Leaves	General Rating	% Seeders	Tolerance to Bolting	Best Harvest	Date
Fla 683	A&C	101	37	27	59	9.3	3.3	4.9	5.0	3.5	3.9	3	2.7	July	20
Fla 683	RS	100	35	27	61	8.3	3.6	4.6	5.0	4.0	4.0	0	3.7	July	23
Ventura	Sto	98	38	29	63	8.8	3.7	4.6	4.9	3.2	4.3	0	4.5	July	23
Tall Green Light	HM	97	41	29	59	9.6	3.3	4.9	5.0	2.8	3.4	7	1.9	July	28
Imp. Utah 52-70	Sto	92	43	31	59	8.7	4.0	3.8	4.8	3.4	3.9	0	3.3	July	23
Fla 683	Sto	90	42	26	59	8.6	3.3	4.9	4.9	3.5	3.9	0	3.6	July	28
Cry 004	HM	89	39	26	57	8.3	3.9	3.9	4.8	2.8	4.0	0	4.3	July	23
Florida 683K	Sun	88	38	27	59	9.3	2.8	4.8	4.9	3.1	3.4	3	3.5	July	28
Imp. 52-70R	A&C	86	44	31	62	8.9	3.7	3.7	4.6	3.7	3.9	7	2.9	July	28
Deacon	HM	83	40	26	59	8.3	3.8	4.4	4.6	2.9	3.6	0	4.0	July	28
Cry 003	HM	83	41	27	60	9.0	3.5	4.3	3.8	3.5	3.8	0	4.2	July	28
Strain 2-14	A&C	82	41	29	61	8.5	3.6	3.9	4.7	3.9	4.3	0	4.1	July	20
Tall U. 52-10R	FM	81	44	29	63	8.3	3.8	3.9	4.9	3.3	3.9	3	3.5	July	23
Tendercrisp	Sto	80	42	28	56	8.1	3.4	3.1	4.4	3.5	3.5	0	5.0	July	28
Bishop	HM	79	37	29	55	7.9	4.3	4.0	4.4	3.9	4.0	0	5.0	July	20
Tall U. 52-70 HK	Sun	79	42	28	58	7.8	3.4	4.9	4.9	2.6	3.5	3	4.0	July	23
Clean Cut	HM	76	49	29	57	7.9	4.2	3.8	4.8	3.5	3.8	0	4.1	July	23
FM 1218	FM	75	36	24	61	8.3	4.0	3.8	4.1	2.7	3.8	0	4.9	July	28
Advantage	MSU	74	41	30	62	8.1	3.8	4.7	5.0	4.9	4.2	0	5.0	July	28
Companion	MSU	72	49	34	68	7.5	4.2	5.0	4.8	3.5	4.2	43	1.0	July	23
Pilgrim	MSU	67	45	31	60	8.1	3.7	3.0	5.0	4.6	3.7	0	5.0	July	20

5 = Most Desirable

Listed in Order of Marketable t/ha

67 t/ha = 30 t/a = 1000 cartons/a

EARLY CELERY CULTIVAR ADAPTATION TRIAL - 1987

Cultivar	Source	Marketable t/ha	% Trim Loss	Petiole Length (cm)	Total Length (cm)	Diameter (cm)	Compactness	Boron Deficiency	Nodal Cracking	Yellow Leaves	General Rating	% Seeders	Tolerance to Bolting
FM 1217	A&C	100	37	28	49	8.4	3.3	3.3	5.0	3.0	4.3	0	3.9
Summit	FM	91	35	24	52	8.4	3.0	2.3	4.7	3.7	3.3	0	5.0
Surepak	FM	94	48	33	59	8.6	4.0	2.7	4.7	3.7	3.7	0	4.3
Tall U. 52-75	FM	95	32	23	44	8.8	3.7	2.3	5.0	3.0	3.0	0	4.6
Tall U. 52-75 Imp.	FM	95	32	25	42	8.8	4.0	2.7	4.3	4.3	4.3	0	4.5
June Belle	Sun	97	34	23	51	9.8	3.7	3.7	5.0	3.0	4.0	0	4.1

5 = Most Desirable

67 t/ha = 30 t/a = 1000 cartons/a

Management Procedures.

Seeded: On February 27, the cultivars were seeded in the greenhouse. Transplanting to flats took place on March 6.

Fertilizer: - 500 kg/ha 16-14-30 + 25 kg Borax.  
- 2 side dressings of 100 kg/ha am. nitrate (33%).

Transplanting: The cultivars were transplanted to the field on May 7 at a spacing of 68cm X 15cm. The Main Trial was replicated 3 times.

Minor Elements: Solubor and Calcium Nitrate were applied several times as a foliar spray.

Evaluation.

Evaluation took place on July 20, 23 and 28. One replication was judged per date.

Marketable t/ha: The weight after the stalks were trimmed and cut to a length of 36cm (14").

Nodal Cracking: Horizontal cracking on or below the nodes which is not caused by Boron deficiency.

Best Harvest Date: The date on which the highest marketable yield was obtained.

EARLY HEAD LETTUCE CULTIVAR MAIN TRIAL - 1987

Cultivar	Source	Days To Harvest	Wt./Carton 18 Heads (kg)	% Marketable	Reason Non-Marketable	Diameter (cm)	% Tipburn	Bottom Rot	Firmness	Uniformity	Internal Stem Length (cm)	Overall Rate	Comments
Cannon (XP 993)	Asg	69	16	77	s.,br.	15	17	3.0	3.8	3.7	4	3.7	Brown rib
Classic (XP 5171)	Asg	67	19	100		15	3	3.9	4.0	4.0	5	4.0	
Fame (XP 5172)	Asg	68	19	90	s.	16	3	3.5	3.8	3.8	5	3.7	Brown rib
Ithaca 989	Asg	67	20	90	s.	16	0	3.9	3.2	3.7	6	3.5	
Emperor	FM	71	19	70	s.	15	63	3.5	3.8	3.8	6	2.8	Oblong shape
Empress	FM		No	Emergence									
South Bay	FM	63	16	93	s.	14	0	4.6	3.8	4.0	4	3.7	Nice but small
Bounty	PETO	70	19	90	s.	16	23	4.1	2.0	3.4	15	1.0	Unsuitable
Ithaca	Sieg	66	21	93	sl.,s.	16	0	3.7	3.6	3.7	6	3.6	
Frosty	Sto	73	32	47	sl.,s.	17	100	3.2	2.7	3.9	10	1.0	Unsuitable
Green Lake	Sto	71	16	70	s.,br.	15	17	3.6	3.8	3.3	6	3.5	
Great Lakes	Sto	73	19	57	s.,sl.	15	100	3.2	2.3	2.7	13	1.0	Unsuitable
Minilake	Sto	63	17	100		15	0	4.0	3.9	4.2	5	4.1	Light weight
Pennlake	Sto	70	18	70	br,sl.	16	93	3.0	3.1	3.2	10	1.3	Brown rib
Raleigh	UF	67	16	97	se.	14	13	3.8	3.8	4.0	6	3.7	
Shawnee	UF	63	16	93	s.	13	0	4.2	3.9	4.1	4	4.0	Slightly oblong

Seeded May 8, 1987. Replicated 3 times. Spacing 43cm X 30cm

Legend: 5 = Most Desirable  
 sl. = slime  
 br. = bottom rot

wt./carton 18 kg = 40 lbs.  
 s. = soft  
 se. = seeder

Unsuitable = Cultivar not tolerant to climatic conditions in the Holland Marsh area.

LATE HEAD LETTUCE CULTIVAR MAIN TRIAL - 1987

Cultivar	Source	Days to Harvest	Wt/Cartron 18 Heads (kg)	% Marketable	Reason Non-Marketable	Diameter (cm)	% Tipburn	Bottom Rot	Firmness	Uniformity	Internal Stem Length (cm)	Overall Rate	Comments
Cannon (XP 993)	Asg	62	22	83	sl.,s.	16	7	3.7	4.3	4.3	6	4.1	
Classic (XP 5171)	Asg	60	19	93	sl.,s.	16	3	3.9	3.9	3.9	5	4.1	
Fame (XP 5172)	Asg	62	22	77	s.,sl.,	16	20	3.4	4.1	3.9	6	3.2	
Ithaca 989	Asg	61	22	90	sl.,s.	16	7	3.8	4.3	4.1	7	4.1	
Emperor	FM	61	22	83	sl.,s.	16	43	3.2	4.2	3.9	5	2.6	
South Bay	FM	60	19	90	sl.,s.	16	7	4.0	4.2	3.8	6	3.8	
Bounty	PETO	63	20	40	se.	16	0	4.5	3.0	3.5	15	1.5	Unsuitable
Ithaca	Sieg.	59	21	97	sl.	15	7	4.1	3.9	3.6	7	3.8	
Frosty	Sto	63	27	70	sl.,se.	18	28	3.3	3.1	3.1	9	1.7	Unsuitable
Green Lake	Sto	61	19	77	sl.,s.	15	0	4.0	4.2	4.4	7	3.6	
Great Lakes	Sto	63	21	33	se.,br.	16	4	4.2	3.2	2.9	12	1.3	
Minilake	Sto	57	17	83	s.	15	0	4.1	4.4	4.5	6	4.6	
Pennlake	Sto	63	25	40	se.,sl.	17	67	3.5	3.8	4.1	12	1.3	
Raleigh	UF	59	18	87	sl.,s.	16	10	4.2	4.2	4.2	8	3.7	
Shawnee	UF	57	17	97	s.	15	0	4.1	4.1	4.2	6	4.6	
Saladcrisp	CU	60	21	83	sl., s.	16	0	3.7	4.7	4.4	7	4.2	

Seeded July 2, 1987. Replicated 3 times. Spacing 43cm X 30cm

Legend: 5 = Most Desirable  
sl. = slime  
br. = bottom rot

Wt./carton 18 kg = 40 lbs  
s. = soft  
se. = seeder

Unsuitable = Cultivar not tolerant to climatic conditions in the Holland Marsh area.

EARLY HEAD LETTUCE CULTIVAR ADAPTATION TRIAL - 1987

Cultivar	Source	Days to Harvest	Wt/Carton 18 Heads (kg)	% Marketable	Reason Non-Marketable	Diameter (cm)	% Tipburn	Bottom Rot	Firmness	Uniformity	Internal Stem Length (cm)	Overall Rate	Comments
Empire	FM	75	18	20	s.	17	100	3.7	3.0	1.0	7	1.0	Unsuitable
Ithaca	FM	71	21	100		17	0	4.0	4.0	4.0	8	3.7	
Raleigh	FM	72	14	90	s.	15	10	3.3	3.3	3.7	7	3.3	
FM-1577	FM	75	16	60	s.	15	100	3.7	3.3	3.0	10	1.0	Unsuitable
FM-1638	FM	75	23	60	s.	16	60	4.3	3.7	3.0	13	2.7	Unsuitable
NIZ 32-120	NZ	72	19	100		16	60	3.3	3.0	3.7	11	2.0	Unsuitable
Ithaca	Sto	71	18	90	s.	16	0	3.7	3.3	3.7	8	3.3	
South Bay	Sto	69	16	70	sl.	14	20	3.0	4.0	3.7	6	3.3	
South Bay	UF	65	14	100		14	0	3.0	3.7	3.7	4	3.7	
1265	UF	65	20	100		16	0	4.0	4.0	3.7	5	4.3	
1366	UF	69	16	90	br.	14	10	3.0	4.0	4.0	6	4.0	
1443	UF	68	18	100		15	0	2.7	4.0	4.0	5	3.7	
47098	UF	68	18	90	sl.	15	20	3.0	4.0	3.7	5	4.0	
48060	UF	75	21	100		17	30	3.0	3.0	4.0	9	2.0	
49674	UF	68	20	70	s.,sl.	15	0	3.7	4.3	3.7	6	3.7	
49688	UF	69	19	90	br.	16	100	3.7	4.0	4.0	8	1.7	
50011	UF	68	20	100		16	0	3.7	3.7	4.0	8	3.7	Thick int. stem
60167	UF	72	17	70	s.,sl.	16	20	3.3	3.0	3.0	11	2.0	
60745	UF	72	17	70	s.	16	20	3.0	3.3	3.0	11	2.0	

Seeded May 8, 1987. No replication. Spacing 43cm X 30cm

Legend:

5 = Most Desirable  
sl. = slime  
br. = bottom rot

wt./carton 18kg = 40 lbs.  
s. = soft

Unsuitable = Cultivar not tolerant to climatic conditions in the Holland Marsh area.

LATE HEAD LETTUCE CULTIVAR ADAPTATION TRIAL - 1987

Cultivar	Source	Days to Harvest	Wt/Carton 18 Heads (kg)	% Marketable	Reason Non-Marketable	Diameter (cm)	% Tipburn	Bottom Rot	Firmness	Uniformity	Internal Stem Length (cm)	Overall Rate	Comments
Empire	FM	64	20	20	se.,s.	17	0	3.7	3.7	3.0	6	1.0	
Ithaca	FM	62	21	80	sl.	15	20	3.0	4.7	4.7	6	3.3	
Raleigh	FM	57	15	90	s	15	0	4.3	4.0	4.3	6	4.0	
FM-1577	FM	62	23	70	sl.,s	17	60	3.3	4.0	4.0	10	2.0	
FM-1638	FM	62	22	70	s	18	10	3.3	3.7	3.7	9	3.0	Ribby
NIZ 32-120	NZ	60	24	80	se.	17	50	3.7	3.3	3.0	13	2.0	
Ithaca	Sto	57	19	100	-	14	0	4.7	3.7	4.0	6	4.0	
South Bay	Sto	60	20	100	-	15	0	4.0	4.7	4.3	5	4.7	
South Bay	UF	62	20	70	s.,sl.	16	10	4.0	4.7	4.3	6	4.0	
1265	UF	60	22	90	sl.	16	0	4.0	5.0	4.7	6	4.7	
1366	UF	62	19	80	sl.,s.	16	0	4.3	4.7	4.7	6	4.3	
1443	UF	62	22	100	-	16	70	3.3	4.3	4.0	6	2.0	
47098	UF	60	19	100	-	16	0	4.3	3.7	4.0	6	4.3	
* 48060	UF	62	20	80	s.	17	0	3.7	2.7	4.0	8	3.3	Thick stem
* 49674	UF	64	19	80	s.	15	0	4.0	4.3	3.7	9	3.7	
* 49688	UF	57	16	90	sl.	15	0	4.3	4.0	4.7	8	4.3	
* 50011	UF	62	23	100	-	16	0	3.3	3.7	3.3	7	3.3	Thick stem
* 60167	UF	60	18	90	s.	14	0	4.0	3.3	3.7	8	3.3	
* 60745	UF	62	15	60	s.	15	0	4.0	2.7	3.3	6	3.3	Thick stem

Seeded July 2, 1987. No replication. Spacing 43cm X 30cm

Legend: 5 = Most Desirable                      wt./carton 18 kg = 40 lbs  
 sl. = slime    s. = soft  
 br. = bottom rot                                      se. = seeder

\* These cultivars have good lower leaf clearance



EARLY ROMAINE LETTUCE CULTIVAR TRIALS - 1987

Cultivar	Source	Days to Harvest	Wt./Carton 18 Heads (kg)	% Marketable	Reason Non-Marketable	Diameter (cm)	% Tipburn	Bottom Rot	Firmness	Uniformity	Internal Stem Length (cm)	Overall Rate	Comments
<u>Main Trial - Seeded May 8, 1987 - Replicated 3 Times</u>													
Valmaine	Asg	63	14	100	-	13	23	4.6	3.6	3.4	7	3.2	Brown Rib
Green Towers	HM	62	16	100	-	13	7	4.7	3.7	4.3	8	3.9	
Cartan	NZ	63	16	100	-	13	57	4.4	3.7	4.1	8	3.3	
Roli	NZ	61	15	83	tb.	12	63	5.0	3.9	4.8	11	2.9	
Parris Island Cos	RS	62	15	100	-	13	17	4.9	3.7	3.9	7	3.8	Weight not Uniform
Corsica	Sieg	62	16	100	-	13	13	4.6	3.6	3.7	8	3.9	
Parris Island Cos	Sto	63	15	100	-	13	57	4.0	3.7	4.1	8	2.9	Brown Rib
<u>Adaptation Trial - No Replciation</u>													
Parris Island Cos	Asg	63	13	100	-	13	0	5.0	4.0	4.3	8	4.3	Brown Rib
Parris Island Cos	FM	63	17	100	-	13	10	4.3	4.0	4.3	8	4.3	
Corsica	RS	63	18	100	-	14	0	4.7	4.3	4.7	8	4.7	Excellent
Valmaine	Sto	61	16	100	-	14	40	3.7	4.0	3.3	7	3.7	
43007	UF	73	12	100	-	11	0	4.7	3.7	3.7	8	3.3	Small
43008	UF	66	19	100	-	14	20	3.0	4.3	3.7	9	4.0	
49678	UF	73	-	20	s.	17	25	5.0	4.0	-	13	4.3	Poor Emergence
50105	UF	63	17	100	-	13	30	4.7	4.3	4.7	7	4.0	
60186	UF	66	15	100	-	13	100	4.7	4.3	4.3	8	2.0	Compact, Short
50100	UF	66	17	100	-	14	0	4.7	4.3	4.7	18	4.3	Harvested Late

Spacing 43cm X 25cm

Legend: 5 = Most Desirable  
 tb. = tipburn  
 s. = soft

Wt./carton 18 heads: 15 kg = 33 lbs.

LATE ROMAINE LETTUCE CULTIVAR TRIALS - 1987

Cultivar	Source	Days to Harvest	Wt./Carton 18 Heads (kg)	% Marketable	Reason Non-Marketable	Diameter (cm)	% Tipburn	Bottom Rot	Firmness	Uniformity	Internal Stem Length (cm)	Overall Rate	Comments
<u>Main Trial - Seeded July 2, 1987 - Replicated 3 times</u>													
Valmaine	Asg	55	12	100	-	13	0	5.0	3.3	3.7	10.8	3.6	
Green Towers	HM	51	11	100	-	12	0	5.0	4.2	4.1	9.3	4.0	
Cartan	NZ	53	12	100	-	13	0	4.9	3.7	3.3	12.1	3.7	
Roli	NZ	50	11	100	-	12	40	5.0	4.1	3.9	13.3	3.3	
Corsica	Sieg.	53	12	100	-	14	0	5.0	4.1	3.7	10.3	4.0	
Parris Island Cos	Sto	53	11	100	-	13	0	4.9	3.2	3.7	12.6	3.1	
<u>Adaptation - No Replication</u>													
Parris Island Cos	Asg	53	11	100	-	13	0	4.7	4.0	3.7	12.0	3.7	
Parris Island Cos	FM	53	9	100	-	11	0	5.0	3.3	1.7	8.0	2.7	
Corsica	RS	54	11	100	-	12	0	5.0	3.7	4.2	11.7	4.2	External suckers
Valmaine	Sto	53	11	100	-	13	0	5.0	3.7	3.0	12.6	3.3	
43007	UF	68	10	100	-	12	0	5.0	4.3	3.7	6.2	4.0	
43008	UF	53	15	100	-	15	0	5.0	4.3	4.3	11.4	4.3	Heavy
49678	UF	No Emergence											
50105	UF	53	14	100	-	14	0	5.0	4.7	4.3	9.0	4.7	Very nice
60186	UF	55	12	100	-	13	0	5.0	4.3	4.3	7.8	4.3	
50100	UF	53	13	100	-	13	0	5.0	4.0	4.3	19.5	3.7	

Spacing 43cm X 25cm

Legend: 5 = Most Desirable

Wt./carton 18 heads: 15 kg = 33 lbs.

Management Procedures.

Fertilizer: 650 kg/ha 15-5-25 + 30 kg/ha copper sulfate.

Seeding: On May 4 and 5, the cultivars were seeded at 46 to 52 seeds/m depending on germination, in rows spaced 43 cm apart. A V belt seeder equipped with a 5 cm wide scatter shoe was used. The seed was coated with Pro Gro, and Lorsban 15G was applied at 16 kg/ha in the seed furrow. The Main Trial was replicated three times.

Weed Control: Pre-emergence: 3 L/ha Gramoxone  
Loop Stage: 13.8 L/ha Radox + 5.5 L/ha CIPC tank mixed  
Post-emergence: 3.5 L/ha Radox at the 1 leaf stage  
140 ml/ha Goal at the 2 and 4 leaf stage  
5.6 L/ha Radox at the 6 leaf stage  
420 ml/ha Goal at the 6 and 8 leaf stage  
5 L/ha Radox + 2.5 L/ha CIPC at the 7 leaf stage  
1.6 L/ha Poast + 3.3 L/ha Assist at the 7 leaf stage

MH60 SG was applied at 5 kg/ha in 550 L/ha water on August 13.

Harvest: The trials were pulled September 11 and harvested on September 24.

Storage: The samples were placed in a forced air and temperature controlled storage.

Evaluation

All trials were evaluated during the first week of December, after 9 weeks in storage.

Marketable Yield: # 1 smalls (32-44mm) and # 1 large (over 44mm).

Weight/bulb (g): The total weight in grams of all bulbs divided by the total number of bulbs.

Firmness A: Evaluated on September 24 at harvest.

Firmness B: Evaluated the first week of December after artificial curing and drying.

Score: The average of the marks from Firmness B to Neck finish.

5 = Most Desirable

NOTE: An Observation Trial of 82 numbered cultivars was grown for the benefit of the breeders.  
No evaluation was done by us.

ONION CULTIVAR MAIN TRIAL - 1987

Cultivar	Source	Days to Maturity	Stand/Meter	Marketable Yield		% No. 1 Smalls	% Culls	Weight/Bulb (g)	Firmness		Uniformity		Colour	Skinning	Neck Finish	Score
				t/ha	b/a				A	B	Size	Shape				
- Hustler (HXP 2610)	HM	105	22	64	1138	1	7	135	4.2	3.6	3.7	3.9	3.4	3.6	4.0	3.70
- Columbia	FM	106	36	72	1277	8	3	87	4.4	3.7	3.7	3.7	3.8	3.2	4.1	3.70
- Autumn Splendor	JHK	106	28	61	1089	3	5	100	4.0	3.8	3.4	2.9	3.8	3.6	4.0	3.58
- Eskimo	Sto	107	30	74	1310	3	1	107	4.3	3.7	3.5	3.8	3.9	3.3	4.2	3.73
- Norstar	Tak	108	26	77	1377	2	4	133	3.9	3.1	3.5	3.9	3.1	3.2	4.6	3.57
- Tarmagon	Sto	109	30	84	1500	2	1	120	4.5	3.8	4.1	4.2	4.0	3.3	4.2	3.93
- Taurus	Asg	111	34	63	1115	5	9	87	4.3	3.4	3.7	3.7	3.7	3.7	4.0	3.70
Trapp # 8	E.J.	113	27	67	1191	3	2	108	4.3	3.7	3.7	3.9	4.0	3.7	4.0	3.83
- Capable	Sun	113	27	73	1305	3	1	116	4.1	3.4	3.4	3.5	3.3	3.4	3.9	3.48
Bullet	FM	114	30	81	1433	3	1	119	4.5	3.8	3.9	3.7	3.9	3.8	3.9	3.83
Bingo	Sto	114	29	78	1384	3	3	118	4.3	3.9	3.7	3.7	3.9	3.8	4.0	3.83
Super Spice II	Sto	114	28	63	1123	4	3	99	4.3	3.8	3.8	3.6	3.7	4.0	4.0	3.82
Sassy Brassy	FM	116	30	75	1340	3	3	113	4.2	3.4	3.5	3.6	3.7	3.9	3.9	3.67
XPH 3282	Asg	117	30	66	1169	4	9	102	4.1	3.7	3.9	4.0	4.0	4.0	4.0	3.93
- Sweet Sandwich	Sto	117	29	86	1532	3	1	129	4.0	3.6	3.4	3.7	3.7	4.2	3.8	3.73
- Copra	A.Ch.	118	29	74	1320	2	1	111	4.4	3.9	4.2	4.1	4.1	4.3	4.0	4.10
- Cuprum	Sun	118	30	84	1488	2	2	121	4.3	3.8	3.7	3.7	3.7	3.9	3.8	3.77
Suntan	Swy	118	27	74	1310	3	1	116	4.5	3.6	3.7	3.9	3.5	4.0	4.0	3.78
- Flame (XPH 3272)	Asg	118	34	85	1511	4	7	114	4.4	3.4	3.7	3.1	3.5	4.0	3.7	3.57
Russet	Sto	118	29	77	1363	3	2	116	3.8	3.2	3.2	3.0	3.4	3.5	3.7	3.33
Paragon	Sun	120	30	81	1436	3	2	121	4.3	4.1	3.8	3.7	4.1	4.0	4.1	3.97
Sleeping Beauty	FM	121	28	71	1268	4	1	112	4.2	3.9	3.7	2.9	4.0	4.1	3.8	3.73
Rip Van Winkle	FM	121	26	70	1242	4	2	117	4.1	3.9	3.3	2.7	4.0	4.0	3.9	3.63
Vanguard (CRk N51)	E.J.	124	33	75	1331	6	2	99	4.3	3.9	3.6	3.7	3.7	4.0	3.9	3.80
Superior	A&C	128	27	83	1474	1	5	139	4.0	3.3	3.5	3.1	3.6	4.0	3.7	3.53

5 = Most Desirable

Listed in Order of Days to Maturity

Legend:

Stand/Meter: 33 bulbs/m = 10 bulbs/ft  
Marketable Yield: 56 t/ha = 25 t/a = 1000 bags/acre  
Weight/Bulb (g): A bulb 57 mm (2 1/4") in diameter weighs 100 g  
A bulb 64 mm (2 1/2") in diameter weighs 135 g

ONION CULTIVAR ADAPTATION TRIAL - 1987

Cultivar	Source	Days to Maturity	Stand/Meter	Marketable Yield		% No. 1 Small's	% Culls	Weight/Bulb (g)	Firmness		Uniformity		Colour	Skinning	Neck Finish	Score
				t/ha	b/a				A	B	Size	Shape				
Keepsweet II	A&C	118	35	103	1839	0	6	139	4.3	3.3	3.3	3.3	3.3	3.7	3.7	3.43
Gambler	Agw	118	24	69	1235	2	1	128	4.0	3.7	3.7	3.3	3.3	3.7	3.7	3.57
Spartan Banner 80	Agw	118	28	77	1367	1	4	125	4.3	3.7	3.7	3.7	3.7	4.3	3.7	3.80
Aries	Asg	107	24	63	1121	1	5	121	4.3	3.7	3.7	4.0	4.0	3.7	3.7	3.80
Rocket	Asg	107	26	60	1073	2	1	102	4.0	4.0	4.0	4.0	4.0	3.7	4.0	3.95
XPH 3243	Asg	107	27	61	1080	5	1	98	4.0	3.7	3.3	3.7	3.7	3.3	4.0	3.62
XPH 3246	Asg	109	35	65	1159	9	2	82	4.3	4.3	4.0	4.0	3.7	4.0	4.0	4.00
XPH 3311	Asg	111	30	91	1623	1	1	132	4.0	4.0	4.0	2.7	3.3	4.0	4.0	3.67
XPH 3330	Asg	118	39	81	1435	7	5	93	4.0	4.0	3.7	4.0	4.3	4.3	4.0	4.05
XPH 3370	Asg	109	25	71	1260	3	1	121	3.7	4.0	3.3	3.7	4.3	4.0	4.0	3.88
XPH 3407	Asg	114	39	90	1600	5	1	100	4.7	3.7	3.3	3.3	4.0	3.7	4.0	3.67
XPH 3678	Asg	118	33	85	1517	1	3	117	4.0	4.0	4.3	3.3	3.7	3.7	4.0	3.83
XPH 3679	Asg	114	41	78	1396	13	0	83	4.3	3.3	2.7	3.3	3.0	3.3	4.0	3.27
XPH 3680	Asg	116	46	100	1785	5	1	95	3.7	3.7	3.3	2.3	3.0	3.0	4.0	3.22
Albion	BEJO	107	26	44	789	1	34	111	5.0	4.0	3.7	3.7	W	3.7	4.0	3.82
Golden Treasure	Cro	114	32	64	1146	7	3	89	4.0	3.3	3.3	3.3	3.7	4.0	3.7	3.55
Sunglow	Cro	107	35	82	1467	4	2	104	3.7	3.0	3.3	2.7	3.7	3.7	3.7	3.35
Trapp # 6	E.J.	103	32	53	935	12	2	73	5.0	3.7	3.7	4.0	4.3	3.7	4.0	3.90
Hi-Score (CRK N50)	E.J.	107	29	63	1113	4	3	96	5.0	4.0	3.7	3.7	3.7	3.7	4.0	3.80
Bronze Reserve	FM	111	30	58	1032	4	2	83	5.0	4.0	4.0	4.0	4.3	4.0	4.3	4.10
Class Pak	FM	114	30	78	1390	1	4	119	3.7	3.7	4.0	3.7	3.3	3.0	3.7	3.57
Gibraltar	FM	114	30	69	1235	2	1	99	4.3	4.0	3.7	4.0	4.3	4.3	4.0	4.05
Gold Mine	FM	111	34	78	1381	6	1	99	4.7	4.0	3.7	3.3	4.0	3.7	4.0	3.78
North Star	FM	114	31	65	1164	5	9	99	4.7	4.0	3.7	3.7	4.3	4.0	3.7	3.90
Buccanner Improved	HM	114	32	82	1451	1	6	117	5.0	4.3	3.7	3.3	3.7	4.0	3.7	3.78

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ONION CULTIVAR ADAPTATION TRIAL - 1987 - continued

Cultivar	Source	Days to Maturity	Stand/Meter	Marketable Yield		% No. 1 Small	% Culls	Weight/Bulb (g)	Firmness		Uniformity		Colour	Skinning	Neck Finish	Score
				t/ha	b/a				A	B	Size	Shape				
Nutmeg	HM	114	27	62	1104	6	0	101	4.3	4.3	3.3	3.7	4.0	4.0	3.7	3.83
Progress	HM	111	27	83	1481	1	1	136	4.0	3.0	3.7	2.7	3.0	2.7	3.7	3.13
Sentinel	HM	114	28	56	1002	1	16	103	4.7	4.0	3.7	3.7	4.0	3.7	4.0	3.85
Advancer (60-12)	HM	103	26	65	1152	3	0	107	4.0	3.7	3.3	4.0	3.3	3.7	4.3	3.72
HXP 3636	HM	111	30	76	1356	1	2	111	4.7	4.0	4.0	3.7	3.0	3.0	4.0	3.62
Autumn Keeper	JHK	114	31	75	1340	3	4	109	5.0	4.0	3.7	3.3	3.7	4.0	3.7	3.73
Autumn Pride	JHK	116	31	74	1321	2	9	112	4.7	3.3	3.3	3.3	3.3	3.7	3.3	3.37
Early Yellow Globe	JHK	111	36	90	1600	3	8	115	3.0	3.0	3.3	2.3	3.0	3.0	2.7	2.88
Enterprise	JHK	111	28	54	963	4	7	90	3.7	3.7	4.0	3.7	3.3	3.3	3.7	3.62
Krummrey Banner	Kru	118	40	95	1698	6	6	109	4.3	3.7	3.3	3.0	3.3	3.3	3.3	3.32
Olathe	NZ	107	29	52	927	8	9	87	4.3	3.0	3.7	3.7	3.3	3.0	4.0	3.45
Royal Pokey	NZ	107	37	71	1266	7	6	89	4.7	3.7	3.3	3.7	3.7	3.3	3.7	3.57
Ailsa Craig Exhib.	Swy	136	33	107	1899	2	18	173	3.0	1.3	3.3	2.7	1.0	2.0	1.0	1.88
Buffalo	Sieg	86	30	29	523	9	2	67	3.3	2.3	3.7	4.0	2.0	2.0	4.7	3.12
Early Pak	Sieg	107	39	85	1508	3	7	102	5.0	3.7	4.0	4.3	4.3	4.0	4.0	4.05
Canada Bronze	Sto	109	30	64	1143	7	2	96	5.0	3.7	3.3	4.0	4.0	3.7	3.7	3.73
Canada Maple	Sto	107	24	69	1228	1	8	135	4.7	4.0	3.7	3.3	3.7	3.7	3.7	3.68
Golden Cascade	Sto	107	29	85	1508	2	6	135	4.0	2.7	3.3	3.3	2.7	3.7	3.7	3.07
Improved Autumn Spice	Sto	107	32	63	1118	5	2	86	5.0	4.0	4.0	3.7	4.0	3.7	4.0	3.90
New Yorker Early	Sto	109	30	105	1867	2	4	157	3.7	3.0	3.0	2.0	3.3	3.0	3.3	2.93
Northern Oak	Sto	114	32	81	1445	2	5	117	4.0	3.3	3.7	3.3	3.7	3.3	3.7	3.50
Spartan Banner	Sto	114	28	84	1486	1	4	132	4.0	3.7	4.0	3.7	3.7	3.7	4.0	3.80
Stokes Exporter II	Sto	107	27	66	1171	6	1	108	4.0	3.7	3.7	3.7	4.0	3.7	4.0	3.80
Tamarack II	Sto	107	27	72	1287	2	4	120	3.7	3.7	4.0	3.7	4.3	3.7	4.0	3.90
Simcoe	Sun	103	31	69	1219	6	0	95	4.3	4.0	3.7	4.0	3.7	3.3	4.0	3.78

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ONION CULTIVAR ADAPTATION TRIAL - 1987 - continued

Cultivar	Source	Days to Maturity	Stand/Meter	Marketable Yield		% No. 1 Smalls	% Culls	Weight/Bulb (g)	Firmness		Uniformity		Colour	Skinning	Neck Finish	Score
				t/ha	b/a				A	B	Size	Shape				
635-2	Sun	104	35	76	1347	2	5	98	3.7	3.3	3.3	3.3	3.3	3.7	4.0	3.48
702-3	Sun	100	36	72	1285	3	4	90	4.3	3.3	4.0	3.7	2.0	2.0	4.3	3.22
60-1	Tak	107	27	68	1209	2	0	109	4.3	3.7	3.3	3.7	4.0	3.0	4.0	3.62
60-02	Tak	103	24	65	1162	1	0	118	4.0	3.3	3.3	4.3	3.3	2.3	3.7	3.37
60-12	Tak	104	27	68	1210	3	1	111	4.3	3.7	3.3	4.0	3.7	3.3	4.3	3.72
Clipper	VDH	107	24	66	1173	1	3	119	4.7	4.0	4.0	3.3	4.0	3.3	3.7	3.72
Django	VDH	107	26	79	1406	1	1	134	4.3	3.7	4.0	3.7	3.7	3.3	4.0	3.73

5 = Most Desirable

Legend:

Stand/Meter: 33 bulbs/m = 10 bulbs/ft

Marketable Yield: 56 t/ha = 25 t/a = 1000 bags/acre

Weight/Bulb (g): A bulb 57mm (2 1/4") in diameter weighs 100 g  
A bulb 64mm (2 1/2") in diameter weighs 135 g

LONG TERM AVERAGES ONION CULTIVAR STORAGE TRIALS

Cultivar	Source	# Years Tested	% Weight Loss in Storage	% Rot, Soft & Sprouts by Weight	% Marketable by Weight	* Firmness
Simcoe	Sun	4	7.8	7.2	85.0	4.18
ABCO	A&C	3	8.0	7.7	84.3	3.67
Cuprum	Sun	3	8.6	8.7	83.7	3.80
Canada Maple	Sto	8	8.2	8.5	83.3	4.22
Buccaneer Imp.	HM	5	9.0	8.0	83.0	4.22
Exporter	Sto	3	8.7	9.2	82.1	3.63
Taurus	Asg	7	6.9	11.5	81.6	3.70
Sentinel	HM	8	9.9	9.8	80.3	4.17
Sweet Sandwich	Asg	3	10.0	9.7	80.3	3.40
Mucker	Sun	6	8.3	11.5	80.2	3.82
Trapp #8	Tra	7	8.5	11.4	80.1	4.00
Copper Cache	FM	5	8.9	11.8	79.3	3.98
Fawn Preview	FM	6	8.3	12.6	79.1	4.17
Storage King	Sto	4	8.8	12.7	78.5	3.93
Autum Pride	E.J.	3	8.0	14.7	77.3	3.33
Trapp #6	Tra	5	8.6	14.3	77.1	4.02
Autumn Keeper	Cro	5	9.6	15.4	75.0	3.92
Rocket	Asg	5	8.0	17.5	74.5	3.96
Tamarack	Sto	4	9.0	16.7	74.3	3.83
Mustang	HM	4	8.8	17.4	73.8	3.95
Aries	Asg	6	8.2	20.5	71.3	3.52
Garnet	Asg	5	8.0	21.4	70.6	3.34
Ontario M	Asg	5	7.8	21.9	70.3	3.70
Autumn Splendor	Cro	6	8.8	22.0	69.2	3.92
Eskimo	Tak	3	9.0	24.7	66.3	3.50
Early Pak	Cro	5	9.6	24.2	66.2	3.72
Autumn Glo	Cro	4	10.9	24.8	64.3	3.80
Progress	HM	7	8.5	30.7	60.8	2.89
Russet	Sto	5	9.4	30.0	60.6	3.00
Norstar	Tak	3	9.0	39.0	52.0	2.83

\* 5 = Most Desirable

Listed in order of % marketable

Storage Period Usually 11 Months



LONG TERM AVERAGES OF ONION CULTIVARS

Cultivar	Source	# Years Tested	t/ha	LTA b/a	LTA Days to Maturity	Firmness
Eskimo	Tak	5	61.4	1094	106	3.74
Super Spice	Sto	5	37.5	668	107	4.14
Norstar	Tak	5	67.4	1200	107	3.37
Pronto S	Asg	4	48.4	862	107	3.00
Autumn Spice	Cro	9	41.2	773	108	4.17
Columbia	FM	4	60.2	1072	108	3.89
Simcoe	Sun	8	48.6	865	109	4.24
Rocket	Asg	13	54.6	970	109	3.82
Early Pak	Cro	8	52.5	935	110	4.08
Fawn Preview	FM	11	51.2	912	110	4.05
Trapp # 6	E.J.	12	54.1	962	110	4.01
Tarmagon	Sto	4	69.9	1244	110	3.86
Garnet	Asg	12	54.1	962	110	3.77
Progress	HM	8	57.5	1024	110	3.70
Mirage	Sto	4	44.2	787	111	4.35
Tamarack	Sto	6	48.8	868	111	4.22
Buccaneer	HM	13	52.0	926	111	4.08
Mustang	HM	12	51.1	910	111	4.05
Aries	Asg	10	52.3	931	111	3.93
Taurus	Asg	11	54.5	969	111	3.79

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Cultivar	Source	# Years Tested	t/ha	LTA b/a	LTA Days to Maturity	Firmness
Capable	Sun	4	60.1	1070	111	3.72
Nutmeg	HM	10	51.6	919	112	4.29
Trapp #8	E.J.	12	57.7	1026	112	4.19
Golden Laker	FM	5	47.4	848	112	4.00
Imp. Autumn Spice	Sto	8	45.8	815	112	3.78
Sunburst	Asg	8	44.5	792	113	4.00
Mucker	Sun	8	55.6	990	114	4.05
ABCO	A&C	4	61.2	1090	114	4.02
Buccaneer Imp.	HM	4	57.6	1025	114	4.28
Autumn Glo	Cro	6	53.7	955	114	3.97
Autumn Splendor	JHK	6	55.4	986	114	3.96
Copper Cache	FM	9	53.7	956	114	3.92
HXP 2612	HM	3	56.8	1010	114	3.90
Sunglow	Cro	4	51.3	909	114	3.86
Autumn Bronze	FM	2	40.0	713	115	4.00
Sweet Sandwich	PETO	6	70.0	1246	115	3.87
Ontario M	Asg	7	54.7	970	116	4.11
Bronze Reserve	FM	3	52.0	926	116	3.80
Coppermine	FM	2	61.9	1100	116	3.78
Canada Maple	Sto	16	56.0	997	117	4.21

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LONG TERM AVERAGES OF ONION CULTIVARS - continued

Cultivar	Source	# Years Tested	t/ha	LTA b/a	LTA Days to Maturity	Firmness
Spartan Era	Sun	7	55.5	987	117	4.13
Autumn Keeper	JHK	8	53.7	955	117	4.09
Storage King	Sto	8	53.9	960	117	3.90
HXP 2621	HM	2	46.7	831	117	3.90
Gladiator	Sun	10	61.5	1094	117	3.76
Exporter	Sto	14	57.9	1030	117	3.76
Bronze Age	FM	6	60.8	1082	117	3.38
Spartan Sleeper	USDA	4	61.4	1093	118	4.11
Russet	Sto	7	67.7	1204	118	3.74
Bullet	FM	4	71.3	1268	119	3.89
Autumn Pride	Cro	5	69.0	1228	119	3.66
Sentinel	HM	12	58.4	1039	120	4.22
Cuprum	Sun	4	68.4	1218	120	3.92
Harvestmore	HM	2	39.4	701	120	3.50
Canada Granite	Sto	5	45.1	803	121	4.04
Northern Oak	Sto	8	61.0	1085	121	3.80
Gibraltar	FM	2	59.7	1063	122	4.25
Copra	BEJO	4	66.4	1182	122	4.05
Surecrop	HM	4	60.7	1081	124	4.23
Better Banner	A&C	2	59.2	1052	125	3.84
Spartan Banner 80	Agw	2	67.8	1207	125	3.78
Superior	A&C	3	60.6	1072	125	3.56
Super Sleeper	HM	3	59.6	1060	126	4.20
Spartan Banner	A&C	6	62.1	1106	126	3.77

Listed in order of Days to Maturity

ONION CULTIVAR STORAGE TRIAL - SEPTEMBER 26, 1986 - AUGUST 10, 1987

Cultivar	Source	% Weight Loss	% Rot	% Sprouts	% Soft	% Mkb.	* Firmness	
							Sept. 17/86	Aug. 10/87
Flame	Asg	13	2	1	6	78	3.6	3.5
Autumn Keeper	JHK	15	2	3	3	77	4.1	3.7
Copra	Sieg	12	4	2	7	75	4.1	4.0
Cuprum	Sun	15	2	3	6	74	4.1	3.5
ABCO	A&C	16	5	1	6	72	4.0	3.5
Bullet	FM	14	7	2	6	71	4.0	3.5
Bronze Reserve	FM	14	3	6	6	71	3.6	3.3
Sweet Sandwich	A.Ch.	16	4	2	8	70	3.5	3.2
Autumn Splendor	JHK	12	3	9	8	68	4.1	3.5
Canada Maple	Sto	17	6	1	9	67	4.2	4.0
Columbia	FM	17	10	3	3	67	4.0	3.5
Aries	Asg	13	1	9	11	66	3.8	2.9
Autumn Pride	JHK	17	6	5	9	63	3.8	3.5
Early Pak	Sieg	17	3	13	5	62	3.7	3.3
Buccaneer Imp.	HM	19	4	8	8	61	3.8	4.0
Autumn Glo	Cro	15	1	18	6	60	3.9	3.5
Sentinel	HM	17	9	5	9	60	4.2	3.0
Taurus	Asg	16	4	2	18	60	3.9	2.9
HXP 2612	HM	20	6	7	8	59	3.8	3.5
Spartan Banner	JHK	19	5	8	10	58	4.0	3.0
Capable	Sun	17	5	8	14	56	4.0	3.2
HXP 2621	HM	21	10	7	8	54	4.1	3.5
Tarmagon	Sto	13	2	26	9	50	4.1	3.2
Eskimo	Sto	18	2	29	7	44	3.9	2.9
Norstar	Tak	13	3	31	10	43	3.8	2.7
Average		16	4	8	8	64	3.9	3.4

\* 5 = Most Desirable

Listed in order of % marketable

The hail storm on August 1, 1986 severely damaged the crop resulting in poor tops and storage potential. On August 18, 1986, MH 30 was applied at 8 L/ha in 550 L/ha water. The bulbs were pulled on September 3 and tops removed September 26. The samples were placed in a forced air temperature controlled storage at 25°C and a relative humidity of 60% which increased to 70% in 2 weeks. The temperature was gradually lowered until it reached 1°C by the end of December. The samples were moved to a refrigerated storage in February of 1987. Evaluation took place August 11, 1987. Total storage period was 45 weeks.

## TRANSPLANTED SPANISH ONION TRIAL - 1987

### Management Procedures.

Seeding: On March 13, twenty three cultivars were seeded in speedling trays filled with Pro-Mix G, at 2 seeds per cell (3 X 3cm). The cultivars were thinned to 1 plant per cell at the 1st true leaf. They were regularly clipped to a height of 12cm, promoting sturdy plants.

Fertilizer: Greenhouse - 2 applications of 20-20-20 at a rate of 3.8 g/L water.  
Field - 650 kg/ha 15-5-25 + 30 kg/ha copper sulfate.

Transplanting: Three replications were planted on May 20, at a spacing of 43 X 12cm. After transplanting, 15 kg/ha Lorsban 15G was spread in a band over the row and covered with 1 cm of soil. A drench treatment of Birlane 25WP was applied at 1 kg ai/ha in 170 ml water per plant, on May 27 just prior to peak egg deposition of first generation onion maggot fly.

For information on post-emergence weed control, minor elements and water table refer to Onion Cultivar Trial Management Procedures.

Harvest: On September 4 all cultivars were pulled, topped by hand and placed in a forced air and temperature controlled storage.

Storage: The temperature was set at 27°C the first week, then gradually lowered to 1°C by the beginning of December. The relative humidity varied from 50 to 70%.

### Evaluation

Evaluation was done on November 23 after 11 weeks in storage.

Maturity Date: Date when 85% of the tops were down. All cultivars with a September 4th maturity date were still upright when pulled.

% Marketable: Onions over 75mm in diameter

Weight/Bulb (g): The weight in grams of all bulbs divided by the total number of bulbs.

# Rings over 3cm: The total number of complete rings over 3 cm diameter in 10 bulbs.

Score: The average of the 6 marks from firmness to neck finish.

5 = Most Desirable.

NOTE: In 16 of the 23 cultivars, storage rot and doubles accounted for the majority of culls. The storage rot consisted of black mould, bacterial diseases, skin and fusarium rot. Undersized bulbs (< 75mm) made up a very small portion of the unmarketable onions. There was an insignificant number of seeders.

SPANISH ONION CULTIVAR TRIAL - 1987

Cultivar	Source	Maturity Date	% Stand	Marketable Yield > 75 mm		% Marketable	Weight/Bulb (g)	% Single Centres	# Rings Over 3 cm	Uniformity		Firmness	Colour	Skinning	Neck Finish	Score
				t/ha	b/a					Size	Shape					
Armada	Asg	Sept. 4	100	55	970	80	353	7	60	3.9	3.2	4.0	3.4	3.9	3.5	3.65
Maya	Asg	Aug. 30	97	61	1080	83	389	0	56	3.9	3.8	3.9	4.0	4.2	4.1	3.98
Vega	Asg	Sept. 4	99	71	1258	89	411	13	60	3.9	3.9	4.2	3.9	4.1	3.6	3.93
Yula	Asg	Aug. 24	97	30	542	55	296	0	38	3.2	3.7	3.4	2.9	3.5	3.7	3.40
Autumn Surprize	Cro	Sept. 2	98	35	631	58	326	0	46	4.0	3.6	4.1	4.0	3.8	3.7	3.87
Big Mac	Cro	Sept. 3	96	42	749	54	418	7	54	3.9	3.4	3.8	3.9	3.8	3.2	3.67
Ringmaker	Cro	Sept. 2	94	46	821	76	338	13	52	4.2	3.9	4.1	3.9	3.5	4.0	3.93
Sweet Amber (77N76)	Cro	Aug. 30	90	48	862	85	327	47	72	3.8	4.1	3.8	3.9	4.1	3.7	3.90
Bullseye	FM	Sept. 3	97	50	893	76	351	13	56	4.0	3.5	4.1	4.2	4.1	3.8	3.95
Spanish Main	FM	Aug. 29	97	27	484	51	287	13	46	3.6	3.1	3.8	4.0	4.0	4.0	3.75
Sweetheart	FM	Sept. 4	100	50	892	78	330	27	58	3.8	3.8	4.1	4.1	4.1	3.7	3.93
Sweet Sp. Yellow	FM	Sept. 1	93	25	450	46	301	0	36	3.6	3.4	4.0	3.7	3.9	3.5	3.68
Spanish Beauty	HM	Sept. 2	80	11	204	30	243	0	26	2.1	3.7	4.1	3.7	3.4	3.9	3.48
Yellow Sweet Sp.	HM	Sept. 4	81	33	585	64	332	13	52	3.6	3.3	4.0	4.2	3.8	3.3	3.70
Titan	HM	Sept. 3	94	26	468	48	302	0	46	3.0	3.3	4.6	4.0	4.2	3.3	3.73
Brahma	Sun	Aug. 21	98	53	949	85	333	7	56	3.7	4.1	4.3	4.0	4.1	4.1	4.05
Bullring	Sun	Aug. 27	98	68	1207	93	389	47	80	4.3	4.0	4.7	4.4	4.3	3.7	4.23
Cimarron	Sun	Aug. 23	94	22	389	51	239	0	52	2.3	3.2	3.7	2.1	3.3	3.8	3.07
Durango	Sun	Sept. 4	97	63	1127	89	378	40	72	4.1	3.9	3.9	4.0	3.7	3.3	3.82
Golden Cascade	Sun	Aug. 27	96	61	1082	81	403	7	58	3.9	3.1	3.8	3.7	3.3	3.1	3.48
Midstar	Sun	Aug. 24	80	15	265	40	242	20	46	3.1	3.2	3.8	W*	3.8	4.3	3.64
Spano	Sun	Aug. 23	90	22	388	58	214	7	42	2.3	3.2	3.1	2.2	3.4	4.1	3.05
Winner	Sun	Sept. 2	100	59	1051	84	361	13	66	4.0	4.1	4.3	4.1	4.0	3.6	4.02

5 = Most Desirable

\* W = White Cultivar

RED ONION CULTIVAR TRIAL - 1987

Cultivar	Source	Days to Maturity	Stand/Meter	Marketable Yield		% No. 1 Smalls	% Culls	Weight/Bulb (g)	Firmness		Uniformity		Colour		Skinning	Neck Finish	Score
				t/ha	b/a				A	B	Size	Shape	External	Internal			
<b>Main Trial - 2 Replications</b>																	
Red Baron	Cro	111	30	71	1266	6	2	105	3.7	3.7	3.7	3.5	3.7	4.2	3.5	3.5	3.69
Redman	FM	118	24	66	1169	2	13	133	3.5	3.3	3.2	3.2	3.0	3.2	3.3	3.5	3.24
Benny's Red	HM	122	26	72	1290	7	9	124	4.2	3.7	3.2	3.0	3.0	3.5	3.2	3.9	3.36
Carmen	Sto	134	24	49	865	6	20	109	3.9	3.5	3.3	3.9	4.3	4.3	3.3	3.5	3.73
Lucifer	Sto	126	27	71	1258	4	10	127	4.0	3.7	3.3	3.3	3.7	4.0	3.7	3.5	3.60
Southport Red Globe	Sto	115	29	61	1089	3	14	105	3.9	3.7	3.7	3.9	4.0	3.7	3.4	3.5	3.70
Tango	Sun	126	25	52	926	4	18	110	3.7	3.7	3.5	4.0	4.2	4.3	3.3	3.3	3.76
<b>Adaptation Trial - 1 Replication</b>																	
NIZ 230075	NZ	111	32	69	1221	0	37	151	3.7	2.7	3.7	2.3	2.3	3.7	2.0	4.0	2.96
NIZ 230097	NZ	109	26	41	726	1	31	100	3.3	2.7	3.0	3.7	2.3	3.7	1.7	4.0	3.01
NIZ 231045	NZ	109	35	60	1075	2	43	130	4.0	3.0	3.0	3.3	2.0	3.3	3.0	4.0	3.09
NIZ 239906	NZ	109	32	44	785	6	15	71	3.7	2.7	2.0	1.7	3.3	3.3	2.3	4.0	2.76
60033	Sto	111	39	95	1687	6	3	108	3.3	4.0	3.3	2.0	3.7	4.0	3.3	3.3	3.37
60045	Sto	114	30	64	1143	9	5	99	3.3	3.7	3.3	4.0	4.3	4.0	2.7	3.7	3.67

5 = Most Desirable

Legend:      Stand/Meter: 33 bulbs/m = 10 bulbs/ft

Marketable Yield: 56 t/ha = 25 t/a = 1000 bags/acre

Weight/Bulb (g): A bulb 57 mm (2 1/4") in diameter weighs 100 g  
A bulb 64 mm (2 1/2") in diameter weighs 135 g

## ONTARIO REGIONAL POTATO CULTIVAR TRIAL - 1987

This trial was done in co-operation with Dr. R.H. Coffin (Research Scientist) and Mary Kay Keenan (Plant Breeding Technician) of Agriculture Canada.

### Management Procedures.

Fertilizer: 500 kg/ha 10-6-30 + 2kg/ha Borax.

Planting: Four replications of eleven cultivars were planted on May 29. The tubers were planted 25 cm apart at a depth of 7 cm and covered with low hilling. Larger tubers were cut in half. The rows were spaced 86cm apart.

Weed Control: One treatment of 2 kg/ha Lorox was applied on June 8, after a second hilling.

Harvest: Harvest was done on October 13.

### Evaluation.

Evaluation took place on November 4.

Marketable Size: 57 to 89 mm ( 2 1/4 to 3 1/2 inches).

Chip Score: Poor = 50, Excellent = 85+

Specific Gravity: Poor = 70, Excellent = 80+



ONTARIO REGIONAL POTATO CULTIVAR TRIAL - 1987

Cultivar	Mkb. t/ha	% Mkb.	% Small	% & Over. & Culls	Chip Score	Sp. Gravity	Comments
F 73008	49.8	70	5	25			Large rough, lot of secondary growth, burst ends, adhering stolons.
Saginaw Gold*	42.9	72	7	21	60	64	Large good looking, clean.
Atlantic	41.4	79	16	5	60	72	Good looking, large and blocky.
Norchip	32.4	78	18	4	55	57	Good looking, clean, lots of smalls.
Yukon Gold	31.1	72	10	18			Medium size, good looking, clean, distinct pink eyes.
Chieftan	23.9	74	15	11			Small-medium size, clean, good colour.
Rose Gold *	23.3	78	21	1			Lots of smalls, sprouting by Nov. when kept in warm temp.
F70021	22.4	74	18	8			Round-oval, medium size, brittle, some deep eyes.
Shepody	17.6	71	10	19			Low yield, small, some irregular size and shape.
F81062	17.0	78	22	0			Small, low yield, some pointers, clean, uniform.
ND860-2	14.7	68	32	0	70	60	Very small, round, clean.

\* Cultivar has temporary license.

Legend: Marketable t/ha: 31 t/ha = 500 bushels/acre, 1 bushel = 25 kg ( 55 lbs.)