

Canola Research Priorities

Canada Brassica Genomics Network Meeting

Saskatoon

December 11, 2008

Arvel Lawson, Program Manager – Crop Production
Canola Council of Canada



Canola Oil Health and Nutrition Research



Canola Product Research Fund (CPRF)

Joint Initiative with funding from:

- Canola Council funds (crushers and exporters)
- Canola grower groups (Alberta, Saskatchewan and Manitoba)
- Life Science Companies (Bayer CropScience, Monsanto, Pioneer Hi-Bred and Dow AgroSciences)



Canola Product Research Fund (CPRF)

- Research should be of benefit to all sectors of the industry
- Canola's highest value point is that of a healthy edible oil
- Research must amplify the inherent value of canola over any other crop
- We must "brand" canola as the healthiest oil



2008 CPRF Projects

- Efficacy of consumption of canola and flax oils in management of hypercholesterolemia and other disease risk factors (Dr. Peter Jones – U of M)
- Monounsaturated and omega-3 fatty acids, oxidative stress and inflammation in adults at risk for type 2 diabetes (Dr. Sheila Innis – UBC)
- Effect of canola oil on glycemic control and coronary heart disease risk factors in type 2 diabetes (Drs. David Jenkins and Cyril Kendall – U of T)



Canola Oil Health and Nutrition Research

Canola oil is recognized for its healthy fatty acid profile, as evidenced by the FDA health claim for reducing cardiovascular disease. There are strong indications that canola oil can be of benefit in other diseases as well.

A workshop in May 2008 attended by leading researchers identified several high priority areas for canola oil research.

- Heart Health
- Diabetes
- Conversion and direct benefits of alpha-linolenic acid (ALA)



Key Findings: Cardiovascular Disease

- Fully investigate role of MUFA, ALA and minor components of canola oil
- Additional research into new risk factors for heart disease
- Include measurements of glucose and insulin as they relate to metabolic syndrome



Key Findings: Diabetes

- Science is still in its infancy
- Continue to invest in research on insulin resistance and any clinical indicators of glycemic control
- Perform research in animal models to determine the effects of individual fatty acids (MUFA, ALA) in canola oil on diabetes



Key Findings: Alpha linolenic acid (ALA)

- Postprandial benefits of ALA as related to endothelial function
- Methodologies to measure conversion and accumulation of ALA
- Role of ALA in reducing inflammation



Canola Oil Functionality Nutrition Research

Canola oil's light taste, high smoke point and healthy fatty acid profile are some of the main reasons for its strong demand from the food industry. Further research on its functionality will help diversify food markets for canola oil and potentially create opportunities for more designer oils.

- Oxidative Stability
- High value components
- Altered fatty acid profiles



Canola Oil Research

- Syngenta/CCC NSERC Collaborative Research and Development Program for Adding Value to Canola (Dr. Usha Thiyam – U of M)
 - Isolating phenolic compounds in the meal
 - Add to the oil as a source of natural antioxidants





Canola Meal Research Priorities

With large supplies of distillers dry grains (DDGS) and increased soybean meal and canola meal availability, the market for canola meal will be under increased pressure. The following research and development priorities were set at a canola meal research workshop in Saskatoon in 2007

- Maximize use in high value dairy feeds
- Increase meal energy content for swine and poultry
- Increase practical feed inclusion rates
- Develop high value meals for aquaculture
- Extract high value components from canola meal



Canola Meal Research – Projects related to increasing metabolizable energy levels

- Preparation of high digestibility canola meals from regular canola and yellow seeded canola (POS Pilot Plant)
- A new, high energy canola meal for poultry and swine: The effect of yellow seed coat, processing and enzyme supplementation (U of M)
- Estimation of the net energy content of six samples of canola meal in growing pigs (Prairie Swine Centre)
- Evaluation of yellow seeded canola products for poultry (Nova Scotia Agricultural College)
- Maximizing the use and value of canola meal and full-fat canola seeds by defining their digestible and net energy values in growing pigs and adult sows (Prairie Swine Centre)
- DOTM – production of yellow seed coat, lower fibre canola (Various, Saskatoon Research Station)



Agronomic Research

- Canola Agronomic Research Program (CARP)
- Prairie Canola Agronomic Research Program (PCARP)



Questions?

Arvel Lawson
Program Manager – Crop Production
Canola Council of Canada
lawsona@canolacouncil.org

Dave Hickling
Vice President – Utilization
Canola Council of Canada
hicklingd@canolacouncil.org

