2018/19 Canola Council of Canada Research and Innovation Priorities

The following is a summarized list of the Canola Council of Canada’s priorities for research and innovation under the pillars of Sustainability, Integrated Pest Management, Harvest & Storage Management, Stand Establishment, and Fertility Management. These priorities have been determined by the Crop Production and Innovation (CP&I) team through consultation with expert steering groups, industry members, and the annual Canola Discovery Forum meeting.

Sustainability
Gregory Sekulic: sekulicg@canolacouncil.org
- Quantify ecosystem services on canola yield
- Determine the role of buffer strips in mitigating nutrient and pesticide run-off
- Determine nutrient and pesticide load in tile-drainage effluent
- Determine the impact of climate change and landscape modification on canola yield

Integrated Pest Management
Insect Pests
Keith Gabert: gabertk@canolacouncil.org
- Genetic screening for canola insect pest resistance
- Evaluation of alternate (non-neonicotinoid) management strategies for flea beetles
- Investigation of natural enemies and tactics for enhancing their control of key pest species
- Modelling for dynamic thresholds of key pest species

Weeds
Ian Epp: eppi@canolacouncil.org
- Determine modern hybrid canola’s “Critical Period of Weed control” under a range of plant densities and abiotic factors
- Novel integrated weed management techniques for enhanced and diversified weed control methods

Sclerotinia Stem Rot
Clint Jurke: jurkec@canolacouncil.org
- Develop highly resistant canola varieties
- Develop a robust sclerotinia stem rot canola canopy risk assessment model to forecast the development of an epidemic on a field basis
- Fast in-field assessment of S. sclerotiorum ascospore loads
Clubroot
Dan Orchard: orchardd@canolacouncil.org
- Solutions to grow economically viable canola in the presence of clubroot
- Further understand the biology and physiology of the clubroot pathogen
- Solutions to reduce the risk of the clubroot disease in regions with low spore concentrations

Blackleg
Justine Cornelsen: cornelsenj@canolacouncil.org
- Evaluate the impacts of crop management and cultural control on blackleg severity and the durability of genetic resistance
- Provide / evaluate fungicidal seed treatment or in-furrow treatment for blackleg control
- Determine what the potential for blackleg root infection pathway is in Western Canada
- Explore related genomes for novel resistance genes

Liming
Keith Gabert: gabertk@canolacouncil.org
- Crop rotation impacts across crops, including an economic analysis across rotations
- Free Ca vs pH effects in managing clubroot with pH adjustment
- Evaluate pH amendment products, pH targets for agronomic enhancement versus clubroot suppression, and physical incorporation strategies that include zero till

Harvest and Storage Management
Storage
Angela Brackenreed: brackenreeda@canolacouncil.org
- Development of best management practices for storage of canola in large bins, such as airflow and temperature dynamics and fan requirements for adequate airflow
- Evaluation of alternative conditioning and drying methods/technologies
- Re-evaluate canola’s equilibrium moisture content (EMC)

Harvest
Angela Brackenreed: brackenreeda@canolacouncil.org
Shawn Senko: senkos@canolacouncil.org
- Correlate phenotypical maturity with moisture and chlorophyll loss
- Develop / test yield and loss monitor technology with the accuracy and precision necessary to utilize in field scale research

Stand Establishment
Autumn Barnes: barnesa@canolacouncil.org
- Understand the mechanisms of non-germination and non-emergence to improve emergence and early season vigor
- Understand the management implications and risk of plant population ranges (1-4, 5-8 plants/ft²)
Fertility Management
Warren Ward: wardw@canolacouncil.org
*Refer to “Liming” priorities under Integrated Pest Management

- Quantification of optimal fertilizer rate, placement and application timing of current fertilizer sources to mitigate greenhouse gas emissions from canola production systems while improving yield
- Analyze compiled current research results for NUE in canola and compare to long term values
- Investigate canola response to micronutrient applications and determine reliable critical values
- Improving phosphate management for long term sustainability on the prairies