

# **1987 REPORT**

## **Ontario Soybean Variety Trials**



**Conducted in 1984-86  
by the  
Ontario Oil & Protein  
Seed Crop Committee**

## ONTARIO OIL AND PROTEIN SEED CROP COMMITTEE

This organization is made up of representatives of OMAF, Agriculture Canada, the University of Guelph, the Ontario Seed Growers Association, the Canadian Seed Trade Association, the Ontario Soya-Bean Growers Marketing Board, and the Oilseed Crushers. Tests are conducted each year by the following co-operating agencies.

Research Station, Harrow; Ridgetown College of Agricultural Technology; Centralia College of Agricultural Technology; University of Guelph; Kemptville College of Agricultural Technology; Research Station, Ottawa.

### INTERPRETATION OF RESULTS

#### HEAT UNIT RATING

Using the same heat unit system as for corn, each variety is given a heat unit rating based on the relative maturity of that variety. In choosing a variety you should select those varieties equal to or less than the heat units available on your farm (see map).

#### HILUM COLOUR

Each soybean seed has a hilum which is the point where it was attached to the pod. Varieties differ in hilum color and can be either yellow, gray, buff, brown, or black. Yellow hilum soybeans are generally the only type accepted for the export market.

#### SEEDS PER KILOGRAM

This is an estimate of the relative number of seeds of a particular variety in a kilogram of seed. Since seed size can vary from year to year and from seed lot to seed lot these figures should be used as a rough guide only.

#### PHYTOPHTHORA ROOT ROT

The % Plant Loss is a three-year average (1984-86) obtained in a field heavily infested with Phytophthora. Some races of Phytophthora root rot are not found at this site. Thus the relative ranking of varieties for tolerance may differ in fields that have other races present. Disease tests in the greenhouse show that 5 varieties have resistance to a number of prevalent races. These 5 varieties have the same gene for resistance.

#### YIELD INDEX

Varieties can only be compared within each test area. Yield index of a variety indicates its performance as a percentage of the average yield of all recommended varieties grown in a test area.

#### DAYS FROM PLANTING TO MATURITY

Maturity is affected by planting date and the area where a variety is being grown. Varieties are rated as being mature when 95% of the pods on the plants are ripe. Normally, 3-10 additional drying days are needed before the crop is dry enough for combining.

### PLANT HEIGHT

An indicator of the amount of plant growth, it is measured at maturity as the length of the stem from the base of the plant to its tip.

### LODGING

A visual estimate at maturity of the standability of the crop. A value of 1 is equivalent to a crop standing completely upright while a 5 represents a crop entirely flat. Within a test area, varieties with lower values are less prone to lodging.

### TESTING METHODS

In each trial, varieties were replicated in a suitable experimental design and received equal fertility, weed control, and management. All trials were planted and harvested by machine.

Prior to harvest, plant height and lodging scores were obtained. The grain harvested from each plot was weighed and the yield of soybeans was calculated in tonnes/hectare at 14% moisture. Yield results are three-year averages from 2 to 4 locations each year.

### TEST LOCATIONS AND SOIL TYPES 1986 TRIALS

Location	Heat	Soil Type	Row	Co-operator
	Unit		Width	
	Rating		-cm-	
Malden	3500	Clay loam	60	Jon Parks
Woodslee	3400	Clay	60	Research Station
Tilbury	3350	Clay	60	Robert Farquharson
Chatham	3300	Clay loam	60	Stan Wonnacott
Inwood	3050	Clay	60	Jack & Kevin Marriott
Ridgetown	3250	Clay loam	60	R.C.A.T.
Fingal	3000	Silt loam	60	Julius Virag
Talbotville	2900	Clay loam	35	Jim Brokenshire
Centralia	2800	Clay loam	35	C.C.A.T.
Woodstock	2700	Clay loam	35	O.A.C.
Winchester	2825	Clay loam	35	K.C.A.T.
Smithfield	2850	Sandy loam	25	Ag. Canada, Smithfield
Elora	2550	Silt loam	35	O.A.C.
Brussels	2600	Clay loam	35	Jeff Cardiff
Ottawa	2650	Sandy loam	25	Research Station

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**TABLE 1. SOYBEAN VARIETY RECOMMENDATIONS AND DESCRIPTION**

<b>Variety</b>	<b>Heat Units Required</b>	<b>Hilum Colour</b>	<b>Seeds Per Kilogram</b>	<b>Phytophthora Root Rot Reaction % Plant Loss<sup>1</sup></b>	<b>Distributor</b>
Maple Ridge <sup>2</sup>	2400	yellow	6490	20	SeCan members
Baron <sup>2</sup>	2450	dark brown	5680	10	W.G. Thompson & Sons Ltd.
Maple Amber <sup>2</sup>	2450	brown	5850	10	Public variety
Maple Isle	2500	yellow	5430	27	SeCan members
Maple Arrow	2600	brown	5570	14	Public variety
KG30	2600	dark brown	6760	22	Pride Brand Seed
Bicentennial	2600	brown	4890	6	SeCan members
OAC Scorpio	2600	yellow	5590	32	SeCan members
Apache <sup>2</sup>	2600	gray	5480	12	W.G. Thompson & Sons Ltd.
OAC Libra	2650	black	6260	16	SeCan members
KG60	2700	buff	5530	8	King Agro Inc.
Evans	2700	yellow	6020	21	Public variety
Maple Donovan	2750	buff	6850	18	SeCan members
0877	2750	light gray	6090	25	Pioneer Hi-Bred Ltd.
J081 <sup>3</sup>	2750	yellow	5590	26	Jacques Seed Co.
OAC Aries	2750	dark brown	6330	24	SeCan members
Marathon	2750	yellow	5350	22	W.G. Thompson & Sons Ltd.
J82	2800	dark brown	6900	34	Jacques Seed Co.
Crusader	2850	yellow	6060	15	W.G. Thompson & Sons Ltd.
Commander	2850	yellow	5350	15	W.G. Thompson & Sons Ltd.
1282	2900	buff	5420	18	Pioneer Hi-Bred Ltd.
Hodgson	2900	buff	5960	14	Public variety
OAC Pisces	2900	buff	6180	4	SeCan members
Galaxy	2900	buff	5810	9	W.G. Thompson & Sons Ltd.
KG71	2900	buff	6250	13	Pride Brand Seed
A1564	2900	yellow	5740	12	Maple Leaf Mills Ltd.
S1346	2900	yellow	5620	7	Northrup King Seeds Ltd.
KG82	2900	tan	5240	5	King Agro Inc.
S15-50*	2900	gray	6760	6	Northrup King Seeds Ltd.
A1895	2900	black	5920	4	Maple Leaf Mills Ltd.
B152*	2900	yellow	5920	4	Northrup King Seeds Ltd.
PS80	2900	yellow	6080	15	Pride Brand Seed
S14-60	2950	buff	6600	7	Northrup King Seeds Ltd.
A1937	2950	buff	6080	11	Maple Leaf Mills Ltd.
1677	3000	yellow	6730	22	Pioneer Hi-Bred Ltd.
Hawk	3000	black	5760	6	W.G. Thompson & Sons Ltd.
B203*	3050	yellow	6330	5	Northrup King Seeds Ltd.
A2187	3050	yellow	6140	13	Maple Leaf Mills Ltd.
B220	3100	yellow	5980	27	King Agro Inc.
Premier	3100	yellow	6260	8	Pride Brand Seed
Jewel	3100	yellow	6170	30	W.G. Thompson & Sons Ltd.
S23-03	3100	buff	5840	5	Northrup King Seeds Ltd.
Combat	3100	yellow	6240	3	W.G. Thompson & Sons Ltd.
Elgin	3100	black	5590	8	Public variety
G-3637	3100	black	5620	14	Funk Seeds
PS90	3100	yellow	5960	11	Pride Brand Seed
S24-24*	3100	yellow	6240	2	Northrup King Seeds Ltd.
000112	3100	brown-black	5440	8	United Cooperatives of Ontario
Corsoy 79*	3150	yellow	6300	7	Public variety
Harcor	3150	yellow	6090	21	Public variety
9271	3150	brown	5160	11	Pioneer Hi-Bred Ltd.
9292	3200	brown	5130	14	Pioneer Hi-Bred Ltd.
J103	3200	yellow	5680	22	Jacques Seed Co.
J231	3250	brown-black	4640	24	Jacques Seed Co.
A2943	3250	brown-black	6200	7	Maple Leaf Mills Ltd.
A3127	3300	black	6650	7	Maple Leaf Mills Ltd.

\*Varieties with multi-race resistance to the prevalent races of Phytophthora root rot organism.

<sup>1</sup>Three-year average (1984-86) in a field heavily infested with Phytophthora. Not all races of Phytophthora root rot are found at this site. Thus the relative ranking of varieties for plant loss may differ in fields that have other races present.

<sup>2</sup>Metribuzin should not be used on Maple Ridge, Baron, Maple Amber, Apache.

<sup>3</sup>This variety was not tested in 1986. Values shown are 3-yr. averages from 1983-5, calculated as a % of values for other varieties, and multiplied by 1984-86 averages.

**TABLE 2. AGRONOMIC DATA**

Testing Areas	Variety	Heat Unit Rating	Yield (t/ha)	Yield Index (%)	Days from Planting to Maturity	Plant Height (cm)	Lodging 1=standing 5= flat
3 year average of 10 trials at Brussels, Elora, Winchester and Ottawa	Maple Ridge	2400	2.4	89	108	61	1.3
	Baron	2450	2.5	93	110	70	1.8
	Maple Amber	2450	2.4	89	111	73	1.7
	Maple Isle	2500	2.4	89	114	62	1.5
	Maple Arrow	2600	2.6	96	118	76	2.0
	KG 30	2600	2.7	100	118	75	1.8
	Bicentennial	2600	2.7	100	120	80	2.7
	OAC Scorpio	2600	2.8	104	122	81	2.5
	Apache	2600	2.8	104	124	73	1.8
	OAC Libra	2650	2.8	104	128	85	2.8
	Maple Donovan	2750	2.9	107	129	82	2.1
	0877	2750	2.9	107	131	88	2.4
		<b>Average Yield</b>		<b>2.7</b>			
3 year average of 9 trials at Centralia, Woodstock, Talbotville and Smithfield	Maple Arrow	2600	2.6	93	111	70	1.4
	Bicentennial	2600	2.8	100	114	74	1.9
	Apache	2600	2.7	96	116	70	1.3
	OAC Libra	2650	2.7	96	118	79	1.9
	KG60	2700	3.0	107	120	68	1.6
	Evans	2700	2.8	100	121	81	1.8
	0877	2750	3.0	107	121	80	1.7
	J081	2750	2.8	100	121	85	1.3
	OAC Aries	2750	2.8	100	121	90	1.9
	Marathon	2750	2.9	104	121	79	1.6
	Maple Donovan	2750	2.8	100	122	78	1.5
	J82	2800	2.6	93	122	83	1.6
	Crusader	2850	2.8	100	123	84	1.8
	Commander	2850	2.8	100	124	89	1.9
	1282	2900	2.9	104	126	88	1.8
	Hodgson	2900	2.8	100	126	86	1.5
	OAC Pisces	2900	2.7	96	126	79	1.9
	Galaxy	2900	2.8	100	129	86	1.5
S1346	2900	2.9	104	130	75	1.5	
A1564	2900	2.8	100	131	91	1.8	
KG82	2900	3.0	107	131	86	1.6	
	<b>Average Yield</b>		<b>2.8</b>				
3 year average of 11 trials at Fingal, Talbotville, Ridgetown, and Inwood	1282	2850	3.1	94	124	77	1.9
	Crusader	2850	3.2	97	124	81	2.3
	Hodgson	2900	3.2	97	125	80	1.7
	KG71	2900	3.2	97	127	71	1.6
	A1564	2900	3.2	97	127	89	2.2
	S15-50	2900	3.2	97	127	85	1.7
	A1895	2900	3.3	100	128	75	1.8
	B152	2900	3.5	106	128	72	1.6
	S1346	2900	3.2	97	128	71	1.3
	A1937	2950	3.4	103	129	82	2.3
	S14-60	2950	3.2	97	129	74	1.6
	1677	3000	3.2	97	130	77	2.0
	Hawk	3000	3.2	97	131	77	3.2
	Elgin	3100	3.4	103	134	77	2.2
	Premier	3100	3.3	100	135	82	2.0
	B220	3100	3.3	100	135	85	1.8
	Jewel	3100	3.4	103	135	76	1.7
	9271	3150	3.4	103	137	77	1.6
Corsoy 79	3150	3.3	100	138	94	2.7	
	<b>Average Yield</b>		<b>3.3</b>				

*(Continued on next page)*

**TABLE 2. AGRONOMIC DATA (Continued)**

Testing Areas	Variety	Heat Unit Rating	Height (cm)	Yield Index (%)	Days from Planting to Maturity	Plant Height (cm)	Lodging 1=standing 5= flat
3 year average of 10 trials at Chatham, Tilbury, Woodslee, and Malden	A1564	2900	3.1	94	116	78	1.6
	8152	2900	3.2	97	116	62	1.2
	PS80	2900	3.0	91	116	79	1.6
	Hodgson	2900	3.2	97	117	74	1.4
	S1346	2900	3.0	91	117	62	1.1
	S14-60	2900	3.2	97	118	68	1.2
	1677	3000	3.0	91	118	69	1.6
	A1937	3000	3.3	100	119	76	1.6
	Hawk	3000	3.2	97	119	71	2.0
	B203	3050	3.2	97	121	73	1.5
	A2187	3050	3.3	100	122	76	1.2
	B220	3100	3.2	97	123	75	1.3
	Premier	3100	3.2	97	123	74	1.5
	Jewel	3100	3.3	100	124	68	1.4
	S23-03	3100	3.4	103	124	78	1.5
	Combat	3100	3.2	97	125	83	1.7
	Elgin	3100	3.4	103	125	72	1.7
	G-3637	3100	3.3	100	125	91	2.0
	PS 90	3100	3.3	100	125	82	1.5
	S24-24	3100	3.3	100	125	83	1.9
	UCO112	3100	3.4	103	125	76	1.3
	Corsoy 79	3150	3.3	100	125	88	1.9
	Harcor	3150	3.2	97	126	85	2.0
	9271	3150	3.5	106	126	71	1.2
	9292	3150	3.5	106	127	70	1.1
	J 103	3200	3.3	100	128	73	1.4
J 231	3200	3.4	103	128	75	1.3	
A2943	3250	3.4	103	134	85	1.2	
A3127	3300	3.5	106	136	81	1.4	
	<b>Average Yield</b>		<b>3.3</b>				