



Innovation: It Starts With the Seed

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Innovation: It Starts With the Seed

- 1. Seed Industry Contribution to the Canadian Economy**
- 2. Investment in Research and Development**
- 3. The Value and the Costs of Innovation**
- 4. What's in the Innovation Pipeline**
- 5. Challenges to Innovation**
- 6. Funding Innovation**



Contribution to the Canadian Economy

Total Contribution in 2007.....\$ 3.95 Billion

Salary and Benefits.....\$ 1.01 Billion

Operating Costs.....\$ 1.72 Billion

Capital Investment.....\$ 0.66 Billion

Sales outside Canada.....\$ 0.56 Billion

Contribution to the Canadian Economy

Total Contribution in 2007.....	\$ 3.95 Billion
Research & Development.....	\$ 0.36 Billion
Seed Production.....	\$ 1.10 Billion
Processing & Production Support....	\$ 1.51 Billion
Marketing & Distribution.....	\$ 0.98 Billion





Contribution to the Canadian Economy

Total Employment in 2007.....	14,229
Research and Development.....	3,049
Seed Production.....	2,575
Production & Processing Support.....	6,234
Marketing & Distribution.....	2,371



Contribution to the Canadian Economy

Research and Development\$ 360.00 Million

Salary and Benefits.....\$195.98 Million

Operating Costs.....\$100.70 Million

Capital Investment.....\$ 32.21 Million

Sales Outside of Canada.....\$ 32.18 Million

Contribution to the Canadian Economy

Seed Production\$ 1.103 Billion

Salary and Benefits.....\$ 225.74 Million

Operating Costs.....\$ 463.55 Million

Capital Investment.....\$ 267.13 Million

Sales Outside of Canada.....\$146.63 Million





Contribution to the Canadian Economy

Processing & Production Support...\$1.511 Billion

Salary and Benefits.....	\$ 365.78 Million
Operating Costs.....	\$ 865.05 Million
Capital Investment.....	\$ 272.11 Million
Sales Outside of Canada.....	\$ 8.75 Million



Contribution to the Canadian Economy

Marketing & Distribution.....\$975.95 Million

Salary and Benefits.....\$ 220.03 Million

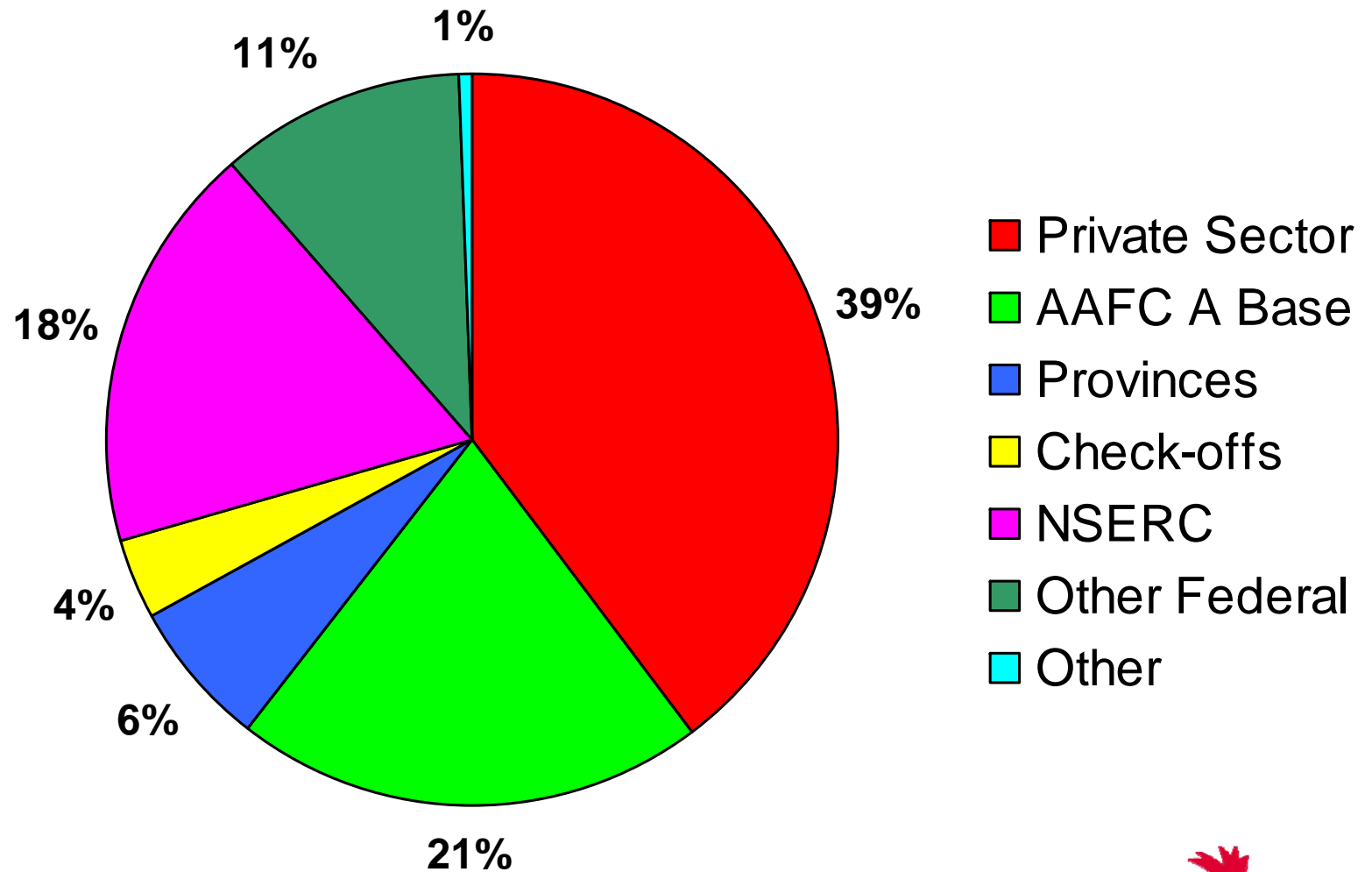
Operating Costs.....\$ 287.45 Million

Capital Investment.....\$ 87.41 Million

Sales Outside of Canada.....\$ 381.06 Million

Investment in Research and Development

Total Investment in Plant Breeding and Research 2006





Investment in Research and Development

Private Sector investment:

1987.....	\$14.2 million
2001.....	\$45.3 million
2007.	\$56.1 million
2012.....	Projected \$105 million

Over 95% of that investment will be in corn, soybeans and canola



Investment in Research and Development

Private Sector Investment (millions)

Crop	1987	2001	2007	2012 (projected)
Corn	\$2.8	\$ 7.9	\$ 4.8	\$ 9.0
Canola	\$7.1	\$30.5	\$41.9	\$ 80.0
Cereals	\$1.5	\$ 2.3	\$ 3.3	\$ 2.7
Soybeans	\$0.7	\$ 2.6	\$ 3.9	\$ 12.7
Forages	\$0.3	\$ 0.8	\$ 0.49	\$ 0.5
Special Crops	\$0.1	\$ 0.4	\$ 0.12	\$ 0.1
Garden Seed	\$0.1	0	0	\$ 0.0
Other	\$1.6	\$ 0.8	\$ 1.6	\$ 1.4

The Value of Innovation

Returns From Recent New Varieties

Variety	Yield Increase	Increase in Farm Revenue
25R47 SRW (2006)	10.0 bu/acre	\$9.0 million
5602 HRSW (2006)	3.4 bu/acre	\$4.4 million
AC Strongfield (2007)	2.1 bu/acre	\$46.0 million
AC Lilian HRSW (2007)	0.9 bu/acre	\$12.1 million
Xena Feed Barley (2007)	5.6 bu/acre	\$35.0 million
CDC Falcon WW (2007)	7.0 bu/acre	\$21.0 million
CDC Copeland Barley (2007)	2.5 bu/acre	\$10.8 million

The Costs of Innovation

One Example: FT Wonder (Soft Red Winter Wheat)*

3 Year Total Development Cost

	2003/04	2004/05	2005/06
Hyland Seeds	\$164,510	\$166,862	\$169,201
MII & AAFC**	\$140,468	\$142,084	\$143,689
Total	\$304,978	\$308,946	\$312,890
3 Year Total	\$926,814		

* A Hyland Seeds Variety

** Matching Industry Initiatives and Agriculture and Agri-Food Canada (in kind)

What's in the Innovation Pipeline?

Some Examples:

- Corn stock rot resistance
- Increased ethanol producing corn
- Improved feed quality corn
- Drought tolerant corn
- Increased nitrogen efficiency in corn
- Northern maturity corn and soybeans
- High Oleic and Stearic acid soybeans
- Low linolenic soybeans
- Reduced refuge requirement soybeans
- Broader weed control soybeans
- Increased anthracnose resistant navy beans
- Fusarium resistant wheat



Challenges to Innovation

Outdated and restrictive regulatory systems eg.

- Variety registration – often restricts timely introduction
- Novelty regulations and triggers – lack clarity and slow approvals
- Seed treatment and crop protection product approvals – asynchronous in Canada and the U.S.
- Bagging, tagging, testing, sampling regulations are outdated
- Outdated intellectual property protection tools

Challenges to Innovation

- On average 30% of the seed planted in Canada is certified
- Investment in innovation is funded through sales of certified seed

Crop	% of seed used that is certified	% Projected Private Sector investment (2012)
Canola	92%	74%
Corn	98%	12%
Soybeans	87%	10%
Cereals	18%	2%



Funding Innovation

Certified Seed sales fund innovation - Increase certified seed sales by:

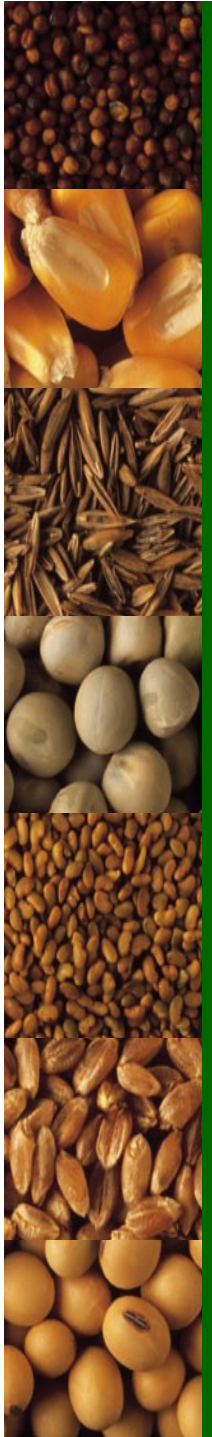
- Increasing grower appreciation of the value of the certification system and certified seed
- Reflecting reduced risk with lower premiums in risk management protection (like crop insurance)
- A tax incentive for producers who purchase certified seed



Tax Incentive on Certified Seed

An Economic Stimulus for Agriculture

- Farmers claim 155% of the cost of certified seed as an expense for income tax
- Increased tax return offsets extra cost of certified seed
- Increased use of certified seed improves traceability, identity preservation
- Farmers get access to new varieties and traits – and new markets
- Increased use of certified seed increases investment in innovation
- Costs of innovation are shared by all who benefit



Thank You

Questions?

Comments?

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