

Volume 23 No.1 • July 2015

FLAX COUNCIL OF CANADA

### FLAX: 2009–2015 the Triffid Years

The last Flax Focus Newsletter was published in July of 2009 and little did we know at the time the dramatic events the industry was about to encounter.



Don Kerr joined the Flax Council of Canada as President in September 2014. Don brings with him over 40 years experience in the Canadian industry primarily focused in several different marketing positions.

The discovery in 2009 of flaxseed from the cultivar "Triffid" which contained a genetically modified (GM) trait not approved in Europe shocked the industry. The presence of Triffid seed throughout the seed supply threatened the very existence of the industry.

Canada relies very heavily on exports and market access is a vital issue. At the time, Europe was responsible for 68% of Canada's total export shipments amounting to in excess of 400 thousand tonnes of seed.

Because the EU policy on unauthorized GM traits is zero tolerance, Canadian flax shipments ground to a halt and in the ensuing two years imports from Canada fell to near zero.

As there were no standards for acceptable threshold levels of GM traits in flax, all stakeholders from producers to end users were determined to find solutions. Shippers and importers undertook efforts to develop a framework to enable markets to operate. Domestically, priority was placed on establishing protocols to restore the confidence of export markets in the Canadian supply chain.

The Farm Stewardship Program was introduced in Canada along with appropriate protocols on sampling and testing which included seed from the farm gate through to exports. A key component of the program was to ensure planting seed was absolutely GM free. Producers were encouraged to forgo using farm saved seed and instead opt to plant pedigreed seed. In conjunction with this step, a reconstituted seed program was implemented to develop new GM free seed supplies.

This year will represent the second generation of reconstituted seed. Growers have not only demonstrated an understanding of the program goals but have also done their part by complying with the request to use pedigreed seed and reconstituted seed for planting.

As a result of these efforts, the Canadian flax industry has made tremendous progress in reducing the presence of GM containing seed within the supply chain to negligible amounts. Because of the Farm Stewardship Program and the cooperation of flax growers, consumer confidence has once again been restored in the Canadian supply chain.

The challenges that the industry has faced over the past 6 years have been unprecedented. The fact that the industry has now recovered is a testament to the resiliency of Canadian flax and the determination of all flax stakeholders.



This newsletter while reflecting on the past is more importantly about our future which is filled with exciting opportunities for the growth and development of our industry.

### FLAX 2015 Production and Export Markets

2014/2015 acreage made an impressive move back to pre Triffid levels and early indications are that this year we will see another increase of minimum 5%. Production last year was again back to pre Triffid years with some shifting dynamics showing Alberta production growing which is largely market driven.

Europe has returned as an important market for Canadian flax although with some EU Countries still not importing flax chances are a return to pre Triffid levels may take some time. However, demand for flax has created new markets with China leading the way as the largest buyer of flax taking 40% of Canada's total exports last year and on pace to exceed that percentage this year.

The U.S. is now the second largest market for Canadian flax and with encouraging potential for growth in the area of human consumption and animal feed.

Flax exports for 2014/2015 are expected to be 10% higher than last year most of which can be attributed to China.

LeftField Commodity Research Inc., Winnipeg

#### CURRENT INCREASE IN FLAX ACRES IS ONLY RETURNING INDUSTRY TO THE LONG TERM AVERAGE





## China Initiative 2015

In recognition of the importance of the Chinese market to the flax industry in Canada, the Flax Council of Canada is sending a delegation to attend the 5<sup>th</sup> annual Pea and Linseed Conference in Tianjin, China

The mission which takes place between August 10 to the 12<sup>th</sup>, includes Brian Johnson (Chairman of the FCC Board), Wayne Thompson (Executive Director of Sask Flax), Kelley Fitzpatrick (President of Nutrasciences Solutions Ltd), and Don Kerr. The purpose of the trip is to meet with Chinese

industry representatives and exchange valuable information on the flaxseed value chain as it relates to both countries. To facilitate this discussion, the Flax Council along with co-sponsors from STEP (Saskatchewan Trade and Export Partnership) will be hosting a Flaxseed Seminar following the main program. This will provide an excellent opportunity for direct contact with industry. Printed material and products from Canada will be displayed.

On the return to Canada, the Flax Council delegation will meet in Tokyo, Japan with members of the industry to discuss issues affecting trade as well as current market opportunities for Canadian flax. Funding for this mission is provided in part through Agriculture and Agri-Food Canada's Growing Forward 2, Agri-Marketing Program.

# Flax and Health/Nutrition



Kelley Fitzpatrick is the Principle of NutriScience Solutions, a company that focuses on assisting clients with research, marketing and communications in the agri-health sector for over 25 years. Flaxseed has been consumed for centuries due to its desirable flavor and nutritional properties. In recent years, as people have become more concerned about health, demand for flaxseed in food and beverages has risen dramatically. Scientific research supports the many health benefits of flaxseed, particularly due to its high level of the omega 3 fatty acid, alpha-linolenic acid (ALA), antioxidants, lignan, protein as well as both soluble and insoluble fibre.

## Healthyflax.org and a Health Claim

The health-promoting components in flaxseed are associated with improved cardiovascular health. In 2014, Health Canada approved a health claim linking the consumption of ground whole flaxseed to blood cholesterol lowering, a major risk factor for heart disease.

The claim is only one of thirteen approved in Canada. An example of the permitted claim for ground flaxseed is:

"16 g (2 tablespoons) of ground flaxseed supplies 40% of the daily amount shown to help lower cholesterol".

The "daily amount" referred to in the claim is 40 g (5 tablespoons) of ground whole flaxseed to be consumed over three eating occasions in the day. The claim may be used on whole seed as long as the disclaimer "must be ground" also appears on the label.

#### Health benefits of flaxseed

The omega-3 fatty acids play a balancing role in the body. They correct imbalances in modern diets that lead to health problems. Nutritionists caution that the amount of omega-3 fatty acids eaten in North America no longer meets our bodies' needs. You can balance your consumption of fatty acids by adding flaxseed to your diet as a great source of omega 3 fats.

A lower risk for heart disease. Flaxseed is the richest plant source of ALA. Studies show that flaxseed may reduce the risk of heart disease by preventing the buildup of harmful deposits in arteries. In studies in which large groups of people were assessed to determine disease trends, increasing the ALA content of the diet corresponded to a decrease in risk of stroke and heart disease. Flaxseed also shows powerful blood pressure lowering effects. And along with fibre, lignans and other antioxidants, ALA can reduce blood cholesterol - as supported by Health Canada - which may also lower the risk of heart disease.

**Reduction in the risk of some forms of cancer.** The link between diet and cancer is well known. Flaxseed lignans, in particular may be protective against some cancers (such as prostate, breast, lung and colon) because of their antioxidant activities and ability to reduce tumor number and blood vessel growth.

#### Reducing the risk of immune disorders

Lignans and ALA in flaxseed help to reduce and prevent inflammation that affects the body's immune system. Thus, flaxseed may be useful in the treatment of such immune disorders as rheumatoid arthritis and psoriasis.

Managing Diabetes. Flaxseed has been shown to lower fasting blood glucose and glycated hemoglobin (HbA1c) and thus may be helpful in the management of diabetes mellitus. In overweight or obese individuals with pre diabetes, flaxseed intake decreased glucose and insulin levels and improved insulin use.

For more nutritional information and for references, please visit **www.healthyflax.org**.

### Flaxseed and Hypertension

This clinical study represents the largest anti-hypertensive effect ever demonstrated by a dietary intervention



Dr. Grant N. Pierce has published ~200 manuscripts that have attracted more than 4000 citations. He is currently studying the potential for nutraceuticals and functional foods to alter cardiovascular disease. He is the Executive Director of Research at St. Boniface Hospital and Co-Editor of the Canadian Journal of Physiology and Pharmacology.

Hypertension, known as the "silent killer", represents a global health crisis contributing to 9.4 million deaths per year and affecting more than 40% of adults aged 25 years and older. If left uncontrolled, hypertension can lead to heart attacks, strokes, kidney failure, blindness, dementia, and peripheral arterial disease (PAD), which is a serious plaque build-up in the arteries of arms and legs.

In ground-breaking research, Dr. Grant Pierce and his colleagues within the Canadian Centre for Agri-food Research In Health and Medicine (CCARM) at St Boniface Hospital have completed a major double blinded, placebo controlled, randomized trial (the "gold standard" for clinical studies) in Winnipeg in which patients with PAD were supplemented daily for one year with flaxseed in their diet (The FlaxPAD Trial). Fifty-eight patients were fed 30 g of milled flaxseed and another fifty-two patients were fed 30 g of whole wheat (placebo group). Most of the PAD patients were hypertensive and administered anti-hypertensive medication. Subjects could select from seven different food options which contained the 30 g of flax or whole wheat including bagels, muffins and bars (each in three different flavors), biscuits, buns, and pasta. They also could choose baggies of ground flax (or placebo) to sprinkle onto their food of choice.

The ingestion of flaxseed produced a strong and consistent anti-hypertensive effect at all-time points examined: 1, 6 and 12 months. Systolic blood pressure (SBP) was reduced by flaxseed by 10 mmHg and diastolic blood pressure (DBP) was decreased by 7 mmHg at 6 months in comparison to the placebo patients. Patients on placebo did not exhibit a significant drop in either SBP or DBP. Even more impressive, patients who entered the trial with systolic hypertension were the most affected by dietary flaxseed and reacted with a 15 mm Hg drop in SBP. This clinical study represents the largest anti-hypertensive effect ever demonstrated by a dietary intervention and is comparable to most hypertensive medications available. This large decline in SBP and DBP would be expected to lower the incidence of heart attacks and strokes by >50%.

These clinical investigations of Dr. Pierce and other CCARM scientists at St. Boniface Hospital support the heart saving properties of flaxseed. The rich content of ALA, lignans, fibre, and protein in flaxseed together may be the key to knocking out the silent killer of high blood pressure and high cholesterol.



### Flax – A Bright and Exciting Future

Earlier this year, the Flax Council of Canada and its stakeholders were pleased to introduce two websites.

www.healthyflax.org was launched to promote the health and nutritional benefits of flax. A feature of the site is extensive information and recipe advice highlighting the flaxseed and cholesterol lowering Canadian health claim. Health professionals and consumers can use the site to learn more about flaxseed and it's positive benefits in wellness and disease reduction. In addition, food manufacturers will find a number of fact sheets to assist in the development of foods and beverages using flaxseed and oil.

The second website, **www.flaxcouncil.ca**, is not new but a vastly improved version of the previous site. The focus of this site is market and crop production information designed around best management practices available to growers to help enhance their business.

Social media as a means to communicate through these two sites is a very high priority for the Flax Council of Canada.

# Flax 2015 and Beyond



J. C. Paul Dribnenki, Ph.D., P.Ag. has 35 years experience working in extension, agronomy, flax breeding and biotechnology. He resides in NW Saskatchewan.

The Flax Council of Canada is currently carrying out agronomic initiatives focused in three main areas.

First the Flax Growers Guide has been completely updated and is now available on the Flax Council website. This guide provides essential information to growers to produce higher yielding and superior quality flax crops.

The second initiative is focused on Best Management Practices and provides information derived from grower surveys and field trials. This information will be uploaded to the Flax Council website as it becomes available. The format will enable growers not only to access information but also to provide their feedback giving a practical perspective. The Grower Guide and Best Management Practices are funded in part through Growing Actions, a Growing Forward 2 AAFC and Manitoba government initiative.

The third area of focus is directed primarily at improvements in yield and yield stability and is funded in part through AAFC's Growing Forward 2 Agri-Innovation Program (AIP). The Flax Council and its stakeholders are working in collaboration with researchers at AAFC, and the Universities of Saskatchewan, Alberta, Manitoba and B.C. As described in the next article, research is currently underway examining stand establishment, plant nutrition, insect, weed and disease control. Genetic improvements are an important part of the program which builds on previous research that determined the genome sequence of flax.

# The AgriInnovation Program (AIP)

"Improving the Competitiveness of Flax through Agronomic, Breeding & Biotechnology Research"

Six research activities are being conducted between 2014 to 2018 with funding provided in part through the AIP.

- Disease Management. Pasmo is the most prevalent 1. flax disease in Canada. Pasmo increases the prevalence of lodging thereby reducing yield and quality of seed. This project will study virulence of pasmo and screen to identify genetic resistance for breeders.
- 2. Seed Quality. The objective of this study is to determine whether there is a yield loss from the use of farm saved seed versus pedigreed seed. Seed size and seeding rate will be evaluated for seedling vigour and performance of flax varieties.
- Mitigating Soil Moisture Extremes. In the prairies, 3. claims made for flax under crop insurance are most frequently due to excess moisture (28% of claims) and drought (22% of claims). This study will evaluate adaptability of flax varieties to soil moisture extremes. Development of tillage options and strategies to mitigate and manage adverse soil moisture conditions are also being undertaken.

- 4. Abiotic Stress and Transcription Factors. This research will identify transcription factors associated with heat and drought stress. Transcription factors are proteins that regulate expression of large number of genes (behave as master genes). Genetic markers will be developed to enable breeders to improve stress tolerance in future flax varieties.
- 5. Optimizing Integrated Weed Management. Weed management is a major factor involved with yield and yield stability. Effective weed management should slow the spread of herbicide tolerant weeds. The objective of this study is to determine how effective combinations of agronomic practices impact weed growth and flax yield.
- Genetic Improvement for Drought. The purpose of 6. this research is to identify genes for drought tolerance. Genetic markers will be identified that will help to develop new flax cultivars with drought tolerance.





Sign up for updates, ask questions and share your experiences with the new TIPS section of the Flax Council website

Visit flaxcouncil.ca/tips\_article/





465-167 Lombard Avenue Winnipeg MB Canada R3B 0T6 Ph: (204) 982-2115 F: (204) 982-2128

E: flax@flaxcouncil.ca www.flaxcouncil.ca