DIVERSE FIELD CROPS CLUSTER

Supporting the research and development of high-potential, special and emerging crops.

DFCC
DIVERSE FIELD CROPS CLUSTER

CANADIAN AGRICULTURAL PARTNERSHIP | PARTENARIAT CANADIEN pour l'AGRICULTURE

Ag-West Bio

Canada

www.dfcc.ca

WHAT IS THE DIVERSE FIELD CROPS CLUSTER?

The Diverse Field Crops Cluster (DFCC) is an agri-science cluster whose purpose is to support the research and development of high-potential special and emerging crops: flax, camelina, canaryseed, sunflower, hemp, quinoa and mustard.







FLAX • CAMELINA • CANARY SEED • SUNFLOWER • HEMP • QUINOA • MUSTARD

DFCC CROP SECTOR MEMBERS

CHTA ACCC
Canadian Hemp Trade Alliance
Alliance Commerciale Canadienne du Chanvre
www.hemptrade.ca

NORQUIN
CANADIAN GROWN QUINOA
SINCE 1992

MANITOBA CROP ALLIANCE

Mustard 21
Canada inc.

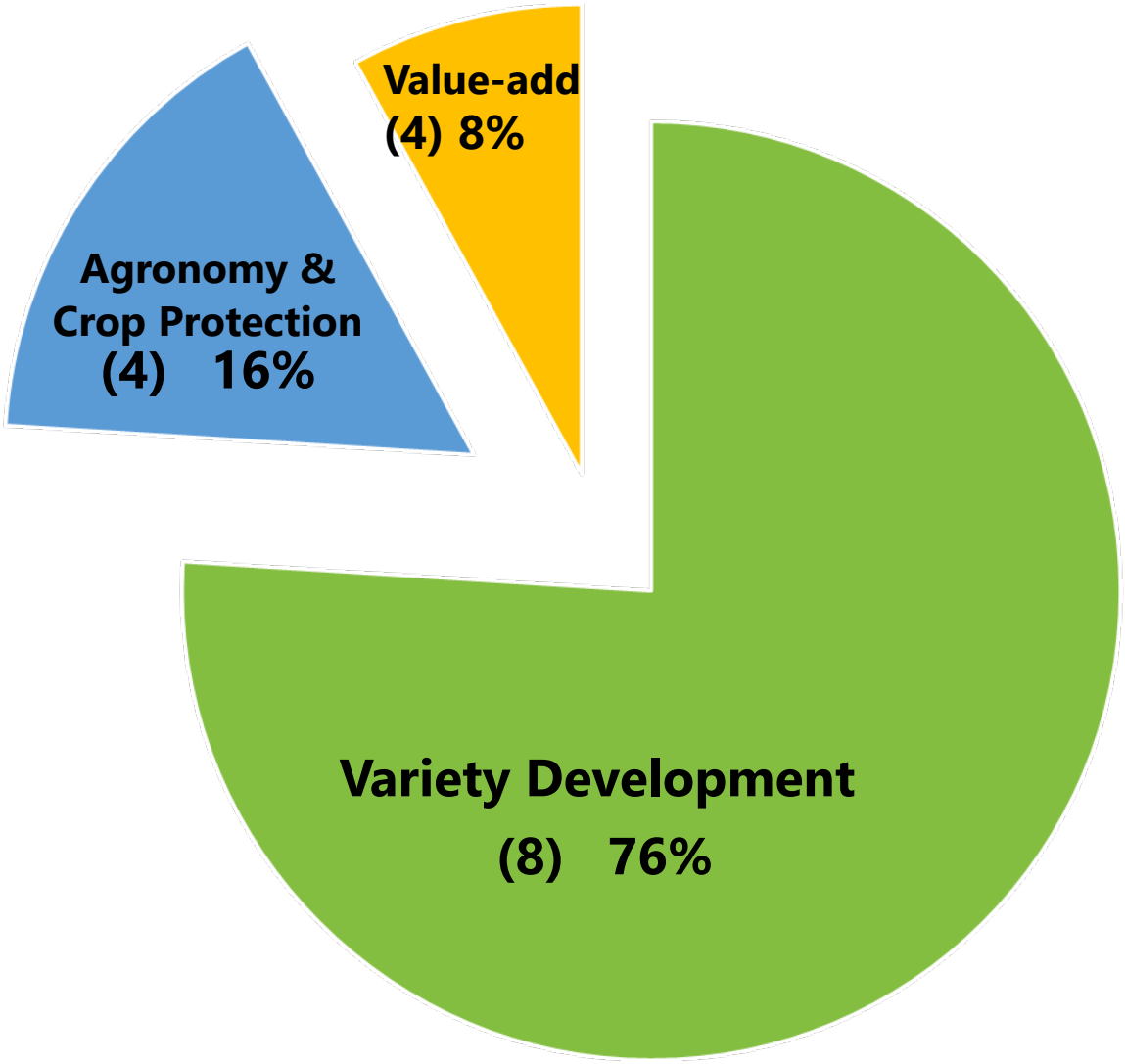
SMART EARTH™

Canary Seed Development Commission of Saskatchewan

SaskFlax

DFCC Goals

- Strengthen productivity and increase profitability
- Reduce risk of disease and pests
- Create opportunities as food and feed ingredients and industrial products



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Variety Development

Genetic improvement and evaluation of breeding lines under different growing environments

Upstream

- Development of molecular tools and breeding platforms
- Identification of genes associated with disease resistance
- Development of hybrid seed production systems to increase yields and crop performance

Downstream

- Development and evaluation of new varieties of camelina, flax, hemp, mustard, quinoa and sunflower for commercial release
- Improved disease/drought resistance, nutritional profiles, herbicide tolerance, physical characteristics

Successes

Mustard

- First hybrid brown mustard-AAC Brown 18 -2019
- First composite AAC Yellow (condiment mustard) - 2021

Quinoa

Canadian adapted varieties

Agronomy & Crop Protection

- Evaluation of herbicide-tolerant varieties in the Canadian environment
- Expand use of emerging crops in crop rotations to increase crop choices and reduce disease risk
- Understanding heavy metal uptake to mitigate market risk

K. Plaizier, UofManitoba

Value-Add

- Understanding the nutritional, functional and sensory characteristics of canaryseed, quinoa and mustard proteins and fibre.
- Developing processes to increase shelf-life
- Expanding use of these special crops in food, feed and industrial applications

Successes

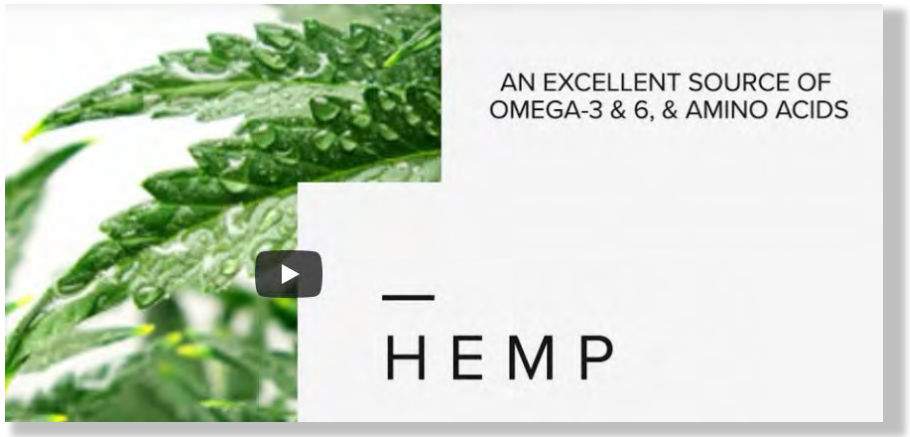
Canary Seed Development Commission of Saskatchewan

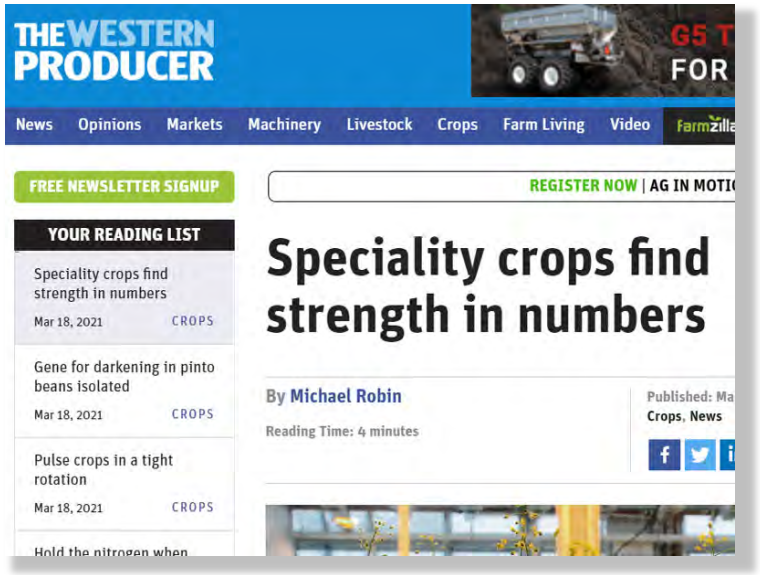
Processing method to stabilize canary seed groats developed and optimized

Quinoa varieties with unique functionalities and applications

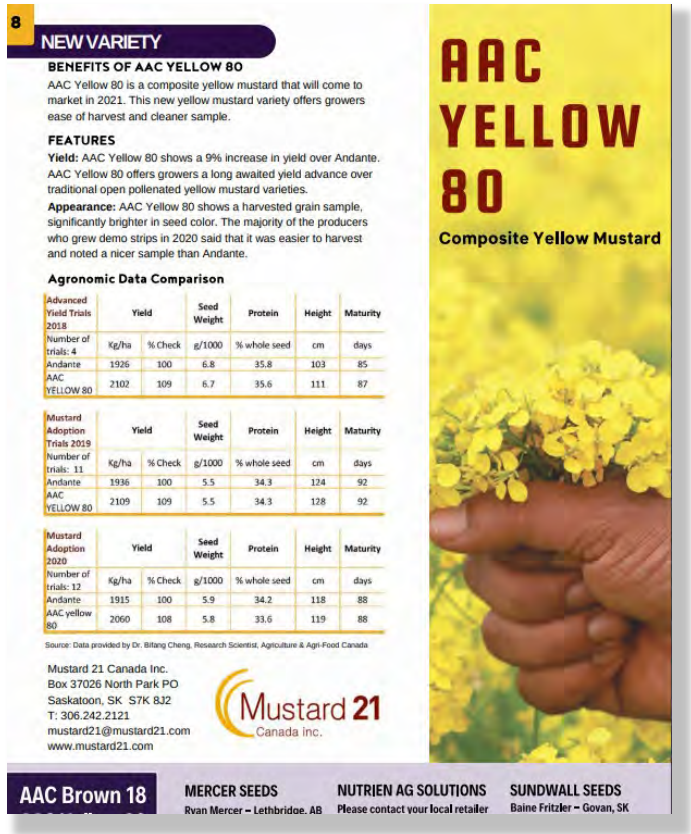
Norquin

Knowledge Transfer





Research snapshots shed light on the Diverse Field Crops Cluster research activities



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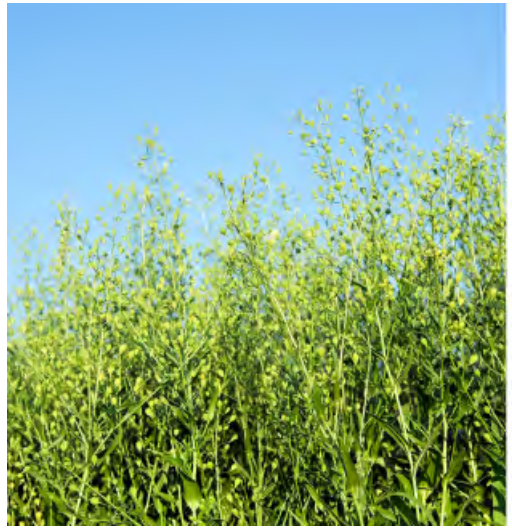
Moving forward

Variety Development

Sustainability

Value Add



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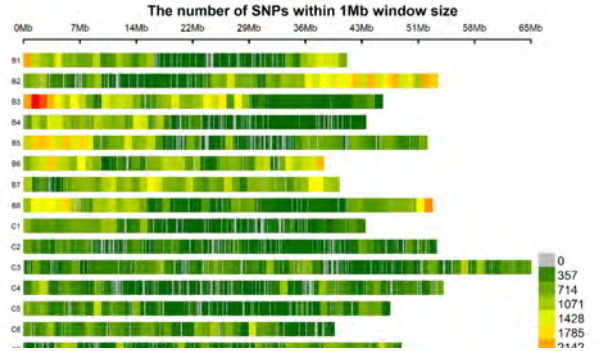
Variety Development

- Quality traits
- Agronomic traits
- New varieties adapted to Canadian environment
- Molecular analysis and development of tools to support breeding programs
- Bioinformatic resources



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Sustainability

- Consensus on “definition” and “measurement” of sustainability
- Enhanced agronomic practices to support producer profitability
- How best to use small acreage crops to mitigate impact on environment and climate change
- What new challenges will emerge?

Value Add

Nuseed Carinata now a listed feedstock for CORSIA Sustainable Aviation Fuels

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Collaborators

Researchers, Industry & Funders

AAFC
(AB, SK, MB, ON)

Universities
(Saskatchewan, Manitoba, Guelph, Washington State)

Research Agencies
(Innotech Alberta, SK & MB Food Centres)

Provincial Research Agencies
(AB, MB, SK)

Nuseed Canada

InfraReady Foods Ltd

Smart Earth Camelina Corp

NorQuin

Western Grains Research Foundation

Government of Manitoba

Government of Alberta

Government of Saskatchewan

Canadian Mustard Association

Saskatchewan Mustard Development Commission

…and the many producers across Canada who grow the crops that provide the levy to the Commissions

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THANK YOU.

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