

# Bi-weekly Bulletin

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## ORGANIC GRAINS AND OILSEEDS

As a result of increased consumer demand, improved marketing techniques, and current low prices for conventional grains, production of organic crops is expanding across Canada. The recent introduction of international and national guidelines regulating the production and marketing of organic foods is expected to increase consumer confidence, leading in turn to higher demand and prices for organic grains and oilseeds. This issue of the *Bi-weekly Bulletin* examines the situation and outlook for organic grain and oilseed production in Canada.

### Organic Agriculture

Organic farming is commonly referred to as a holistic combination of agronomic practices that do not use highly processed chemical inputs in crop production. Instead, organic production involves the use of crop rotations, insect predators, and naturally derived inputs in the production of crops.

While organic farming is still a small specialized industry, it is becoming more mainstream with organic farming viewed as a credible diversification option for small family farms. Up until the mid-1990s the number of organic producers was

modest, but cuts to grain transportation subsidies and the rapid increases in machinery and chemical costs, paired with unstable commodity prices have made the organic growing option much more appealing to producers. Other driving forces behind the growth in organic production include: more emphasis on health and nutrition, an aging population, reports of unsafe food products, concerns for environmental protection and sustainable agriculture and concern about genetically enhanced crops in the food chain.

### International Organic Standards

Globally, organic agricultural

production operates under a series of non-binding guidelines established by the Codex Alimentarius Commission, an international body established in 1962 to administer the Joint Food Standards Programme for the Food and Agriculture Organization and World Health Organization.

In 1999, the Codex Alimentarius Commission published Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods. By publishing these guidelines, Codex provided the first step toward developing an official internationally harmonized set of regulations for the production,

## PRODUCTION OF ORGANIC CROPS

Three essential elements of organic farming are the use of green manure crops, proper crop rotation and diversification. Green manure crops provide organic material for the soil when they are plowed into the field and they also reduce soil erosion. Typically green manure crops are sown in the fall and plowed down the following spring. However, fallow ground can be covered with plant material for a longer period. Common winter green manure crops include rye and wheat, while summer crops include oats, soybeans and buckwheat. For organic farmers, providing nitrogen to the soil is important so leguminous crops such as alfalfa and clover are often used. Crop rotation is essential to organic production to build soil fertility and to control weeds and pests. Without conventional fertilizers, it is important to monitor the nitrogen, phosphorous, sulfur and potassium levels of the soil and to adjust crop rotations as necessary. Diversification, rather than specialization is essential to the survival of the organic farm. At any given time, about one third of all cultivated area is seeded to grass and legumes to improve soil fertility and structure. Livestock are also an important part of the organic farm, as livestock manure provides valuable nutrients as well.



marketing, inspection and labelling of organic agricultural products. The guidelines outline the principles for maintaining organic authenticity at the various stages along the production, processing and marketing chains and for labelling organically grown food. These guidelines have several aims: to protect consumers against unsubstantiated production claims, to protect organic producers against misrepresentation, to ensure that all stages of production and marketing are subject to inspection and compliance with the guidelines, to harmonize guidelines for organically grown produce, and to maintain and promote organic agricultural systems in each country.

Each country, or producing region has numerous organizations at the regional, provincial and national

levels which provide their own certification standards. For example, in the United States (US), the US Organic Crop Improvement Association (OCIA) is striving to become compliant with the International Organization for Standardization (ISO) Guideline 150 65.

On March 7, 2000, US Agriculture Secretary, Dan Glickman announced a new proposal for uniform and consistent national standards for organic food. The proposal details the methods, practices, and substances that can be used in producing and handling organic crops and livestock, as well as processed products. Clear labelling criteria are also outlined so that consumers know exactly what they are buying.

Meanwhile in the United Kingdom (UK), the United Kingdom Register of

Organic Food Standards (UKROFS) registers inspection bodies and directly certifies operators. As other countries develop homogeneous national standards adhering to the Codex Alimentarius, trade and consumption of organic grains is expected to increase.

#### **New Canadian Organic Standard**

In June 1999, the Canadian General Standards Board published the National Standard of Canada for Organic Agriculture (CAN/CGSB-32.310-99) that conforms to the regulations outlined by the Codex Alimentarius Commission and was approved by the Standards Council of Canada (SCC). Prior to the introduction of the Organic Standard, the organic industry operated on a set of self-administered certifications and standards, resulting in inconsistent organic standards and a

## **CROP BUDGETS (2000-2001): ORGANIC VERSUS CONVENTIONAL**

### **SASKATCHEWAN (BLACK SOIL ZONE)**

	<b>2 CWRS Wheat</b>		<b>Flaxseed</b>		<b>Peas</b>		<b>Clover<sup>14</sup></b>
	<i>Organic</i>	<i>Conventional</i>	<i>Organic</i>	<i>Conventional</i>	<i>Organic</i>	<i>Conventional</i>	<i>Organic</i>
<b>Income:</b>							
Projected Price (\$/t) <sup>11,12</sup>	156	120	275	183	210	140	0
Yield (t/ha) <sup>13</sup>	1.48	2.05	0.7	1.3	1.15	1.95	1.6
<b>Projected Revenue (\$/ha)</b>	<b>231</b>	<b>246</b>	<b>193</b>	<b>238</b>	<b>242</b>	<b>273</b>	<b>0</b>
	.....dollars per hectare.....						
<b>Operating Costs:</b>							
Seed	20	15	18	12	60	40	3
Fertilizer	0	53	0	53	0	27	0
Pesticide	0	68	0	67	0	70	0
Crop Insurance	10	8	16	11	12	8	0
Fuel and Repairs	46	40	53	46	58	50	40
Other <sup>15</sup>	12	15	12	15	12	15	12
<b>Total Operating Costs</b>	<b>88</b>	<b>199</b>	<b>99</b>	<b>204</b>	<b>142</b>	<b>210</b>	<b>55</b>
<b>Net Income (Loss)</b>	<b>143</b>	<b>47</b>	<b>94</b>	<b>34</b>	<b>100</b>	<b>63</b>	<b>(55)</b>

<sup>11</sup> Agriculture and Agri-Food Canada, March 2000 forecast

<sup>12</sup> Prices for organic crops are conservatively estimated to be 130% for wheat and 150% for flax and peas of conventional crops, based on insured price premiums by Saskatchewan Crop Insurance. Current price premiums available; 300% for flax, 225% for peas, and 175% for wheat.

<sup>13</sup> Estimated yields: conventional, AAFC forecast; organic wheat, flax and peas are 72%, 54%, and 59% of conventional, respectively.

<sup>14</sup> Assumed to be plow down clover in accordance with organic guidelines. Hay may be sold depending on local markets.

<sup>15</sup> *Other* costs include interest and miscellaneous. For clover they are estimated by AAFC, based on costs for alternative crops.

Source: Agriculture and Agri-Food Canada, University of Saskatchewan, and Saskatchewan Crop Insurance

lack of readily accessible information on the Canadian organic industry. The adoption of the Organic Standard will promote uniform procedures for evaluation and certification agencies, of which approximately 60 are estimated to exist. Organic standards as well as certification are applied on a voluntary basis in Canada, except in Quebec where there is a mandatory system.

The standard provides a national guideline for producers and assurance for local consumers as to the authenticity of organic grains and oilseeds grown in Canada. It will also provide a means for meeting new requirements from our major trade partners, namely the European Union (EU) and Japan.

The Organic Agriculture Standard stipulates the general principles for organic production, as well as the specific requirements for the production of grains and oilseeds, slaughter and dairy livestock, fruit

and vegetables and foodstuffs such as mushrooms, honey, and maple syrup. As well, it outlines storage, transportation, processing, packaging and labelling requirements to meet in order to maintain the organic integrity of the final product.

The impetus for changes to the certification process in Canada, and around the world is the actions of the EU, a major destination for Canadian organic foods. Since 1998, the European Commission has communicated to the international community that as of July 1, 1999, Member States of the EU will only import organic production verified by certification bodies who are compliant with the ISO Guide 65. In Canada, only the SCC has the authority to grant ISO certification to other accreditation bodies.

#### **Marketing Channels for Organic Canadian Grains and Oilseeds**

Organic commodities typically serve niche markets, requiring specialized marketing strategies. Like

conventional commodities, wheat and barley for export are marketed through the Canadian Wheat Board (CWB), while oilseeds, other grains, and special crops are marketed off-board. Organic producers, however, are typically more involved in the actual sale of the commodity to the buyer.

Producers have three major marketing options for off-board grains and oilseeds. First, a producer can custom clean the organic grain or oilseed at an organic cleaning and processing facility and privately market the processed product. Second, the producer may opt to deliver their product directly to the end user where it will be cleaned, graded and purchased. Third, producers can clean the organic grains and oilseeds themselves and market the product privately or through co-operative type ventures.

Producers may experience difficulty in marketing grain because of the effort required to locate potential

### **ECONOMIC RETURNS**

For organic production to be economically viable, premiums are required to compensate producers for the loss in yields due to the abandonment of conventional pesticides and fertilizers and for the three year conversion period where yield declines are typical. The market for organic grains and oilseeds is price sensitive and consumers typically are resistant to prices over 50% higher than those for conventional products. This resistance appears to be weakening, partly as a result of increased environmental concerns. Premiums for organic grains and oilseeds are expected to remain strong as the growth in consumer demand exceeds the growth in production. Currently in Saskatchewan, price premiums for organic flax are approximately 300%, while peas earn 225% and wheat yields 175% of conventional prices. Due to the relatively small size of the organic industry, price premiums are variable and depend on supply and demand fundamentals.

Over the long run, the sustainability of organic production is dependent on the profitability of the rotation compared to growing conventional crops. Producers contemplating switching into producing organic grains and oilseeds should prepare a set of crop budgets over several years before switching. The attached set of budgets based on Agriculture and Agri-Food Canada forecasts data for 2000-2001 compares the profitability of a 10 year organic crop rotation versus conventional crops. The budgets include yield and price data for organic crops collected from Saskatchewan Agriculture and Food and the University of Manitoba. These budgets indicate the profitability of growing conventional versus organic grains and oilseed crops for a particular location. Prices, yields and profitability will vary from farm to farm due to a variety of agronomic, economic and management factors.

buyers. Organic products tend to be sold in small quantities directly by organic producers or certification bodies. There are food shows in the US and Canada which bring together prospective buyers and sellers of organic products. Large buyers/marketers in the Canadian organic market typically offer contracts for 200 to 1,000 tonnes (t). Selling to Canadian marketers is an option as well, although many marketers are not licensed and bonded which presents an additional risk to producers.

Organic wheat and barley can be marketed through the CWB, which is currently conducting a review with organic producers, processors, and marketers to develop an organic marketing policy that meets the needs and preferences of the

majority of organic producers. With the development of a viable segregation system, organic grains will be marketed independently of conventional grains to assure organic integrity.

For CWB grains, the organic producer has two options. First, the producer can deliver to a Canadian Grain Commission (CGC) licensed facility certified for organic deliveries. The grain company attracts delivery by offering the organic producer a premium for his organic grain, over and above the CWB's initial price. The producer is now entitled to further CWB payments based on the delivery and keeps the organic premium. The same option applies with a licensed processor who can issue cash tickets.

The second option is referred to as a Producer Direct Sale (PDS). The producer or the elevator manager contacts the CWB to receive a domestic or export price, based on the sale destination. The producer negotiates the elevator's administration fee and the elevator manager completes a sales contract with the CWB at the agreed CWB price. For an export sale, the elevator manager will also apply for an export license on behalf of the producer. The producer receives the CWB initial payment for the delivery and pays the elevator the CWB agreed sales price. The producer will also collect payment from the organic grain buyer. As in the first option, the producer is entitled to further payments made by the CWB and keeps the organic premium negotiated with the buyer.

### CROP ROTATION RETURNS: ORGANIC VERSUS CONVENTIONAL

Year	ORGANIC ROTATION RETURNS <sup>1</sup>						CONVENTIONAL ROTATION RETURNS <sup>2</sup>					
	Yield	Price	Revenue	Operating Costs	Income (Loss)		Yield	Price	Revenue	Operating Costs	Income	
	(t/ha) .....(Cdn\$/ha).....						(t/ha) .....(Cdn\$/ha).....					
1	<i>Clover</i>	0	0	0	55	(55)	<i>Wheat</i> *	2.05	120	246	199	47
2	<i>Clover</i>	0	0	0	55	(55)	<i>Canola</i>	1.25	220	275	230	45
3	<i>Clover</i>	0	0	0	55	(55)	<i>Barley</i> *	3.00	85	255	180	75
4	<i>Flax</i>	0.70	275	193	99	94	<i>Peas</i>	1.95	140	273	210	63
5	<i>Peas</i>	1.15	210	242	142	100	<i>Wheat</i> *	2.05	120	246	199	47
6	<i>Wheat</i>	1.48	156	231	88	143	<i>Canola</i>	1.25	220	275	230	45
7	<i>Clover</i>	0	0	0	55	(55)	<i>Oats</i>	2.35	70	164	162	2
8	<i>Flax</i>	0.70	275	193	99	94	<i>Wheat</i> *	2.05	120	246	199	47
9	<i>Peas</i>	1.15	210	242	142	100	<i>Canola</i>	1.25	220	275	230	45
10	<i>Wheat</i>	1.48	156	231	88	143	<i>Barley</i> *	3.00	85	255	180	75
<b>Total (including conversion period) <sup>3</sup></b>					<b>454</b>							<b>491</b>
<b>Total (excluding conversion period) <sup>4</sup></b>					<b>564</b>							<b>399</b>

<sup>1</sup> For organic crops, prices and yields have been adjusted as per crop budgets. The rotational mix was provided by the University of Saskatchewan. Prices and yields were derived from the conventional crop forecast by AAFC.

<sup>2</sup> For the conventional rotation, data was forecast by AAFC based on a 800 acre benchmark farm in the Saskatchewan Black Soil Zone, to provide a hypothetical comparison. Results may vary from location to location due to numerous agronomic, economic and management factors.

<sup>3</sup> Total reflects years 1 to 10. Conversion period refers to years 1 to 3.

<sup>4</sup> Total reflects years 3 to 10, including two full organic rotations (clover, flax, peas, wheat).

\* Wheat: 2 CWRS / Barley: an expected premium for malting barley is included in the barley price

If the organic wheat is to be milled on the farm on which it was produced, and marketed in the province of production, it is exempt from CWB regulations.

In 1998-1999, a \$10 per tonne containerization allowance was deducted from the PDS price to allow for overseas export of organic grains. This allowance has been retained for 1999-2000.

## WORLD

Complete data on production and trade is unavailable because the organic industry is governed by multiple independent certification agencies who maintain data confidentiality. However, global organic grain and oilseed production is dominated by the EU, followed by the US, Canada, Australia, and Argentina.

Europe is a net importer of grains and oilseeds with the majority originating from the US and Canada. The German market accounts for more than one-third of the EU organic food market. There is considerable European north-south cross border trade with grains going south and vegetables heading north. In particular, France and the Netherlands are dominant exporters while the UK and Germany are dominant importers.

North America is considered a relatively unpolluted environment and an ideal source of organic foodstuffs. The US is a net exporter of organic bulk grains, organic soybeans and processed organic products to the Europe and Japan.

## UNITED STATES

The United States Department of Agriculture estimates that the value of US retail sales of organic foods in 1999 was approximately US\$6 billion. The number of US organic producers is increasing about 12% per year and now stands at about 12,200 nationwide- most are small-scale producers.

## CANADA

### Production

In 1999-2000, COAB estimates the Canadian organic industry is worth nearly \$1 billion annually and is expanding by 20% a year. About 1,500 farmers across Canada are registered organic producers, while hundreds more are unregistered.

Total production of organic grains and oilseeds is estimated to be about 140,000 t, valued at \$400-500 million, versus conventional grain and oilseed production of 62 million tonnes (Mt).

Organic grain production is concentrated in Western Canada. Unofficially, wheat including durum

constitutes one-half of total organic grain. Wheat, excluding durum, is the largest crop, while durum and rye are the second largest crops and roughly equal in output. Buckwheat production is small but is increasing at a relatively slow pace.

Oilseeds make up only 10-20% of total organic production due to problems with weeds and disease combined with a lack of organic crushing facilities. The major organic oilseeds are flax, canola and sunflowers.

Legume production is relatively small in comparison with other crops. However, as they are good sources of nitrogen for the soil, it is important to increase the level of legumes in the crop rotation.

Approximately 40% of land on organic farms is dedicated to soil-building crops such as alfalfa, pasture and sweetclover green manure. Alfalfa is an important crop to include in rotation as it improves the nutrient (nitrogen and phosphorus) status of the soil, provides weed management, decreases soil salinity, improves soil aeration, and increases subsequent crop yields.

Provincial breakdowns of areas are unavailable due to the existence of numerous certification agencies,

## SURVEY OF THE PRODUCTIVITY OF ORGANIC GRAIN AND OILSEED FARMS IN EASTERN MANITOBA

A recent University of Manitoba survey of organic farms in Manitoba and Eastern Saskatchewan revealed that approximately 40% of the land on organic farms is dedicated to soil building crops such as sweetclover, alfalfa and pasture. Only 6% of the land was summerfallowed during the survey. Grain yields for organically produced wheat, barley and oats averaged about 75% those on comparable conventional farms while peas, canola and flax yields averaged about 50%. In general, weeds limited yields, with wild mustard, red root pigweed, and Canada thistle being the most damaging. Soil testing revealed that while soil nitrogen levels were generally adequate, in many cases, inadequate phosphorous and sulfur limited yields. In some cases, phosphorous and sulfur levels were low enough to limit the nitrogen fixing ability of legume crops. These phosphorous and sulfur deficiencies need to be corrected.

which may maintain overlapping membership lists, leading to distorted or exaggerated organic production data.

Yields of organic crops are consistently lower than conventional yields due to the elimination of fertilizers and pesticides. Grain yields for organically produced wheat, barley and oats average 75% of those on comparable conventional farms, while yields of pea, canola and flax are 45-60%. The lower yields are generally compensated for by premiums, although these are partly offset by increased freight costs involved in Identify Preserved (IP) marketing.

#### **Crop Insurance**

Certified organic producers can participate in provincial crop insurance programs. For Saskatchewan, crop insurance premiums and rates for organic grains and oilseeds are available for only certified producers. An organic prices option provides for a 30-50% price premium due to the increased risk of growing organic crops. In Manitoba and Alberta, organic crops are insured similarly to conventional crops.

#### **Exports**

The majority of Canadian organic grain and oilseed production is exported, primarily to the EU, the US, and Japan. Wheat is the dominant export at approximately 15,000 t, compared to conventional wheat exports of 14.5 Mt forecasted for 1999-2000. About half of the organic wheat is destined for Europe with the remainder evenly divided between the US and Japan. The US is the major market for the remaining exported organic grains and oilseeds.

#### **Domestic Consumption**

Domestic consumption of organic grains and oilseeds is centered in Central Canada, therefore shipment from Western Canada to processing and milling plants in Ontario and Quebec is necessary. The capacity for handling organic grains is increasing in Western Canada with the use of containers and IP marketing techniques.

#### **OUTLOOK**

In Canada, the area seeded to organic grains and oilseeds for 2000-2001 is expected to be similar to 1999-2000, partly due to the long conversion period required to switch from conventional to organic production. However, production is likely to decrease slightly as yields return to more normal levels, in line with conventional grain and oilseed crops, assuming a return to more normal moisture conditions. As a result, supplies are expected to decrease slightly for 2000-2001. Assuming that demand for organic grains and oilseeds is also similar to 1999-2000, carry-out stocks are expected to decrease. This is expected to support current price premiums for organic grains and oilseeds over conventionally produced commodities, therefore prices are forecast to increase slightly.

Over the medium-term, the area seeded to organic crops may increase by 500%. By 2005, the organic industry is anticipating that their market share will increase to 10% of the Canadian retail market. Organic bulk and value-added products currently represent one alternative to conventional farming.

The introduction of the National Standard of Canada for Organic Agriculture and the recognition of the Canadian accreditation system by Canada's major trade partners is expected to result in stronger exports of organic grains and

oilseeds over the medium-term. Consumer demand is also expected to grow with the development of a fast and accurate test to ensure organic integrity. However, testing organic processed products will continue to be difficult because the properties that identify conventional crops tend to disappear in the production process.

Organic sales in the EU have been projected by an English-based publication to quadruple by 2005, suggesting that market growth is dependent on maintaining current prices for organic products. EU supermarkets, which account for two-thirds of the EU organic market, continue to promote numerous organic product lines.

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