



DELAGE FARMS

The Impact of Biotechnology on Western Canadian Agriculture

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Delage Farms Ltd.

Delage Farms

Indian Head, Saskatchewan



- **22,000 seeded acres - Black Soil Zone (Heavy Clay)**
- **32 years of operation**
- **Direct Seeded/ Continuous Crop**
- **Three/Four Year Rotation**
- **Crops - Spring Wheat, Canola, Lentils, Peas, Flax, and Canary Seed.**
- **Commercial Grain Operation**

Our Vision

**The continuous development of a family farm enterprise
focused on grain production which will achieve:**



Our Vision

- **Financial performance allowing for a fair rate of return to capital, management and labour.**



Our Vision

- A rewarding and safe environment to work and live in.



Our Vision

- **A business capable of meeting financial, career and family expectations of future generations.**



Our Vision

- **Best practice in land management and environmental stewardship**




Guiding Principles

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- A wide-angle photograph of a vast, golden-brown grain field, likely wheat or corn, stretching to the horizon. In the distance, a line of five combine harvesters is visible, working in a row. The sky is a clear, pale blue. The overall scene conveys a sense of large-scale agricultural production.
- Grain will be worth less in the future than today, adjusted for inflation.

This drives operational efficiency

Guiding Principles

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- A line of combine harvesters working in a golden field under a clear sky. The harvesters are yellow and blue, and they are moving from left to right across the frame. The field is a mix of golden and green crops, and the sky is a clear, pale blue.
- Globalization of agriculture and agricultural markets demands we understand the interrelationship between global trends/markets and the direct impact on our farm on a daily basis.

Guiding Principles



Planning allows for us to manage the complexity of the business:

- Strategic planning
- Operational planning
- Market plan
- Financial planning
- Capital replacement plan
- Man power plan
- Task planning

Guiding Principles



Profit is the reward for taking risk.

**Optimizing value creation on a farm is complex
and demands a holistic integrated approach
at all levels.**

Typical Fertilizer rates

Canola

Target Yield 60 bu/ac

5 year average 52.6 bu/ac

- Nitrogen 130 lbs N
5:1 ratio
- Sulfur 26 lbs S
- Phosphate 35 lbs P

One Pass System

Optimizing Inputs Costs

- Fertilizer
- Fuel
- Labor
- Equipment
- Precision farming

Optimizing Production Potential

- Fertilizer Efficiency
- Plant Population/Seedling Vigor
- Pest Management (Weeds/Insects/Disease)
- Crop Rotations/Varieties/Genetics
- Harvest Timing/Efficiency

Maximize Economic Yield Potential

A close-up, high-angle photograph of a vast field of green canola plants. The leaves are bright green, rounded, and have serrated edges. They are densely packed together, creating a textured, repetitive pattern across the entire frame. The lighting is even, highlighting the natural color and shape of the foliage.

Canada's modern canola Industry is a direct result of biotechnology

In 2013, more than 95% of
Canola is Genetically Modified

Breakthrough #1

- The commercial introduction of biotechnology into canola in 1995 resulted in two major competing herbicide tolerant systems, Liberty Link and Roundup Ready.
- The result was outstanding broad-spectrum post-emergent weed control. Which allowed for minimum tillage in canola.

Breakthrough #2

Hybrid Canola

- The introduction of hybrid canola significantly enhanced yields. 50 and 60 bu/ac yields common.
- Improved stress tolerance
- Quick crop establishment

Biotechnology has allowed for:

- 15 million metric tonnes of Canola production
- A domestic Canola crushing industry of 8 million metric tonnes
- Canola Exports of 7 million metric tonnes

Canada's Canola industry contributes:

- \$15.4 Billion to Canada's economy
- 228,000 Canadian Jobs
- \$8.2 Billion in employee wages

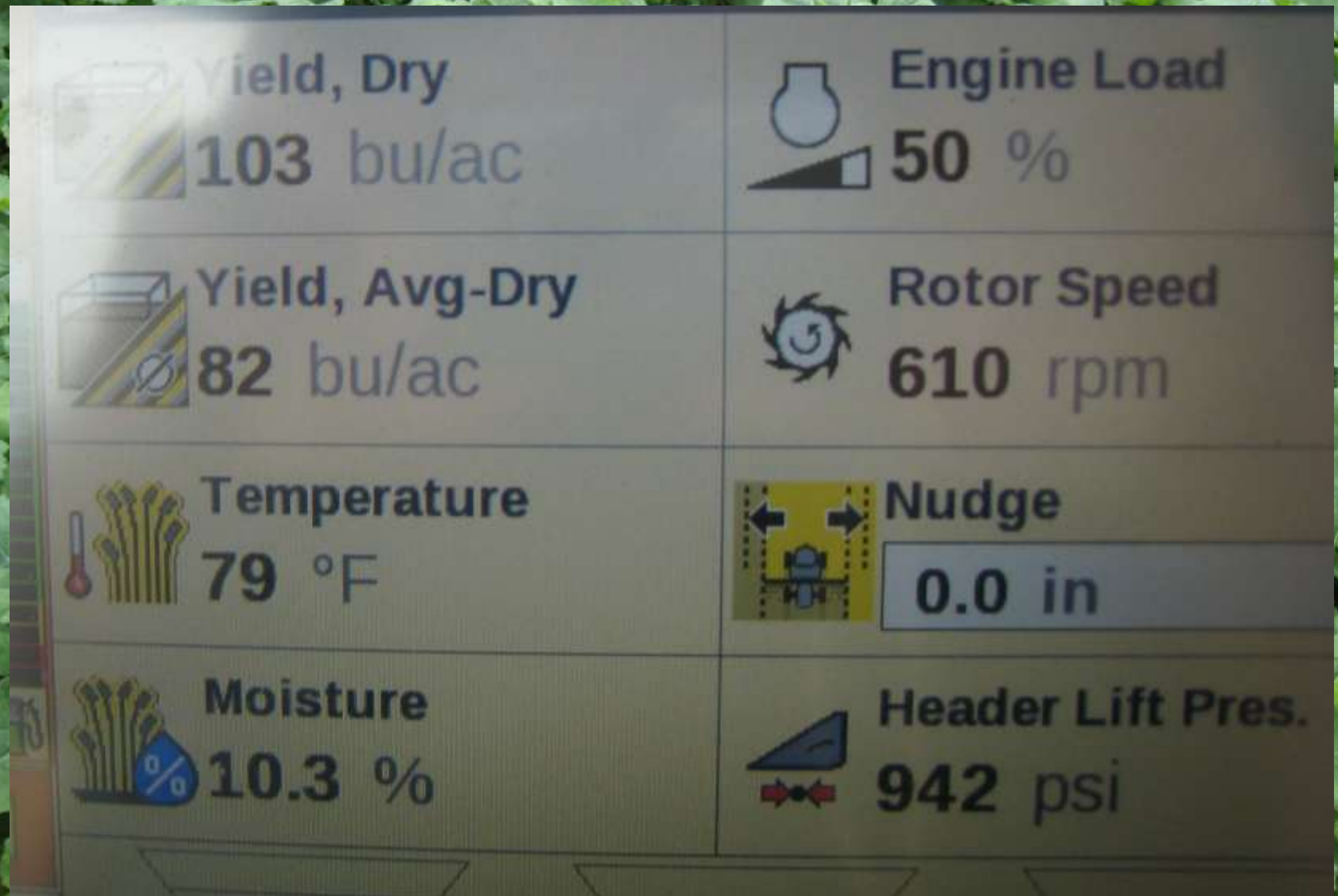
Future Traits

- Disease tolerance
- Pod shatter resistance
- Higher oil content
- Improved oil profile
- Stress tolerance
- Improved inbred lines
- More efficient use of fertility

Higher
Yields

70-80 bu/ac
10-20 years

Exceptional Canola Yields in 2013



A wide-angle photograph of a vast agricultural field. A narrow, straight dirt path runs from the bottom center of the frame towards the horizon, creating a strong sense of perspective. The field is filled with rows of green soybean plants. The sky above is a vibrant blue, filled with numerous white, puffy cumulus clouds. The overall scene is bright and clear, suggesting a sunny day.

Soybeans are here

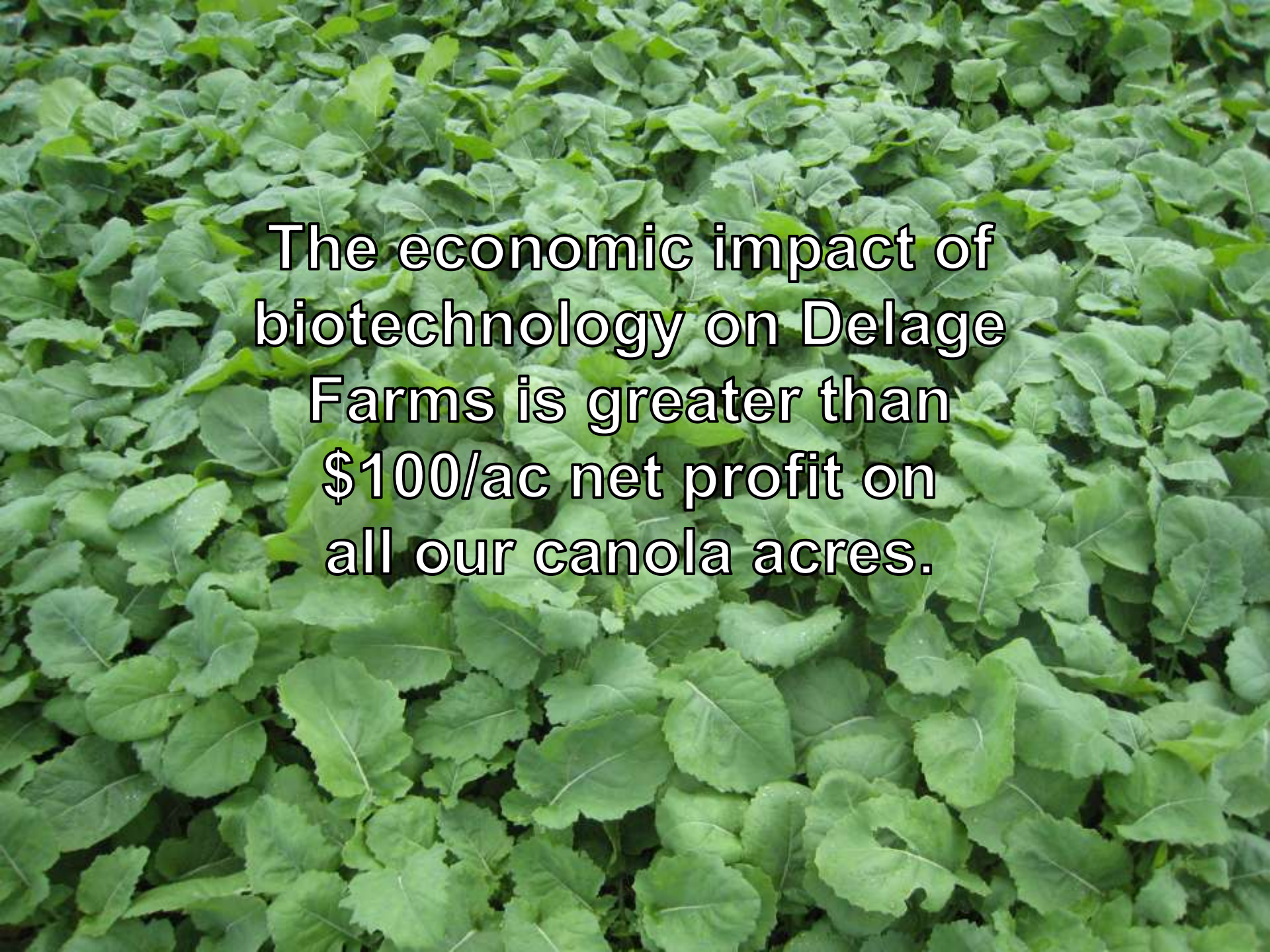
Corn is Coming

Continuously find ways
to lower unit costs of production



15-20 field experiments/year



A close-up, high-angle photograph of a vast field of green canola plants. The leaves are bright green, rounded, and have serrated edges, creating a textured, repetitive pattern across the entire frame. The lighting is even, highlighting the natural color and shape of the foliage.

The economic impact of
biotechnology on Delage
Farms is greater than
\$100/ac net profit on
all our canola acres.

New technology is key to the long term viability of Delage Farms



Technology is never neutral



DELAGE FARMS