Agriculture Research and Development

Viability of Malting Barley Cultivation for the Beverage Industry in Western Newfoundland

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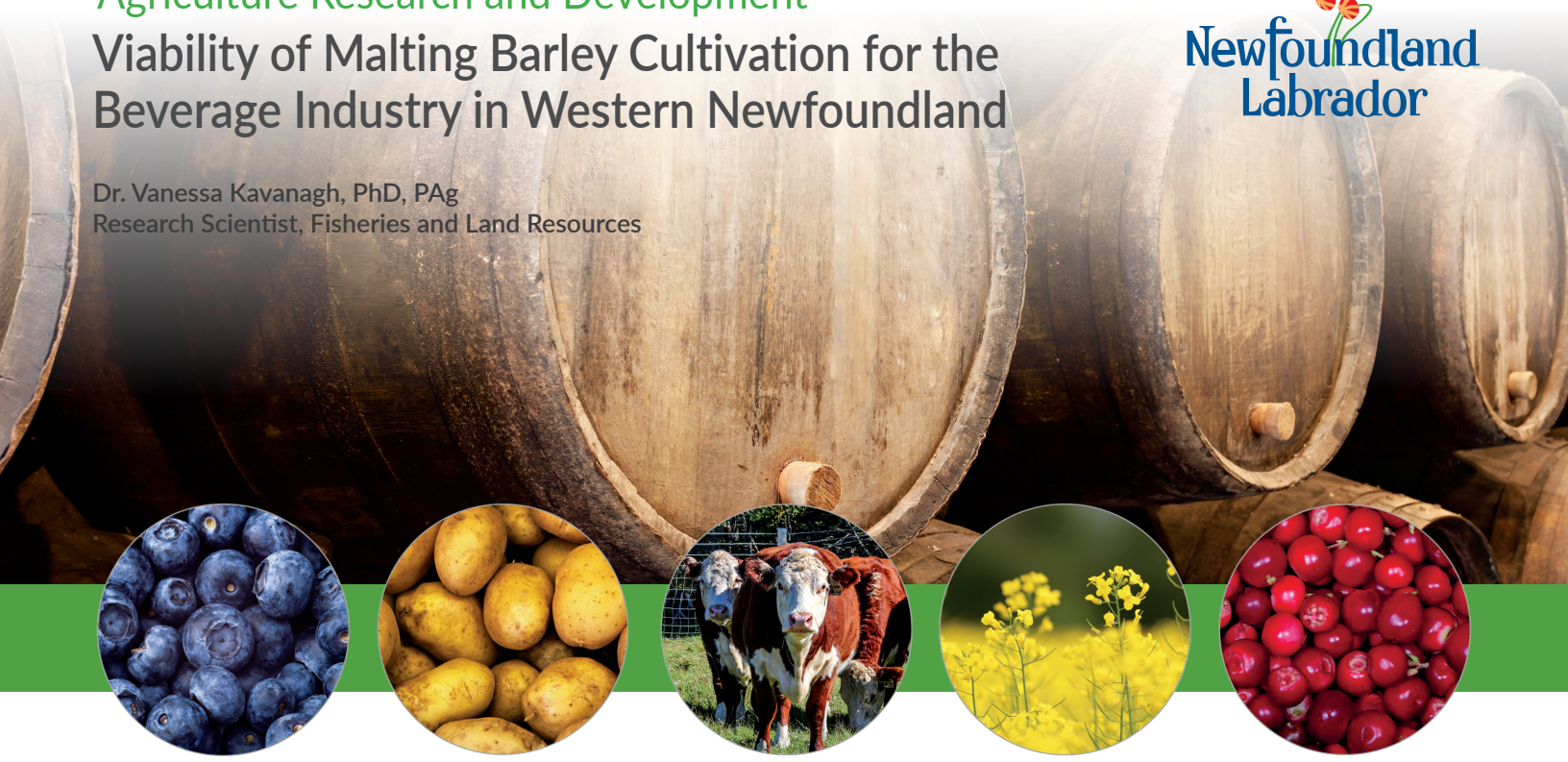

Project Objectives

The objective of the malting barley project is to determine the potential for growing malting barley in Newfoundland and Labrador with qualities suitable for the brewing and distilling industries.

Specifically:

- Determine if malting barley can be reliably cultivated in western Newfoundland;
- Establish growing practices;
- Assess qualities desired for brewing and distilling; and
- Assess nutritional qualities of spent brewers and distillers grain for the livestock industry.

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The success of the grain program for livestock feed has allowed investigation into the viability of malting barley cultivation for multiple-industry use such as livestock and beverages.

In 2017, government partnered with the Newfoundland Distillery Co. and Larch Grove Farm to assess the potential of growing malting barley in western Newfoundland. Malting barley is more valuable than traditional feed barley since it can provide straw to the farmer and a diversified source of income in the barley grain.

Agriculture-beverage industry partnerships can bolster the income of farmers while allowing the beverage industry to create new specialty beverages (i.e. Aquavit). Growing malting barley will provide straw at harvest to the farmer for immediate use, and barley to distilleries or breweries for use in malting. When the beverage industry is finished with the grain, it can be dried again and reincorporated into livestock rations as a high-quality feed commonly referred to as dried distillers' grain (DDGs) or dried brewers' grain (DBGs).

Malting barley is being assessed on large farm plots using cultivation practices provided by Agriculture and Agrifood Canada researchers in Prince Edward Island. First year results suggest malting barley is a viable crop option in Newfoundland and Labrador; however, more testing will be required. Grain must be harvested at high moisture and require dried. Different drying options are available and can be used to dry other commodities such as wheat, rye, corn, canola or sunflower.

Background

Our research has shown that grain production is a viable cropping option that can be incorporated into livestock operations in western Newfoundland. Malting barley has been long desired by the provincial craft brewing and distilling companies looking to partner with local farmers to make a product from ingredients sourced in Newfoundland and Labrador.

- Feed barley and malting barley have already been grown for feed.
- Malting barley is less intensely managed than other grains.

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- A dryer is required as the crop must be harvested at high moisture.
- The dryer is a versatile farm addition and can be added to the bottom of existing upright silos. Inexpensive, used stand-alone dryers are also available.
- At harvest, straw can be kept by the farmer for bedding or feed and grain sold as a feedstock for the beverage industry.
- Spent grains from breweries and distilleries can be reused by the livestock industry as DBGs or DDGs without loss of quality.

Technical Details

- A large 10-acre plot trial was planted on an agricultural field on the west coast assessing a malting barley variety that was early maturing, high yielding, exhibited suitable disease resistance, and was high in malting qualities.
- The seeding rate was high at 600 plants per meter squared.
- A site-specific recommended rate of fertilizer was applied at seeding.
- Crop growth assessments included days to maturity, grain and straw yield, lodging propensity, nutritional contents, malting quality analysis, disease and mycotoxin pressures and ability to harvest.
- Distillers and brewers will assess suitability for their own products and establish methodologies to use the product that best highlights its potential.

Preliminary Results

- Crop established well and withstood drought better than other grains such as wheat.
- The high seeding rate crowded out weeds and substantially lowered tillering compared to previous barley trials.
- Yields averaged 1.2 tonnes per acre and straw four bales per acre.
- Straw is a highly desired commodity for vegetable, fruit and mushroom farmers as well as the livestock industry.
- Grain was successfully incorporated into a unique locally distilled beverage called 'Aquavit' and other products from the company that are already available on Newfoundland Liquor Corporation store shelves.
- Testing is currently underway to determine grain quality for the brewing industry.

Recommendations

- High seeding rates lessen late tillering, allowing a more uniform crop and easier harvest.
- Soil pH must be <6.0 for thick stand establishment and high yields.
- If multiple frosts are predicted, harvesting earlier may be required to preserve quality.
- Seed must be dried to a minimum of 13.5-14 per cent.

Agriculture Industry Benefits

We work closely with Newfoundland and Labrador farmers to ensure research is relevant to their needs and will provide them with tangible benefits.

- Economic – creating new agricultural products and opportunities, decreasing costs, and generating new employment potential.
- Innovative – diversifying production and sources of income, and providing a quality locally grown feed.
- Business stability – decreasing susceptibility to market fluctuations from political or natural events.
- Food/feed security – increasing self-sufficiency and less reliance on other provinces or transportation.

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