



Western Canadian Wheat Growers

Toward commercialization of biotech wheat

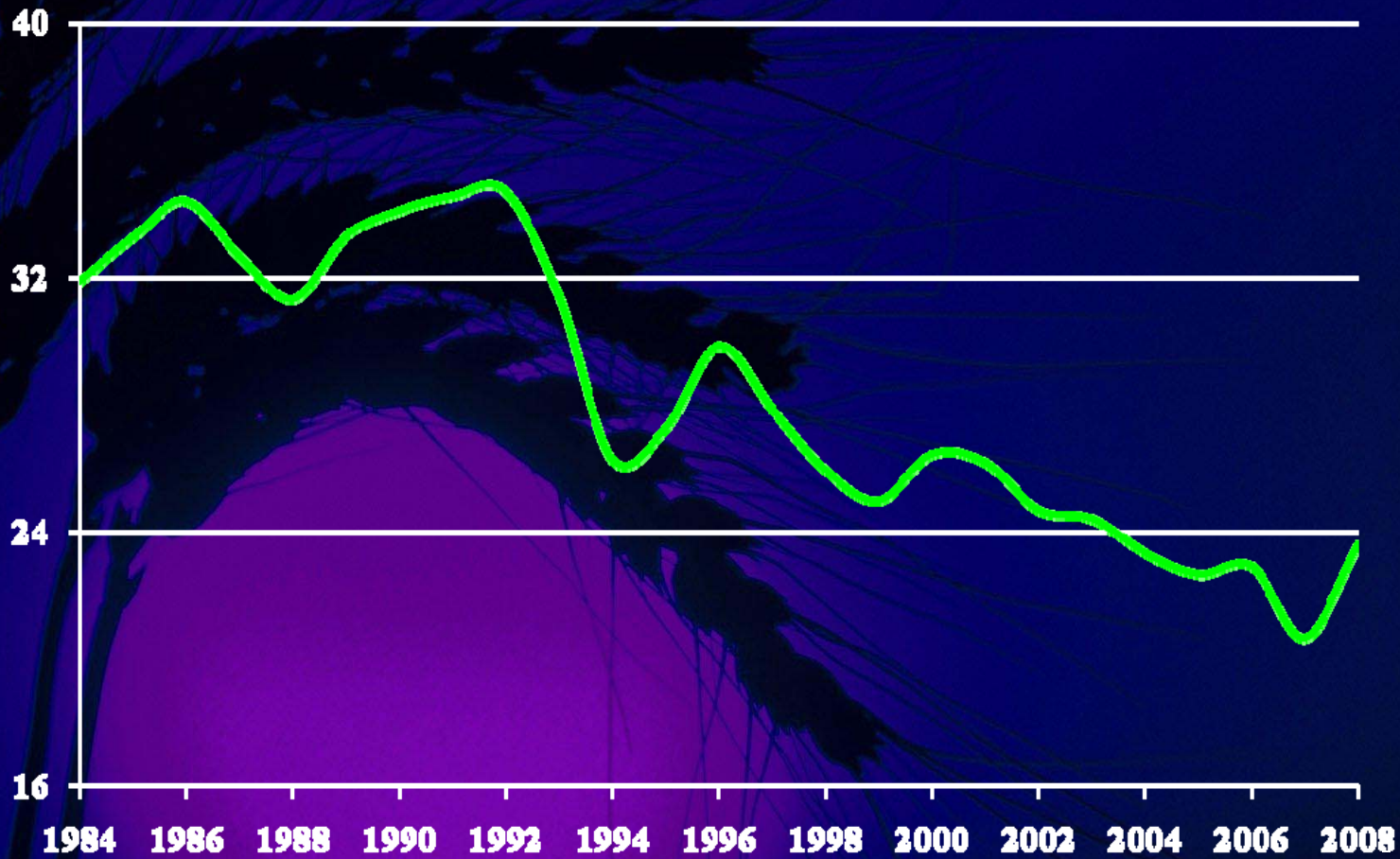
Presentation to Canadian National Millers Association
Blair Rutter, Executive Director
Western Canadian Wheat Growers Association
September 15, 2009
Montebello, Quebec



Rationale for Wheat Grower support of GM Wheat

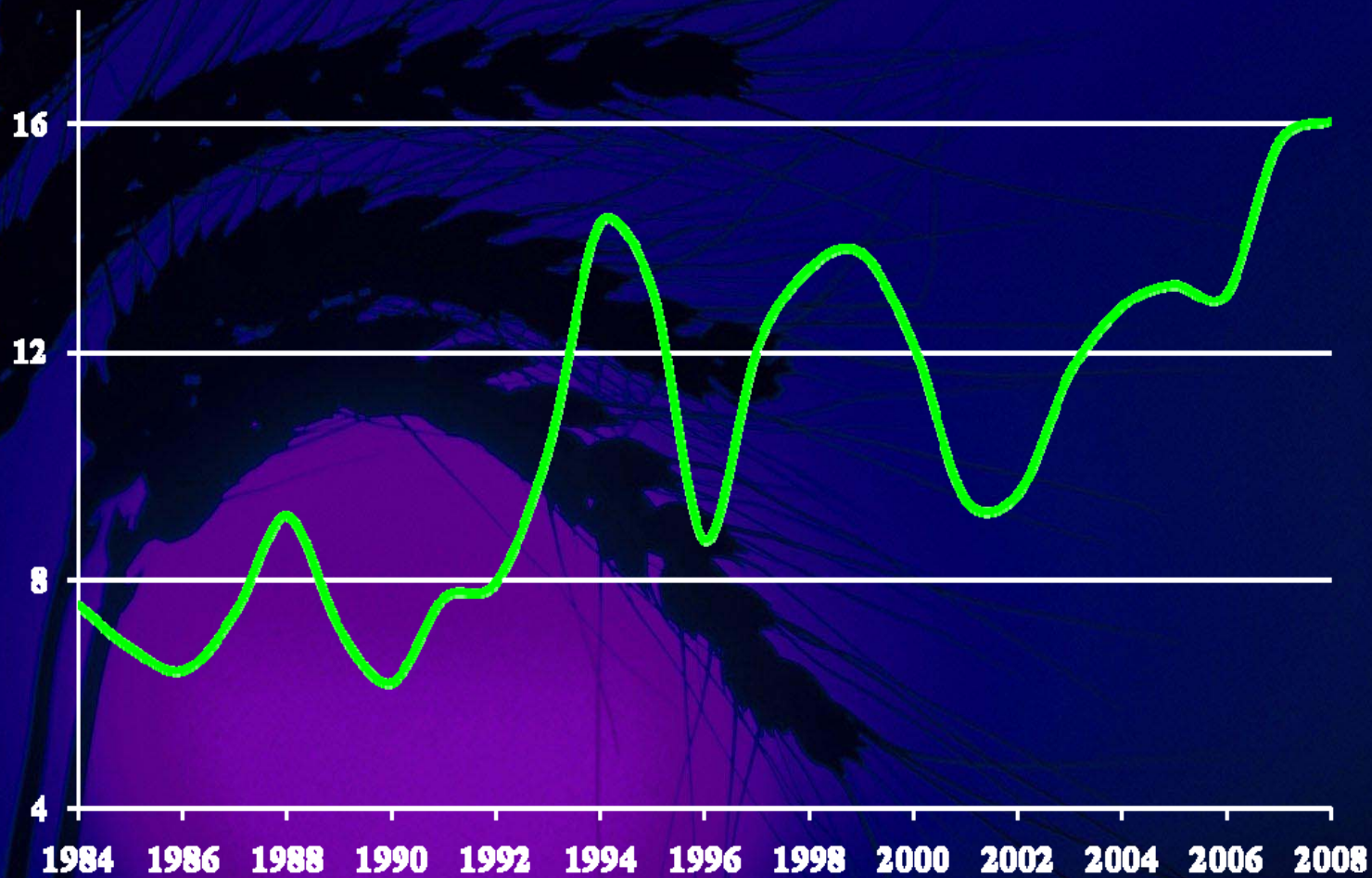
- Increased farm profitability
- Improve the competitiveness and long-term sustainability of our farms

Wheat acreage, Western Canada, 1984 – 2009 (million acres)



Source: Agriculture and AgriFood Canada, seeded acreage, all wheat

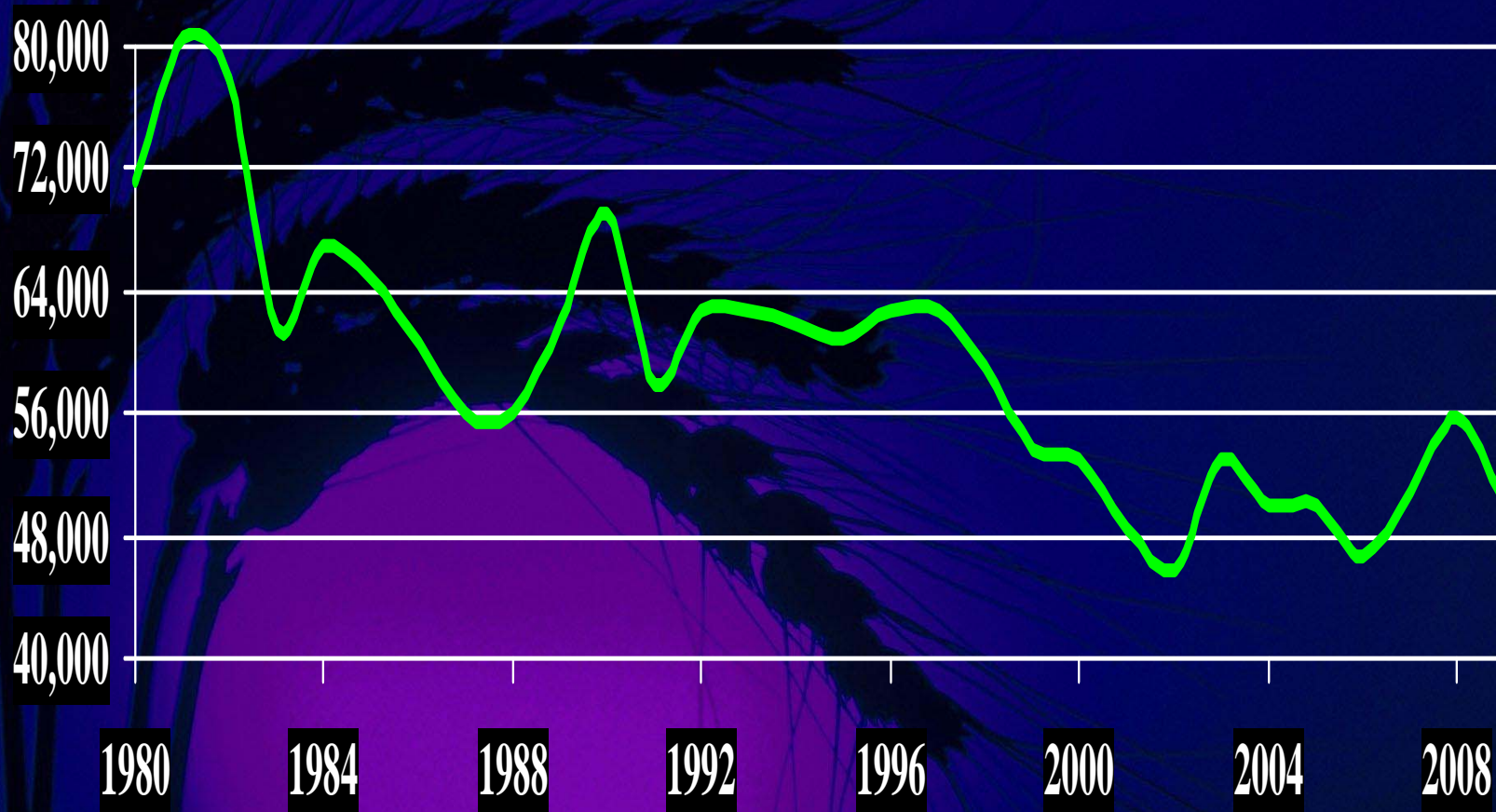
Canola acreage, Western Canada, 1984 – 2009 (million acres)



Source: Agriculture and AgriFood Canada, seeded acreage, canola

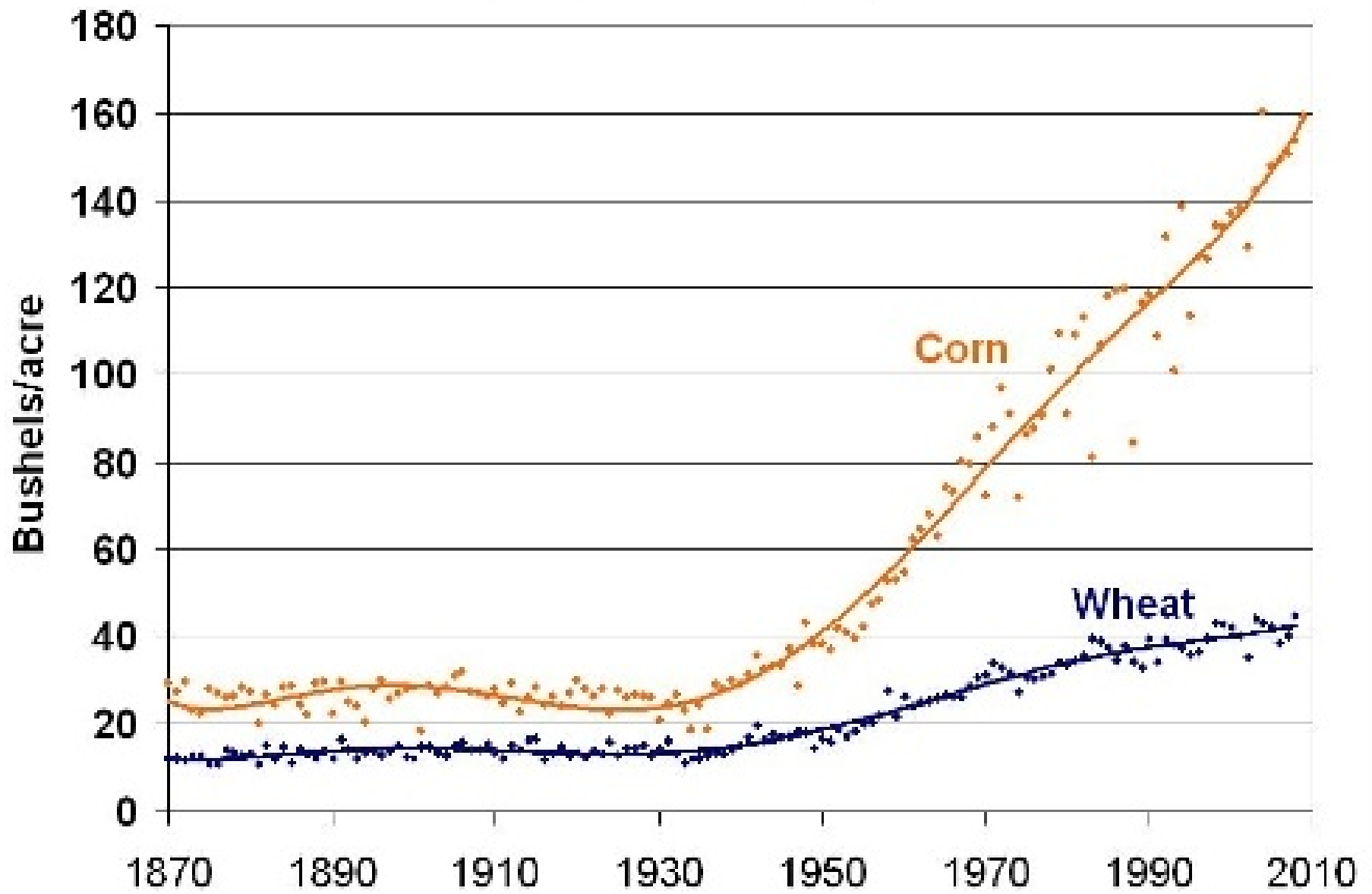


U.S. wheat harvested acreage 1980 – 2009 (000's acres)

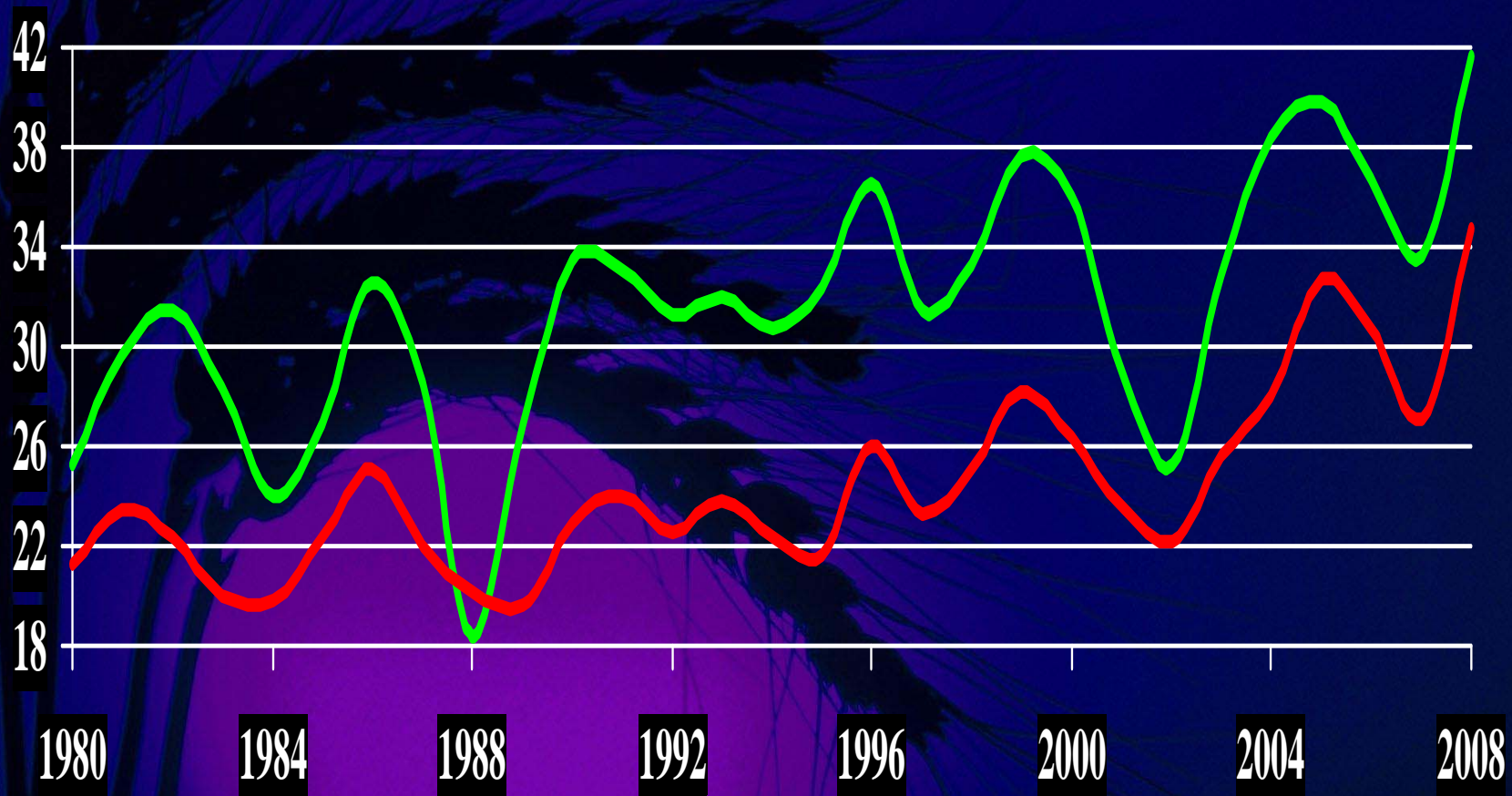


Source: USDA

Historical Crop Yield Progress in the United States (Source USDA NASS)



Western Canada spring wheat vs. canola yields, 1980 – 2008



Source: AAFC Market Analysis Division, bushels / acre



Benefits of GM technology

- Improved profitability
- Cleaner fields – improves subsequent yields
- Facilitates greater adoption of minimum tillage practices
- Reduced pesticide use



Desired GM wheat traits

- Improved nutrient utilization
- Disease resistance (fusarium, septoria, rust)
- Midge, sawfly and other insect resistance
- Drought tolerance
- Yield enhancement



Desired GM wheat traits (tier 2)

- Improved winter hardiness
- Herbicide resistance
- Sprout resistance / falling number
- Improved traits for ethanol and other industrial uses
- Enhanced nutritional profile / celiac



Challenges facing biotech wheat

- Market access / acceptance
- Segregation issues
- Liability issues
- Political acceptance



Market Acceptance

Could we introduce biotech wheat today?

- **Most certainly not**

Will we be able to introduce biotech wheat within 10 years?

- **Most likely yes**



Market Acceptance

“Britain’s biggest supermarkets are considering reversing their ban on GM food as the price of non-GM ingredients soars”

According to the Food Standards Agency, the number of UK consumers “worried” about GM in their food has decreased from 20% in 2003 to 6% in 2008.

Source: *The Independent*, UK newspaper, Sept. 1, 2009



We are optimistic about our industry's ability to commercialize GM wheat

- Segregation is possible, within tolerances
- Declaration systems / contracts work
- Technological advances in testing
- Wheat is self-pollinating



If we don't embrace this technology

- 1) Greater wheat price volatility
- 2) Yield gap will worsen (between GM crops & non-GM)
- 3) Canada's competitiveness in wheat will diminish
 - a) low public research / checkoff dollars
 - b) private research will go elsewhere



Private investment in plant R & D in Canada, 2007

	\$ million	Percentage
Canola	42.0	74%
Corn	5.1	9%
Soybeans	4.0	7%
Cereals	3.3	6%
Other	<u>2.3</u>	<u>4%</u>
Total	\$56.7	100%

Source: Canadian Seed Trade Association



Global growth in Biotechnology

- GM crops in commercial production in 25 countries in 2008 (up from 6 in 1996).
- 15 of the 25 countries are developing countries.
- 125 million hectares (309 million acres) in GM crops.
- GM acreage increased 9.5% in 2008.

Source: ISAAA, *Global Status of Commercialized Biotech / GM crops: 2008*



Global benefits of Biotechnology

- Increased global farm income through improved yields & reduced pesticide use
 - US \$10.1 billion in 2007
 - US \$44.1 billion 1996 to 2007

Source: Brookes & Barfoot – *GM Crops: Global Socio Economic and Environmental Impacts 1996-2007*, May 2009



Top six biotech countries, 2008

	million acres	# of GM crops
U.S.	154	8
Argentina	77	4
Brazil	39	4
India	19	1
Canada	19	4
China	9	6

Source: ISAAA, Global Status of Commercial Biotech / GM crops



Concluding thoughts

- Biotech is here to stay – no turning back
- GM wheat will be the last major crop to be commercialized
- Developing countries may be the first adopters
- Canada's competitiveness in wheat will continue to diminish if we are not among the first adopters
- Innovation has been, and will continue to be, the key driver of profitability & sustainability of our farms



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