



Agronomy Overview

Crop Production Week

January 12, 2007

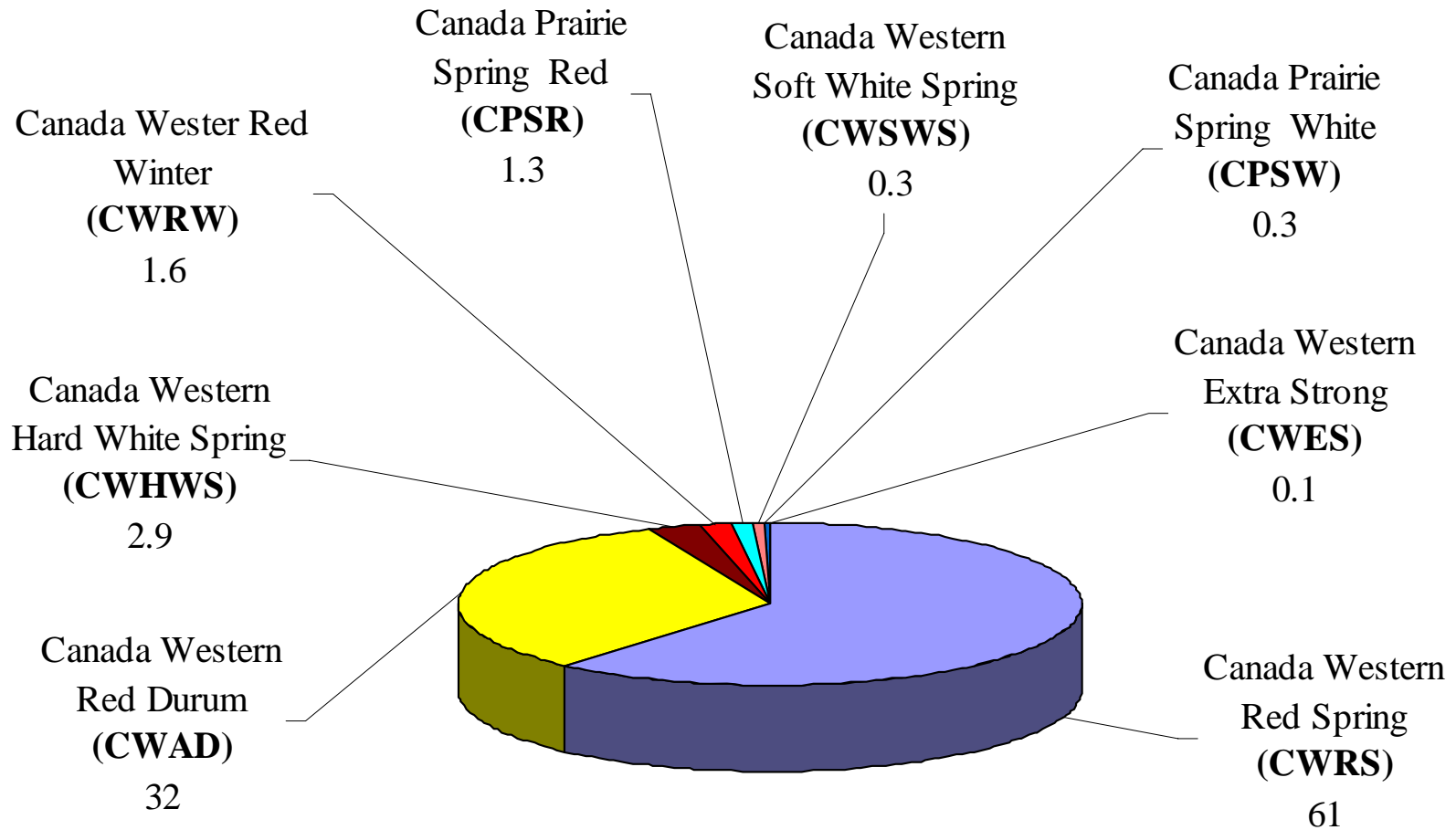
Mike Grenier, Agronomist

Product Development and Marketing Support

Presentation Overview

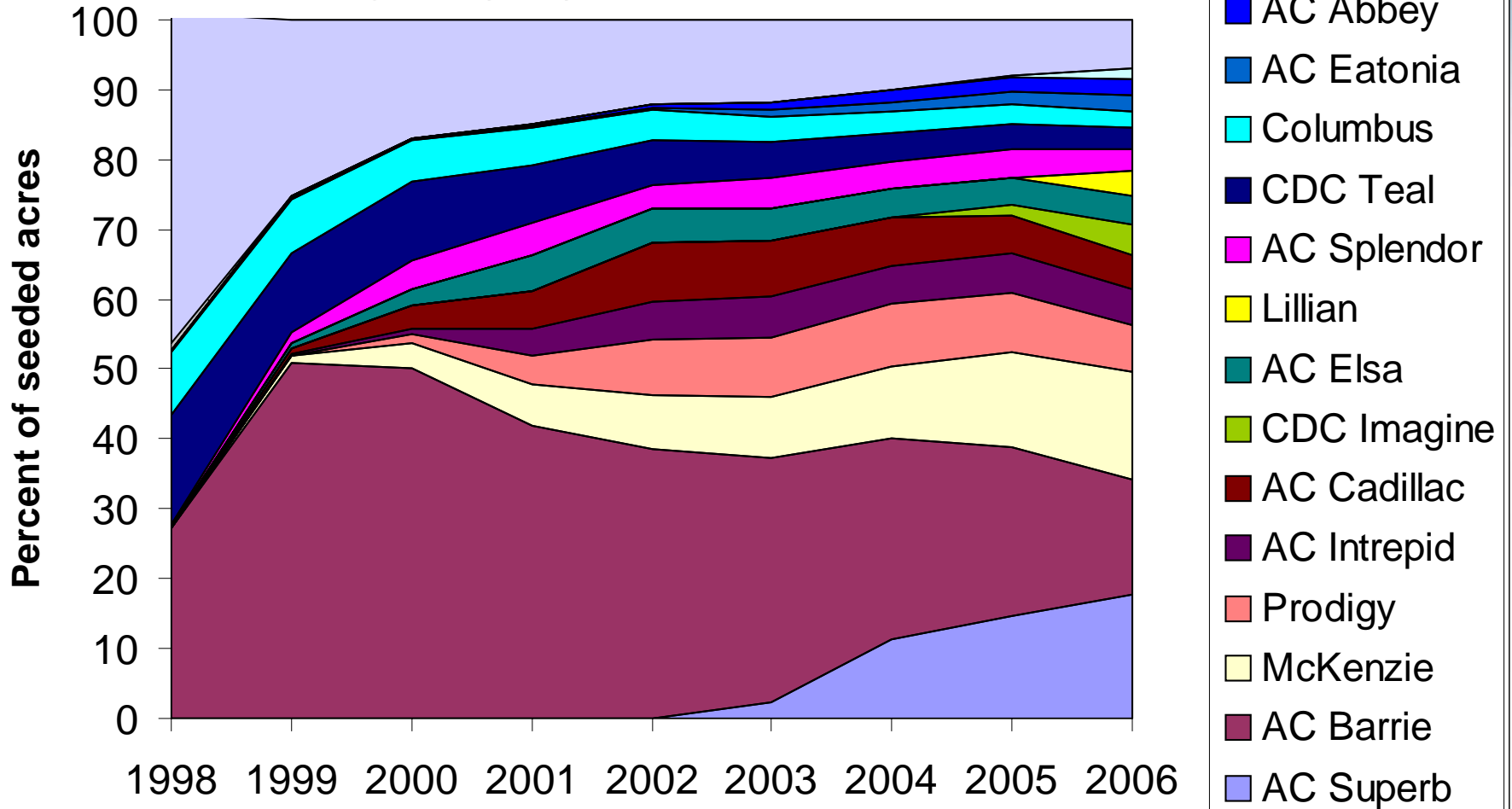
- 2006 CWB Variety Survey Highlights including:
 - Review of trends in variety adoption
 - Overview of new varieties
 - Update on agronomy projects for malting barley and winter wheat
- Agronomic issues looking forward:
 - Sawfly update
 - Midge update
 - Grain Storage Quality

2006 Variety Survey - Saskatchewan



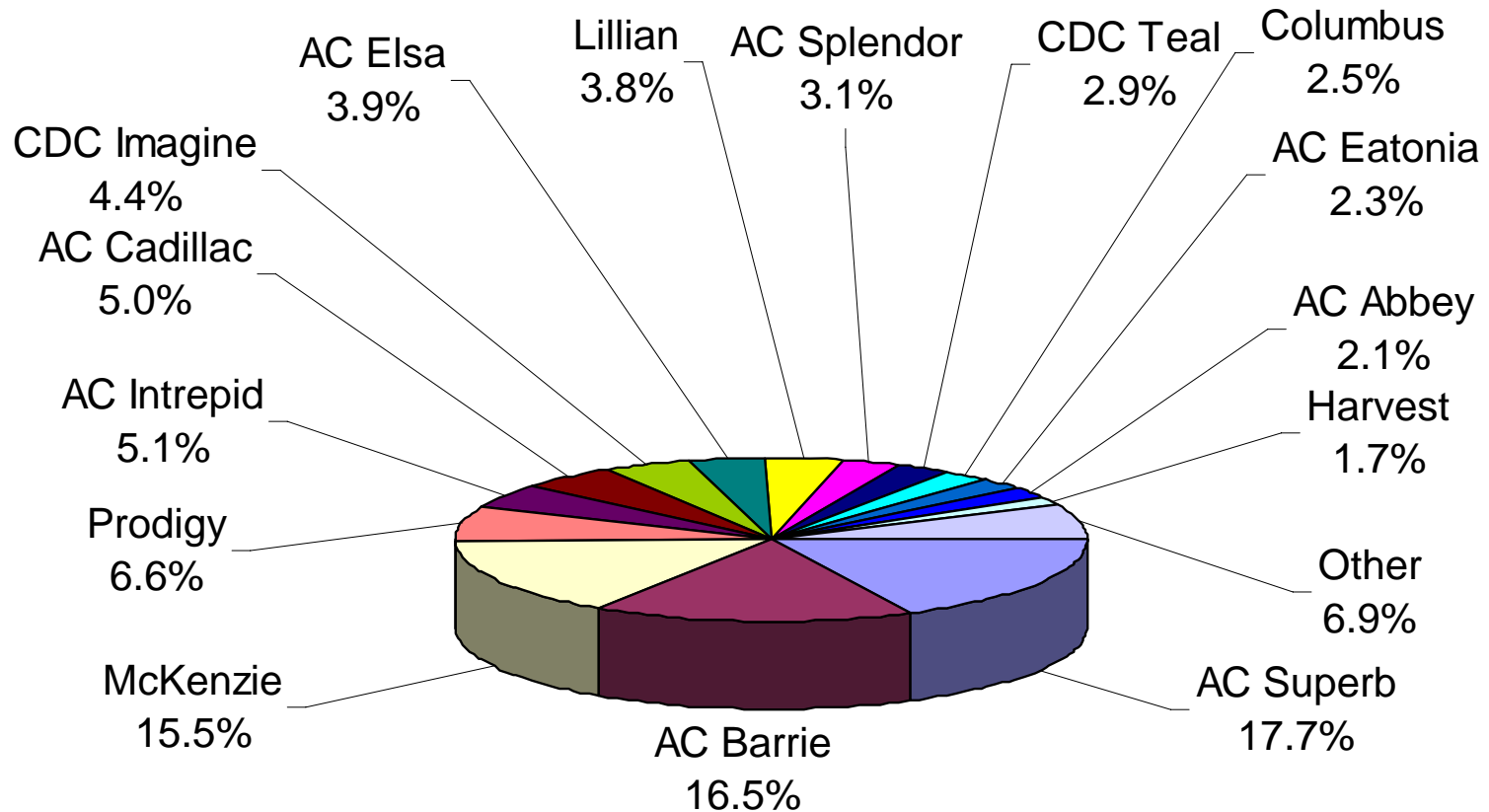
CWB Variety Survey 1998-2006

CWRS - Saskatchewan



2006 CWB Variety Survey

CWRS - Saskatchewan



How do new varieties rate?

2002-03 Registrations

CDC Imagine	Clearfield wheat
CDC Go	Improved yield and straw strength
CDC Osler	Improved yield with early maturity
Harvest	Excellent sprouting with improved yield
Journey	Improved sprouting, mid to late maturity
Lovitt	Improved sprouting, early maturity with yield better than AC Barrie
Peace	Early maturity with yield equal to AC Barrie
AC Lillian	Solid stem, improved yield and protein

2004 Registrations

5602HR	High yield and improved FHB tolerance
Somerset	Improved yield and high protein with early maturity
CDC Alsask	High yield with early maturity
Infinity	High yield and protein across all soil zones, earlier than Superb

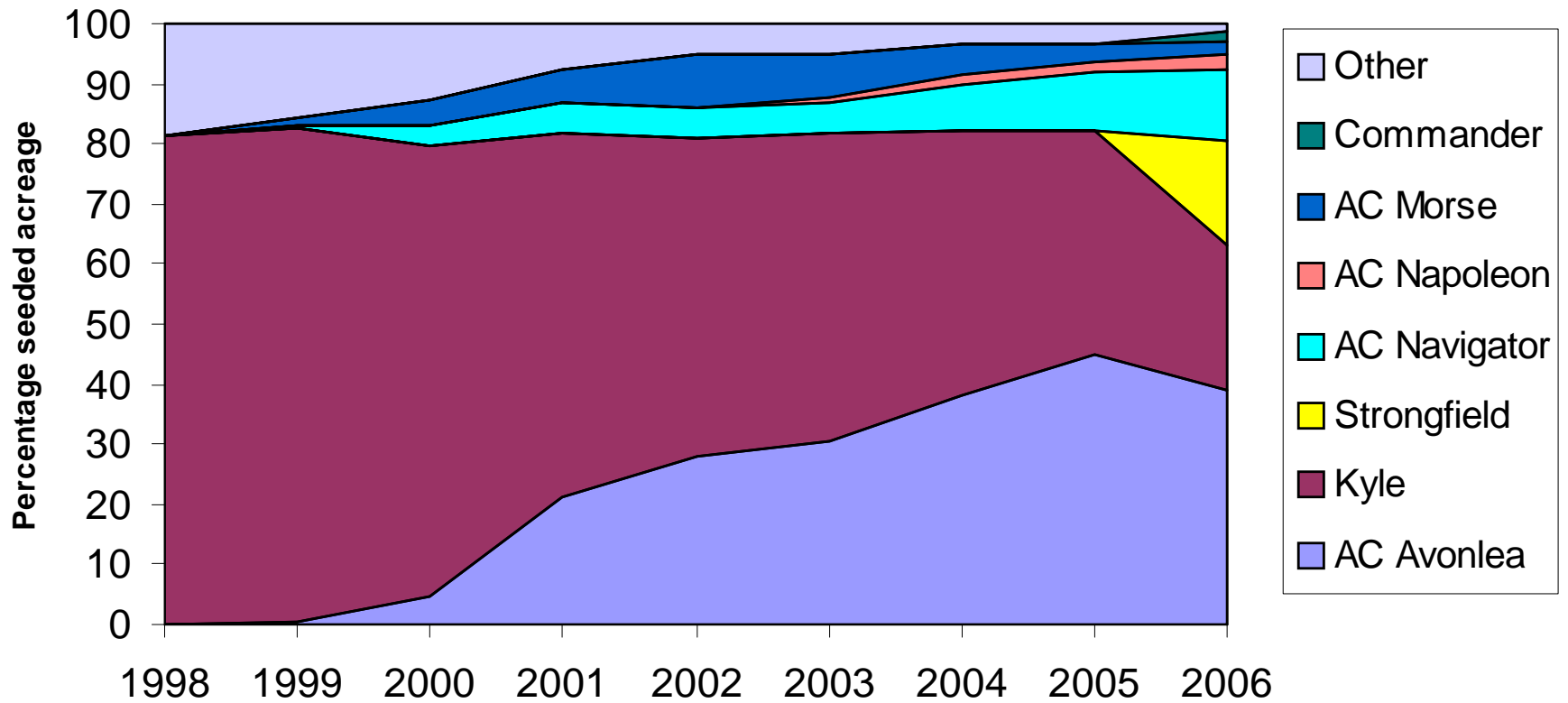
2005 and 2006 Registrations

Kane	High yield with excellent leaf rust resistance and good sprouting resistance
Alvena	Improved yield and protein with early maturity better than AC Barrie
Helios	Early maturity with improved yield better than AC Barrie

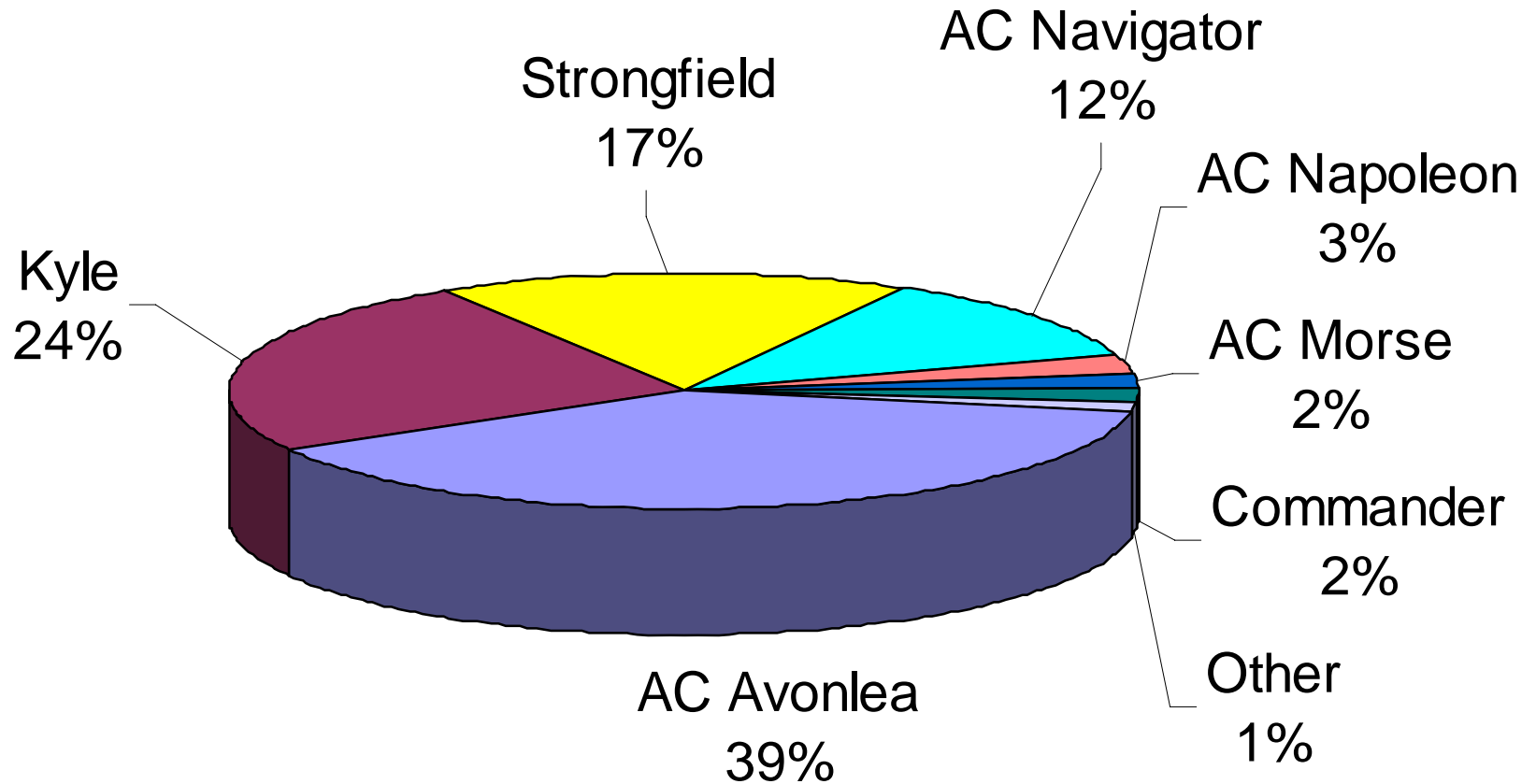
Lines still up for distribution: PT425, BW824

CWB Variety Survey (1998-2006)

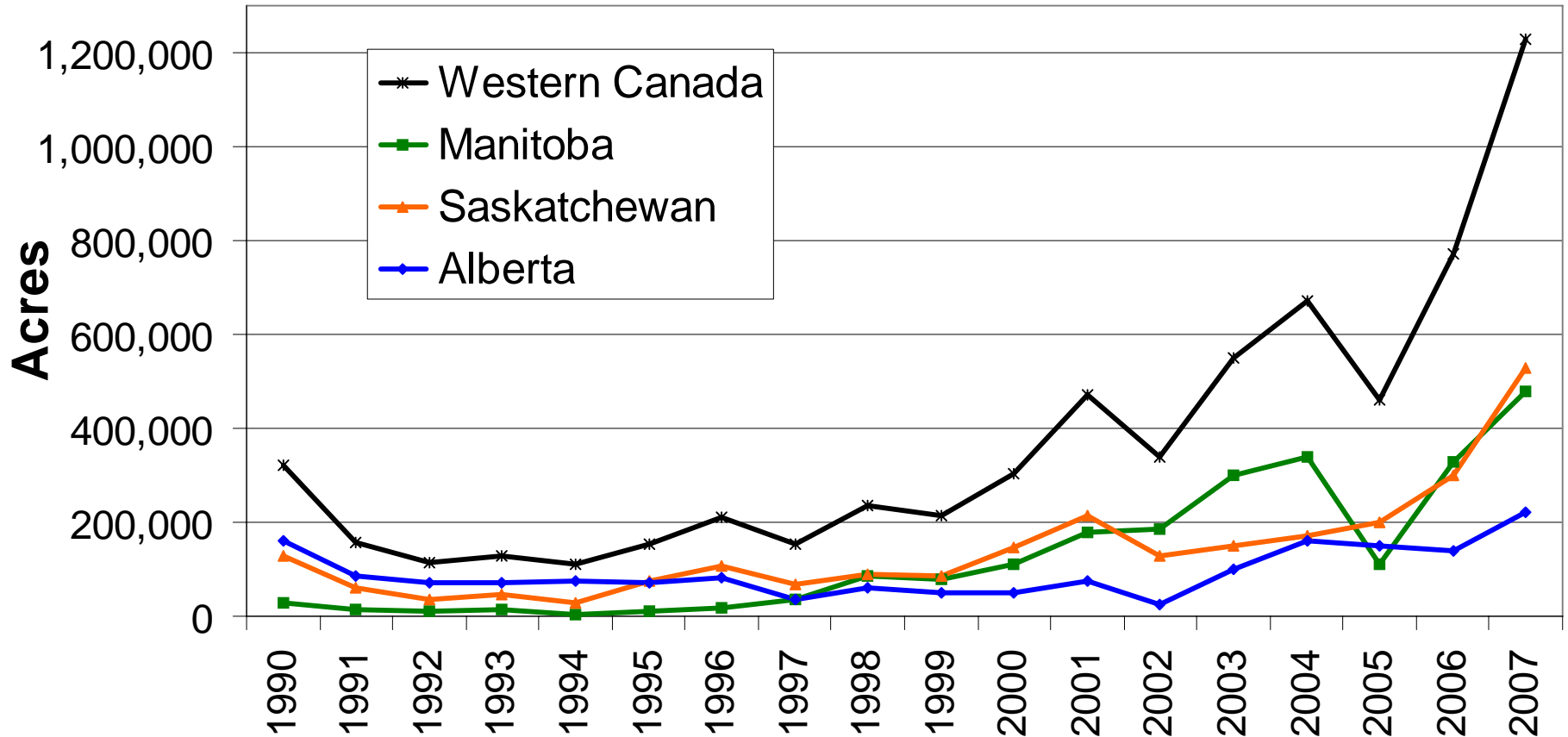
CWAD - Saskatchewan



2006 CWB Variety Survey CWAD - Saskatchewan



Canada Western Red Winter (CWRW) Acreage 1990-2007



Source: Statistic Canada Field Crop Reporting Series



CWRW Select IPCP

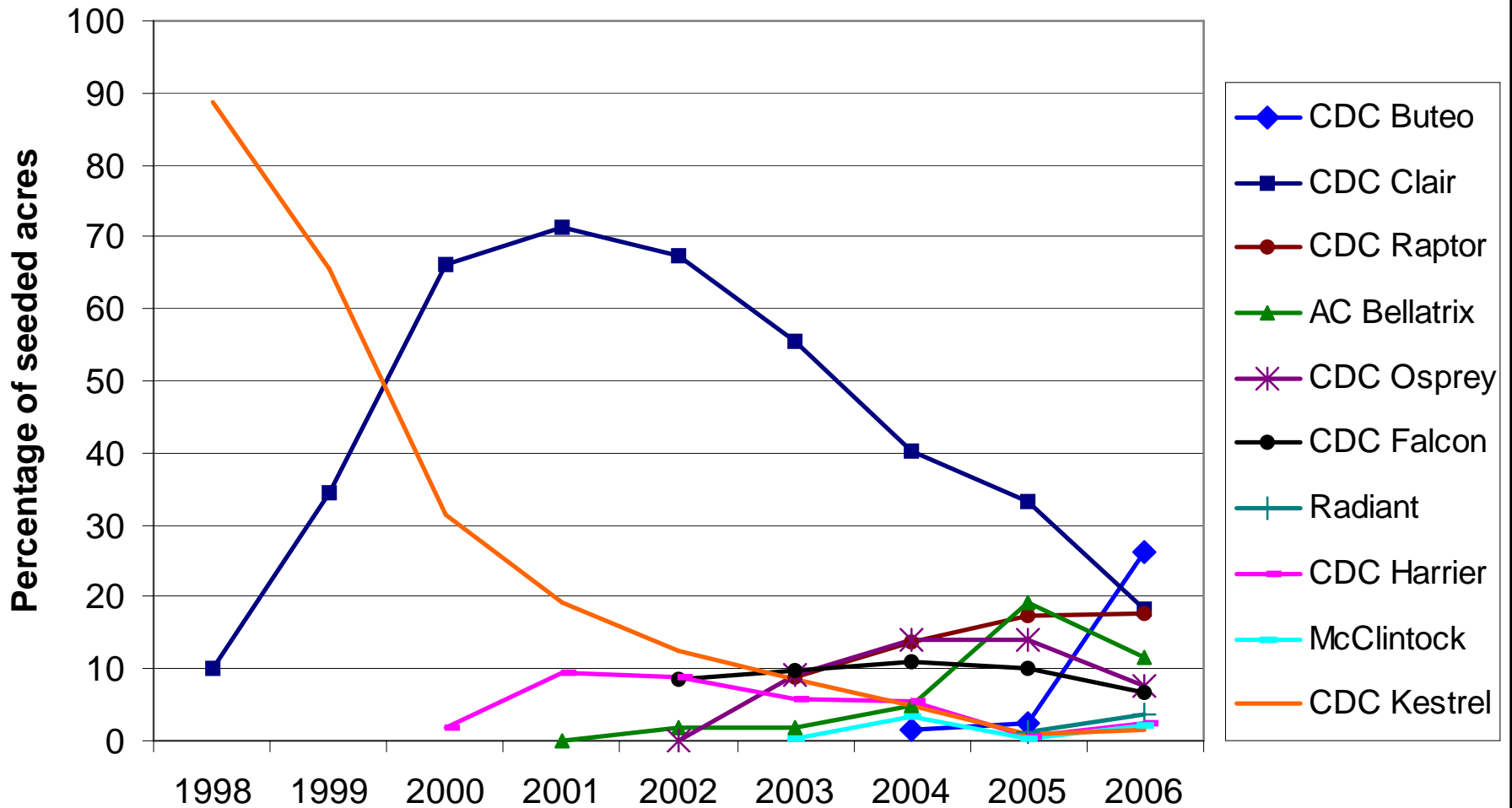
Eligible varieties:

- AC Bellatrix
- AC Tempest
- AC Readymade
- CDC Osprey
- CDC Buteo
- McClintock
- Norstar
- Radiant

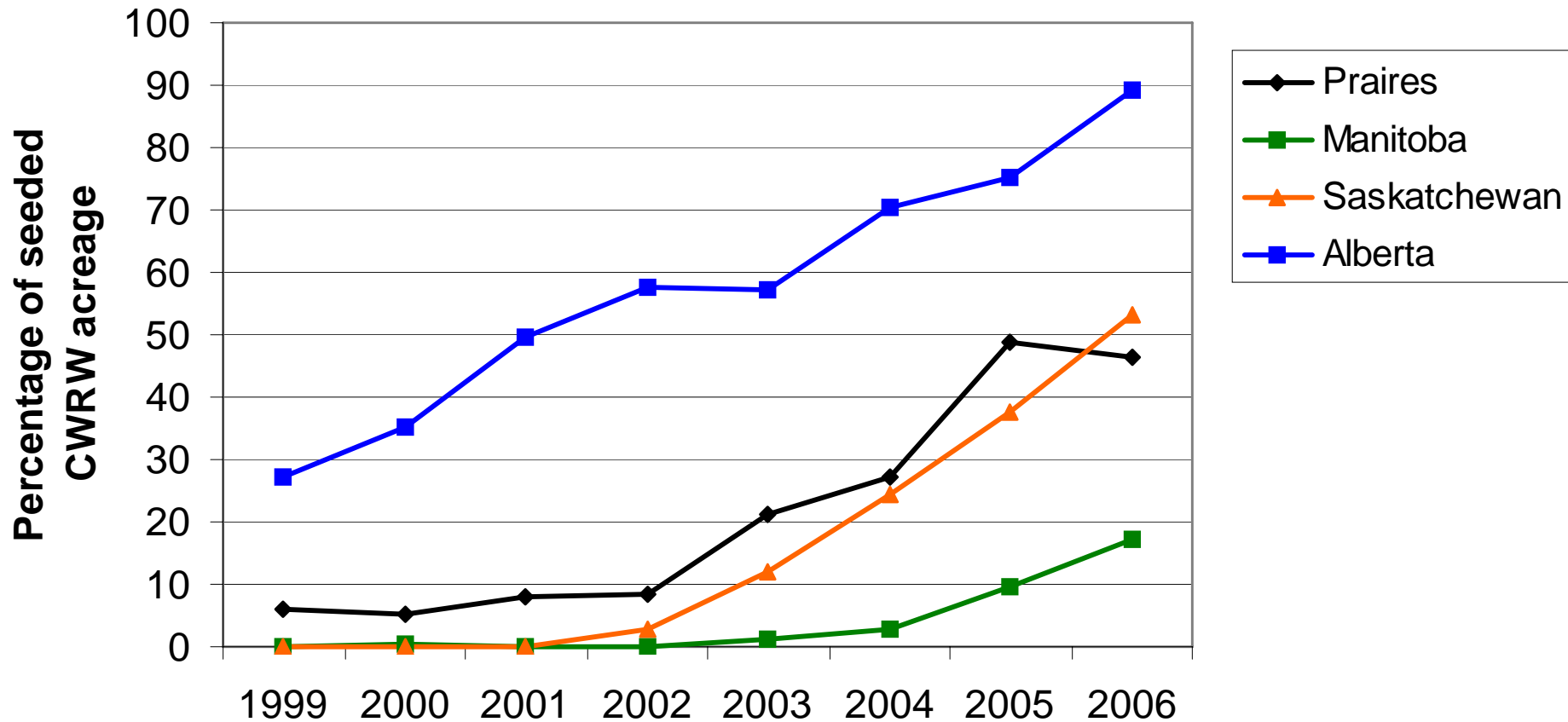


CWB Variety Survey (1998-2006)

CWRW - Saskatchewan



CWRW Select as Percentage of CWRW Acres CWB Variety Survey (1999-2006)



Winning with Winter Wheat

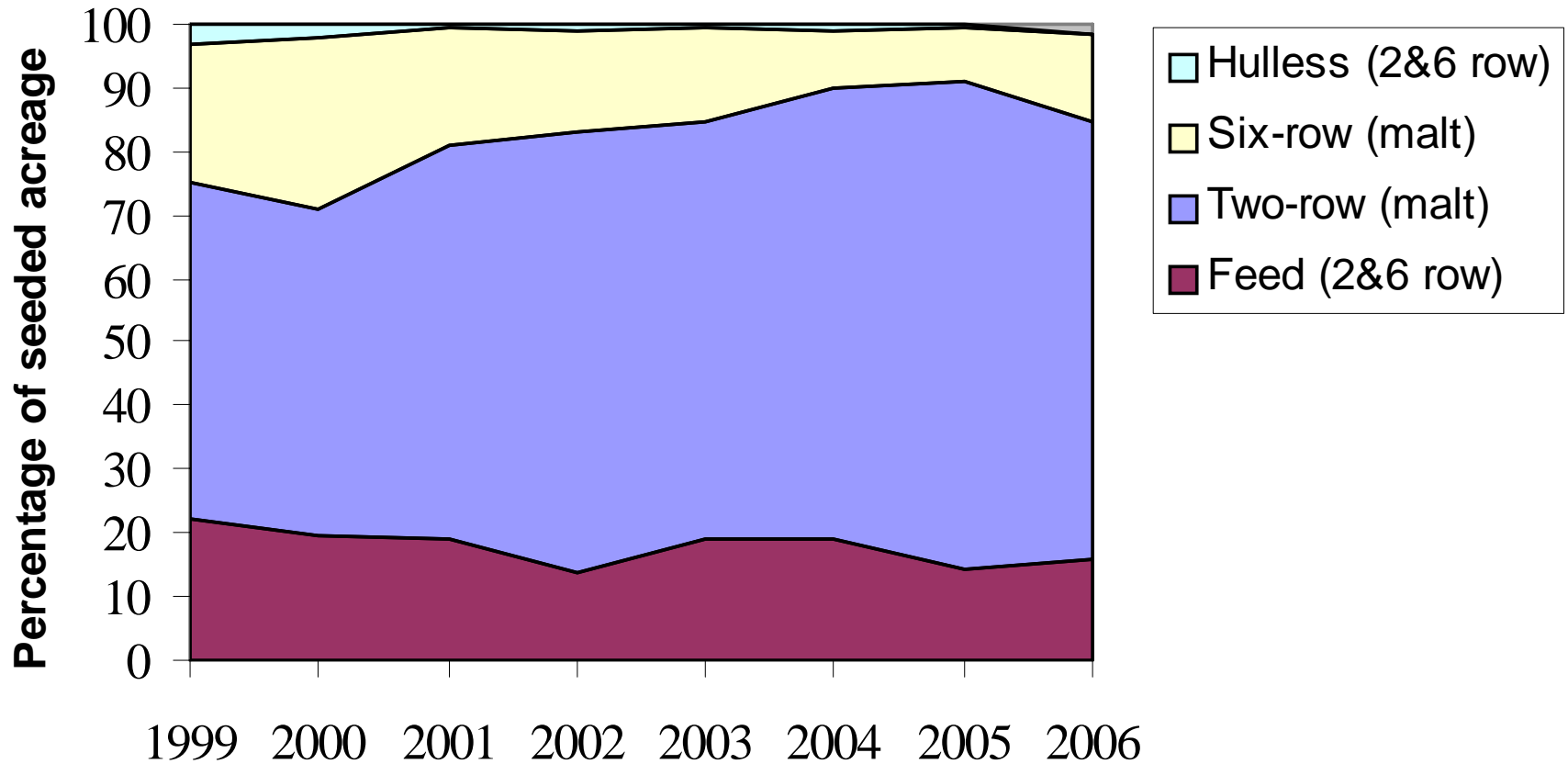
2006-07 SK Field Demo sites:

- Dinsmore
- Esk
- Bruno



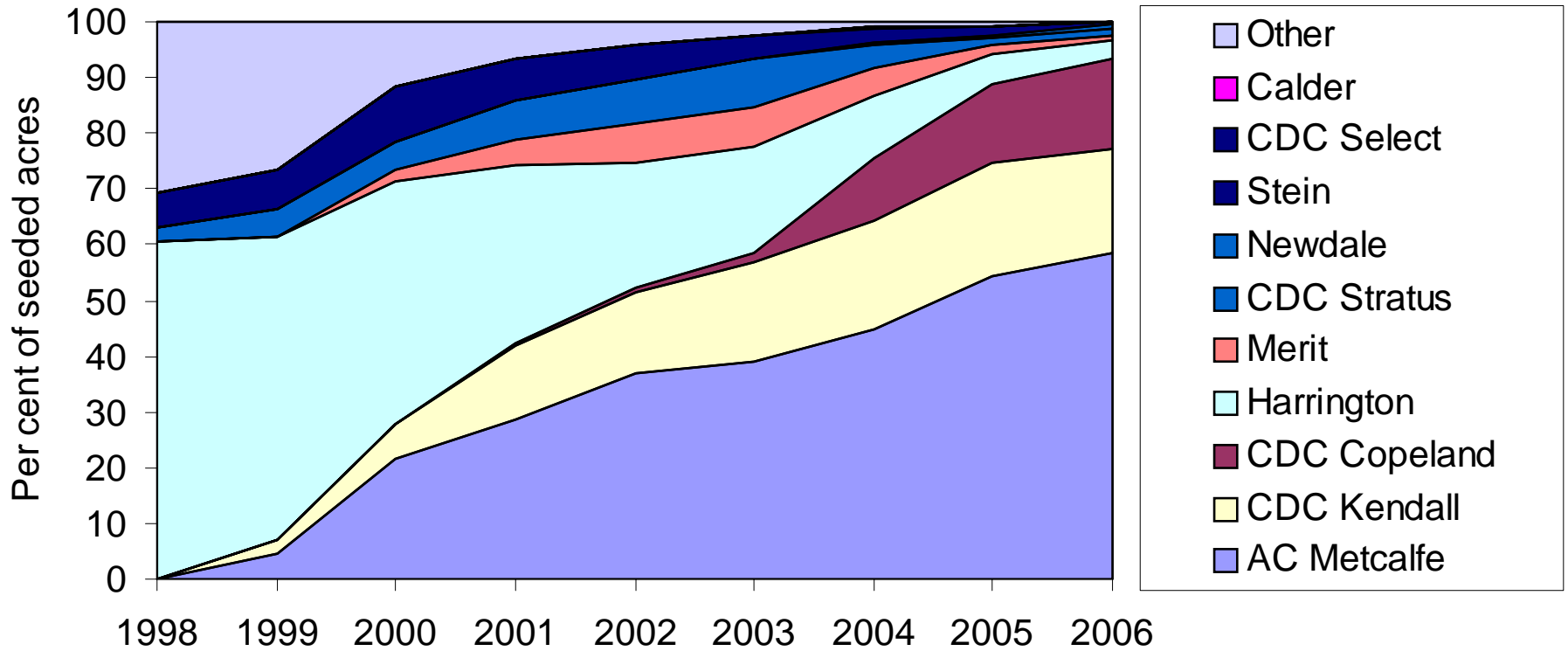
CWB Variety Survey (1998-2006)

Barley Acres by Type - Saskatchewan

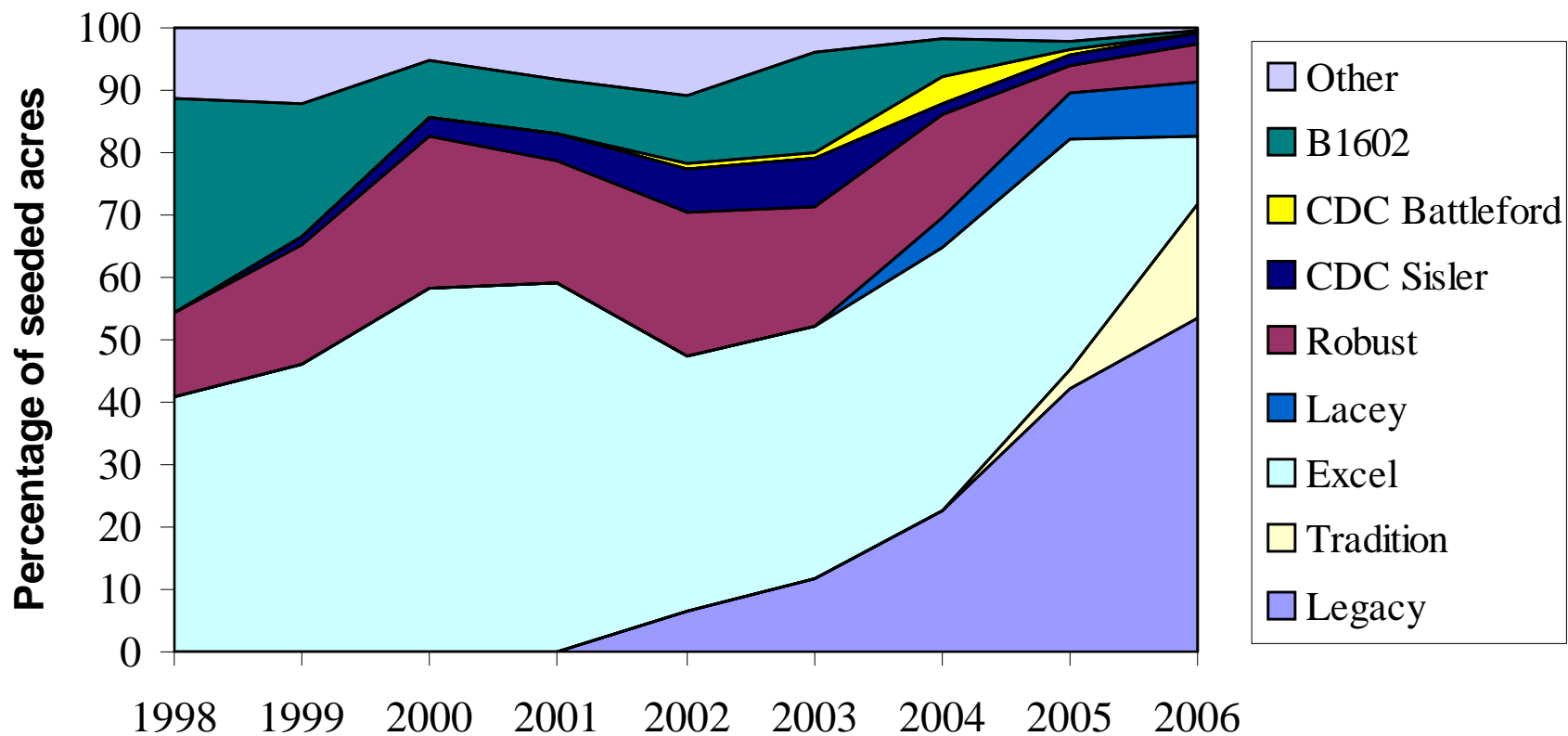


CWB Variety Survey (1998-2006)

Two-row Malting Barley - Saskatchewan

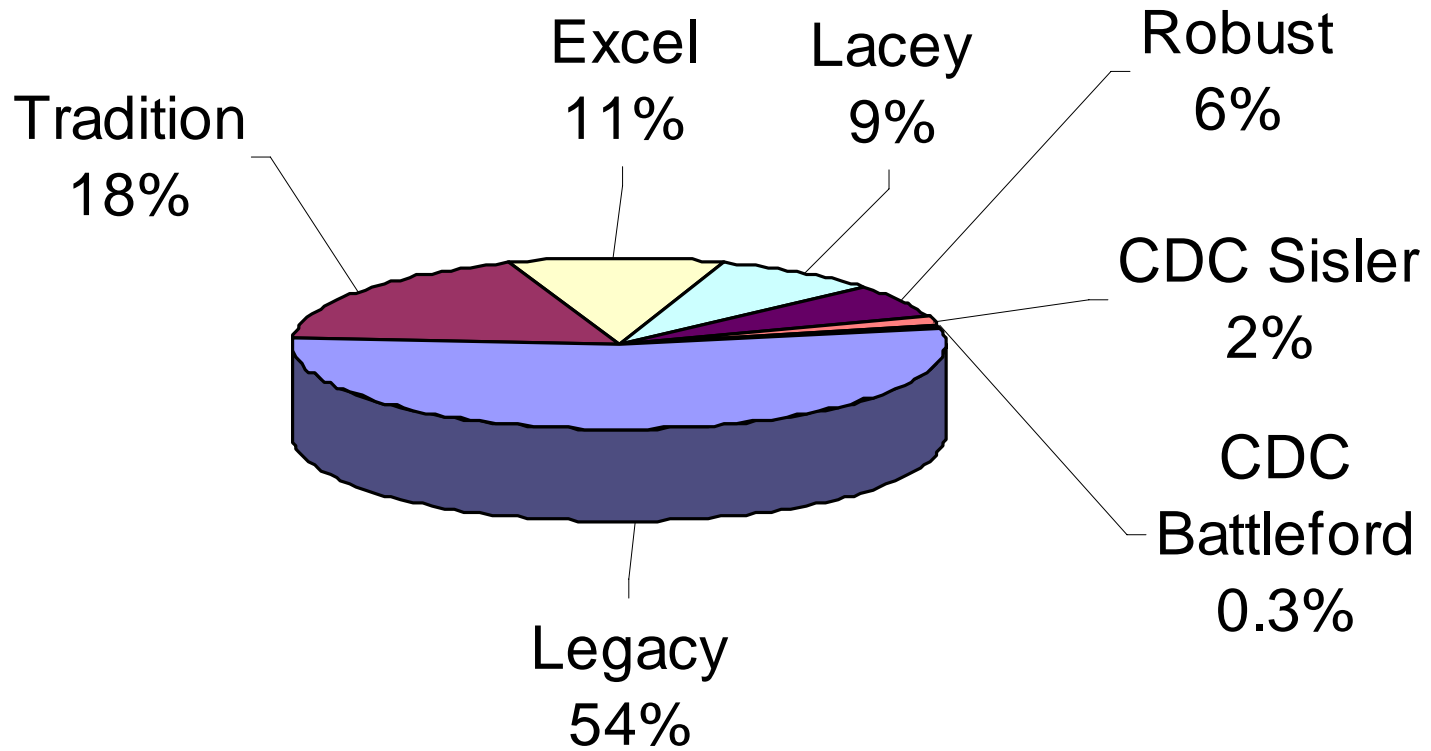


CWB Variety Survey (1998-2006) Six-row Malting Barley - Saskatchewan



2006 CWB Variety Survey

Six-row Malting Barley - Saskatchewan



Quality Payments for Malting Barley

2006-07 Protein Premiums for Two-row Malting Barley

Protein Level (%)	Price adjustment (\$/tonne)	Protein Level (%)	Price adjustment (\$/tonne)
12.6	0	11.7	2.90
12.5	1.00	11.6	3.20
12.4	1.20	11.5	3.50
12.3	1.40	11.4	3.80
12.2	1.60	11.3	4.10
12.1	1.80	11.2	4.40
12.0	2.00	11.1	4.70
11.9	2.30	11.0	
11.8	2.60	and below	5.00

Malting Barley Research

Optimizing agronomic performance (yield) and quality

- Extension and promotion of best management practices
 - Joint field research and demonstration site with Prairie Malt, Biggar SK
- Four year funding commitment to Malting Barley Agronomy & Quality project with Agriculture and Agri-Food Canada
 - Factors: crop rotation, variety, seeding date, and fertilizer recommendations
- Renewed three year funding commitment for Fusarium Head Blight research at Brandon Research Centre
- Storage quality research

Predicting Germination Loss During Storage

- Identified need for a rapid and objective test. Research project led by Canadian Grain Commission, CWB and Industry
- Weathering conditions can lead to incipient pre-germination (not visible to the eye)
- Instrumentation is same as for measuring falling number in wheat
- Length of germination viability is also related to storage conditions, in particular moisture content

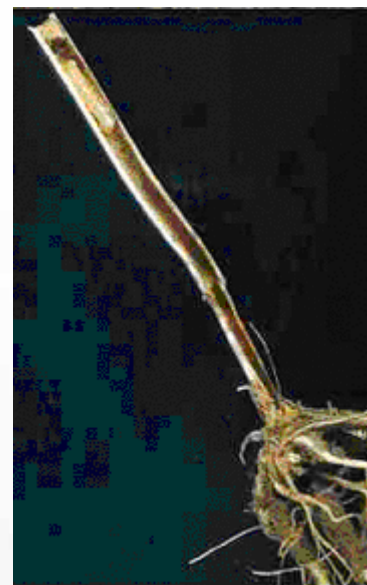
Rapid Visco-Analyzer (RVA)



Ability to reduce risk for growers in discussion with selectors relative to storage management condition and delivery requirement needs

Sawfly

- No in-season control methods available for sawfly
- Crop management decisions need to be in advance of seeding
- Be aware of risk level for sawfly damage in your area



Photos from: <http://www.agr.gov.sk.ca/docs/production/wheatstemsawfly.asp>

Sawfly Management

- Sawfly tend to be weak fliers, fields adjacent to where sawfly damage has been observed are at highest risk
- Control methods:
 - Crop rotation out of wheat to non cereals or oats & barley
 - Use of solid stem varieties for wheat
- Must have proper expectations for control methods and your management decisions
- Need consistent approach with tolerant varieties in order to have an impact on reducing overall sawfly population

Wheat Variety Selection for Sawfly Management

Saskatchewan Varieties of Grain Crops 2006

Yield (% of AC Barrie)

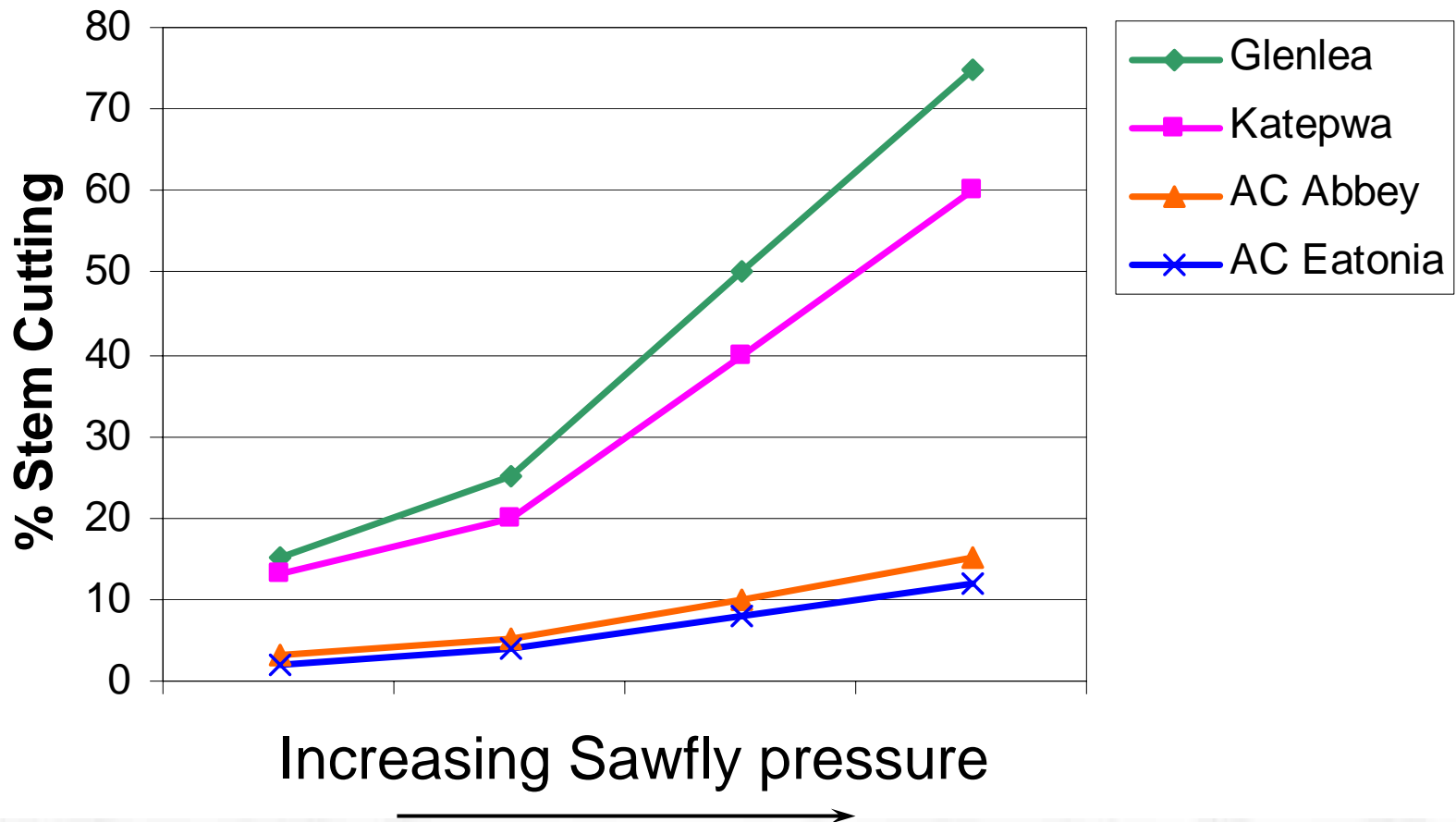
Area

Stem Leaf

Variety	1&2	3&4	Maturity	Protein	Lodging	Sprouting	Rust	Rust	FHB
Hollow Stem									
AC Barrie	100	100	100	14.7	G	G	G	P	F
McKenzie	106	102	-1	-0.5	F	G	G	VG	F
Superb	107	109	3	-0.4	G	G	G	P	P
Solid Stem									
AC Abbey	96	95	-1	-0.8	F	P	G	P	P
AC Eatonia	93	88	0	0.2	P	VG	F	P	
Lillian	105	100	0	0	F	G	G	VG	VP



Managing expectations for sawfly stem cutting levels with solid versus hollow stem varieties



Source: Dr. Ron DePauw, AAFC Swift Current

Midge

- Be aware risk for midge damage in your area
- Be prepared for timely field scouting to assess midge populations
- Be prepared to make pesticide control application



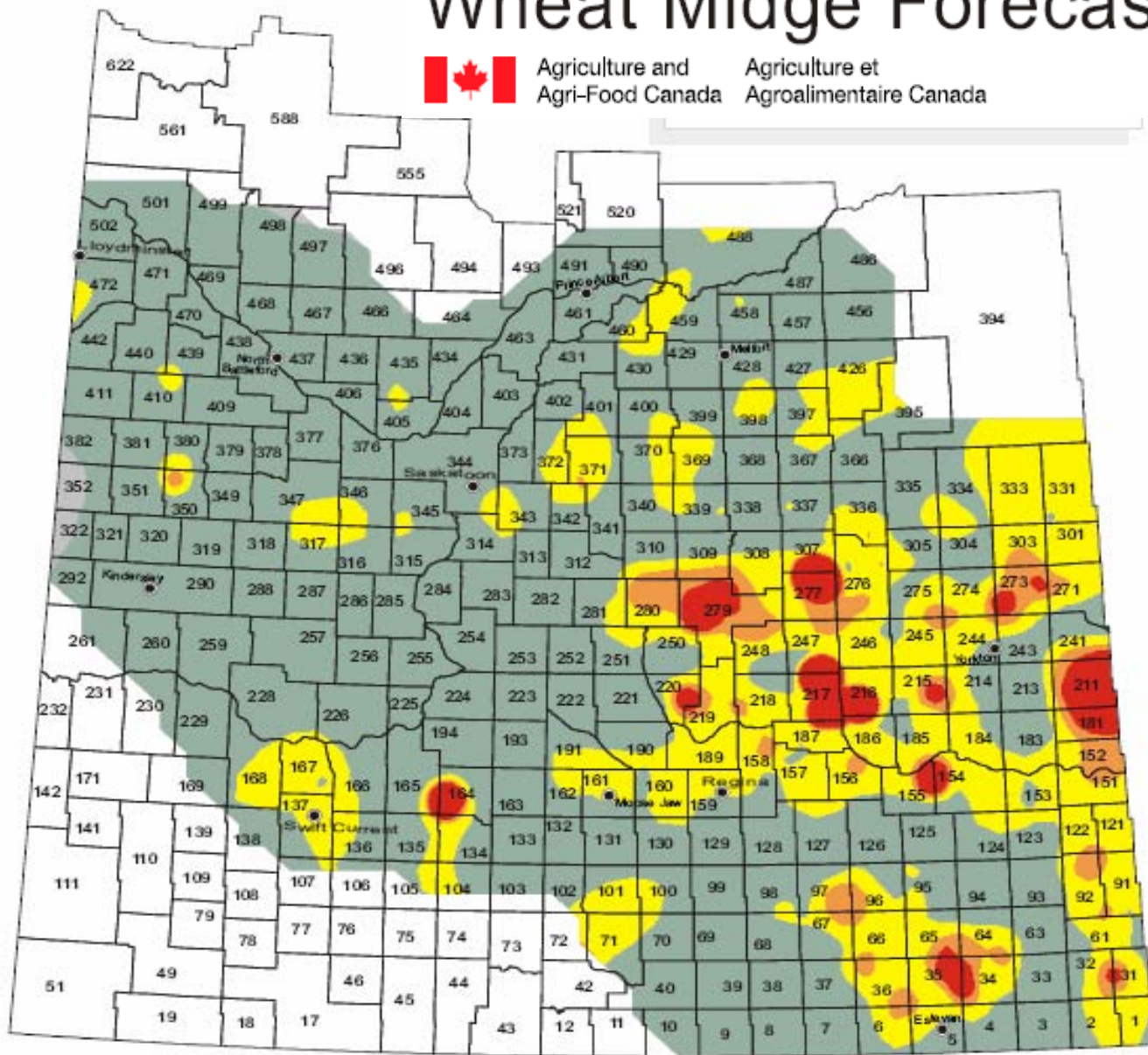
Photo from: <http://www.agr.gov.sk.ca/docs/production/midge0106.asp>

Wheat Midge Forecast 2006

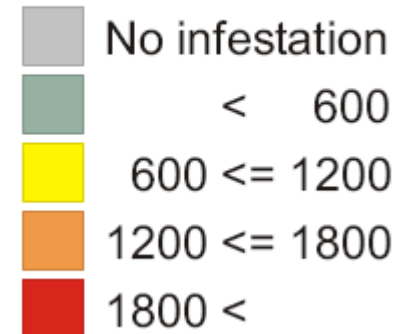


Agriculture and
Agri-Food Canada

Agriculture et
Agroalimentaire Canada



Midge / m²



CANADA - SASKATCHEWAN
Crop Insurance



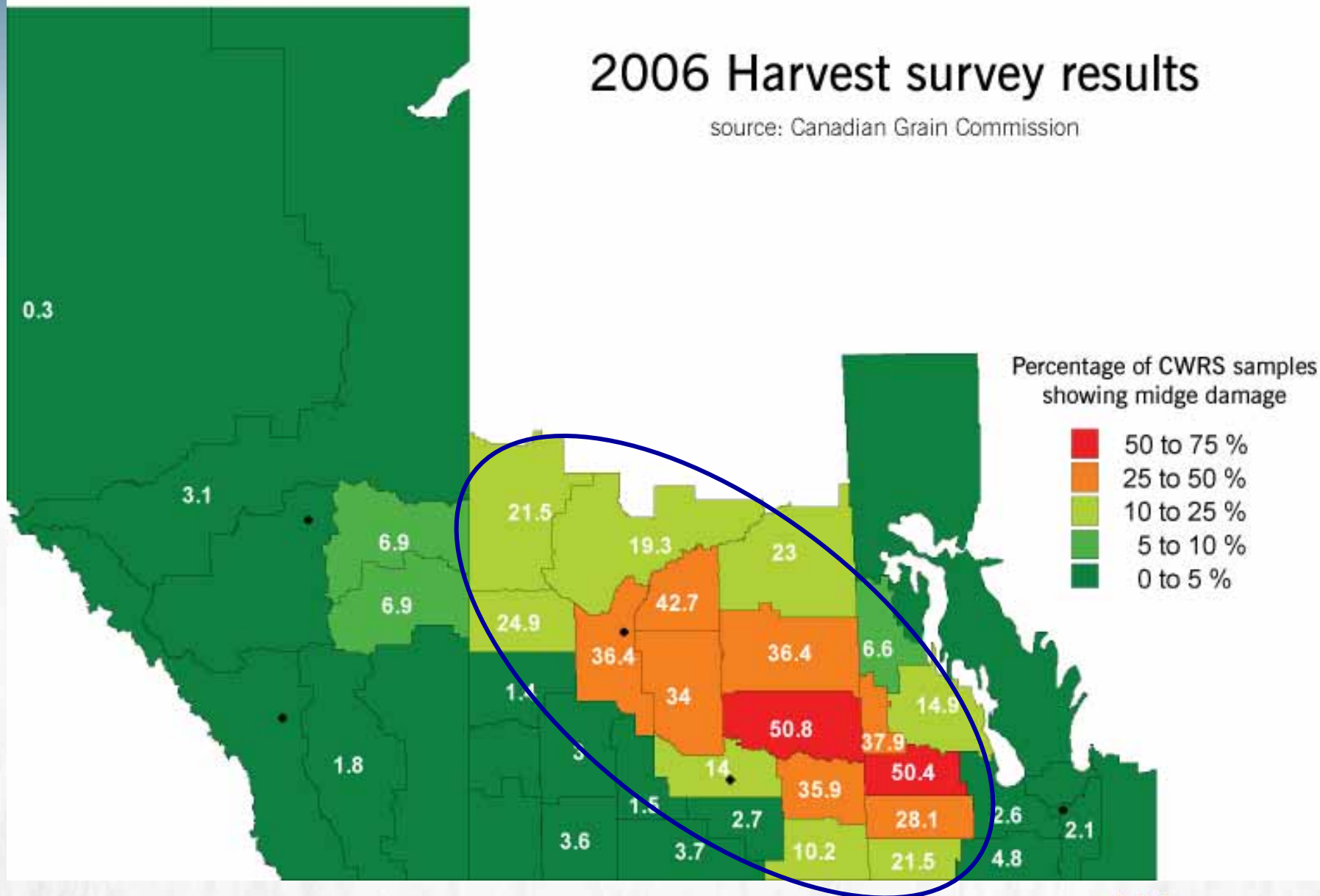
Saskatchewan
Agriculture
and Food

Note: Watch for new 2007 forecast expected to be released in February



2006 Harvest survey results

source: Canadian Grain Commission



When to monitor for presence of midge?

Fig.1

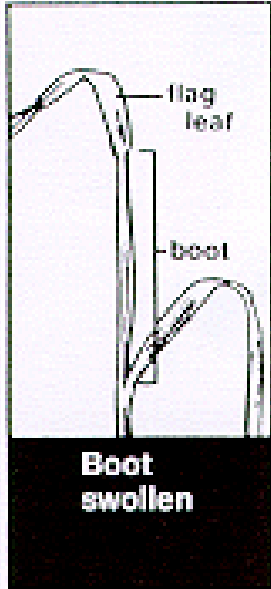


Fig. 2

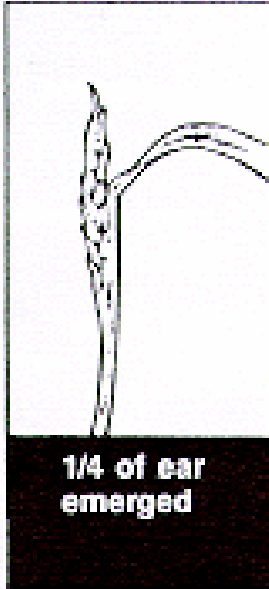


Fig. 3

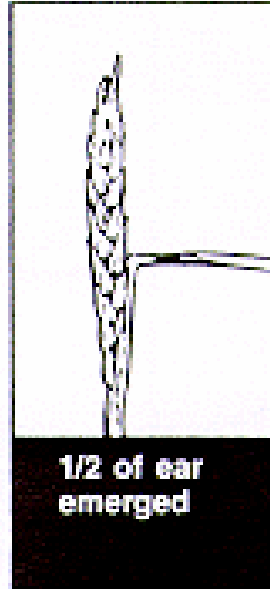


Fig. 4

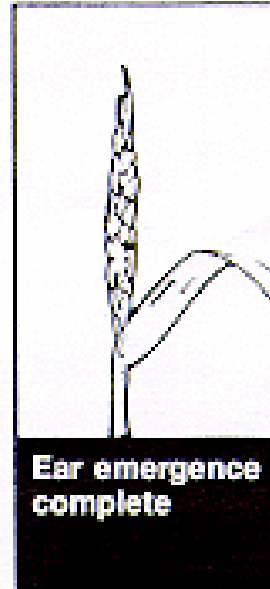


Fig. 5

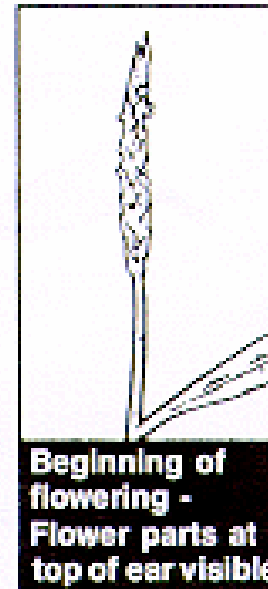
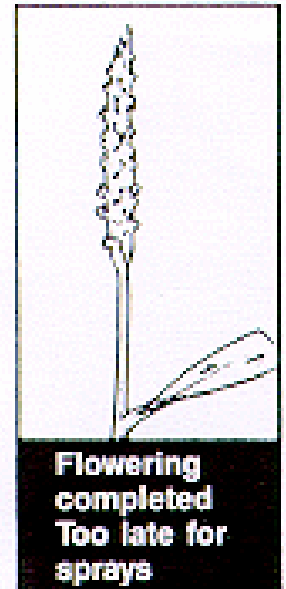


Fig. 6



Economic thresholds:

- Yield only: 1 per 4 to 5 heads
- Yield & Grade: 1 per 8 to 10 heads

Graphic from: <http://www.agr.gov.sk.ca/docs/production/midge0106.asp>

On Farm Storage Quality Control Canadian Advantage



Managing quality of stored grain

Available resources

- Canadian Grain Storage CD-ROM
 - Available from Canadian Grain Commission (CGC), Agriculture and AgriFood Canada (AAFC) and University of Manitoba
 - www.grainscanada.gc.ca
 - http://res2.agr.ca/winnipeg/index_e.htm
- Guide to Crop Protection Saskatchewan
 - Saskatchewan Agriculture Food and Rural Revitalization
 - www.agr.gov.sk.ca/docs/production/cropguide00.asp
- Factsheets and web info also available from:
 - Manitoba Agriculture Food and Rural Initiatives
 - www.gov.mb.ca/agriculture
 - Alberta Agriculture Food and Rural Development
 - www.agric.gov.ab.ca



Common Stored Grain Pests

- The most common grain feeding insects in Western Canada are:
 - Rusty grain beetle
 - Red flour beetle
 - Saw-toothed grain beetles
- Other
 - Moulds
 - Fungus feeding insects and mites



Photo from: <http://www.grainscanada.gc.ca/Entomology/prevent01-e.htm>

Detection methods



Probe sampling

- A pheromone-baited pit-fall trap
- A pheromone-baited probe pit-fall trap

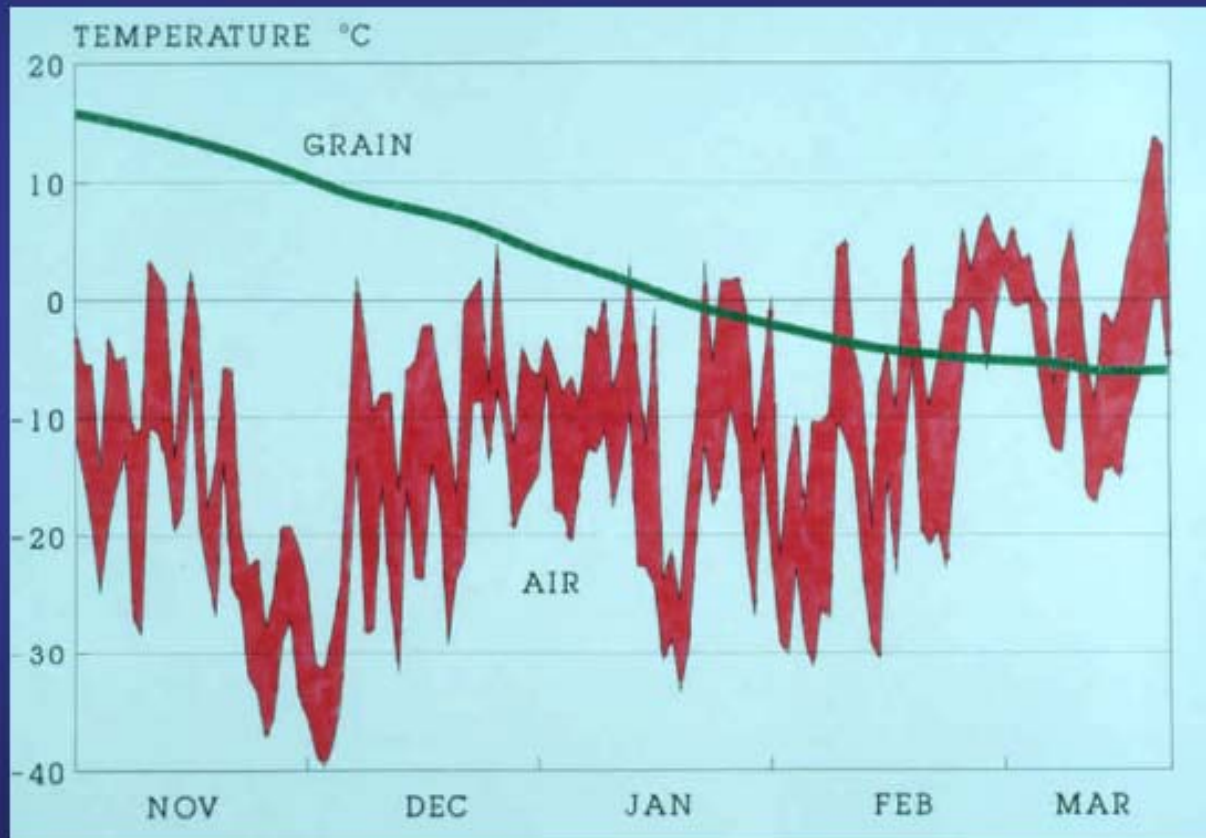


Sieve sampling

- Examine both sieve and pan material for presence of insect pests

Photos from: <http://www.grainscanada.gc.ca/Entomology/prevent01-e.htm>

How Do They Make Through Prairie Winters



<http://res2.agr.ca/winnipeg/storage/pubs/slides.pdf>

Control Methods

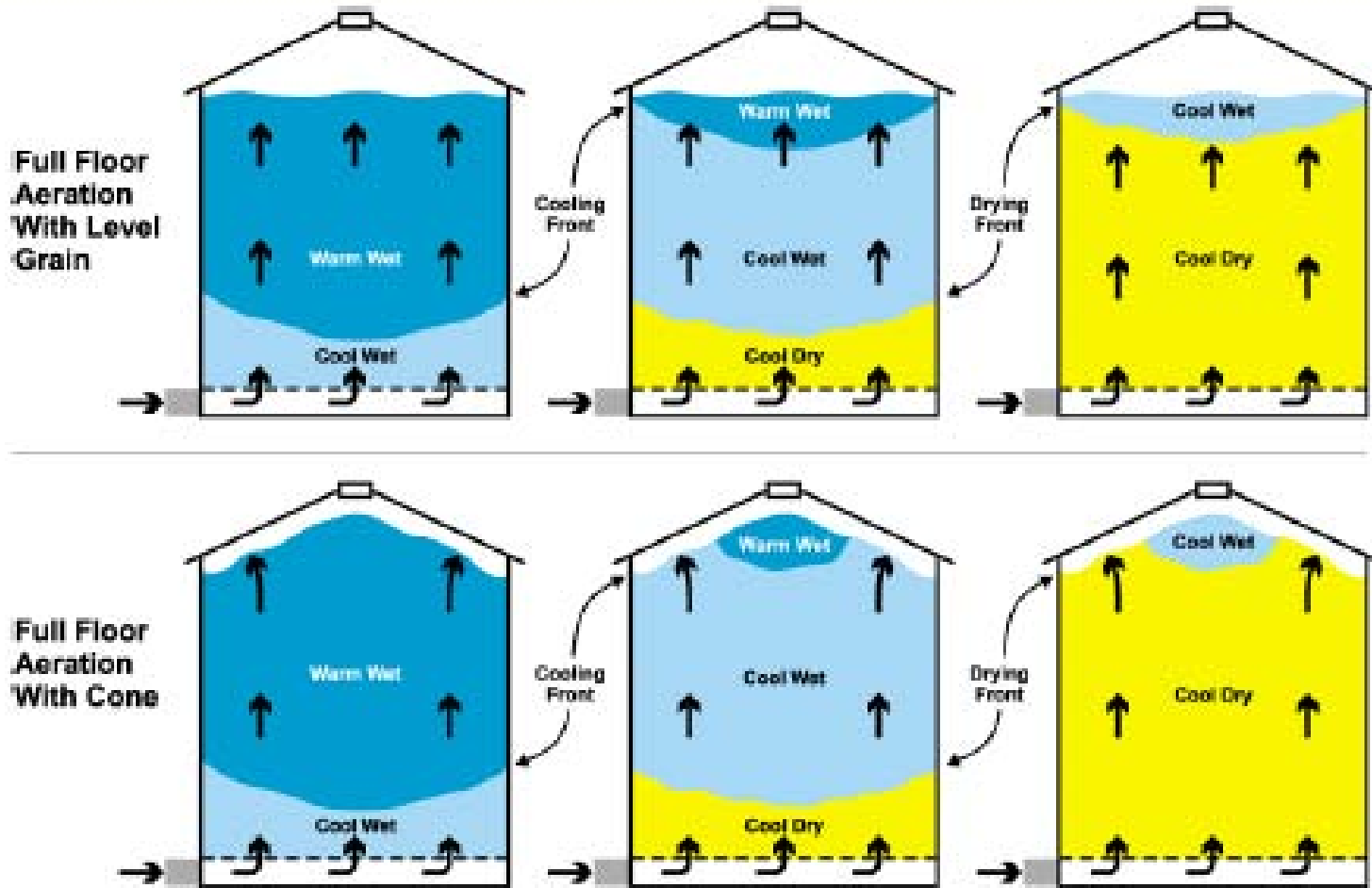
- Cold Temperatures

Time required to kill:

-5 C	12 weeks
-10 C	8 weeks
-15 C	2 weeks
-20 C	1 week



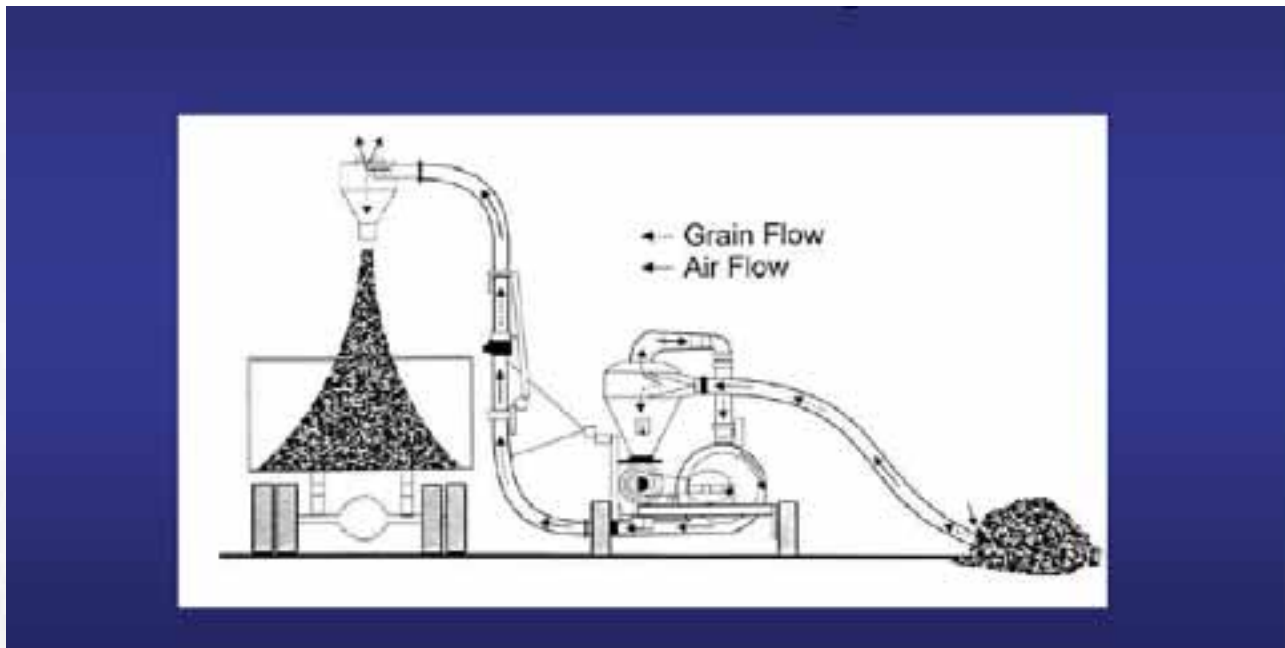
Aeration of Grain



<http://res2.agr.ca/winnipeg/storage/pubs/slides.pdf>

Other control methods

- High temperatures (Heat treatment)
- Insecticides
 - Fumigation (Phostoxin)
 - Chemical (Malathion)
 - Diatomaceous earth (Protect-it or Insecto)
- Moving grain



Prevention will be critical prior to 2007 harvest

- Sanitation

- Removal of all grain residues in and around bins
- Includes spilled grain and moving equipment (augers)



- Bin Treatment

Refer to guide for Crop Production for approved insecticides for **cereals**



Photos from: <http://www.grainscanada.gc.ca/Entomology/prevent01-e.htm>

Questions?

