

Alberta Pulse Research Strategy

2002 - 2010

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PURPOSE

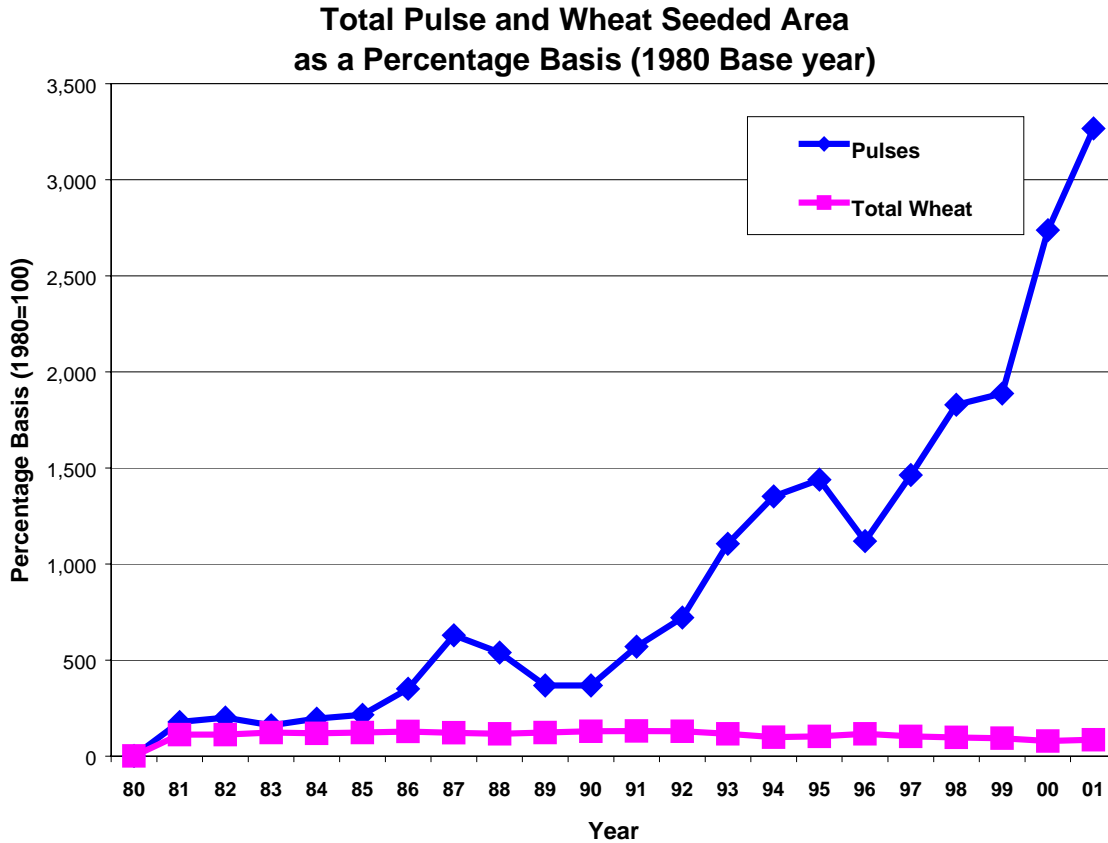
The purpose of the Alberta Pulse Research Strategy is to outline and articulate the scientific effort that will:

- improve long term cropping system management
- remove barriers to pulse production
- improve producer profitability
- enhance pulse quality
- identify and enhance marketable traits
- encourage value added processing of pulses for food and feed.

The Alberta Pulse Growers will support research and technology transfer in cooperation with its many partners: Pulse Canada, Alberta Agricultural Research Institute, Alberta Agriculture, Food and Rural Development, Agriculture and Agri-Food Canada, Alberta Crop Industry Development Fund, University of Alberta, University of Lethbridge, Alberta Value Added Corporation and Agri-business.

Much of the groundwork for this document was provided by the Pulse Canada Research Strategy (2001). The Alberta Pulse Research Strategy aims to identify and advance the strengths and opportunities that exist within Alberta that will contribute to the realization of a national strategy for the pulse industry.

INTRODUCTION



Pulse crops' emergence as a leading sector of Alberta's and western Canada's agriculture is one of the more notable developments of the past decade. Driven by global market realities and opportunities, combined with the ingenuity and entrepreneurship of a multitude of industry participants, Canada's pulse industry has become recognized worldwide. The past decade's growth has created the foundation for Alberta's pulse industry to advance significantly over the next decade. Fulfilling that potential requires greater investment in research.

EXPECTED OUTCOMES

- Increased acreage sown to pulse crops in Alberta
- Increased contribution of pulse crops to Alberta's farm income
- Sustainable crop production through integrated pest management and reduced fertilizer use
- Rural communities receive investment and employment due to value added processing of pulse crops
- Alberta's farm organizations co-operate on whole-farm cropping systems research
- Alberta's livestock industry is more competitive due to consistent source of high-value pulse feedstuffs
- New novel and non-food uses are identified and developed
- A growing market share in the high nutritious, high value food market in North America is identified and developed

STRATEGIC AREAS FOR ALBERTA'S PULSE INDUSTRY

☞ Agronomy and Sustainability

☞ Profitability

☞ Value

☞ Knowledge

AGRONOMY AND SUSTAINABILITY

Goal #1: Improve management of plant diseases within the cropping system

Action #1: Identify and Monitor Pulse Disease Pathogens in a National Plant Health Survey. The first step in developing a disease management program is the ability to identify the strains that occur.

Action #2: Design and support disease management studies.

Action #3: Develop and implement a National Pulse Crop Protection Strategy.

Action #4: Conduct Integrated Pest Management Research. Pulse crops are an important part of an integrated pest management program for Canadian farmers.

Goal #2: Improve economic sustainability of Alberta farms through optimum long term cropping systems.

Action #1: Co-ordinate farm organizations on whole-farm agronomy and sustainability research that generates information that is integrated and sustainable throughout the cropping system.

Action # 2: Design and implement an On-farm Cropping System Research Protocol where farmers and researchers cooperate to design, monitor, and measure field-scale research trials.

Action #3: Maintain and enhance the existing Long Term Crop Systems Studies at Bow Island, Ellerslie, Breton, Three Hills, Lethbridge and Vauxhall.

Action #4: Conduct research into reduced Pesticide and Fertilizer Use.

Action #5: Support research into the factors that affect the build up and breakdown of herbicide residues, and the management of herbicide residues in crop rotations.

Action #6: Support research into reduced tillage systems for row crop beans.

Goal #3: Improve pulse crop's contribution to Greenhouse Gas Reduction

Action #1: Search and summarize the research measuring the impact of pulse crops on greenhouse gas.

Action #2: Quantify the amount and timing of Nitrous oxide emissions and Carbon sequestration from Pulse Crops.

Goal #4: Develop new varieties of pulse crops suited to Western Canada

Action #1: Build the Parkland Pulse Breeding Program and an Ascochyta Nursery at Lacombe.

Action #2: Support the Dry Bean Breeding Program at Lethbridge.

Action #3: Build a comprehensive system of pulse screening sites across Western Canada

- Expand collaborated disease-screening sites for chickpeas at Brooks.

- Support and enhance sclerotinia screening sites at Lethbridge.

- Support and enhance bacterial blight screening sites at Morden.

- Establish field pea disease screening sites at Lacombe.

- Improve testing of new lines of dry beans at Lethbridge, Vauxhall, Bow Island and Brooks.

Action #4 Support and enhance chickpea and lentil genetic improvement programs at CDC Saskatoon.

Action #5: Source fababean germplasm and develop for Alberta conditions.

PROFITABILITY

Goal #1: Production technologies and management practices will enhance product quality and farm profitability

Action #1: Sustain Regional Variety Testing throughout Alberta.

Action #2: Conduct research into yield variability in peas.

Action #3: Conduct research into improved irrigation management technologies.

Action #4: Encourage the development of dry bean, chickpea and fababean seed industries in Alberta.

Goal #2: Genetic Improvement is matched to end use markets

Action #1: Perform market intelligence research that informs plant breeders of existing and potential markets for pulse crop lines.

Action #2: Develop standard quality measurements for assessing potential crop lines.

VALUE

Goal #1: Provide comprehensive component analysis of all pulse crops

Action #1: Expand the research at the Food Processing Development Centre to measure pulse components and assess potential uses in food, feed and industrial products.

Action #2: Establish energy values for Canadian feed peas using NIR spectroscopy.

Goal #2: Increase awareness of pulse crops' role in human health and wellness

Action #1: Work with the health industry to identify research partnerships for the pulse and health industries.

Goal #3: Increase utilization of pulse crops in domestic livestock rations

Action #1: Establish a national pulse feedstuffs working group made up of scientists, nutritionists and feed manufacturers to direct feed pulse research .

Action #2: Conduct nutritional studies identified by the working group.

Goal #4: Increase value-added processing of pulse crops in Alberta

Action #1: Establish a Pulse Process Research Fund that assists companies in developing processing technologies.

Action #2: Perform market intelligence research that informs existing and potential pulse processors of market opportunities.

KNOWLEDGE

The pulse industry will advance if it is built on:

the information generated from research, and

the extension and application of that information in the field.

Expansion in the pulse industry has been more rapid than the growth and development in research and extension. The result is a need for more core scientific and extension positions in pulses.

Goal #1: Southern Alberta and south-western Saskatchewan are world leaders in sustainable, profitable chickpea production

Action #1: Create an **Integrated Team for Chickpea Advancement** at Lethbridge, Brooks, and Swift Current bringing together scientists, extension agronomists and farmers to conduct research and develop production technologies.

Goal #2: Provide superior pulse crop varieties and production technologies that will support the expansion of sustainable, profitable pulse production into the Parkland regions of Alberta, Saskatchewan and Manitoba

Action #1: Build a **Pulse Breeding and Disease Management Team** at Lacombe, bringing together plant breeders, plant pathologists, extension agronomists and farmers to conduct research and develop production technologies.

Goal #3: Provide extension expertise to deliver the technological and management information that is generated from research

Action #1: Build an Alberta Pulse Agronomy Network.

Action #2: Designate two Pulse Extension Agronomists for Alberta.

Action #3: Create one Pulse Extension Pathologist for Alberta.

Goal #4: Alberta is the leader in pulse quality and utilization research.

Action #1: Create a **Pulse Products and Processing Team** in Alberta, expanding the compliment of scientists at the Food Science and Technology Program at Brooks, the Centre for Agri-Industrial Technology and the Food Processing Development Centre.