



Manitoba Oat Variety Review 2012



Portage La Prairie



Martensville



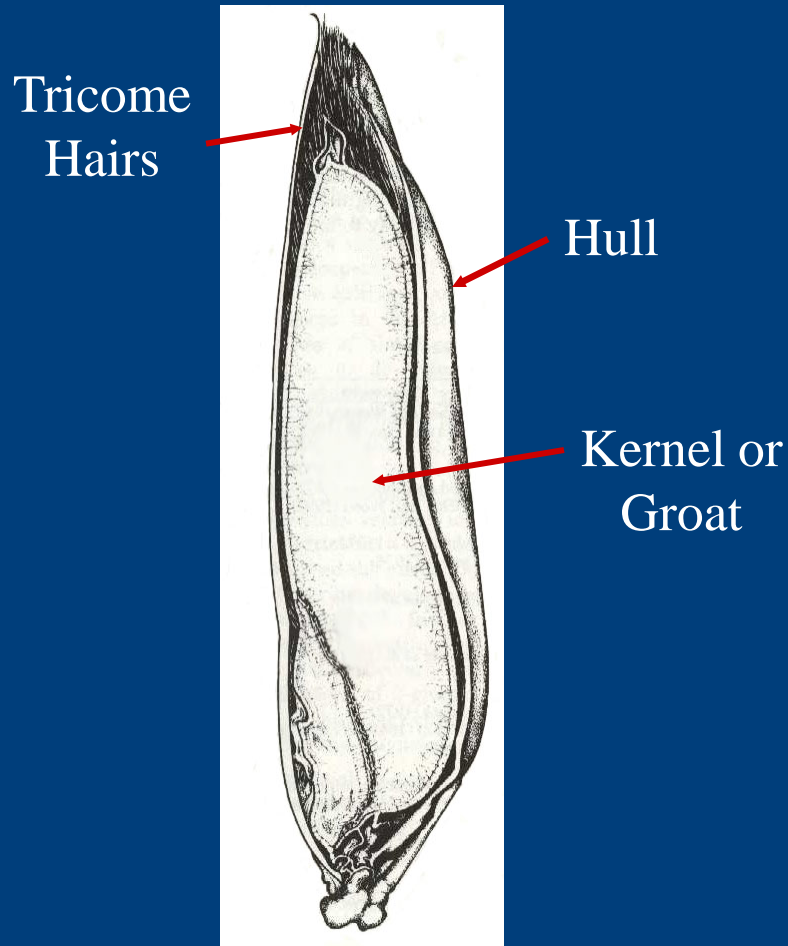
Barrhead



South Sioux City



Raw Oat Quality



Low Hull % is Desired

- ◆ Food products have extremely low tolerance for hulls.
- ◆ Impacts Milling Yield

Milling Yield

100 lbs Raw Oats



Customer Expectations

- Food Safety ... Free of metal, glass, pathogens, toxins, allergens
- Flavour & Texture consistency
- Nutritional profile ... Must meet Heart Health Food Claim
- Timely delivery and correct packaging
- Price
- Sustainability across the entire supply chain



FDA Health Food Claim

January 1997

Soluble fiber found in whole oat products may reduce the risk of coronary heart disease.

To qualify, food products must contain:

- Minimum of 10% total dietary fiber
- Minimum of 4% beta glucan
- Maximum 3 grams of fat per serving if oats are used as an ingredient



Variety Milling Evaluation

Considerations

- Milling yield ... Hull thickness and adhesion to groat
- Mill Balance ... Groat size, shape and uniformity
- Nutritional Profile ... Beta Glucan, Total Digestible Fibre, Fat/oil, Protein
- Customer Acceptability ... Groat Colour, Product Flavour
- Grower Acceptability ... Grain Yield, Standability, Disease resistance



Variety Evaluation Mechanisms

Testing and Assessment

- Contribute \$ to P.O.B.C. and C.D.C. breeding programs
- Contribute \$ to special projects (I.H.A.R.F. and the N.A. C.O.R.E.)
- Review WCORT data as part of the P.G.D.C.
- Asses larger samples as new varieties are progressing through seed multiplication
- I.P. run a minimum of 150 mt of all potential milling oats



Raw Oat Specifications

Test Weight – 41 lb/bu (240 g/.5l)

Moisture – 13.5% max

Heated - 0% max

Damaged - 2% Max (green, frozen, sprouted, mildewed)

Wild Oats, Wheat, Barley – 1.5% max

Ergot, Sclerotia, Fireburnt - Nil

Total Damaged & Foreign Material - 4% max (ie 96% Sound)

Dehulled - 6% max

Thin Seed - 10% max (through 5/64 x 3/4 slot sieve)



Approved Varieties

RUST AREA

LEGGETT

SUMMIT

HiFi

SOURIS

TRIACTOR

AC RONALD

AC PINNACLE

FURLONG

NON-RUST AREA

AC MORGAN

DERBY

CALIBRE

CDC ORRIN

CDC DANCER

CDC WEAVER



Prohibited Oat Varieties

JORDAN

AC MARIE

AC MUSTANG

CASCADE

JASPER

AC JUNIPER

CDC PACER

CDC BALER

FOOTHILLS

GRIZZLEY

ATHABASCA

Lu



Varieties Under Review

CDC MINSTREL
CDC MORRISON
OT 2069



Variety Relative Beta Glucan Levels

Dry weight basis BG range

6.0 to 6.5% ----- HiFi, Morrison, CDC Sol-Fi

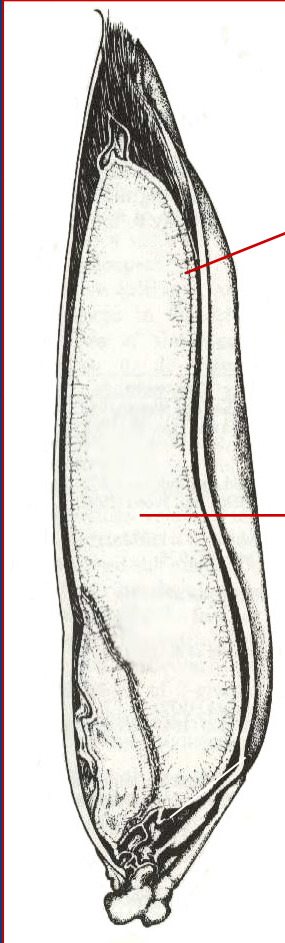
5.5 to 6.0% ----- CDC Pro Fi, SW Betania

5.0 to 5.5% ----- Leggett, Triactor, Souris, Summit

4.0 to 5.0% ----- everything else grown in the market place. On
a year with large seed size some will drop below 4%
(Furlong & Morgan)



The Dilution Effect



Bran layer of groat where Beta Glucan is concentrated

Low Beta Glucan starchy endosperm that increases with favourable growing conditions



Impact on Seed Size

- Growing season moisture – Too much or too little
- Growing season heat – Blasting
- Fertility
- Plant Diseases --- Leaf Rust, Stem Rust, Leaf Blotches, FHB,



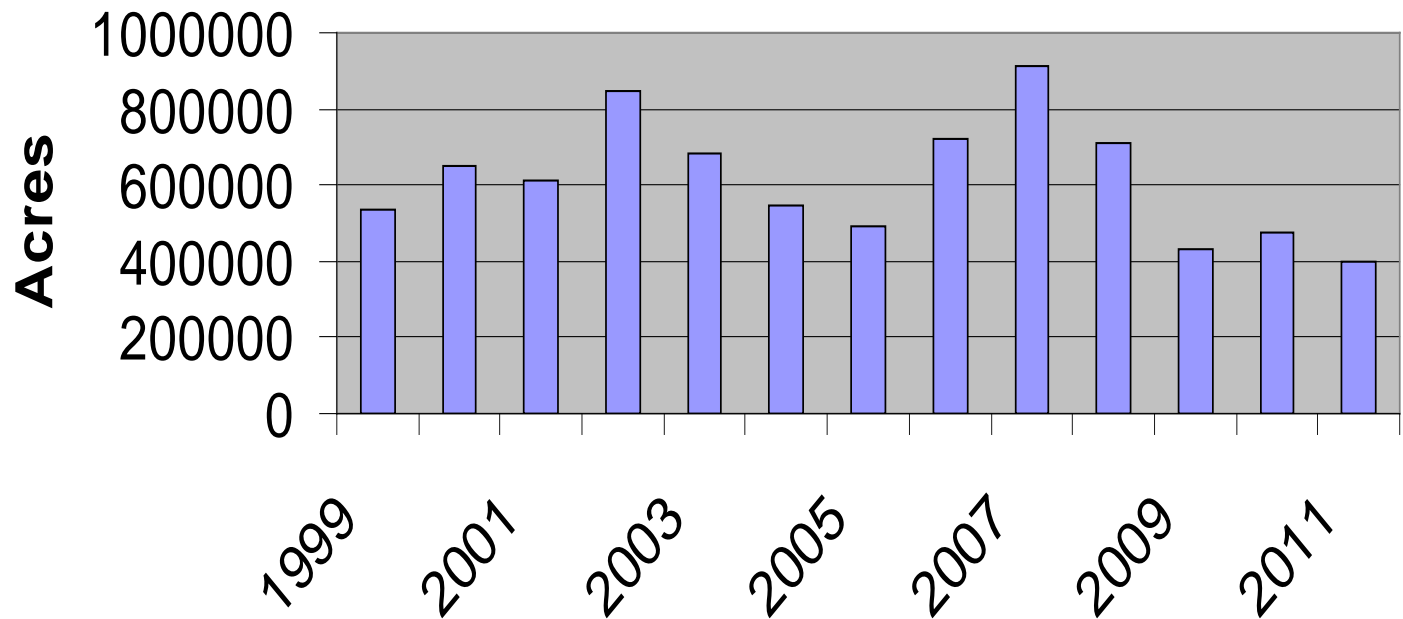
M.A.S.C. Data

	2009	2010	2011
SOURIS	4.4	15.3	25.8
FURLONG	25.5	22.5	16.0
LEGGETT	18.0	20.1	11.8
TRIACTOR		5.3	11.4
RONALD	13.0	10.6	9.4
SUMMIT		--	7.3
PINNACLE	12.2	11.4	6.3
CDC DANCER	4.0	2.8	2.0
AC ASSINIBOINE	4.3	2.8	2.0
TRIPLE CROWN	3.5	1.7	1.7
JORDAN	5.0	1.5	--



M.A.S.C. Data

Manitoba Oat Harvested Acres



A wide-angle photograph of a lush green agricultural field, likely a crop field, stretching towards a distant horizon under a pale, overcast sky. The foreground is filled with dense, green plants, possibly corn or a similar grain, which are slightly out of focus. The middle ground shows a more uniform green field, and the background features a gentle rise in the land, also covered in green vegetation. The overall scene conveys a sense of vastness and agricultural productivity.

ALBERTA 2005

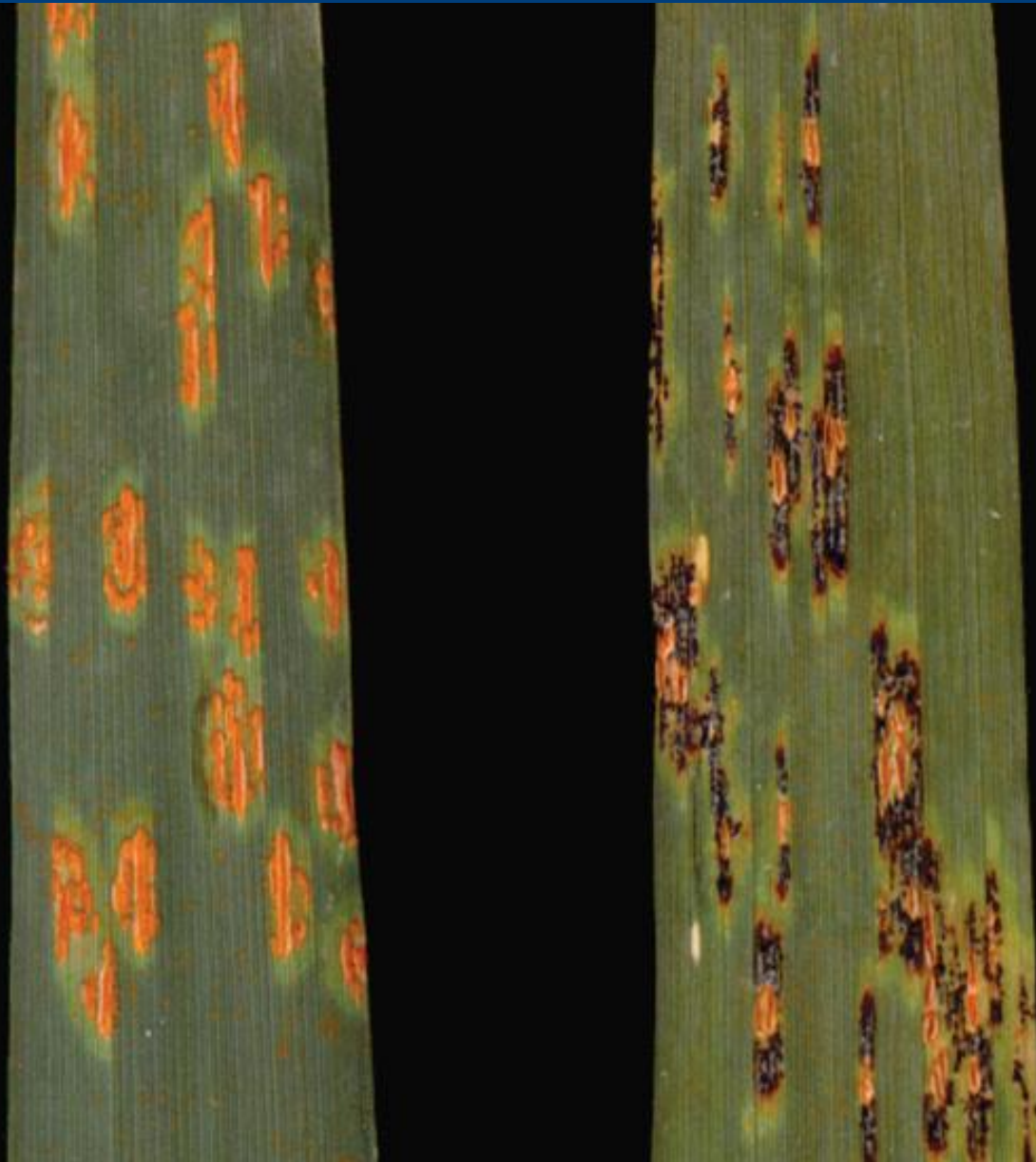
TERTIARY KERNELS



OAT BLAST



Oat Leaf (Crown) Rust





**2005
CROWN
RUST**

Genetic Disease Resistance

Resistant Gene Combinations For Leaf Rust

Fungicide application has low probability of net return

Pc 91 (Pc 96)	HiFi, Stainless
Pc 94	Leggett
Pc 48 & Pc 68	Summit, Triactor
Slow Rusting	CDC Dancer



Genetic Disease Resistance

Defeated Gene Combinations For Leaf Rust

Fungicide application has high probability of net return

Pc 38 & Pc 39

Robert, Riel, Dumont, Gerry,
Preakness, Boyer

Pc 38/39, & Pc 68

Assiniboia, Medallion,
Pinnacle, Ronald, Furlong, Jordan

Pc 48

Triple Crown



Oat Stem Rust



Oat FHB



Oat Leaf Blotch



Barley Yellow Dwarf Virus

