

CDC Copeland

2-Row Malting Barley



Strengths:

- “Recommended” status from the Canadian Malting Barley Technical Centre
- 16% higher yield than Harrington, 2% higher yield than Manley (1996 – 98 Coop Trials)
- 3 days earlier maturing than Manley (1 day later than Harrington)
- Moderate resistance to net blotch (similar to Manley)
- Better stem rust resistance than Manley and Harrington
- Much stronger straw than Harrington, slightly stronger straw than Manley
- Higher test weight and plumper kernels than Manley, kernel plumpness similar to Harrington
- Much lower beta-glucan than Harrington and Manley
- Excellent malting quality

Neutral Traits:

- 7 cm taller than Harrington, 5 cm taller than Manley
- Susceptible to Scald and Septoria as are Manley and Harrington

Weaknesses:

- Susceptible to loose smut
- More susceptible to common root rot than Manley

Breeder:

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1996-98 Western Cooperative Two Row Barley Registration Trials

Entry	Yield (% Harrington)	Maturity (days)	Height (cm)	Lodging 1 = best 9 = flat	Kernel Weight (mg)	% Plump	Scald Rating	Net Blotch rating	Loose Smut	Other Smuts
Harrington	100	87.3	80	4.2	41.0	86.7	Susceptible	Susceptible	Susceptible	Susceptible
Manley	113	91.4	82	3.1	44.4	83.1	Susceptible	Intermediate	Intermediate	Intermediate
CDC Copeland	116	88.5	87	2.8	45.1	86.7	Susceptible	Intermediate	Intermediate	Intermediate

Seed Manitoba 2006 - Malting Barley Comparison

Variety (Rows)	Long Term Average Yield (% of Robust)	Days to Maturity (+/- Robust)	Height (Inches)	Test Weight	Awn Type	Resistance to:						
						Lodging	Stem Rust	Loose Smut	Surface -Borne Smut	Root Rot	Net Blotch	Fusarium
Robust (6)	100	0	0	0	S	G	G	F	F	F	P	P
Harrington (2)	82	-3	-4	-0.1	R	P	P	P	P	P	VP	G
AC Metcalfe (2)	103	-1	-4	0.7	R	F	G	VG	F	F	F	F
CDC Kendall (2)	99	1	-4	0.9	R	F	P	P	P	F	F	F
CDC Stratus (2)	98	-2	-5	0	R	F	G	P	F	F	F	F
CDC Copeland (2)	105	-1	-2	0.2	R	F	G	P	F	F	F	F

VG=Very Good; G=Good; F+=Fair Plus; F=Fair; P=Poor; VP=Very Poor

2006 Saskatchewan Varieties of Grain - Malting Barley Comparison

Variety (Rows)	Awn Type	Yield as % of AC Metcalfe				Relative Maturity	Resistance to:							
		Area 1	Area 2	Area 3	Area 4		Lodging	Net Blotch	Scald	Loose Smut	Other Smuts	Root Rot	Stem Rust	FHB
Harrington (2)	R	99	92	89	88	M	F	VP	P	P	P	F	P	G
AC Metcalfe (2)	R	100	100	100	100	M	G	F	P	VG	F	F	G	F
CDC Kendall (2)	R	99	103	102	102	M	G	F	P	P	P	F	F	F
CDC Stratus (2)	R	100	104	105	104	M	G	F	P	F	F	F	G	F
CDC Copeland (2)	R	109	107	107	107	M	G	F	P	P	F	F	F	F

M=Medium; VG=Very Good; G=Good; F=Fair; F+=Fair Plus; P=Poor; VP=Very Poor

FHB=Fusarium Head Blight

2006 Alberta Seed Guide - Malting Barley Comparison

Variety (Rows)	Yield as % of Harrington						Awn Type	Comp. Maturity (Days)	Test Wt.	Kn. Wt.	Ht. (cm)	Resistance to:						Tol. FHB
	Irr	Area 1	Area 2	Area 3	Area 4	Area 5 & 6						Ldg.	Loose Smut	FL+Cov. Smut	Comm Root Rot	Scald	Net Blotch	
Harrington (2)	100	100	100	100	100	100	R	98	50	44	78	F	S	S	I	S	S	G
AC Metcalfe (2)	102	100	107	114	110	109	R	1	52	46	82	F	R	I	I	S	I	F
CDC Kendall (2)	101	97	102	113	109	105	R	-1	52	45	78	F	S	S	I	S	I	F
CDC Stratus (2)	104	99	101	111	109	105	R	0	52	46	78	G	I	I	I	S	I	F
CDC Copeland (2)	114	101	110	120	113	116	R	1	50	48	83	F	S	I	I	S	I	F

Test Wt.=Test Weight (lb/bu); Kn. Wt.=Kernel weight (grams/1000 kernels); G=Good; F=Fair; R=Resistant; I=Intermediate; S=Susceptible

Irr=Irrigation Ldg.=Lodging

Ht.=Height FL+Cov. Smut=False loose & covered smuts Tol. FHB=Fusarium Head Blight Tolerance

Description of the cultivar CDC Copeland

Crop: Barley (*Hordeum vulgare* L.)

Type: 2-Row Malting

Proposers: B.L. Harvey, E.B. Lefol and B.G. Rossnagel.
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Test #: TR150, SM94516

Pedigree: WM861-5 / TR118

Area of adaptation: Western Canada

Strengths:

- 1) Better yield than Harrington and Manley
- 2) Good kernel plumpness and weight
- 3) Early maturing
- 4) Good resistance to lodging
- 5) Good Net Blotch and Stem Rust resistance

Neutral trait: Height Greater than Manley

Negative traits:

- 1) Susceptible to Loose Smut
- 2) Septoria susceptible
- 3) Scald susceptibility identical to Harrington and Manley

Description: CDC Copeland is a two row malting barley with promising qualities. It has out yielded Harrington and Manley in all zones. CDC Copeland is taller but stronger-strawed than Harrington and similar to Manley for lodging resistance. The maturity of CDC Copeland is intermediate between Harrington and Manley. CDC Copeland is similar to Manley in disease resistance but has better resistance to rust. CDC Copeland has a good plumpness, higher friability and extract than Harrington and Manley and has much lower malt β -Glucan. Its diastatic power and α -Amylase activity is slightly lower than Harrington.

Agronomic performance (overall means for 96-98 Coop data)

Variety	Grain Yield (Kg/Ha)	Maturity (days)	Plant Height (cm)	Lodging (1-9)	1000 Kernel Weight (g)	Plumpness (%)
Harrington	4937 (100%)	87.3	80.2	4.2	41.0	86.7
Manley	5598 (113%)	91.4	81.7	3.1	44.4	83.1
CDC Copeland	5708 (116%)	88.5	86.9	2.8	45.1	86.7

Grain yield data (Kg/Ha) for the different Soil Zones (overall means for 96-98 Coop data):

Soil zone	Black	Black and Grey	Brown	Overall Mean
Harrington	4555	5240	5015	4937
Manley	5663	5559	5572	5598
CDC Copeland	5724	5683	5705	5708

Disease data. Means for 1996-98 Western Cooperative two-row barley tests.

Cultivars	Net Blotch	Smut (Ustilago) (%)			Common Root Rot (% coverage)	Stem Rust (% of coverage)	Scald	Septoria
		U.nuda	U.hordei	U.nigra				
Harrington	MS S	86.5	17.5	19.0	27.2	20.0	MS S	S
Manley	MR MS	77.5	00	9.5	26.1	15.0	MS S	S
CDC Copeland	MR MS	81.0	11.0	12.0	33.7	9.3	MS S	S

Note: Smut data based on means for 96 and 97 Coop tests.

Quality data. Means for 1996-98 Western Cooperative two-row barley tests.

Cultivars	Protein (%)	Friability (%)	Fine extract (%)	70°C Extract (%)	F/70°C Diff. (%)	β-Glucan (p.p.m.)	Soluble Proteins (%)	Diastatic Power (°L)	α-Amylase (D.U.)
Harrington	11.9	70.1	77.9	75.0	4.5	243	4.9	120	53.3
Manley	12.3	67.1	79.5	75.4	4.1	222	4.7	157	59.3
CDC Copeland	11.9	75.9	80.0	76.8	3.1	99	4.7	113	47.4