



Maritime Organic Field Crops Market Study

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January 2011

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1. Introduction

1.1. Executive Summary

The findings of the Maritime Organic Field Crops Marketing Study are a guiding document for developing the organic grains market in Atlantic Canada. Currently, there are over 30 organic grain and oilseed producers in the Maritimes, cultivating close to 5000 acres. With a limited number of purchasers—primarily marketing only within Atlantic Canada—the number of supply chains is restricted. Although producers in the Maritimes have an admirable desire to keep regional grains at home, this has led to competition amongst each other to sell their crops to the same small markets.

This study identifies new potential markets in Quebec, Ontario, and New England, while exploring the procedures involved in marketing to international markets such as Europe and Japan. Many opportunities exist to advance the growing grains market, and by implementing the recommendations elaborated in this report, the sector would positioning itself to take advantage of a changing and expanding market scene.

Approximately 60% of Maritime organic field crop producers participated in the 2010-2011 harvest survey, which informed the in-depth sector profile included in this market study. The survey examined reasons for growing organic field crops, various crop production aspects, including varieties seeded and yields obtained, and asked several questions about markets and future production plans.

According to the survey, wheat, oats, soybeans and barley accounted for 80% of field crops grown in 2010. This finding, along with identified market demand, indicates the strong possibility for crop diversification and new entrants to organic field crops in order to meet new and niche market demands.

Currently, field crop producers in the Maritimes have relationships with steady, regional buyers, which have continued to grow and respond to meet their needs. The largest food-grade purchaser of organic grains is Speerville Flour Mill and at the moment, the largest regional feed buyer is a newly transitioned hog producer on Prince Edward Island, Walter Clark.

However, there are several emerging regional markets that may greatly affect the demand for organic grains. These include Nova Scotia's EcoMilk and cheese production, Nature's Crops International and the development of the organic livestock sector. Although nationally (due to high shipping costs) markets are limited for Maritime growers, promising markets include Quebec, Ontario, as well as New England and certain international markets (as a result of the Halifax international port).

Many Maritime grain producers are aware of the potential of Quebec markets, yet favour selling to Ontario. This is due in part to language barriers and the fact that a historical relationship with Homestead Organic in Eastern Ontario has been developed. Interviews with Quebec buyers conducted for this market study indicated that there is significant interest in sourcing Maritime organic field crops. As shipping costs increase and new buyer relationships are formed, Quebec may become a more profitable option.

There are major opportunities to develop a Maritime-New England market relationship. According to organic statistics derived from the US Department of Agriculture Economic Research Service, New England livestock producers are importing the majority of their organic grains to meet feed demands. In fact, one of the largest purchasers of organic grains in New England, a livestock/grains co-operative called CROPP (a division of Organic Valley), stated it is purchasing 75% of organic grains from Canada and no grain is being sourced from the Maritimes.

Overseas, growing markets for non-genetically modified and organic crops in Europe and Japan provide incentives for Maritime organic grain producers to branch into the world market. While there are challenges involved, several marketing groups have had success reaching international markets. Such collaborative ventures show potential to expand the now regionally-dominated market into the worldwide sphere.

In order to increase accessibility to niche and foreign markets, and to strengthen sector capacity, this study also documents exemplary models for encouraging collaboration amongst grain producers. These include an equipment sharing model popular in Quebec, the “Coopérative d’utilisation de matériel agricole” (CUMA) and Farmer Direct Co-op in Saskatchewan, which has been successfully marketing organic grains and livestock.

In order to increase the capacity of the Maritime organic field crops sector and to meet the demands of the various markets, the following recommendations are suggested:

- 1) Stakeholders and associations are recommended to form an industry-chaired committee to direct the future activities of the MOGN.
- 2) The mandate and capacity of the MOGN should work towards FABQ’s model, a Quebec-based organic grain grower group. In addition to creating a strong network of organic grain and pulse producers, the group tracks market information semi-annually and organizes one conference per year with buyers from across the national and international markets. Additionally, the grain grower group of the FABQ functions to coordinate educational opportunities and farm tours.
- 3) MOGN and industry partners should organize field tours every second year to visit grain farmers in other regions (or countries).
- 4) MOGN should work with industry partners to lead workshops on optimizing grain quality through proper management, storage and handling.
- 5) PEI and other geographic areas where there is a concentration of organic grain producers should investigate the possibility of developing an equipment and infrastructure sharing system, such as Quebec’s CUMA.
- 6) A feasibility study should be completed to examine the potential creation of a grain/livestock co-operative such as Organic Valley’s CROPP model or Saskatchewan’s Farmer Direct Co-op.
- 7) Regional grain buyers should offer incentives for quality and variety preferences, which would offer positive reinforcement and push innovation.
- 8) In order to entice new entrants to organic grain production, a detailed cost of production analysis for different crops under organic management (as part of a rotational farming

system) should be developed, including a profitability analysis in relation to production scale by crop. This information should be distributed to conventional grain commodity groups.

In conclusion, the recurring theme throughout the recommendations is the concept of collaboration—a term Maritime producers have historically exemplified, and an idea synonymous with the organic sector. By organizing to meet shared goals, the Maritime organic community would be positioning itself to take advantage of emerging opportunities and to support the growth of an economically, socially and environmentally responsible sector.

1.2. Background

The Atlantic Canadian Organic Regional Network (ACORN) and the Organic Agriculture Centre of Canada (OACC) recognized the need for increased information sharing and access amongst organic producers involved in grain and pulse production. Support for the idea was strong from both organic producers and processors of the region. On behalf of the Atlantic Canadian organic sector and OACC, ACORN was approved for four year funding to create and inform a unified network of grain producers in partnership with OACC in 2007.

The Maritime Organic Grains Network (MOGN) has conducted research and facilitated information exchange through a variety of means, including an organic grains forum in 2008, a variety of workshops, a field tour of organic grain producers in Quebec in 2008, local field tours in New Brunswick and Prince Edward Island, and six MOGN newsletters. The MOGN newsletters included an annual survey, with general crop information. ACORN and OACC have been collecting this information annually since 2007.

It is clear that the MOGN was a positive and necessary progression for the organic field crop sector in Atlantic Canada. Without considering national and international markets, as well as additional value-added opportunities, the main Maritime organic processors are looking for more producers and crops. There is clearly great potential for expansion and it appears that organic grains and field crops deserve much more attention in Atlantic Canada.

1.3. Objectives

- 1) Develop a profile of the organic field crops sector in the Maritimes.
- 2) Identify upcoming and potential markets in the Maritimes
- 3) Identify and examine regional, national and relevant international markets
- 4) Identify opportunities for developing the Maritime organic field crops sector
- 5) Provide recommendations to take advantage of the market opportunities identified

1.4. Methodology

1.4.1. Maritime Organic Grains Network (MOGN) Profile

Using the template of previous MOGN surveys, the survey was revised and enhanced to include additional information relevant to this report. Surveys were disseminated via paper mail-outs, email, and participants were given the option to complete the survey over the phone. The surveys were distributed only to producers who were indicated to be organic or transitioning. Overall, 60 surveys were sent out to identified grain producers (in order to capture producers who may be in transition, surveys were sent to producers included on the Maritime Organic Grains Network list). Follow-up phone calls were completed to ensure the best possible

response rate. Additionally, select interviews were conducted with key producers in the region in order to further develop the scope of the profile and clarify any discrepancies or questions.

1.4.2. Market Analysis

Research, analysis, and stakeholder consultation informs this report, one of the first comprehensive assimilations of the potential markets and trends for Atlantic Canadian organic grain and field crops. Data collection includes results from the MOGN profile, interviews, local and relevant national initiatives, as well as researching select international opportunities. In particular, this study focuses on markets in the Maritimes, Quebec, Ontario, New England, with an overview of potential Japanese and European markets.

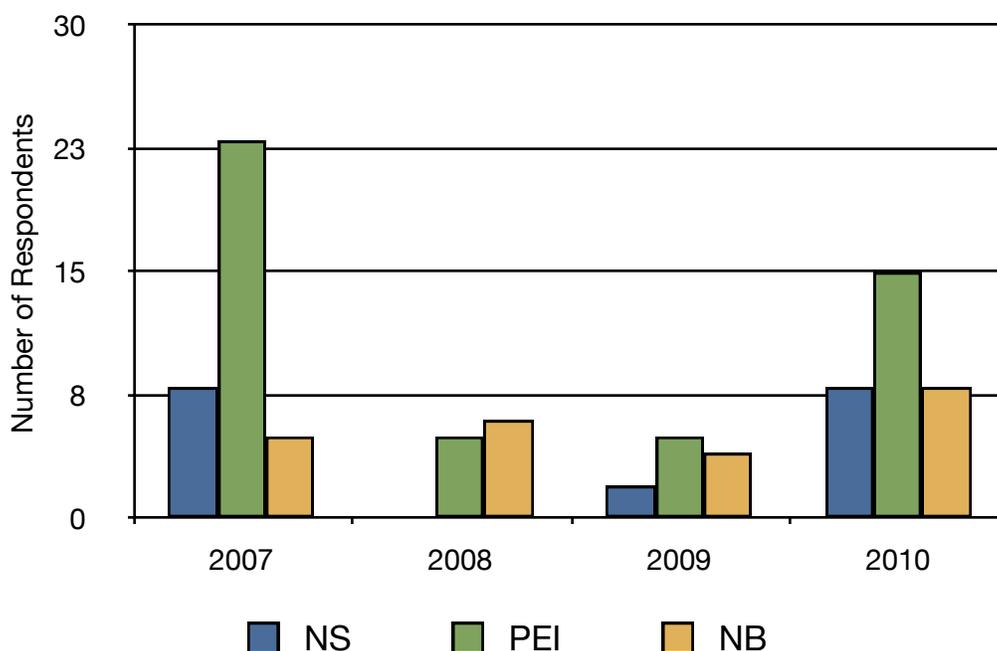
2. Profile of the Maritime Organic Field Crops Sector

2.1. Introduction and Overview of Survey Respondents

There were 30 respondents for the 2010 survey, representing approximately 60% of the certified organic grain producers. Response rate percentage was highest in New Brunswick, but overall, there were 15 responses from Prince Edward Island, eight in Nova Scotia and seven in New Brunswick. The total number of organic grain producers was deduced from a combination of the ACORN organic database as well as by asking provincial organic specialists for organic contacts—based on this information, it is estimated that there were approximately 50 certified organic grain producers.

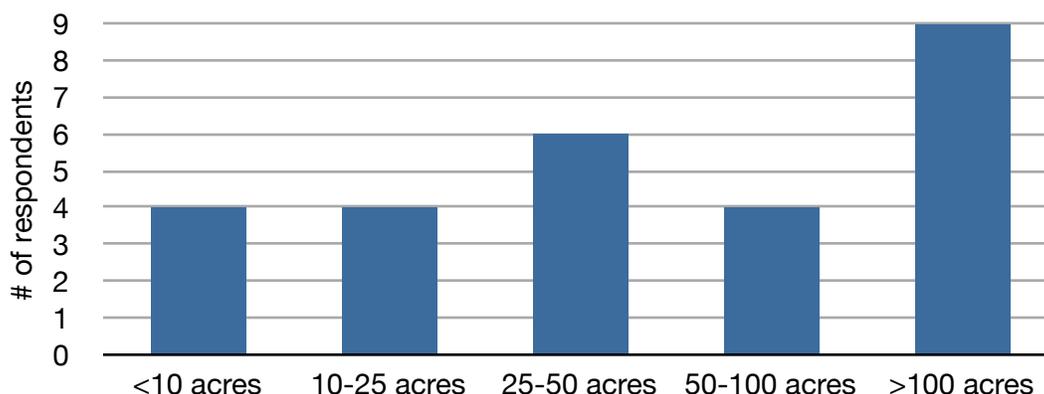
Figure 1 displays the number of survey respondents ranging from the Maritime Organic Grains Network's first survey collected in 2007 to ACORN's 2010 final survey. As shown, the response rate was highest in 2007, and that is in large part due to the fact that the survey itself was much simpler in the first year, and the fact that there was a person dedicated to the task of disseminating and collecting the surveys. Of significance however, is the fact that organic cereals and pulses did experience a decrease in production following the market lows of 2008.

Figure 1. Overview of Survey Respondents from 2007-2010



Initially, based on the ACORN online searchable database, the number of organic field crop producers seemed relatively small (approximately 15 producers), but it became evident as the study progressed that this number was incorrect. It appears that there are more than triple that number of organic producers growing organic field crops. Granted, some of these producers, as demonstrated in figure 2, are in a category of very small-scale production (<10 acres) and approximately ten of them are in the mid-range (between 25-100 acres), while there are nine producers that indicated they are working over 100 acres (see figure 2). The maximum acreage was approximately 500 acres. There were no producers beyond this acreage amount, but twelve producers indicated interest in expanding their grain operations beyond 500 acres. Of these 12 producers, three are already producing over 100 acres. This means that there could be a significant increase in organic acreage in the coming years. Of the rest of those twelve producers who indicated interest in expanding their operations, they are all farming between 25-400 acres. To put this in perspective, according to Statistics Canada in 2008, the average farm size in the Maritimes was 132 acres, so those farming over 100 acres are about an average farm size for the Maritimes, while there are several who are above average.

Figure 2. Acreage

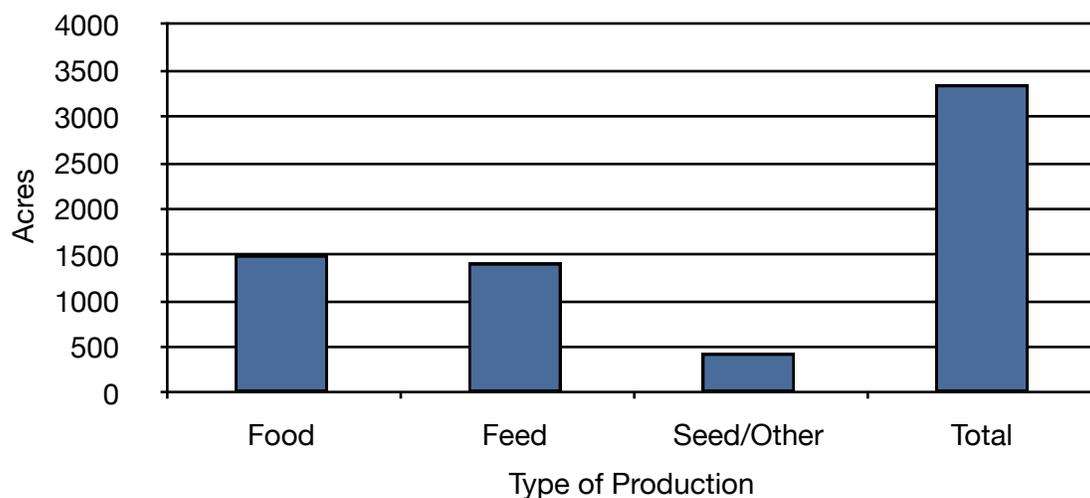


Most of the organic field crop producers began production between 2000-2010 (survey results), with three producers indicating that they had become certified in the last 3 years, and one respondent who is currently in transition; 30% of the survey respondents began production well before the year 2000. It's important to see that grain producers who began earlier are still in the business, and that there is a resource of experienced organic producers available to new entrants. The data used throughout this analysis is based solely on those producers who are involved in certified organic farming.

2.2. Production

Total acreage of organic field crops reported by the survey respondents equalled 3349.85 acres for 2010. Given that there were several farmers who didn't fill out the survey, some of them with larger acreages, it is a safe estimate that there was actually about 5000 acres in production. Figure 3 shows the breakdown of the acreages recorded for food, feed, and seed or other production types according to the survey results.

Figure 3. Field crops produced for food, feed, seed/other; 2010 survey results



The four main crops being grown in the Maritimes are (in order of acreage): oats, barley, wheat and soybeans. Table 1 below gives an annual summary of the acreage planted in these four crops, including each crop's percentage of the total area recorded as seeded in organic cereal and pulse crops per farm; the yields for food, feed and seed grade crops; as well as the varieties planted. Please note that the 2007 survey results did not supply enough detail to be fully included in this chart, the information that was available is included.

Table 1. Annual summary of acreage planted in the top four crops with % of total area seeded, yields and varieties planted.								
Year	# of Respondents	Area Seeded (acres)	% of total crop area planted	Yield (tonnes)				Varieties Planted
				Food	Feed	Seed	Total	
Wheat: Some of the wheat varieties are winter wheats, which won't be harvested until 2011, which partially explains why the yields are low although a rough estimate winter wheat harvest is calculated below.								
2010	30	1068	31	124+45 soft wheat	215	3.5	387.5	AC Barrie, AC Helena, AC Kane, Acadia, Borden, Red Fife, Walton
2009	11	323	22	103	97		200	Spelt, Red Fife, Common Winter, Borden, Walton, Acadia, AC Barrie
2008	11	210	28	45.5	23		68.5	Walton, Red Fife
2007	36						185	
Barley: None recorded grown in 2009 survey responses.								
2010	30	333	9		168		168	AC Maple, AC Queens, Encore, Island, Lucky
2009	11						0	
2008	11	25	4	11	3.5		14.5	Synassolis, McGuire
2007	36						203	
Oats								
2010	30	689	19	79	146.5	18	243.5	AC Baton, Alymer, Common, Hulless, Marion, Nova
2009	11	276	19	70	67		137	Rigedon, Nova, Lachute, Common Hulled, Common, AC Baton
2008	11	185	26	66	4		70	Common, Hulless AC Baton, Alymer, Lachute, Nova, Orrin
2007	36						183	
Soybeans								
2010	30	906	25	222	99	10	331	AC Laurent, AC Prudence, Atwood, Bicentennial, Black Jet, Champion, Prudence, Phenix, Ugo, Vision, Savan
2009	11	323	45	102.5	97		199.5	Savannach, OAC Prudence, Black Jet,
2008	11	43	6		31.5		31.5	Prudence, Black Jet, Champion
2007	36						213	

Table 2 simply separates the percentage column shown in table 1, more clearly demonstrating the percentage of total area seeded in each specific crop. Wheat has been a pretty steady crop, capturing a high percentage of the total production in 2010, with 31%. Soybeans seem to have dramatically increased from 2008 to 2009, while dropping off to 25% in 2010. In 2008, the top four crops only accounted for 64% of the total acres seeded, whereas these top four are

over 80% of the crops seeded in the following years. When examining the other crops grown in 2008, 17% of the total cereal and pulse crop seeded under the category of “other”, which includes yellow eye beans, black oil sunflowers, canola, rye and spelt. This indicates that on average, there was more diversity in the acreage of crops planted that year.

Table 2. Organic field crop acreage in the Maritimes reported from 2008-2010 and the % of total acreage by crop

Crop	Wheat		Barley		Oats		Soybeans		Other		Total
	Ac	%	Ac	%	Ac	%	Ac	%	Ac	%	Ac
2010	1087.8	31	332.8	9	689	19	906	25	580	16.2	3589.6
2009	323.2	22	0	0	275	19	651	45	675	45.4	1488.4
2008	196	28	25	4	185	26	43	6	234.1	33.1	707.6

There are several other crops that are commonly grown in the Maritimes, and they include (in order of acreages recorded in the 2010 survey): buckwheat (5%), rye (2%), and corn (2%), with less than one percent acreage of spelt, field peas, triticale, sunflowers, flax, popcorn, perilla, red clover seed and mixed crops (such as barley and peas). In years previous, additional crops grown included canola and several varieties of edible beans.

2.3. Sector Constraints

Weeds and market demand are by far the top concerns of the majority of producers (figure 4). For those producers with greater than 100 acres in organic field crop production, the “constraints” identified on figure 4 are almost identical to the constraints experienced by the larger group of survey respondents, with the exception that none of those with over 100 acres in production indicated that profitability was a constraint.

Weeds in organic field crops are a challenge not likely to disappear, although there are certainly well-documented methods of lessening the problem. Soil fertility was also a recurring concern, and is likely to be an important factor when exploring markets outside of Canada. Internationally, organic purchasers are demanding, in addition to organic standards, regulated levels of heavy metals (making some types of wood ash non-compliant).

The Organic Agriculture Centre of Canada (OACC) has been well aware of the fertility issues faced by organic grain producers, given the lack of a livestock industry which would otherwise readily supply manure and compost. The OACC has several resources on their website¹ and they can also provide many other resources to help with weed and fertility control. ACORN also has resources on its website from previous conferences and workshops. Both websites address soil fertility through cover cropping, intercropping, amendment studies and more. In addition, the ACORN website has an excellent resource for calculating a farm’s Cost of Production². Knowing the cost of production can make a significant difference for producers to understand what price they should be aiming to sell their grains for, and to discover if it is in fact worthwhile for them to grow them at all.

¹ http://www.organicagcentre.ca/ResearchDatabase/res_field_weed_ctrl.asp

² ACORN *Organic Path* website. Cost of Production:
http://www.acornorganic.org/organicpath/foundation/costs_revenues/

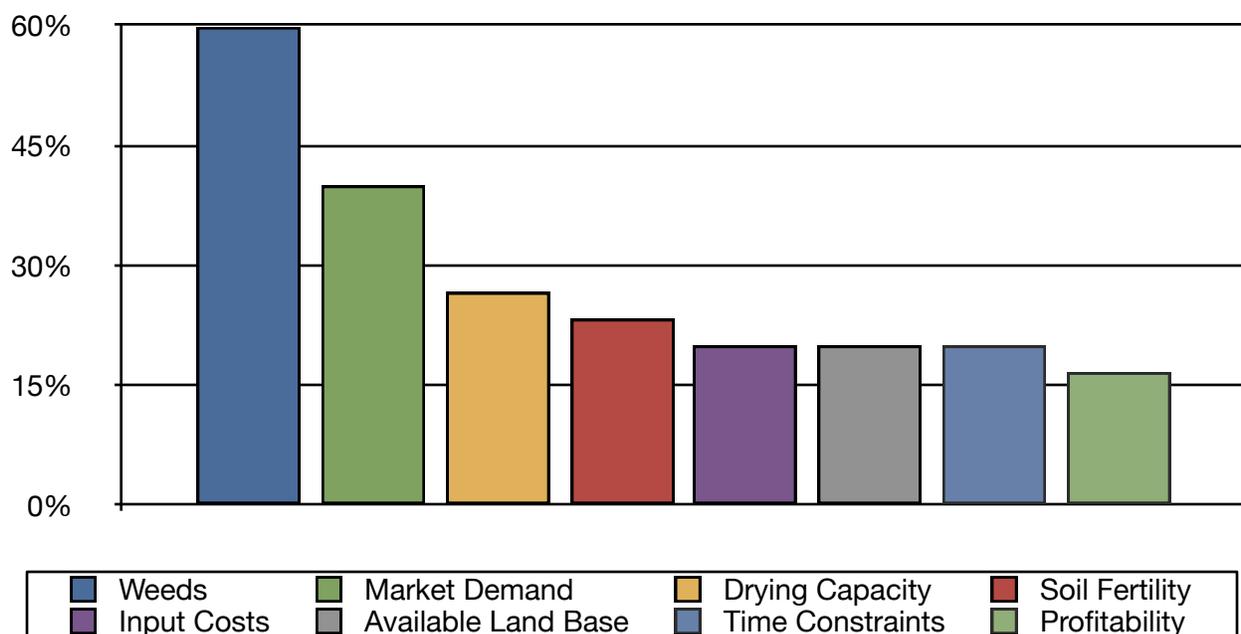
2.4. Reasons for growing field crops

Producers indicated that their reasons for growing grain were often multifaceted. The majority of grain producers (70%) indicated that they are growing grain in order to sell it for food grade profit, while 50% indicated they are growing them for feed for profit. Not surprisingly, 55% of those who responded that they are growing feed for profit are also growing it for their own livestock feed—meaning that approximately 20% of respondents are raising livestock. Another important distinction is that 57% of the producers who are growing crops for food grade profits are also selling their grains to the feed market. In follow-up interviews, many of those producers claimed that they were almost always aiming for food grade quality, only selling their crops as feed grade when it didn't meet quality requirements. Growing field crops for “seed/other” production accounted for 12% of the reasons producers are growing field crops. Very little acreage is sown for seed grade, which highlights the fact that the producers Maritimes are facing difficulties sourcing seed, which is an additional factor that is raising the cost of production and creating more challenges for field crop producers. The seed issue is discussed in more detail in the Summary of Opportunities section of this study.

2.5. Storage, Cleaning and Infrastructure

Market demand and grain drying capacity were the 2nd and 3rd top constraints identified by producers (see figure 4). Having proper drying and/or aerated storage facilities is essential for allowing controlled access to markets and maintaining grain quality. Having storage capacity allows the grain producer to hold the grain to access premium markets; being forced to send the grain off the farm immediately at harvest greatly reduces marketing options.

Figure 4. Constraints to grain production



Grain quality is influenced by many factors including variety selection, management practices, and growing conditions. However, the marketability and quality of grain going to the market is greatly influenced by cleaning, drying and storage capacity. Once a crop reaches maturity, the seed begins to lose quality, often this degradation process begins while still on the stem.

Likewise, getting a crop off early will minimize exposure to rain which promotes disease and reduces quality. This means harvesting grain at higher moisture contents (than suitable for storage) can provide a quality advantage, if drying facilities are available.

In the survey, 75% of respondents indicated that they had storage capacity for 100% of their grain. However, subsequent discussions with Maritime cereal and pulse buyers, revealed that there is frequently a problem with the quality of grain available, mostly due to inappropriate storage and high moisture content. Some producers described in interviews that while indicating they had storage capacity, in actual fact, the grain was not stored in proper bins and tanks, but sometimes even on their barn floor, or in rented bins and in some cases where people indicated they had storage, they actually meant that they did not need it as it was their practice to sell the grain straight off the farm at harvest to avoid need for storage.

Less than 60% of producers surveyed have storage equipped with aeration, and less than 50% have drying capacity. No buyers interviewed for this report would accept high moisture content grains, and all of those who are already purchasing from Maritime producers stated that inadequate grain storage is a recurring issue, as it can cause fusarium damage to spread, encourage crop rot, and generally reduce the quality and value of the crop, which can be discouraging for both buyer and seller. Even a high quality grain can spoil if moisture is not controlled.

Similarly, cleaning and sorting infrastructure are important factors for capturing a higher value market price. By properly cleaning grain before storing it, producers run a much lower risk of having to deal with issues such as dockage, heating, and disease. Producers are often expected to pay for shipping, therefore it seems sensible to ship only the grain that will be of highest value possible. Less than 60% reported having grain cleaning infrastructure, and once again, it is difficult to say whether the cleaning infrastructure producers have is adequate and appropriate. Several respondents indicated they used hand held screens to clean and sort the grain. This is a time-consuming and laborious task, with subpar results compared to machines, and significantly higher labour costs. Relatively inexpensive grain cleaners can be purchased by commercial growers for this job.

When isolating and observing the trends of the nine producers farming over 100 acres, these infrastructure requirements are not such a burden. Although two producers in this category indicated that they do not have full storage capacity, all had storage facilities equipped with aeration. Furthermore, seven of the producers had drying capacity and seven had grain cleaning systems in place.

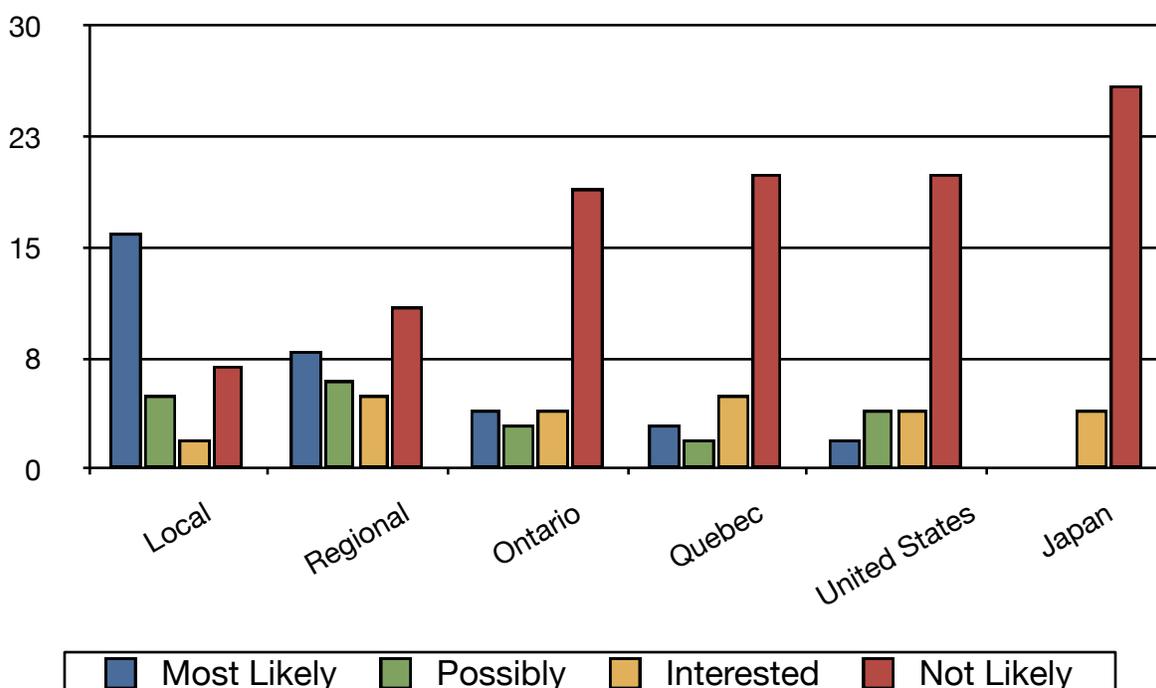
Scale-appropriate technology: It's decidedly easier to acquire the necessary equipment when the purchase is justified by sales, but for many their production levels are too small to permit purchasing capital equipment. Roughly 58% of the survey participants are growing grains and oilseeds to feed to their own livestock, which means they aren't making an easily quantifiable profit for their efforts. Also, since the grain is for feed use, the quality can be lower than for food grade products, making the investment in infrastructure even less likely. It does seem plausible, that if the equipment were available, people would make good use of it. This is supported by a recent online discussion about purchasing a grain thresher, where one producer was looking for other investors in a small-scale thresher. See 'Summary of Opportunities' section for more information about potential grain equipment sharing models. Speerville Flour Mill has published a grain storage guide, complete with suggestions on how to ensure the grain will meet and

maintain its highest quality during storage. It is included in the Resources for Producers section in this report.

2.6. Market Information

Producers were most likely to market their grain provincially and within the region as opposed to outside of the region (figure 5). Many of the producers surveyed commented that they were partial to having their grains ‘stay close to home’. This trend is supported with evidence regarding the producers’ selling preferences, where 70% of producers rated highly the importance of ‘historical relationship’ as a factor when deciding who they were going to sell to. One grower even recounted that they were offered a better price from an out-of-region company, but decided to remain loyal to their historical purchaser and proceeded to sell locally despite the lower profit potential. Seven producers indicated they were unlikely to sell to anyone, indicating that they grew organic grains for their own use as likely as livestock feed.

Figure 5. Preferred Market Rating

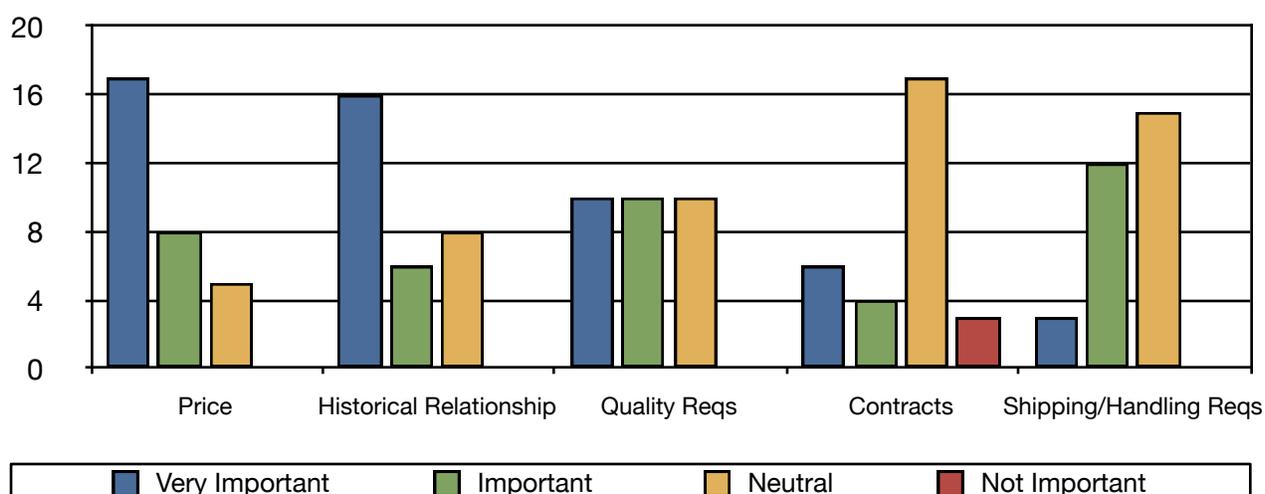


As stated above, respondents indicated that one of the most important factors for deciding who their buyers were was ‘historical relationship’, but, ‘price’ was equally important (Figure 6). Verbal agreements are the norm in this region, with few written contracts, and often it is assumed that necessary recourse will be taken if the commodity does not meet quality standards. It also appears that more often than not, producers are responsible for shipping the product, and market prices are based ‘FOB’ (Freight on Board) the farm, which means that prices are based on a delivered product. This fact reiterates the importance of producers knowing their full cost of production, so that they are aware of the price they need to capture in order to cover the varying shipping prices.

2.7. Buyer Considerations

While price and historical relationship are fairly obvious top hits, it is a bit unexpected to discover that “contracts” and “shipping and handling” are considered to be mostly neutral and in the case of contracts, even “not important”. It appears that Maritime organic producers prefer to sell on the spot market, in the hopes of capturing a better price, rather than signing off on contracts. However, as discussed earlier in this section, the fact remains that the regional markets are small and that producers are consistently growing the same four crops. Relying on the spot market, while also trying to sell into the local market with the same crops, is rarely advantageous for the producers. According to several producer interviews, all too often, one producer will drop their price in order to move his/her product quicker (likely because of lack of storage), which means other producers hoping to sell big on the spot market are now subject to that lower price. Producers also repeatedly grow certain crops in order to capture the high market values of the previous season, only to discover that many others had the same tactic, which floods the market and lowers the premiums.

Figure 6. Important Factors for Buyers



In contract agreements, the producers are guaranteed a price for their product, regardless of the ups and downs of the world market. If a producer has worked out their cost of production, they should know what price they can sell the grain for while still making a reasonable profit. This can restrict a producer if the market price happens to rise above the contracted level, but they are still guaranteed to make a profit. Just as contracts don't allow producers to capture high market prices on the spot market, they also mean that producers aren't subject to unexpected drops in the marketplace. Contracts can also allow producers to plan ahead more effectively, allowing them freedom from falling into the spot market trends. Another consideration in favour of contracts is the fact that most markets outside of the Maritimes prefer contract buying.

2.8. Expansion plans by Province & Farm Size

According to the survey results, which are limited to the 30 survey respondents, Prince Edward Island is producing 69% of the total grain crops produced in the Maritimes. Nova Scotia is responsible for 21%, while New Brunswick has a 10% share.

According to the survey results, of the nine farms growing grains on over 100 acres, seven of them are located in Prince Edward Island.

Only 33% of PEI organic grain growers, which is five producers, indicated in the survey that they plan on expanding their operations in the next ten years. This projection was based on interest and market demand.

In Nova Scotia however, 37% (three producers) claimed they planned on expanding in the next ten years.

New Brunswick had the highest expansion expectations for the next ten years, with 50% (a total of 4 producers) indicating that they planned on increasing production. New Brunswick respondents based their projections fully on market demand and price.

Overall, of the producers growing over 100 acres of organic field crops, four indicated that they hope to expand their production, while two will remain the same, one will reduce and another will discontinue altogether. As mentioned earlier in this section, several producers with over 100 acres who indicated in the survey that they hope to expand also indicated that their expansion plans would make take them over the 500 acre scale.

3. Potential Production

3.1. Overview

Based on results generated from the MOGN survey, as well as specific questions posed to interviewees, there is reason to speculate that given certain incentives, production could significantly increase in the Maritimes. First of all, a total of 40% of survey respondents indicated that they plan to expand their operations in the next ten years. Of those 40%, many are larger producers whose operations already make up almost 30% of the organic acreage dedicated to field crops in the Maritimes. There is also more regional market demand for certain commodities that had to be sourced elsewhere in 2010, such as corn and oilseeds. And despite 2008's market crash, organic field crop production has continued to increase in acreage over the years, from a total of 440 organic field crop acres produced organically in 2003³, to 3350 acres reported in the 2010 survey responses alone.

In addition, while conducting this report, it became evident that there are producers waiting and watching on the sidelines, ready to make the switch to organic depending on certain markets. This is especially true on Prince Edward Island, where several markets are on the verge of development, and also in Nova Scotia, where there appears to be a significant upcoming opportunity.

3.2. Transition potential

With incentives in New Brunswick and Prince Edward Island helping to cover the costs of transition⁴ and a portion of the certification costs, the barriers into organic production have been significantly reduced in these provinces. In Nova Scotia, where some of the greatest growth potential exists for grains with the up-and-coming dairy industry and the regional certified

³ Source: *Organic Marketing Research Final Report* Morton Horticulture Associates and ProAgri, 2003

⁴ For more information about organic support programs in PEI visit: <http://www.gov.pe.ca/agriculture/index.php3?number=1011893&lang=E>; in New Brunswick contact Claude Bérthéléme at claud.bertheleme@gnb.ca or (506) 453-3046

oilseed mill, the incentives are lowest, with no government support programs or subsidies to cover the costs of transition or certification.

Producer interest in the Maritime Organic Grains Network suggests that there is strong interest in organic grain production methods. In total, there are approximately 100 farms listed on the Maritime Organic Grains Network database who are not certified organic. Given that the average farm size of survey respondents was approximately 110 acres, if all of the non-organic producers affiliated with the MOGN decided to certify, there could be an additional 11000 acres of organic field crop production. Although this is a far-fetched speculation, it is interesting to gauge the possible interest and the significance of transitioning producers. With more incentives like market demand, support for transition, and subsidized certification costs, it seems likely that organic acreage could increase significantly.

It is difficult to predict which other larger-scale grain producers might make the transition if the market were to demand more organic grain, but there is certainly discussion on PEI. Raymond Loo has been actively developing the Japanese market for GMO-free canola, claiming that last year he had over 2000 acres of GMO-free canola produced on the Island for export. “Many of these producers are now transitioning or interested in transitioning,” claims Loo. “I am frequently getting phone calls from producers asking me what they can and cannot do [to meet the organic standards]”.

3.3.NB Seeds / Co-op Atlantic

New Brunswick Seeds, owned by Co-op Atlantic is a mill, drying and cleaning facility located in Hartland, New Brunswick. In order to respond to Nova Scotia’s anticipated dairy needs, they are considering becoming certified organic. This facility would have the capacity to clean grain for Co-op Atlantic feeds, but presumably, it would also be available for cleaning and drying other local feed grains for sale to different markets. During the time of this market study, there is no confirmation of this procedure, but having a regional processing facility for organic feed grains, especially one that is en route to Quebec and the United States, would certainly benefit those producers hoping to access these markets.

3.4.Dover Mills

In a preceding marketing report for organic grains, completed in 2004, the report stated that “Dover Mills has indicated to the consultant that they may start handling organic product in the near future.”⁵. True to this report, Dover Industries Ltd did start handling organic products, but they did this through a mill in Saskatchewan. As a result, they are not milling any organic flour locally in Halifax, nor do they expect to do this anytime in the near future. Any product demand for organic is shipped from Saskatchewan.

3.5. Livestock

The classic ‘chicken or the egg’ dilemma rears its head when it comes to grain for the organic livestock market – causing many to wonder which comes first, the crop or the livestock? Either way, the livestock industry is suffering in the Maritimes as a whole. Organic livestock has not seen significant growth in the past four years, barely increasing from 24 to 26 livestock producers in 2010. This is as much a result of the lack of federally inspected facilities, as it is the costly organic feed grains in short supply. As one producer put it,

The only way I can keep livestock is by growing my own grains, otherwise, it’s impossible to recapture the market value of the livestock. That’s why you’ve seen a

⁵ Organic Grains and Cereal Market Research MacArthur Group, 2004

decline in egg production; poultry and other livestock, like hogs that are dependent on grains. Livestock has become unaffordable.

It's clear that an increase in organic livestock production will have to coincide with an increase in local production of affordable organic feed. Grain producers have to be aware of what feed crops grow well on their farms and they need to be well aware of their cost of production so that they can price their products accordingly.

It is likewise important to acknowledge that grain producers rarely purposely grow for the feed market, as they are commonly trying to capture the highest value for their crops as food grade. Inevitably however, the increase in production for food grade grains will help the feed market, as minor crop issues and some dockage grains can be used for feed grade grains—although it is not necessarily healthy to have grains for livestock be a dumping grounds for grains that don't meet the food grade. According to several interviews conducted with livestock producers and buyers in the region, it seems like there is a market for more locally produced feed grains. Once more, the impetus is put on the producers to make sure they are well-aware of their cost of production and to make sure they have multiple markets for the crops they grow.

Another barrier for organic livestock producers is that the market in the Maritimes for organic meat is low, and rarely are customers willing to pay the price. Yet, in order to market organic livestock out-of province (where there is a larger market-demand), a producer has to have their meat slaughtered in a federally-inspected facility. In the Maritimes, there are only two such facilities, Tony's Meats in Antigonish, Nova Scotia and Atlantic Beef Products in Prince Edward Island. Tony's Meats advertises private label opportunities on their website and when asked in an interview if they would handle organic product, Sales manager Aaron Tingley responded:

What we are seeing in Atlantic Canada with respect to organic meat products is that there is a very small niche market opportunity. Local retailers have merchandised a natural / raised without antibiotic pork on their shelves to very little success in this area. Unless the hog producers or the pork marketing boards come to us with a profitable market opportunity we would not be interested.

Atlantic Beef Products has more potential however, and have expressed interest in processing beef products if there was sufficient volumes. Sufficient volumes would equate approximately 50 animals at a time, which alone can be a challenge for a meat industry with a small market base. There is definitely an opportunity to consider however, as the company is actually co-operatively owned, a venture of Co-op Atlantic. Opportunities exist for an organic entrepreneur in PEI, where the majority of feed grain is grown in the first place.⁶

3.6.Nova Scotia Dairy

By July 2011, EcoMilk, a newly formed organic dairy cooperative, hopes to be distributing its organic milk, produced and processed in Nova Scotia. At the time of this report, there are two certified organic producers supplying certified organic milk, but as soon as there is a market for the organic milk, four other dairy producers are all set to make the transition to organic agriculture. Currently, they are not purchasing organic grains because their product is not capturing the organic premiums, making it unfeasible to pay for organic grain. Frazer Hunter, an organic dairy producer in Nova Scotia who's been pushing the organic milk forward for several years now, thinks there is enough grain produced at the moment to make for a viable organic

⁶ Information provided by the PEI Organic and Low Input Specialist, Susan MacKinnon. April, 2010.

milk market. Hunter grows his own grains, but he also purchases on average 10 tonnes of mixed feed per month. He speculated that the four dairy producers he's working with also grow most of their own grains; however, if they too had to supplement their feed needs and purchase 10 tonnes per month, this would amount to an extra 480 tonnes of organic feed grain needed per annum. This is more organic grain than Co-op Atlantic currently purchases in a year. Co-op Atlantic indicated they are only stocking about 110 tonnes total in the past year, and they only have organic storage capacity for about 170 tonnes at once. The development of the organic dairy industry in Nova Scotia would inevitably create a larger market for organic feed grains.

3.7. Prince Edward Island Dairy/Cheese

In 2007-2008, Prince Edward Island saw great growth in organic production as a result of the advent of organic cheese production processed by Amalgamated Dairies Limited (ADL). In early 2008, production halted as a result of the distributor, ADL, declaring that there was no market for the organic cheese. In an interview with Roger Henry, former dairy production club coordinator, he asserted that producers invested a lot in the production of the cheese, but there was not an equal amount of marketing invested. "We needed to get more intense with marketing," claims Henry.

The disappointing outcome of the organic dairy sector on PEI certainly had an affect on the Island's grain production. Most of the dairy producers who were involved have dropped their certification and are no longer producing organic crops to feed their cattle. "Producers bought land and equipment," says Henry, "it certainly changed my focus too."

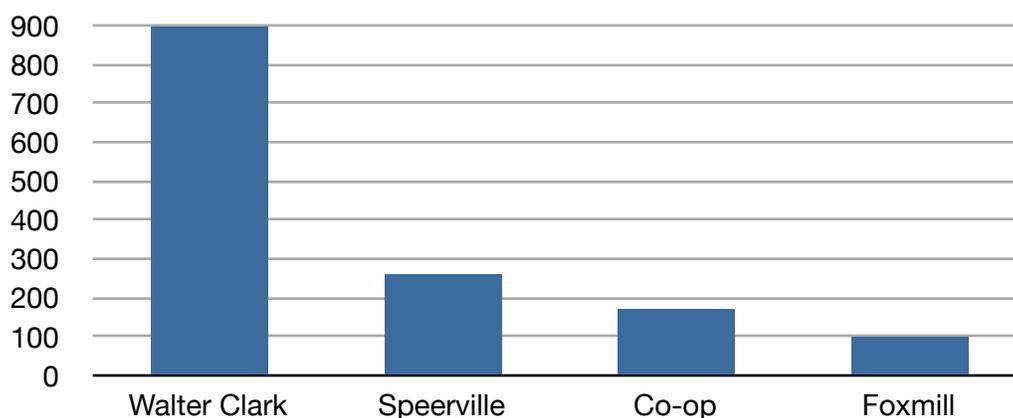
ADL still advertises private label opportunities on their website, stating, "ADL currently provides private label packaging opportunities to a wide range of customers. Our sales force would be excited to speak to you about any ideas you may have about developing your own private label dairy product⁷." Although it was a disappointment for the PEI Dairy producers at the time, ADL does still advertise that they are interested in other dairy opportunities, and perhaps with more market information from the Nova Scotia dairy venture, new opportunities for organic dairy will arise.

4. Regional Market Summary

Currently, the top four grain and pulse purchasers in the Maritimes are Walter Clark, Speerville Flour Mill, Co-op Atlantic, and Foxmill Ltd (figure 7). Complete documentation of the regional Maritime buyers, including all of their purchasing information, requirements and prices (where provided) are included in the appendix. These buyers include (in alphabetical order): Balance It Inc., Barnyard Organics, Co-op Atlantic, Foxmill Ltd, Speerville Flour Mill, Walter Clark and Western Nova Agro-Commodities Ltd.

⁷ Amalgamated Dairies Limited website: <http://www.adl.ca/private/>

Figure 7. Top four Maritime grain purchasers



It is already evident that the Maritimes are able to produce far more grain crops than are being consumed on the regional market. However, the top four grain buyers still have to source outside of the Maritimes to meet their needs. In the case of Speerville, they are steadily working with growers, but still haven't been able to source certain Maritime crops, such as beans, pulses and seeds, which can be grown in this region. However, there are limits to how much the regional market will demand. The region's top four buyers' projected crop requirements for 2011 account for the sale of approximately 1,430 tonnes of organic grain—which happens to be the approximate total tonnage recorded harvested by the 2010 survey results alone which in addition to the top four crops shown in detail in table 1, came to a harvest total of 1,385 tonnes. This means that producers in the region are already producing enough to supply the regional markets, at least by weight—if not by crop type. This also means that producers need to be certain they are growing the crops that are actually in demand.

Tables 7 and 8 demonstrate the breakdown of total regional feed (table 7) and food (table 8) grain requirements by crop and then compares them to the yields recorded by the 2010 survey. During the time of this report the requirements for feed grains are varied as a result of the buyers' preferences. For example, Walter Clark would prefer to purchase 700 tonnes of corn, but if unable to purchase corn, would instead purchase a mix of half wheat and half barley. For feed grains, corn is in highest demand, followed by wheat, barley and soybeans. Canola is in demand for oil production as a feed supplement, but not in high quantities.

Table 7. Total regional feed grain requirements (tonnes/year)					
Grain	Totals	Regional Buyers			Difference between total purchased and survey results
		Walter Clark	Co-op	2010 Survey Result totals	
Corn**	720	700	20	300	420
Wheat	380	350	30	215.4	164.6
Barley	371	350	21	167.45	203.55
Soybeans	302	200	102	99	203
Canola Oil*	3		3	0	3
Oats	8		8	146.5	-138.5
Sunflower Seeds				55	-55
Field Peas				57.5	-57.5
	* Requires pressed canola grown in the Maritimes				
	** Based on the survey results, it is not clear if the corn grown was used for grain or silage				

Of course, the survey results do not include 100% of the organic grain producers in the region, but rather a representative sampling of producers from all three provinces. This is an important factor to consider while examining tables 7 and 8.

For food grade grains and oilseeds, hard spring wheats are in most demand, followed by (in order) hullless oats, soft wheat, rye, sunflower seeds, spelt and canola—all requiring over 30 tonnes total. Flax is another crop that is in demand, and although only ten tonnes is required, this represents a significant acreage as the tiny seed weighs less than a typical grain—and it captures a higher market value than other grains listed. According to the survey results, more hullless oats, soft wheat, sunflower seeds and canola are required to meet the demand of regional buyers. Likewise, regional markets appear to be saturated for hard spring wheat, regular oats, barley and buckwheat. Growers must be prepared to market these crops outside of the region; this also means that infrastructure (e.g. storage and shipping) and management (e.g. cost of production and contracting) issues need to be addressed.

Table 8. Total regional food grain requirements by crop (tonnes/year)					
Grain	Totals	Regional Buyers		2010 Survey Result totals	Difference between total tonnes purchased vs. survey yields
		Speerville	Foxmill	Food Grade	
Hard Wheat	77.6	77.6		101.7	-24.1
Soft Wheat	52	22	30	18.1	33.9
Hulless Oats**	67.9	67.9		0	67.9
Oats**				79	-79
Spelt	26.7	26.7		24.25	2.45
Rye	46.3	46.3		37	9.3
Red Fife	12.7	12.7		4	8.7
Barley*	4 2*		2	18.1	-14.1
Buckwheat*	10.2	10.2*		74	-63.8
Sunflower Seeds*	35.9	5.9*	30		35.9
Corn*	10	10*		10	0
Brown Flax	10		10		10
Pumpkin Seeds	1		1		1
Canola	30		30		30
	* Commodity purchased currently supplemented from out-of-region sources				
	** It was not always clear on the survey results if producers were indicating common or hulless oats. Buyers did say they have had to purchase regular oats to supplement their needs for hulless, which they prefer for ease of processing.				

5. National Markets

Canadian markets beyond Quebec are just too far. Donna Youngdhal, Organic Marketing Director with the Canadian Wheat Board, confirmed this fact: "For the Maritimes, you should be looking only at the North Eastern States and the Quebec mills, otherwise it's too costly to ship products that are already being grown out West."

In addition, it appears that beyond Quebec, any markets that might be interested in purchasing from Atlantic Canada would very likely be looking for quantities that Maritime organic producers cannot supply. Minimum shipments are by the container or full tractor-trailer load (20-30

tonnes). Increased shipping amounts make it more economically viable and the Maritimes simply are not producing the volumes to fill this market.

Unlike Quebec, the organic markets and producers are fragmented in Ontario. Although a few Ontario buyers have looked East in the past to fill their markets, the challenge for Maritimers is maintaining competition with Western producers on the quality and price. When Ontario buyers have typically only purchased soybean from the Maritimes in the past, a market which appears to have been nearly saturated in 2010. This is a marked difference from five years ago, however, when two Ontario buyers, Homestead Organics and Keystone Grains, could not meet demand with ON soybean so they had to have their needs met elsewhere⁸. Homestead Organics has continued to purchase certain crops from the Maritimes, but it is clear that the development of local Ontario farms is their priority. That said, Homestead Organics has been a trusted entrepreneur and has grown a healthy and steady business selling high quality organic feed grains across Canada and into the U.S. Tom Manley, owner of Homestead Organics, was very interested in discussing the Maritime organic grain potential and how they might coincide with his purchasing requirements. For more information about purchasing from Homestead Organics, see section 2.1 in the appendix. Of particular importance is the fact that Homestead Organics is in the planning stages of significant expansion, which would double their organic grain purchases in the next five years.

5.1. Quebec Markets

Given Quebec's proximity to the Maritimes, and their expanding market for organic grains and oilseeds, this study interviewed a selection of Quebec field crop buyers in order to assess the marketing potential in Quebec. Overall, the results were quite positive, with many buyers interested in the opportunity to purchase organic grains from the Maritime Provinces.

Although there are many farms in Quebec producing grains and oilseeds, many Quebec buyers remain interested in diversifying their farm purchase base. In 2005, the number of Quebec organic producers whose main occupation was field crops production was approximately 125. A good portion of these producers had diversified farms and many of them raise organic livestock as well. The production of organic grains is concentrated in three principal zones, in the Montérégie region, the centre of Quebec region, and the Chaudière-Appalache region.⁹

During several interviews, purchasers commented that specialty grains should be the focus of the Maritimes. Jacques Gauthier, of Provalcid claimed that "Quebec produces almost every grain already, so from an economic standpoint, specialty crops should be the ones targeted in the Maritimes. They bring better return compared to other crops and can make the shipping costs worthwhile."

Buckwheat was the most commonly sought-after grain in Quebec organic markets. High-protein crops (other than soybeans) were also high on the list. Corn and soybeans are produced amply in Quebec, although there was the occasional buyer looking for soybeans. Other market opportunities in Quebec include Cream Hill Estates, a gluten-free oat company, that has been trying to source organic gluten-free oats¹⁰. The Maritimes, with small, often isolated acreage

⁸ Organic Grain Marketers Struggle to Fill Their Demand

http://www.organicagcentre.ca/ResearchDatabase/res_mgt_ontfarmer_feb05.asp

⁹ (translated from http://www.fabqbio.ca/page5_1.html)

¹⁰ Château Cream Hill Estates website: <http://www.creamhillestates.com/>

and cool climates make good candidates for this unique opportunity. (More information about this company are included in the appendix, including growing gluten-free information.)

The list, translated from the Fédération d'Agriculture Biologique du Québec (FABQ) website, shows the number of Quebec farms involved in the different types of grain and oilseed production:

Type of product	Number of Enterprises
Soybeans	133
Mixed cereals	123
Wheat	87
Corn	80
Oats	63
Barley	48
Buckwheat	30
Spelt	26
Rye	23
Flax	14
Sunflower Seeds	7
Hemp	6
Canola	2
Mustard	2
Cereal Seed Production	2
Triticale	2
Millet	1
Sorghum	1

The FABQ also releases quarterly price information when it becomes available. The latest prices available (November 2010) by commodity are shown in Table 4.

Table 6. Quebec prices for 2010 harvest		
	Price/tonne	Notes
Corn	260-280	
Soybeans human grade	650-800	
Soybeans (feed grade)	550-650	The market for organic soybeans seems to be firming up, they recommend consulting the USDA organic data for more information
Wheat (food and feed grade)		There is no price available as inventories for 2009 are still being used. There is a surplus of organic wheat
Oats	225-300	Depending on the quality. There seems to be lots of stock in inventory.
Mixed grains	260-290	Depending on the protein levels. There seems to be a lot of stock in inventories. They recommend holding off sales until the summer months in case inventory levels drop and create a higher demand.
Spelt	600	
Hay		The market is very unstable, prices change frequently based on the needs of the buyers and the protein levels.
2009	Quebec prices for 2009 harvest: specialty crops	
Canola	1080	
Hemp	2420	
Flax	1780	
Buckwheat (black)	750	
	* All prices stated as FOB the farm	

The FABQ advises growers to make contact with buyers prior to planting specialty crops, such as canola, flax, hemp and buckwheat because the markets are limited for these crops.

For the purposes of this report, the FABQ also released their historical price information, a summary of which is shown in the following table. Note the increasing prices from 2005-2008 and the subsequent decline from 2008 onward.

Table 7. Summary of Quebec Grain Prices 2005-2010 Minimum Price / Tonne										
Crop	2010 Fall	2010 Spring	2009 Fall	2009 Spring	2008 Fall	2008 Spring	2007 Fall	2006 Fall	2006 Spring	2005 Fall
Corn	\$260	\$260	\$325	\$400	\$400	\$400	\$345	\$340	\$300	\$280
Soybeans (food grade)	\$650	\$700	\$325	\$950	\$925		\$700	\$600		\$740
Soybeans (feed grade)	\$550	\$675	\$325	\$850	\$800	\$1,000	\$600	\$540	\$600	
Wheat (food grade)		\$360	\$325	\$500	\$700	\$750	\$500		\$390	\$380
Wheat (feed grade)			\$325		\$400					
Oats	\$225	\$275	\$325	\$375	\$375					
Mixed (14% protein)	\$260	\$300	\$325	\$400	\$425	\$400	\$330	\$325		\$250
Spelt	\$600	\$650	\$325	\$725	\$600				\$420	\$420
Hay		\$200	\$325	\$175						
Canola			\$1,080		\$1,300	\$960				
Hemp			\$2,420		\$1,500	\$2,100			\$2,200	
Flax			\$1,780		\$700	\$1,250				
Buckwheat (black)			\$750			\$575			\$510	

Table 5 clearly shows the overall rise and fall of crop prices on the marketplace. As of November, 2010, the price of corn is capturing a lower price than it was five years ago. As shown above, the only crops that have not risen and fallen dramatically in the past five years are the specialty crops: canola, hemp, flax and buckwheat. Canola has experienced a 13% price increase from Spring 2008 until Fall 2009; hemp has experienced a 10% increase since 2005—with a seemingly temporary dramatic drop in price in 2008. Flax, from Spring 2008 to Fall 2009, has jumped with a 42% price increase and buckwheat increased by 47% from Spring of 2006 until Fall of 2009.

When comparing Quebec's 2010 prices with those offered by Speerville Flour Mill for the same crops, one gains an understanding for why producers are content to grow for the regional market: it pays between 20 to 100% more for certain crops.

Included in the appendix is a comprehensive list of the Quebec organic buyers contacted for this report. All but one of these organic-only buyers were interested in diversifying their market base to include the Maritimes. For a list of all Quebec field crop buyers (conventional and organic) you can consult the website of the Fédération des producteurs de cultures commerciale du Québec <http://www.fpccq.qc.ca/Marches/Acheteurs.aspx>.

6. International Markets

Internationally, the current market for organic grains from Canada is in low demand. "Kazakhstan, Hungary, and Argentina have significantly increased organic wheat production and in 2008 traditional (European) buyers of Canadian grains went with the cheaper alternatives (because of the recession) and never looked back," claims Donna Youngdhal, Organic Marketing Director for the Canadian Wheat Board.

In addition, most of the international contacts are looking for enormous loads in order to offset shipping costs. Harro Wehrman, of Wehrman Farms in Ripley Ontario, who has been developing a Canadian and international market base for organic grains for the past 20 years, claimed that the international market is looking for more and more concentration of product, "they like larger volumes and long-term contracts," he claims.

The Maritimes does have a coastal advantage. Ocean freight is one of the most cost-effective shipping means for long distances, and compared to Central Canada and the Prairies, there is a major savings advantage because of the proximity to an international port. "The shipping cost would be as much as 70\$/tonne lower than from the prairies, says Youngdhal, "so it would be worthwhile to do a little market development with BIOfach." Both Wehrman and Youngdhal confirmed that Europe in particular is looking for high protein, hard red spring wheats, which they mix into their own grains in order to increase the gluten content. In addition to wheat, European and Japanese markets are interested in canola products, both organic and non-GMO canola.

Recently, Western Australia (WA) announced that they lifted a moratorium on genetically modified (GM) canola. This led to threats of banning WA canola for fear of GM contamination from the international buyers who normally purchase the non-GMO canola grown in WA. "90 per cent of this year's traditionally grown canola crop had been sold to Europe, which has banned GM foods," stated by a marketing manager of Australia's large grain co-operative, the CBH group, in a recent news article. "When you're growing GM [canola], at the moment you need to compete against Canada, but when you've got non-GM you get a free kick into Europe and some markets in Japan," he said. "There's a massive advantage to be growing non-GM this year, because Europe has been so aggressively buying up all the non-GM tonnage," he continued. There have already been cases where the GM crop has contaminated fields in WA, and this poses a great risk for Australian non-GMO markets, and a great market potential for non-GMO canola growers elsewhere.¹¹ Currently, Anne's PEI Farm has begun marketing GMO-free canola to the Japanese market, cultivating a niche that is a step closer to a developing an organic system on the island.

In addition to low international freight costs, the Maritimes have the advantage of being small and isolated. For strict markets such as organic and non-GMO, Maritime producers could run less risk of contamination based on geography and the smaller scale production.

Some of the challenges of marketing internationally for organics in particular are the varying organic standards. Currently, the Canadian Organic Standard (COS) has obtained equivalency with the U.S. National Organic Program (NOP), but not for European (EU) standards and the Japanese standard (JAS). This means that in order to market products in both Europe and Japan, companies have to guarantee that production, handling, processing and shipping meet COS, JAS and EU standards. This presents a significant barrier for the organic industry in the Maritimes.

Additional barriers exist in Japan in particular, where certain products are part of a regulated market and therefore tariffed heavily when imported. Soybeans and wheat for example are regulated products in Japan and this adds another layer of complications when trying to sell into the market. Other challenges include small acreage sizes, increased quality requirements from

¹¹ The Australian. *Europe, Japan GM canola threat*. December 27, 2010:

<http://www.theaustralian.com.au/news/nation/europe-japan-gm-canola-threat/story-e6frg6nf-1225976838667>

European markets (such as low heavy metal content, especially for baby food products) and the discipline involved in meeting the regular quality and quantity needs of overseas markets.

The other beneficial side of marketing internationally is the fact that current regional markets are limited. International markets offer producers an opportunity to diversify their sales base and reduce competition among regional growers. As it stands now, there are a scarce number of marketing regional options for the Maritime producer, and if any one of the buyers were to drop sales for any reason, this would represent a significant loss to the producers. International markets offer a diverse and alternative market base, which if successful could serve to boost local production, and quality demand for organic farming. However, it is clear from all of the testimonials of those already working with international markets (below) that there is a need for Maritime producers to collaborate and work together if they are interested in supplying an international market base. See Section: "Summary of Opportunities" for more comments about this topic.

For markets in the U.S., there are several possibilities and overall interest, but at the time of this report, the Canadian dollar is up with a \$1.01 exchange rate, making Canadian prices less competitive. Although based on historical trends this is likely to reverse, in the meantime it is affecting the marketing prospects.

Many buyers shared advice to 'hang in there' and 'stick with it' for organic products. In every interview, buyers felt strongly that the organic markets would rebound, maybe not to the historical height of price premiums, but they felt the need to assure producers that the market premiums would resume in due time. Some even speculated that by 2012, market prices will have climbed for organics, "Although the organic grain market is not so great right now, and prices are depressed, I see signs that it is starting to come back up again," says Felicien Masumbuko, sales representative with Lackawanna Products in the States. "Prices were good until the economy went down, and I expect prices to climb back up with the strengthening economy."

In recognition of the fact that an individual Maritime organic producer will have little success marketing their product alone on the worldwide marketplace, Appendix A attached to this report outlines some of the marketing efforts already taking place that could be advantageous to Maritime producers. See Appendix A for more details about the greater Canadian buyers and international market opportunities.

6.1.U.S. Markets

This report investigates a variety of New England markets available to the Maritimes. As mentioned earlier, the Canadian exchange rate is prohibitive for entering into US markets, but according to several interviews, this trend is not likely to persevere.

A major consideration for producers hoping to sell into the United States (U.S.) is the fact that there are different regulations for tractor trailer loads. Once a load crosses the border, the load cannot be in a b-train, which normally hauls approximately 30 tonnes of grain. In the U.S. the load is limited to a tractor trailer that can haul about 20 tonnes of grain, which can make it less cost-effective to ship South of the border.

Despite the shipping issues, New England represents a very promising market for Maritime crop producers. This region has a significant and growing organic livestock sector that experienced a 101% growth increase between 2000 and 2008. However, the corresponding grains industry in New England has only grown by 78% during this time, with a total of only 5,497 acres

recorded in production in 2008. Maine boasted a 145% increase in organic livestock during this same period, and also experienced a 343% increase in organic grain crops. When closely examined however, the numbers still don't match up to supply the enormous feed needs of such a large organic livestock sector. In Maine, 2008, there was a count of 24,095 head of organic livestock animals (including cows, pigs, sheep, chickens, turkeys and other/unclassified), with only a total of 2,259 acres in grain production. In order to meet the feed needs of that large a number of livestock (even taking into consideration that much of the cattle could be grass-fed), Maine has to rely on imported grains. As shown on the table 6, Connecticut actually experienced a decrease in grain production over the eight year period, as did New Hampshire. Vermont is similar to Maine, having experienced growth in both the livestock and grain sector overall, but still not corresponding to the growth and number of the livestock sector.¹²

State	Year	Total acres in Grains	Total Live-stock (# of animals)	Grains % Increase	Livestock % Increase
Connecticut	2008	5	456	-97	-51
	2001	170	940		
Maine	2008	2,259	24095	343	145
	2001	510	9,822		
Massachusetts	2008	158	2015	158	-97
	2001	-	63,186		
New Hampshire	2008		172244	-100	115
	2001	25	80,000		
Vermont	2008	3,075	30218	88	395
	2001	1,638	6,108		
Totals in 2008		5,497	229,028		
Overall % Increase				78	101

New England's feed needs are already being supplied by Canadian producers, but so far, rarely from the Maritime Provinces. Quebec's President of the Syndicat des producteurs de grains biologiques du Québec (Union of Quebec organic grain producers), Pierre Labonté, claims that New England was one of their top markets for organic grains over the past several years. In addition, Saskatchewan's Farmer Direct Co-op has been shipping loads of feed grains into New England, despite the costs of shipping a distance of over 3,000 kms. There is major potential for Maritime producers to be supplying this bioregional market, and more details are discussed in Appendix A in the section on national and international buyers.

7. Summary of Opportunities

Constraints to the development of grain markets have their roots in production barriers which include lack of organic certified seed for crop selection, lack of equipment and infrastructure for

¹² Information sourced from the US Department of Agriculture Economic Research Service: <http://www.ers.usda.gov/Data/Organic/>

harvesting, drying and storage capacity and issues with weed management and soil fertility as well as a good grasp on a commodity's cost of production.

When a sector experiences constraints, it often means indicates that equally, there are opportunities to be captured. In the case of Maritime field crop production, there are multiple areas of potential, including key crop opportunities, seed-production, business opportunities, direct marketing, and several exemplary models for encouraging collaboration amongst grain producers in order to increase their accessibility to niche and foreign markets, as well to increase sector capacity. Each of these opportunities are explained in more detail below.

7.1.Key Crop Opportunities

By repeatedly growing the same crops, wheat, oats, soybeans and barley, producers are increasing the regional competition. Generally, the Maritime market is saturated with these crops. Of all the buyers interviewed for this report, none of them were in dire need of additional wheat, oats and barley, and only a few were interested soybeans. Buyers were interested in some of the crops detailed below.

Buckwheat: Buckwheat came up repeatedly while researching for this study. This is a crop that readily grows in the Maritimes, is suited for crop rotations and captures a higher than average market price. In fact, in Quebec, it experienced a 47% price increase from 2005-2010. Buckwheat is in demand in Quebec, Ontario, the United States and even overseas. Unfortunately, there is not much of a demand for buckwheat on the regional market, but Speerville is considering adding Maritime-grown buckwheat to their product line, since they currently purchase it out of Quebec. Although it is not a common feed grain, buckwheat is used in feed mixes, which means second grade crops could still be sold into the feed grade market. Buckwheat can be challenging to produce because it is indeterminate (keeps flowering through the fall) and doesn't just die (like wheat). That means the crop stays green and is difficult to harvest unless you have a swather. Seed that shatters (i.e. falls to the ground) can become a weed in the subsequent crop. This is why many farmers don't grow it for seed.

Canola: Canola is a high value oilseed crop that also grows well in the Maritimes. Japanese and European markets are increasingly seeking out non-GMO canola, and Australia, by recently opening their doors to GM varieties, have potentially threatened their stronghold on these markets. The Maritimes are isolated enough (PEI in particular) to be a GMO-free canola zone, which would be an enviable marketing advantage.

Oilseeds: Foxmill had to source the majority of their seeds outside of the Maritimes in 2010. Although Foxmill's market is limited, there is an opportunity for producers to take advantage of the oilseed market. These crops are in demand outside of the Maritimes as well. In particular, flax, sunflower seeds and canola (as listed above). Although each of these crops have their production complications, if a producer was interested in specializing, or pooling resources with other producers to meet the demand, there is a market for the products.

Corn: This study used acreage to determine the largest crops of the Maritimes, and although overall acreage reported by the survey responses was only 63 acres, the recorded tonnage was 300. Corn may not capture a high market price when compared to other grains, but with strong yields and a guaranteed market, it very well may be a crop worth investigating. Another consideration for those who want to support the livestock industry and keep their grains regionally consumed, is the fact that the largest grain purchaser in the Maritimes—Walter Clark—is actively seeking out organic feed corn for his hogs. If any other conventional hog producers decide to follow Clark's lead, the market for corn will be significant. Jonathan McClelland, from

Western Nova Agro Commodities, stated that he thought organic corn would be an easy commodity to sell on the current market. Shonda Babineau with Co-op Atlantic claims she has to outsource corn every year in order to meet her feed mix needs. She would much prefer to purchase it in the Maritimes. Although there are obvious challenges to producing corn (specialized equipment for harvesting and drying, and weed management and high-nitrogen requirements), it is possible to grow corn in the Maritimes.

High Protein Crops (peas and beans): Once again, there is a limited market regionally for these crops, but it is nonetheless one that is not being fulfilled. Speerville hopes to be working with producers this summer to produce locally grown beans, and they are not the only market looking for these crops. Sophie Martel from the Meunarie Milanaise in Quebec was eagerly anticipating the day she can purchase organic pulse crops, and strongly encouraged Maritime producers to look into the viability of growing them. In addition to beans and pulses for the food-grade market, the livestock sector is looking for high protein crops as well. OACC has done work on mixed barley and peas as a complete feed source. “This crop combination can be very competitive and forgiving of soil condition,” says Andy Hammermeister, Managing Director of the Organic Agriculture Centre of Canada. Fava beans were another high protein crop in demand in New England—as an alternative protein to soybeans. “We’re frequently looking for high protein crops, especially fava beans,” says Luke Zigovits of CROPP. More research may need to be done to test the viability of fava beans for commercial production in the Maritimes. Because these crops are greatly varied, it is highly recommended that producers work towards finding a market for these crops in advance of planting.

Hemp: In 1998, there were 576 acres in hemp production in Nova Scotia and New Brunswick, and none in Prince Edward Island. As of 2009 however there are only a total of 39 acres of hemp production (none are organic) and all of them are located in PEI. A study conducted by the Alberta Department of Agriculture, which it discusses the rise, fall and subsequent increase of hemp cultivation in Canada, stated:

Currently, there are many Canadian companies – including Hempola Valley Farms; Fresh Hemp Foods; Ruths Hemp Foods; HMF Sales and Marketing; Hemp Oil Canada; Cool Hemp; Natures Path; among others – working with hemp food. Many of these companies have strong regional distribution but there is no clear national leader yet. All of these companies are involved in the hemp seed market and are producing a wide range of products. These are snack foods, hemp meal and flour, edible oil, shampoo and conditioners, moisturizers, commercial oil paints, beer and aromatherapy and cosmetic products. Most of the companies are reporting good growth. Another trend worth noting is that much of the hemp food industry has switched to certified organic production because of strong demand. A few industry experts estimate that around 1/3 of Canadian hemp seed production is certified organic.¹³

Hemp might be a crop worth exploring in the future, as there seems to be a stable and growing Canadian market for hemp products and the price recorded for December 2009 by the FABQ was up to \$2,420/tonne, an increase of 10% since 2005, despite the drop in the market price recorded in 2008. Licenses are required to grow hemp, and the application form can be found online here: http://www.hc-sc.gc.ca/hc-ps/pubs/prekurs/hemp_app-chanvre_dem-eng.php; applications most include a criminal record-check, map and GPS coordinates. Hemp is also

¹³ Government of Alberta Department of Agriculture, *Industrial Hemp Production in Canada* [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/econ9631](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/econ9631) February, 2010.

reported to have high nitrogen requirements, which might be a challenge for growers without access to manure.

7.2. Seed

Survey responses indicated that producers find ACORN and OACC's seed supplier listing very helpful, and interviews also suggested that pedigreed organic seed is very difficult to come by in the Maritimes. This means that although producers may be growing organic grains in the Maritimes, its overall sustainability is limited to the availability of organic quality and pedigreed seed from outside the region. The difficulty in finding good quality organic seed can be measured by the fact that survey respondents—when asked to rate the services they found most helpful—indicated that overall they found the Seed Suppliers Listing most helpful. Currently, in Quebec, Louis-Samuel Jacques, with ÉcoRessources Consultants is conducting “The Organic Value Chain Roundtable Organic Seed Study—a Canada-wide study investigating the challenges of seed sourcing and quality. It is hoped that results from this study will provide further direction for increasing the sustainable seed production in Canada overall.

There is a clear opportunity for Maritime growers to become involved in seed production for the Maritime market, as there are no pedigreed organic field crop seed suppliers in the region. Seed production is not an easy task, but organic growers are already familiar with traceability systems and would therefore be good candidates for seed production. In addition, growing for seed is a lower-risk venture for an interested entrepreneur, as seed production aims for the highest quality grain. If the grain were not to make seed quality standards, it could still be sold as food or feed grade. Depending on the crop, organic pedigreed seed is selling for between 150-180 % more than food grade. It might be worth it for a dedicated producer or several dedicated producers to pool resources to meet the demand for regional organic pedigreed seed varieties.

Since the actual tonnage of organic seed purchased in the Maritimes is relatively small, a seed growers co-operative model should be investigated to supply the region's seed needs.

7.3. Processing Opportunity

The other gaps in organic field crop production are the value-added products end-users are trying to source. In several interviews with bakeries using organic flour, bakers said they would appreciate having access to local organic white flour. While Speerville is producing a ‘whole’ white flour, it appears most organic white flour being used in bakeries is coming from outside the region. While some of the reason white flour is imported is due to cost and preference, in interviews with bakeries using organic flour, they also mentioned their consumer demand for products that require a high-rising, refined flour which they cannot get from Speerville. In speaking with Speerville, they stated that they have not tried to capture that market because “we are not interested in making a product that requires conditioning agents or additives—it doesn't make sense to us to mill out the healthy qualities only to have use additives to get it back.” Furthermore, popular items on supermarket shelves include baking mixes and pre-made baked goods, and with the exception of several bakeries using organic products, and one certified organic bakery selling to a few stores and cafés, there are no bakeries servicing the larger retailers and offering an organic alternative.

7.4. Equipment & Infrastructure

The issue of capital, including farm equipment for harvesting, cleaning and storage is largely an issue of scale, as discussed above. Having proper equipment requires that producers have enough volume in sales to pay for it. Organic grain and oilseed producers in the Maritimes are

limited by the equipment available to harvest, clean and store their crops. On the conventional side, producers can take their grain to a grain elevator for storage and cleaning, but for organic producers, the only similar infrastructure is Western Nova Agro Commodities in the Annapolis Valley of Nova Scotia. Although WNAC is interested in servicing the greater Maritime region, it remains to be determined whether it is economically viable for the organic grain producers (concentrated on PEI) to ship their products for storage in Nova Scotia. Another consideration is the scale of organic production; if most producers are growing under 100 acres, it is not necessarily viable for them to purchase the machinery, cleaning, and storage infrastructure required to capture a high market price for their grains. Peter Fuchs of Foxmill Ltd feels that there is enough equipment in the Maritimes that producers could share resources. There is even specialized oilseed harvesting equipment and he sees many opportunities, but so far, the idea of equipment sharing and pooling has not gained ground. “In many cases, says Fuchs, “producers don’t know what equipment the guy up the road may have.” Several buyers have commented that growers here should pool their resources and invest in cleaning and drying facilities for the major crops.

Producers in Quebec are making a huge success of equipment sharing cooperatives, called CUMA: Cooperative D’Utilisation de Matériel Agricole (“Cooperative use of farm equipment”). There are 67 CUMA’s in Quebec, across all regions and all production types. Each CUMA is founded by at least five agricultural enterprises, with the principal goal of sharing common agricultural machinery, tools, and inputs at the lowest price possible.¹⁴ This model works particularly well in Quebec, where there is a denser agricultural population, but there is reason to speculate that such equipment sharing could also be beneficial in the Maritimes, especially in Prince Edward Island where the high acreage producers are concentrated. Equipment could include storage bins, harvesters and combines, grain threshers, mills or cleaning infrastructure—all investments that would help grain producers capture a higher market value for their crops. Another consideration is that the infrastructure in question may already be in existence, however not used to its full capacity, in which case, producers could purchase shares in the equipment equivalent to their requirements. On the Island, Dominic Johnson’s resources should be explored for these purposes. Sharing equipment does require coordination, and cost sharing, but could provide many benefits for to share the investment involved in capital costs.

7.5. Direct Market Options for Organic Field Crops

This market study concentrates on available markets to sell into, but it is worth mentioning that many producers have been making a success of direct marketing their products. Although this is commonly experienced with vegetable and fruit producers, as discussed below, more and more producers are using these marketing advantages for grains and oilseeds as well.

7.5.1. Home Grinders

Several producers have indicated that they are selling small amounts of grain to people with home-grinders. Maurice Girouard, an organic producer in Northeastern New Brunswick is milling and direct-marketing small amounts of flour to his local customer base. In PEI, Mark Bernard has sold small quantities to people with home grinders, and he explicitly cautioned: “don’t underestimate the smaller-scale sales of grain, it may be small acreage, but it can have a big impact.” Side-stepping the shipping costs and the distributor’s cut, selling grain directly to

¹⁴ Translated from MAPQ’s website:

<http://www.mapaq.gouv.qc.ca/fr/Regions/bassaintlaurent/CUMACUMO/CUMA/questcequunecuma/Pages/questcequunecuma.aspx>

end users can capture a significantly higher market price for the producer, while still remaining competitive with store prices. For the consumer, it means fresh grains from a producer they know, in addition to the pleasure of milling one's own flour and grain products. In British Columbia, a new trend has been the Grain community supported agriculture movement, described in more detail below.

7.5.2. Grain Community Supported Agriculture (CSA)

The CSA movement has seen tremendous growth in Atlantic Canada, and it has proven to be a successful marketing strategy. At first, CSA's seemed to be a great way to direct-market vegetables, but since its humble beginning, the CSA movement has expanded to include many different farm products, including cereals and pulses. At the moment, there are no grain CSAs in the Maritimes.

In Kootenay, British Columbia, a grain CSA that started in 2007 has become quite popular, and provides unprocessed grains and lentils to CSA members, promoting home grinding of fresh grains. The website has an excellent resource of recommended home mills.¹⁵ The CSA system provides producers with the ability to have costs to cover the initial planting and investment, while also providing security that they have a market for their grain. For consumers, they are receiving fresh, high quality milling grain at prices that don't include exorbitant shipping costs, processing and distribution. In its first year of operation, the Kootenay grain CSA grew from 200 shares to 600 shares, tripling in size in one year. CSA members receive approximately 100 lbs of grain for \$125.00.¹⁶ This means that the producers are selling their top grade grains for approximately \$2,500/tonne. Urban Grains in British Columbia is another example of a successful grain CSA started as a pilot project in 2009. See: <http://www.urbangrains.ca/> for more information.

Although this may be an excellent opportunity for a smaller-scale grain producer, the direct-market for grains is not large and could likely be captured by one or two Maritime growers. If there were 200 CSA shareholders in the Maritimes for example, this would equal less than 10 tonnes of grain if shares were 100 lbs each. 10 lbs of grain is not huge, but with a market value 5-10 times higher than the traditional organic market price, the idea still holds some value if a producer has interested customers.

7.6. Collaborative Growing & Marketing

Most purchasers outside of Atlantic Canada are looking for larger volumes of a consistent, unique product. Even within the Maritimes there is a limit to the markets for the top four crops and there are other crop options (discussed above) that would grow well in these climates and zones.

Donna Youngdhal with the Canadian Wheat Board, Harro Wehrman of Wehrman farms and Raymond Loo of Anne's PEI Farm all advised organic producers to pool their marketing resources and concentrate on a few unique crops that grow well here. "Get organized, get some good processing established and focus on buckwheat and canola—both organic and non-GMO," says Wehrman. "Right now there is no buckwheat," he continues, "it's coming from China and it's expensive and the quality is low." Wehrman was not the only buyer who was looking for buckwheat and recommending that the Maritimes establish themselves on the

¹⁵ Information on Home Grinders: <http://www.kootenaygraincsa.ca/faq/#4>.

¹⁶ Information sourced from the Kootenay grain CSA website: <http://www.kootenaygraincsa.ca/>

market by growing this coveted crop. During this study, buckwheat was a much desired Canadian commodity. Even as far away as Saskatchewan, buyers were still looking to source whatever buckwheat they could, and Anne's PEI Farm has been negotiating organic buckwheat sales to Japan as well. Wehrman encourages producers to "think outside the box," during these tough economic times. He advised strongly that producers organize together to reach larger markets with pooled crops. He said he feels Quebec is in a unique spot as a history of collaboration has helped them take advantage of large markets in the U.S, where Ontario producers are still too individualistic in their marketing. "In order to sustain and support the limited local market for grains, producers should be thinking about pooling their crops for export," he claims. Farmer Direct Co-operative in Saskatchewan is an excellent example of the success of an organic marketing co-op. They export a lot of the products they sell while investing in regional infrastructure to improve the local market potential. For more information visit their website: <http://farmerdirect.coop/index.php?p=Home>.

Another amazing and successful example of a farming collaborative model is found in the U.S., the Organic Farmer's CROPP co-operative. CROPP is Organic Valley (a dairy cooperative)'s response for the need to support grain producers who supply grains to their dairy producers. They have over 1617 members. Although the co-op took off initially as a dairy co-operative, in 2008, it expanded to allow grain producers to become members of the co-op in order to supply the livestock feed needs under the "Grower Pool". Essentially, Organic Valley buys directly from grain farmers and has the infrastructure to handle all of the grains, so the farmers don't necessarily have to—this allows them to buy and store whatever grain products they need, while making it pretty hassle-free for members. Below is an excerpt from their website¹⁷:

How it works

Growers may enroll as many acres of organic crops as they like and will have a guaranteed price via a 3-year rolling contract. Growers enrolled in the Grower Pool will have priority access to all future sales to CROPP Cooperative for as long as they wish to remain members.

Key elements of the Grower Pool:

1. Mutual commitments made via three-year rolling contracts
2. Sixteen crops eligible for enrollment
3. Full membership in CROPP Cooperative including voting rights
4. A transparent regional pay structure
5. Voluntary acreage commitments
6. Farmgate pricing with no marketing or transportation responsibilities
7. CROPP Cooperative as actual buyer

In addition, Anne's PEI Farm has a pool of growers developing markets for organic jams and berries to Japan, and they are very interested in expanding this operation to include more organic grains. This type of marketing system could prove very effective in the Maritimes, but it does require long-term commitment from producers.

Further to shared or cooperative marketing, producers could collaborate to create a Maritime brand to give their products a marketing edge. There is a lot of marketing leverage potential as

¹⁷ CROPP cooperative website: <http://www.farmers.coop/farmers-wanted/grower-pool/overview/>

the Maritimes are a unique, authentically rural area, with very little major development when compared to many places on the globe, and with access to an international port.

8. Recommendations

Recommendations Summary: In order to increase the capacity of the Maritime organic field crops sector and to meet the demands of the various markets, the following recommendations are suggested:

- 1) Stakeholders and associations are recommended to form an industry-chaired committee to direct the future activities of the MOGN.
- 2) The mandate and capacity of the MOGN should work towards FABQ's model, a Quebec-based organic grain grower group. In addition to creating a strong network of organic grain and pulse producers, the group tracks market information twice annually and organizes one conference per year with buyers from across the national and international markets. Additionally, the grain grower group of the FABQ functions to coordinate educational opportunities and farm tours.
- 3) MOGN and industry partners should organize field tours every second year to visit grain farmers in other regions (or countries).
- 4) MOGN should work with industry partners to lead workshops on optimizing grain quality through proper management, storage and handling.
- 5) PEI and other geographic areas where there is a concentration of organic grain producers should investigate the possibility of developing an equipment and infrastructure sharing system, such as Quebec's CUMA.
- 6) A feasibility study should be completed to examine the potential creation of a grain/livestock co-operative such as Organic Valley's CROPP model or Saskatchewan's Farmer Direct Co-op.
- 7) Regional grain buyers should offer incentives for quality and variety preferences, which would offer positive reinforcement and push innovation.
- 8) In order to entice new entrants to organic grain production, a detailed cost of production analysis for different crops under organic management (as part of a rotational farming system) should be developed, including a profitability analysis in relation to production scale by crop. This information should be distributed to conventional grain commodity groups.

9. Conclusion

The regional market is small and cannot, as it stands, handle the volume of product organic field crop producers are growing. Producers need to both focus on strengthening relationships with markets outside the region and on developing and sustaining the organic livestock industry.

The overall quality of Maritime organic grains is limited by the infrastructure available to producers. Where infrastructure investments are required, sharing and cooperative models have worked with great success in other regions. Equipment sharing and the potential development of equipment cooperatives could greatly benefit the region and create higher value crops while supporting the production of new crops.

There is great market demand potential for Maritime organics in the neighbouring province of Quebec. Quebec producers have reached out into the international markets, and although they are producing plenty of grains, their local mills and grain buyers are very interested in sourcing additional grains and specialty crops from the Maritimes. The New England feed market deserves careful consideration as another prospective buyer for Maritime producers. The new mill in Maine makes it that much easier for Maritime producers to supply a large livestock industry, already 75% of which is being supplied by Canada, with none of it coming from the Maritimes.

Producers need to think outside of the box and start growing new crops for new markets. Once again, shared or cooperative models have shown great results in other regions, increasing market stability and overall profitability for producers. A movement to brand specific crops grown in the Maritimes (such as what Raymond Loo is doing with Anne's PEI farm) for collaborative international marketing could strengthen the organic grains sector by setting the region apart and increasing the market options for producers.

Revival of the organic livestock sector will have an enormous effect on the local market for feed crops. If hog producer Walter Clark is supported by the sector, it is very likely that other livestock producers will follow his lead. Likewise, with the advent of the Nova Scotia organic dairy, feed needs will be rapidly increasing. Field crop producers need to be supportive of the livestock sector as an integral part of the organic supply chain, and it is highly recommended that growers pay close attention to what affordable crops they can supply for the potentially burgeoning livestock industry. In addition, further study is required to determine what other factors will contribute to a healthy organic meat industry in the Maritimes.

Overall, the gaps in the value chain all represent positive opportunities for growth. The recurring theme throughout the recommendations is the concept of collaboration—a term Maritime producers have historically exemplified, and an idea synonymous with the organic sector. By collaborating to meet shared goals, the Maritime organic community would be positioning itself to take advantage of emerging opportunities and to support the growth of an economically, socially and environmentally responsible sector.

Appendix A: List of Buyers

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Quebec	p.13
National & International	p.16

1. Regional Buyers

1.1. Balance It Inc

Contact: Dominic Johnson

Telephone: 902-894-5555

Alt. Telephone: 902-964-3000

Facsimile: 902-894-3790

daj@eastlink.ca

Balance It Inc creates an organic mineral and vitamin premix called Bioflex. Bioflex contains a special toxin-binder that allows feed with 2-3 ppm of fusarium damage to be safely fed to hogs and other livestock. In addition, Balance It has the capacity to store, mix and bag grain and is exploring the possibilities of expanding their operation to include feed grains, possibly for the organic sector. Currently, Dominic Johnson, Manager of Balance It Inc, is not purchasing any organic grains, but is interested in the opportunity to expand their operation, which consists mostly of feed supplements for the conventional hog industry. At the time of this report, Balance It is also certified and creating a special premix for an organic hog producer on PEI. Since certifying, they have also expanded their capacity and are actively looking for other customers for this product. In addition to having the capacity to store, mix and bag grain, Johnson is confident that if the market demanded it, he could clean the grain as well.

Details:

Storage, Drying and Cleaning: Although Johnson is not currently storing grains, he has the capacity to store approximately 150 tonnes. He does not have a grain cleaner on site at the moment, but he is confident that if the market demanded it, he would easily be able to add this service to his operation. Johnson would like to create feed mixes and sell them in bulk or small kilogram bags. He is particularly interested in the organic market, but at the time of this report, Johnson requires additional, experienced partners in the business and is hesitant to go full-tilt into an industry without a guaranteed market.

Shipping: Johnson also has a truck of his own available for picking up grain deliveries and for delivering grain orders.

1.2. Barnyard Organics

Barnyard Organics Ltd

Mark and Sally Bernard

1934 N Freetown Rd

Freetown, PEC0B 1L0

Telephone: 902-887-3188 Fax: 902-887-2285

info@barnyardorganics.ca

www.barnyardorganics.ca, barnyardorganics.blogspot.com/

Barnyard Organics is a mixed farm that specializes in organic soybean and grain production. They have an organic soybean roaster and have been purchasing soybeans from local farms for the past few years to supplement their own production.

Details:

Storage, Drying and Cleaning: They have about 275 tonnes of aerated storage capacity on their farm. Barnyard Organics also offers to store grains or beans at a price of 25 cents per tonne per week. Their present cleaning infrastructure meets all of their needs for feed-grade quality.

Dockage Assessment, Grading and Quality: Barnyard Organics has no written policy for dockage, but they will not accept beans that are higher than 18% moisture and will dock producers accordingly. Barnyard Organics are also equipped to perform GMO testing, which they do for all incoming products, but so far they have not had a positive test.

Shipping: Barnyard Organics pays based on a shipped-to-the-farm rate.

Procurement Methods: Although Mark Bernard has not done contracts in the past, he is considering contracting in the future to avoid the large influx of soybean production. He feels that because soybeans captured a steady and high price on the market in 2009 that more producers grew them in 2010, this led to a market flood of organic soybeans. Generally, in the past, he's purchased based on his own supply and storage capacity.

Wish List: Mark Bernard of Barnyard Organics is interested in bulking up production with other producers and acting as a broker. To some extent, he has been doing this already, but he is always interested in collaborative potential.

Table D: Barnyard Organics			
Grain	Tonnes/Year	Quality Requirements	Price/Tonne
Soybeans	80	less than 18% moisture	Between \$600-\$625 after dockage

1.3.Co-op Country Quality Organics

Contact: Shonda Babineau

123 Halifax Street

Moncton, NB, E1C 8N5

Phone: 506-858-6178 1 Fax: 506-858-6379

shonda.babineau@coopatlantic.ca

In the fall of 2008, Co-op Atlantic completed the set-up of an organic milling facility in Sussex, New Brunswick. They did this in response to the demand for more local organic feed grain in the Maritimes. Prior to this mill, all organic feed grain was being shipped from Quebec and Ontario. Sometimes, Maritime producers would sell their grain to these feed companies in Quebec and Ontario, who in turn sold their grain mixes back into the Maritimes. Co-op Atlantic began handling organic grains and developed their own brand of livestock feed – everything from poultry feeds to sow and horse feed. In the summer of 2010, the Sussex mill closed, and organic operations and milling moved to Scotsburn, Nova Scotia. The facility in Scotsburn is not

as well-equipped as the Sussex Mill, but organic feed processing has continued. Co-op continues to supply the local organic livestock producers with organic feed, while also providing one of the only local markets for grain producers selling feed grade quality grains.

Details:

Co-op Country Quality Organics (referred to herein as Co-op Atlantic) sources 100% feed grains for the local organic livestock sector.

Storage, Drying & Cleaning: Co-op Atlantic has storage capacity for approximately 170 tonnes, however they are currently only using about 50% of their capacity. The demand for their organic feed grain has not been significant, but they are prepared to handle more organic grain if the market picks up. None of their storage is equipped with drying or aeration capacity, which means that they require grain with acceptable moisture levels (see table below for specifics). In addition, with the loss of the Sussex Mill, Co-op Atlantic no longer has any cleaning infrastructure. They therefore require grain to be cleaned to meet their grade requirements prior to shipping. "I put the onus on the producer to take the time to clean and combine the grain properly, this can change the protein levels and overall quality," says Babineau, "we rely heavily on the producer."

Dockage Assessment, Grading and Quality: 2% is Co-op Atlantic's standard for dockage, which Babineau says is standard for conventional grain. However, "if the grain is good quality," claims Babineau, "I won't have to work dockage into the final price." Babineau has had to refuse low quality grain in the past, and she makes it a standard to have all grain samples tested for quality, "Your sample is like your resumé: sell yourself," she says. "Take pride in what you've grown, as a producer, you'll get better results and better treatment that way. Otherwise, I have to waste time and money on a bad sample."

Shipping: Co-op Atlantic is not particular about how the grain is delivered; shipping in bulk or tote bags is acceptable. The Co-op is in an advantageous position where they can send their own tractor trailers to pick up loads from the farm gate. This means that co-op takes care of the hassles of shipping, and prices are based accordingly.

Procurement Methods: At the moment, Co-op Atlantic does not contract growers, but makes arrangements as their inventory levels require. "We're not opposed to contracts," says Babineau, "but at the moment our volumes are so low that it doesn't warrant a contract. We're not worried about filling our volumes". Babineau claims that west of the Maritimes it is more common to purchase by contract for every volume. "[Contracts] could be great for the producer," she admits, "because they could then hold me liable to that volume, they can secure loans with the contract and use it as a bond." She claims that she can see the benefits of contracting and would consider this in the future, although she is happy with the way business has been going so far.

Expansion Plans: No major expansion plans in the immediate future.

Trouble Sourcing: Corn currently sources from Quebec and Ontario.

Wish list: In addition to acquiring a system to clean incoming grains, Babineau hopes to improve the labour-intensive storage situation at the Scotsburn mill. Upon delivery, they must put the grains in totes in order to scale it for mixing, at which point it is made into completed feed. Babineau feels the cost of this inefficiency is adding up for the end users, and she would

love to find a method of reducing this cost. The costs are not included in the table below as they were not provided by Co-op Atlantic.

Table B. November 2010 Co-op Atlantic Purchase List		
Grain	Amount / year*	Quality Requirements
Wheat	30	1ppm of fusarium damage or less for hogs; for dairy up to 2 ppm
Barley	21	Toxin test up to 2 sometimes 3 on barley
Oats	8	Prefers Grade 2 but on occasion will accept grade 3
Corn	20	Grade 3 or better
Soy Beans	22	
Rstd Soy Beans		38% protein
Soy Meal	3	46% protein, will accept 44% minimum
Canola Oil	3	
Soy Oil	2	

1.4.Foxmill

Contact: President and CEO Peter Fuchs

8961 Peggy's Cove Rd.

Indian Harbour, N.S.

B3Z 3P2

Fax/Phone 902-823-1805

www.foxmilloils.com

canadafuchs@eastlink.ca or info@foxmill.info

In early 2006, Peter Fuchs set up a small organic oil mill in Indian Harbour, Nova Scotia, in order to supply the demand for all-local, certified organic oil products. Fuchs primarily concentrates on food-grade, organic cold pressed vegetable oils including canola, flax, pumpkin and sunflower seed oils, as well as omega blends. In addition, Fuchs' mill has the capacity to mill flax meal and seed pellets as a livestock supplement, and he creates other flax products such as linseed oil for carpentry uses. Recently, Fuchs also started milling grape seeds and skins, apple seeds and blueberry seeds and skins in order to make a high-value products for niche markets. The grape seeds and skins, high in valuable antioxidants, are used to create a supplement for human use.. The apple seeds are milled for cosmetic oil uses. The blueberry skins and seeds are a valuable livestock feed supplement. Foxmill has also milled a very limited amount of flour products for a local bakery.

Details: Foxmill concentrates on food-grade oilseeds that can be grown in the Maritimes, with a small market for oil pressing by-products as supplements and livestock feed. Fuchs' facility is small but new, with top-of-the line equipment.

Storage, Drying and Cleaning: Foxmill has the capacity to store approximately 20 tonnes of product at a time and frequently uses 12-15 tonnes. They have a small dryer with a capacity to dry 3-4 tonnes per day if required, though they prefer to receive dry product, versus investing in this labour-intensive endeavour. Fuchs also requires clean seeds and grain because he has only a small cleaning table with the capacity to clean a 1/4 tonne/hour. He regularly has his seeds and grains cleaned at Western Nova Agro (more details below).

Dockage Assessment, Grading and Quality: Fuchs is unique in the Maritimes for his quality requirements and methods of assessing quality. All of the seeds he purchases have to be milling grade, 99.2% clean. Prior to the product being shipped, Fuchs will often make a trip to the farm to check the quality and storage. He does not ask for a sample, as he prefers to see the grain and storage units himself. "At this point, I cannot handle any product that is not top quality. I do not have the capacity to handle dirty or dockage product." Fuchs has also found that on-farm storage in the Maritimes is a major issue that greatly affects quality over time. Given his limited storage capacity at the mill, he is very concerned about buying seeds and grains that deteriorate over the long-term in on-farm storage. "I'm looking to establish long-term relationships with producers," explains Fuchs, in the hopes that his current investments of personally examining grains and farm equipment will pay. In addition, Fuchs collects product samples to send to Germany for overall grain and seed assessment. He has the products tested at the University of Weihen Stefan for additional information, including heavy metals. He has found that Maritime soils have high levels of cadmium, which are unacceptable in European markets. He highly prefers to have these tests done the first year he works with a new farm.

Shipping: Foxmill prefers to receive shipments in 1/2 tonne totes, but accepts 1 tonne totes as well. The division of shipping costs is decided on a case by case basis. As a result of the small tonnage amounts that Foxmill purchases, Fuchs is often able to work out delivery deals with customers, where they share the cost of shipping. "I generally like to cut back on shipping costs, both to save the producer money and to cut back on greenhouse gas emissions," says Fuchs, "if I am travelling in [the direction of the farm], I will happily make a stop to pick up the products, and the producer can share the cost of the gas, which is much cheaper than paying for a delivery truck."

Procurement Methods: Fuchs is hesitant to contract growers as a result of limited knowledge about yields in the Maritimes, "I can't make a contract for a certain tonnage of seed because we just don't know what the yield will be." Normally, Fuchs will make verbal arrangements with growers based on acreage, with a certain price in mind. "We could do this in written form too, if the producer would prefer," says Fuchs, "really, it would be nice to contract in advance to be sure I'm able to get Maritime product." Currently, Fuchs is relying on purchasing as demand requires.

Trouble Sourcing: In 2007-2008, 95% of the oils Foxmill pressed were from Maritime produced crops. In 2010 however, Fuchs had difficulty getting product, and was forced to import some product. He had trouble sourcing almost everything in 2010, but the most difficult product for Foxmill to source has consistently been pumpkin seeds.

Expansion Plans: In 2009, Fuchs started milling a very small amount of grain in order to supply LaHave bakery with fresh, locally-milled flour. In total, he supplied the bakery with approximately 10 tonnes of flour, all in small bags. He began doing this mostly as a favour, and charges LaHave only for the time it takes to mill the flour. LaHave Bakery and the producer work out the details for the price of the grain. Since starting this type of operation, LaHave and

Foxmill have purchased a new flour mill with slightly larger capacity. Fuchs is interested in the specialty grain possibilities, including sprouted grain flours, which he is in the midst of experimenting with during the time of this report. He believes he could be producing up to 1 tonne/day of flour, making approximately 1000 tonnes of flour per year. For next year, he anticipates milling 3 times as many grains for flour production. Foxmill is also considering making a barley sweetener and will be looking for barley in the coming season.

Wish List: Fuchs hopes to see more collaboration amongst Maritime producers, especially in terms of equipment sharing and local shipping and distribution solutions.

Other: Fuchs is registered as an importing company with the ability to trade particularly with German markets. See the International Markets section of this report for more information.

Grain	Specifics	Amount / year*	Quality Requirements	Price/tonne **	Final Products
Wheat		Minimum 30 tonnes	Food grade between 12-13.5% moisture	500	Flour, and sprouted wheat flour.
Barley		2 tonnes	Food grade, same as wheat	400	natural sweetener
Oats	Interested in oatflakes	Has not purchased in the past.	same as wheat		
Brown Flax		10 tonnes	Food Grade: less than 8% moisture. Dead or damaged seed less than 0.2%	1000 (delivered price)	Flax oil and wood and metal preserving oils. Expeller by-products are used for approximately 10% human grade flax fibre, 80% for animal supplements, and the other 10% is used for animal feed.
Pumpkin Seeds		200 kgs - 1 tonne. Interested in export opportunities.	same as flax: dead and damaged seed can be around 2%	6000-7000	Human-grade food oil, and cosmetic oil, supplements,
Canola	Demand is increasing	Between 20-30 tonnes	8% moisture. Wild radish contamination has to be less than 0.2%.	800 (delivered)	Canola Oil for human use and expeller is used for a high protein animal feed.
Sunflower Seeds		20-30 tonnes	8% moisture, contamination of 1-2 % of other seeds	850 (delivered)	Sunflower oil and expeller is used for animal feed and fertilizer
Rye			Same as wheat		
Peas		Interested in export opportunities			

1.5. Speerville Flour Mill

Contact: Tony and Todd Grant, Richard Wetmore

152 Speerville Road

Speerville, NB E7N 1S2

Toll Free Phone: 866-277-6371

Phone: 506-277-6371 Fax: 506-277-1006

www.speervilleflourmill.ca

speerville@xplornet.com

Speerville Flour Mill is a certified organic mill that produces and distributes organic stone ground, whole flours and grain products. Speerville Flour Mill also distributes other organic and local products in the Maritimes. During the 2010 growing season, over 1600 acres were involved in organic production for Speerville Flour Mill. The 2010 acreage count represents 22% growth since 2009. Speerville Flour Mill is dedicated to purchasing local product, increasing organic acreage in the Maritimes, and providing consumers with a healthy, local alternative. Speerville Flour Mills is the largest grains purchaser in the Maritimes.

Details:

Speerville produces 100% food grade grains, with a very small market for dockage grains as either feed or pet litter.

Storage, Drying & Cleaning: Speerville has storage capacity for 500 tonnes of grain in bins and an additional 300-400 tonnes of floor space storage. They have recently increased their storage in order to meet producers' demands for them to handle more product when it is ready to harvest. Speerville also has plans to further increase the number of storage bins and to purchase a more efficient grain dryer that can handle larger volumes. Speerville has the capacity to clean and sort all of the grains they currently purchase.

Dockage Assesment, Grading and Quality: Speerville has staff members who are trained to inspect grains. They commonly collect samples from growers and send them to labs for protein and falling number tests and DON samples (deoxynivalenol: fusarium contamination). Although Speerville is in the food grade business, they do have livestock producers who buy feed grade grains from them, which means they have a means to recoup the cost for the grains that do not make the cut.

Shipping: Speerville prefers shipments to be delivered in a bulk trailer, but they will accept smaller totes. The producer is responsible for paying for shipping, although Speerville does offer to help find good rates.

Procurement Methods: So far, Speerville has avoided contract growing. They prefer to build relationships with their producers. They currently work regularly with about 24 growers and work based on verbal agreements prior to planting. According to Richard Wetmore, "Speerville is always looking for new growers, and we love any opportunity to support new entrants."

Expansion Plans: Speerville is considering the production of an all-organic buckwheat flour. They currently distribute buckwheat flour sourced from a mill in Quebec, and they see opportunities to draw on local producers. This would be an expansion of the other low-gluten products they currently mill, such as corn flour, corn meal and rice flour. Now that Speerville is in the new warehouse location, they have the opportunity to set up a system where they can handle the buckwheat flour separately from other gluten products, eliminating the risk of contamination. Presently, Speerville markets these products as low-gluten, since the market has been too small to justify a certified gluten free facility and supply chain, which is a very involved process. At this point, they do not anticipate expanding into the gluten-free markets. Similarly, Speerville hopes to be able to buy and distribute local organic beans in the next few years. Currently, they are ordering their beans from Quebec.

Speerville is exploring opportunities to market their product in the northeastern United States. In the past year, they have been paying a lot more attention to this possibility, although the current exchange rate is prohibitive, they are keeping their eyes on the bioregional marketing possibilities.

Wish list: Speerville reiterated that the lack of appropriate storage facilities greatly affects the quality of grains they purchase. In an effort to address this issue, they recently created an On-Farm Storage resource document, included in this report.

Speerville growers are experimenting with different crop varieties including Kane Wheat, AC Brio, and Samson Wheat. Samson is a high protein, soft, winter wheat that they hope to add to their flour blends for baking. AC Brio is a hard red spring wheat variety that has had a lot of high yield success in Eastern Ontario. Kane is another hard red spring wheat increasingly being sown organically in Canada.

Other: Speerville is investigating using waste grain as a more energy-efficient alternative heat source for their warehouse and buildings.

Table A: November 2010 Speerville Flour Mill Purchase List				
Grain	Specifics	Amount / year*	Quality Requirements	Price/tonne **
Organic Wheat	Milling quality (prime wheat flour for baking.) Speerville typically prefers AC Barrie, but is exploring other varieties as well.	77.6	13.5 % protein; 250 or better falling #; 14% or less moisture	\$600.00
Organic Wheat	Not milling quality			\$400.00
Winter Wheat	Soft wheat	22	250-280 falling #; 9-12% protein; 14% or less moisture	\$450.00
Hulless Oats		67.9	99.9 % pure hulless oats; dried at high temperatures to 13% moisture to stabilize the oils	\$500.00

Table A: November 2010 Speerville Flour Mill Purchase List				
Grain	Specifics	Amount / year*	Quality Requirements	Price/tonne **
Spelt	Baking quality	26.7	As close to 13.5% protein as possible; 250-300 falling #; 14% or less moisture; must be the 'fall plant' variety	\$550.00
Rye	Milling quality	19.6	150 or better falling #; 14% of less moisture; ergot levels less than minimum acceptable food standards	\$450.00
Rye	Cereal quality (when it doesn't make milling)			\$400.00
Red Fife	milling quality (this is a lower yield crop)	12.7		\$750.00
Red Fife	Non-milling			\$750.00
Corn	Milling: Corn flour and meal			\$600.00
Corn	Non-milling quality used for feed. Not actively purchasing.			
*(numbers listed here represent a projected 15% increase from 2010 usage (tonnes)				
** (stated as dry, clean grain) *Prices are subject to change				
All Prices are for organic product with proper documentation				

Speerville also distributes barley, buckwheat, sunflower seeds, brown flax and a variety of dry edible beans, and although these are crops that can be grown here, they are currently purchasing them out-of-province from distributors. For barley, sunflower seeds and brown flax, Speerville is simply not equipped to handle these products. For beans, however, Speerville is actively working with a couple of producers to see if they can produce the volume of beans they require. They are hoping to have some locally grown organic beans available in 2011-2012.

1.6. Walter Clark

Prince Edward Island organic hog producer

Phone: 902-887-3407

Walter Clark recently ventured into the organic hog industry, having completed a conventional-to-organic transition in early 2010. He currently ships approximately 45 hogs per week into Quebec, where his hogs are sold through DuBreton in Rivière-du-Loup. Most duBreton product goes to Applegate Farms and Whole Foods in the U.S.

Details:

Storage, Drying and Cleaning: Clark has 4 grain tanks which together have a capacity to hold 600 tonnes, however he is using only half of this capacity. Several of his tanks are equipped with aeration, but he has no drying capacity. Clark is only interested in purchasing clean grains since he has no on-farm cleaning capacity and is not interested in adding to his already-full plate. He mixes his own feed.

Dockage Assessment, Grading and Quality: Due to the vitamin and mineral premix supplement provided by Balance It Inc, Clark can purchase lower quality feed grains, which have between 2-3 ppm fusarium damage.

Shipping: Clark prefers to receive all of his grain in bulk if possible. For shipping, he works on a case-by-case basis.

Procurement Methods: Clark is in the habit of purchasing organic grain as his inventory requires. He would prefer to buy as much as he can right out of the fields and store it himself, but he has not had much luck doing that so far.

Wish List: On the top of Clark's wish list is an Atlantic-wide inspected facility. "The market is so small for organic hogs in the Maritimes, and the cost is so prohibitive, there's no way I can market in each individual province," says Clark. At the moment, Clark has only one place to ship his hogs to and he feels that if there were more buyers he could get a better price for his hogs, making the organic hog industry as a whole more profitable. Clark invites conversation with anyone who would be interested in purchasing his hogs as he feels his market is vulnerable with only one purchaser, and he would like to diversify his market base.

Table E: November 2010 Walter Clark Buying		
Grain	Price/tonne	Tonnes/Year
Corn	\$250 or less	Clark would prefer to purchase corn instead of wheat and barley, and if he could source only corn, he would be looking for up to 700 tonnes. Otherwise, he'd purchase whatever he can get affordably.
Soybeans	no price given	200 tonnes
Barley	\$250 or less	If Clark can't purchase corn, he'd be looking for 350 tonnes of barley.
Wheat	\$250 or less	Similarly, if Clark can't get corn, he'd be looking to purchase 350 tonnes of wheat.

1.7. Wester Nova Agro Commodities Ltd.

Jonathan McClelland

311 Elliot Rd. P.O. Box 128

Lawrencetown, NS

B0S 1M0

Phone: 902-584-3736

jonathan@westernvalleyagri.ca

Western Nova Agro Commodities Ltd. (WNAC) began handling organic product in 2008. WNAC provides services of grain drying, grading and storage as well as brokering producers' crops, primarily for feed grade products. At this time, they do not actively sell organic grains, but if a producer wanted a broker for their products, they do offer those services. Please see the Resources for Producers section of this report for more information about the services and pricing offered by WNAC.

Storage, Drying and Cleaning: Currently, WNAC have smaller bins for organic crops, with a total of approximately 250 tonnes available. However, since 2008, they have handled less than 40 tonnes of organic product. As a result, they prefer to know well in advance of the harvest if an organic producer is planning on using the storage so that they can keep the storage space available, otherwise it will be used for conventional grains. In addition to 120 tonnes of organic storage space equipped with aeration, WNAC also has a drier available for organic grains. As for cleaning infrastructure, WNAC has capacity to clean weed seeds out of grain to about 2:1%, but so far, they have not handled feed grade. Jonathan McClelland, Manager of WNAC, says “If an end-user came to us and wanted the grain to be cleaner, we would consider investment in this infrastructure.” Although McClelland feels like their current cleaning infrastructure meets their needs, he admits that “it would be nice to have better ability. Even now, cleaning for seed grade is not really possible, and this is a market need.”

Dockage Assessment, Grading and Quality: All grain coming in to WNAC is graded, they take a 500 gram sample throughout the load, grade it and assess the dockage based on this sample.

Shipping: WNAC prefers to receive bulk grain, though they will also accept it in totes. Shipping to WNAC is the responsibility of the producer, however McClelland stated that they have arranged shipping for producers in the past.

Procurement Methods: As a broker, McClelland does not do any forward contracting. Rather, some end-users will contact them in advance with grain requests. From there, WNAC can set up a contract with the producer(s) and the end-user. This could be a lot less hassle for a grain producer, and has the advantage of properly stored and cleaned grains for the feed market. “So far,” says McClelland, “we’ve only done this type of advanced contracting for conventional growers.” For McClelland, sales and prices all depend on the commodity, and on the price the producer needs to get for the grain. “I have no problem selling wheat or corn,” he says. “For organics, it’s more a question of the price we can get that will work for the producer.”

Trouble Sourcing: McClelland thinks there could be a good market for organic corn if there were growers willing to grow it. “It’s definitely not a crop a producer should start with if they don’t have experience, but I could easily sell corn, barley, hullless oats, wheat and protein crops if they were around.”

Wish List: McClelland noted that the organic sector in the Maritimes is small, and he feels that the services being offered by WNAC could benefit a wider group of producers beyond the Annapolis Valley, NS. He hopes that a revival of the organic livestock industry (including Nova Scotia organic dairy) will help increase the demand for organic product.

Other: Elevator storage rates at WNAC are \$25/tonne for stored organic grains. Drying charges are the same for organic and conventional, and based on moisture content: 18% moisture (relatively high) costs \$16.60/tonne to dry it, while 16% would be \$8-10/tonne. Corn over 30% would cost \$40/tonne.

2. Quebec Buyers

Aliments Trigone Inc.

Contact: Jacques Côté

(418) 259-7414, x 101; bio@alimentstrigone.com

Location: Saint-François-de-la-Rivière Sud, QC (distance of 245 kms from NB Border)

Description:

Looking for: Buckwheat

“Very interested in purchasing more buckwheat from the Maritimes”

Bianca International Organic (BIO)

Contact: Chakib Azizi

(514) 376-7711; biorganic@videotron.ca

Location: Montreal, QC

Description:

Looking for: Any grains, oilseeds or pulses. In particular, we had trouble sourcing organic sunflower seeds, pumpkin seed and sorghum

“We are always looking for reliable sources of organic grains”

Château Cream Hill Estates

Contact: Tracy Perry

1-866-727-3628; 514-363-2066; info@creamhillestates.com

http://www.creamhillestates.com/en_contact.php

Location: La Salle, QC (distance of 538 km from NB border)

Description: Gluten-Free Oat Company

Looking for: Gluten-free oats

“We would be very interested in discussing with the possibility of sourcing gluten-free organic oats from your regional growers.”

Discuss contracts in early New Year. Deliver pre-cleaned oats–97% pure oats. Prefers to receive oats in tote bags. See Cream Hill Estates Appendix for more information about growing gluten-free oats.

Maison D'Orphée

Contact: Éline Bélanger

1-800-667-1530; (418) 681-1530 x 305; elaine@maisonorphee.com

Location: Galilée, QC (distance of 300 km from NB border)

Description:

Looking for: Sunflower and Canola

Minimum purchase is 5 tonnes. They prefer to contract growers in advance.

Meunarie la Milainaise

Contact: Sophie Martel

(514) 235-6157; info@lamilanaise.com

www.lamilanaise.com

Location: Milan, QC (distance of 450 km from NB border)

Description: An all-organic mill that produces all types of organic flours, and distributes seeds and muffin mixes.

Looking for: All grains, but we are particularly interested in trying to source local organic beans and pulses. For a full list, check their website.

They have no storage capacity, and prefer to receive clean, dry, ready-to-use grains. They do not contract in advance, but they require quality samples. They don't have a minimum order, but prefer receiving a truckload, especially for wheat and spelt. We have not sold grain, but we do sell flours to bakeries in the Maritimes

"We are definitely interested in purchasing organic grains, oilseeds and pulses from the Maritimes."

Provalcid

Contact: Jacques Gauthier

1-877-652-3916; jacques.gauthier@provalcid.com

<http://www.provalcid.com/en/index.html>

Location: Varennes, QC (distance of 521 km from the NB border)

Description: An agricultural trading company purchasing grains, by-products, pulses, and birdfood.

Looking for: Oats, barley, wheat and rye (but they can usually purchase these from Quebec)

Otherwise interested in specialty grains such as buckwheat and spelt. Would be interested in oilseeds as well.

Yes we would like to pursue this as we have many customers looking for a consistent supply of quality organic grain.

Minimum purchase would be approximately one truckload, otherwise it's too cost prohibitive.

Provalcid's grain elevator can do conditioning, therefore we can become a real good option for growers in case of high moisture or grade failure.

RDR Grains et Semences

Contact: David Proulx

(819) 293-2001; david@semencesrdr.com

<http://www.semencesrdr.com/application/content/accueil.asp>

Location: Nicolet, QC (distance of 430 km from NB border)

Description:

Looking for: Buckwheat and other grains as needed annually. See website for more details.

SG Ceresco

Contact: Pierre Mollet

1-888-427-7692; (450) 427-3831; pmollet@sgceresco.com

Location: St-Urbain-Premier, QC (distance of 556 km from NB border)

Description:

Looking for: We purchase organic soybeans and non-gmo, clear helium.

"Yes, we are interested in purchasing from the Maritimes, but of course it depends on the shipping costs incurred by the producers"

Also contacted:

The Jirah Group

Contact: John Gladu

www.jirahgroup.com/

Location: Ormstown, QC, (distance of 585 km from NB border)

Description:

Looking for: Soya and corn

Not really interested in purchasing from the Maritimes at this point. We would be interested, but at this time we are a group of producers who grow our own—although we do contract out some local and Canadian product.

3. National & International Buyers

3.1. Homestead Organics

Contact: Tom Manley

1 Union Street, PO Box 39

Berwick, Ontario, K0C 1G0, Canada

(distance of 685 kms from NB border)

Tel: (613) 984-0480

Toll Free: 1-877-984-0480

Fax: (613) 984-0481

tom@homesteadorganics.ca

<http://users.xplornet.com/~tmanley/index.htm>

Homestead Organics receives and markets the certified organic grains produced in Eastern Ontario and Western Quebec. They primarily supply the organic bagged or bulk feed for livestock market mixing feeds for poultry, ruminants, hogs, horses, rabbits, and dogs. They also supply pedigree seed when available and organic common seed.

Details can be found directly on their website: <http://users.xplornet.com/~tmanley/contract.htm>.

Storage, Drying and Cleaning: Homestead Organics has enough storage capacity for approximately one month of production. Annually, they purchase about 6000 tonnes of a variety of crops. They do not operate a grain dryer and they will not purchase anything above 2% of the standard. For cleaning, Homestead Organics does have the capacity to clean grain for the food grade market, but they do charge for these services. For more information about prices for grain cleaning, see <http://users.xplornet.com/~tmanley/files/services.pdf>. When they are purchasing grain for the feed market, they prefer that it has undergone an initial cleaning as necessary.

Dockage Assessment, Grading and Quality: Homestead bases their purchase price on the net of dockage and excess moisture. Please see the table below for more information about quality requirements.

Shipping: Homestead prefers bulk shipments of grain, but accepts totes as necessary. All prices quoted are landed at Homestead or picked up in Berwick, Ontario (if it's rail). Transportation by Homestead is negotiable, but the cost will be deducted from the price paid.

Procurement Methods: About 3/4 of the crops purchased by Homestead are 'forward contracts', which means that they negotiate a price and contract with a producer in advance, and the other quarter is spot market. Forward contracts, signed either before or after harvest, come with a fixed price and a fixed payment schedule. They are offered for delivery in a specific month on a first-come-first-served basis. Forward contracts negotiated prior to harvest are based on fixed

acres and the actual harvest. Forward contracts post-harvest are based on the tonnages available in a producer's bin. Spot purchases are made at negotiated prices to fill gaps in their production volume or to meet new opportunities on the market.

Expansion Plans: Homestead Organics has seen steady growth each year, between 10-20%. Currently, the market has slowed down, but they are taking this opportunity to make plans for the market rebound. Manley is particularly excited about a new "Organic Central" project: "The plan is to create Organic Central, a hub or cluster of organic agri-food business in Eastern Ontario", he wrote in a letter about the project. He envisions a centre with multi-purpose, scalable infrastructure where a collection of collaborative businesses can pool their resources and share costs for distribution and supplies. Organic Central will start with half a dozen businesses and Manley expects volumes to double within five years. For the organic grains industry, this is a significant factor. Already purchasing 6000 tonnes of organic grain, this means Homestead Organics could be purchasing up to 12000 tonnes of grain. In addition, one of their proposed business partners is a flour mill, which would also require organic grains. This project could represent a huge jump for the sector as a whole, and Manley is content to keep working with consistent, quality producers in the Maritimes.

Wish List: Homestead recently began processing for pet food and this requires high-protein crops. In particular, Manley has been looking for sources of buckwheat and peas for the dog food market. If the pet food market continues to grow, Manley expects to require larger volumes of millet and sorghum, where currently they are sourcing these products from the U.S. Organic seed is another part of Homestead's venture that could still be developed.

Other: Homestead Organics is still interested in the opportunity to work with a partner in the Maritimes in order to develop a local feed-making and farm supplies industry. "I have investigated this possibility in the past, and I would still be interested if the livestock industry were to develop in the Maritimes" he says. "The Maritimes lack an organic farm supply network, and our business has worked hard to develop that network."

3.2. Anne's PEI Farm

Contact: Raymond Loo

info@annespeifarm.com

Anne's PEI farm began marketing organic and non-GMO products to Japan in 2007. Initial crops sold to Japan included organic berry preserves, non-GMO canola, organic soybeans and organic dandelion roots. Raymond Loo, organic producer and co-owner of Anne's PEI Farm of Anne's PEI Farm sees a lot of market potential for Japanese markets, but he also feels strongly that in order to access these markets, producers need to collaborate to produce a large volume of high quality products. "There are all kinds of opportunities in Japan, but we need a group of producers [...] who are willing to take a long-term view of this."

Loo believes that organics in the Maritimes need to get around following the world market trends. He would like to come up with an alternate pricing system, one "that relates to our lives as producers, not a world market." Loo sees large opportunities for setting a regional market price that makes sense for producers and remains competitive. "I'm into 'relationship marketing'", claims Loo. He thinks this is one of the best ways to build a market of trust and security.

At the moment, Loo is negotiating contracts for other niche markets in Japan, and exploring European markets for certain products. In the fall of 2009, Loo visited several European countries looking for a market for organic pressed meal, a by-product of making organic canola oil. This is a new venture for Anne's PEI Farm, and he has teamed up with processor Gerard Mol who is certifying his oil press. "There's a market for the oil," claims Loo, "but I don't want to get involved in heavy production until I know I can sell the meal as well." Loo and his business partner, Brian McKay, have also been growing and experimenting with less conventional crops, including buckwheat (which he has a contract for in Japan), perilla (an oilseed from the mint family), and adzuki beans.

3.3.Foxmill Limited

Contact Peter Fuchs (see above 'Local Market' section for more details)

In addition to milling organic oils, Peter Fuchs of Foxmill is a registered importing/exporting company, and is interested in pursuing trade opportunities with European markets. As a German native, Fuchs is particularly interested in trading with Biocentrale, a major German organic products company that sources baby food ingredients, cosmetics and specialty products for common food allergies. He is very interested in teaming up with local producers and entrepreneurs to further investigate this market. In 2008, Biocentrale guaranteed a price of \$3000 Euros/tonne for 50 tonnes of organic pumpkin seeds. There were certain factors critical to the success of this proposal, including an investment of specialized equipment to harvest and handle the seeds. At the time, the PEI government was interested and had looked at the possibility of funding 50% of the required equipment investments, however, in the end, the government decided not to fund the venture. According to Fuchs, the price for pumpkinseeds jumped to \$7000 Euros/tonne, and the company subsequently set up a steady arrangement in South Africa. "The problem is that producers needed specialized equipment to meet the order. It was very disappointing." Fuchs sees many opportunities in the high protein crops as well, and even suggested that there would be a market for smaller tonnages of crops like peas, lentils, and pumpkins.

3.4.Wehrman Farms

Contact: Harro Wehrman

Ripley, Ontario (distance of 2,290 km from NB border)

(519) 395-3126

ingasven@hurontel.on.ca

Harro Wehrman of Wehrman Farms has been brokering organic grains worldwide for over twenty years. He has a steady grower pool of producers in Ontario and Western Canada, in addition to being a producer himself. He has not purchased from the Maritimes in the past, but he would be interested in certain products if the volumes were cost-effective for shipping requirements. Wehrman Farms operates on a contract basis only, they do not do any Spot Marketing and Wehrman explains that he has been working with most of his producers for a very long time. He would be interested in developing relationships with Maritime producers if they were looking for long-term contracts and could commit to significant volumes. For the most part, he is interested in large volumes of GMO-free and organic canola. "PEI has the potential to be disciplined and be a world supply of non-GMO canola, a growing market worldwide," says Wehrman. He would be interested in contracting for oats and buckwheat as well. The main challenge with a buyer like Wehrman however, is the volumes he is interested in are

considerable. For example, he was looking for 1000 tonnes of organic canola, shipped in loads, once a month. At the moment, this is not very plausible for individual Maritime producers. However, Wehrman insisted that with cooperation and collaboration, Maritime producers could build up the capacity to meet these markets. In the meantime, Wehrman said his minimum purchase would be a container load of either organic oats or buckwheat.

3.5. Farmer Direct Co-op

Contact: Jason Freeman

Regina, Saskatchewan

306.352.2444

Jason@farmerdirect.coop

Farmer Direct is a co-operative of 70 organic family farms in the Prairies. Members grow cereals, pulses and oilseeds, and they have rancher members who raise beef and bison. In addition to being certified organic, Farmer Direct has worked with the Agricultural Justice Project, known as fairDeal in Canada, to be a certified fairDeal operation. They market their crops within Canada, the U.S., Europe and Asia.¹⁸ Farmer Direct were initially contacted for information about how their co-op functioned, but it turned out that there are possible marketing opportunities with this organization as well. Although Farmer Direct Co-op normally prioritizes crops from their producer members, they do some marketing outside of their co-op in order to meet their customer needs. In particular, Farmer Direct is selling a significant amount of feed into the Northeastern U.S. to Organic Valley dairy producers. Organic Valley has been avoiding soybeans and prefers to source fababeans – another high protein crop with less risk of GMO contamination, for their feeds. Given the Atlantic Provinces' close proximity to the Northeastern U.S., in order to save on shipping costs, Farmer Direct was interested in filling their market needs by having the product shipped directly from the Maritimes. They also expressed interest in buckwheat, claiming that they'd had a difficult time filling their buckwheat requirements. For more information about Organic Valley, see section below 'Organic Valley / Maine Organic Milling.'

3.6. Keystone Grain

Roger Rivest

Staples, ON (distance of 1,390 km from NB border)

(519) 687-3522; (519) 818-0937

(520) rrivest@keystonegrain.com

Keystone Grains is another exporting company specializing in conventional sunflowers. They expressed interest in purchasing certain organic crops from the Maritimes. At the time of this report, they were searching for buckwheat and peas as well as smaller amounts of soybeans and barley. Roger Rivest, Organic Divisions Manager at Keystone Grains, claimed they were looking for "truckloads of both buckwheat and peas."

3.7. Organic Valley / Maine Organic Milling Co.

Contact: Luke Zigorvits

¹⁸ Information sourced from Farmer Direct website: <http://farmerdirect.coop/>

Organic Valley's farmer co-operative, CROPP, is comprised of dairy and livestock producers. With a strong business that continues to expand, they are always looking for new members and growers of organic grains in particular. Recently, Organic Valley played an integral part in the purchase of a new mill in Auburn, Maine, bought by 12 CROPP producer members who supply dairy to Organic Valley. The mill is called Maine Organic Milling (MOM) and Organic Valley is the mill's sole source of ingredients, of which 75% of the grains come from Canada.¹⁹ Luke Zigovits, Feed Program Manager for CROPP (Organic Valley's producer co-operative), expressed interest in sourcing organic grains out of Atlantic Canada: "There could be some good opportunities for Maritime producers and the dairy producers in Maine," he says. They purchase corn, soybeans, barley, oats, field peas, lentils, spelt, flaxseed, fava beans, grain screenings, and hay. "We buy when our producers demand product," says Zigovits, "and do not typically have storage, unless the product goes to a mill or farm that has storage." As a result, CROPP's volumes vary widely from year to year. They prefer to purchase in bulk truckloads (~20 tonnes/load) and they determine the pay price to producers on the current spot market prices, but they also give producers the option of joining their grower pool, "which," says Zigovits, "offers long-term, stable contracts for 3 years." For more information on the grower pool possibilities, visit <http://www.farmers.coop/farmers-wanted/grower-pool/overview/>, where information includes crops they contract for, and the benefits involved in becoming a member. CROPP, and its recent acquisition of the mill in Maine, represents a very promising opportunity for Maritime producers to supply the growing feed needs of New England.

3.8.Lackawanna Products Corporation

Contact: Felicien Masumbuko

716-633-1940 x 373

Lackawanna Products Corporation (LPC) is an agricultural commodity trading company that sells mostly into the US markets, but also services Canada and Europe. They deal with both conventional and organic products, and have purchased from Maritime organic producers in the recent past. They purchase hard red spring wheat, durum, flax, soybeans, oats and barley, but they will consider purchasing all sorts of grains. They will purchase bin run crops and include shipping in their pay price. This means that LPC will pick up the grain from the farm, this is their standard practice in the US and Canada.

3.9.Birkett Mills

Contact: Cliff Orr

Penn Yan, NY 14527 (distance of 1,191 kms from the NB border)

(315) 536-3311

fax 536-6740

corr@thebirkettmills.com

Located just outside of New England, Birkett Mills claims to be the "World's largest manufacturer of buckwheat products," servicing the US, Canada and Europe. Birkett Mills' products range from gluten-free specialty flours to flour mixes and even grain-stuffed pillows. Their contract

¹⁹ Information sourced in part from MOFGA website article:

<http://www.mofga.org/Publications/MaineOrganicFarmerGardener/Fall2010/OrganicGrain/tabid/1731/Default.aspx>

price for 2010 organic buckwheat was \$530 US dollars/tonne, and they expect this to continue to increase, as it has been annually for three years. They are very interested in contracting growers, and they already purchase a large percentage of their volume from Canada, though they've never purchased from the Maritimes. Cliff Orr, Owner of Birkett Mills, says "if the producers can get it on a rail car, it could be worth their while." Orr also advised that it would be more cost-effective for several producers to team up to produce a load together, have it cleaned and then share the shipping costs. Birkett Mills prefers to receive cleaned, dry grain, and would be interested in setting up a team of growers. They get most of their buckwheat from contracts, where they lease/sell producers their seed. They have a strong demand for organic buckwheat, however, and Orr claimed that they will contract any amount for organic buckwheat. Orr is also interested in the opportunity to meet with producers in the Maritimes, and if there were a group who would be interested, he would consider a trip to the Maritimes to help producers get set up and work out a system.

Appendix B: Resources for Producers

Various web resources	p. 23
Speerville Storage Guide	p. 24
Sample Contracts	p. 25
Gluten-Free Production Information	p. 28

1. International Market information

This web page contains export fact sheets that provide producers with general information on the procedures required for exporting organic products to other nations: <http://organic.usask.ca/Export%20Fact%20Sheets.htm>

2. Cost of Production

This webpage helps a producer evaluate their cost of production, and uses an example of a grain farm. <http://acornorganic.org/organicpath/preparing/evaluating/capital.php>

3. Organic Support Programs in PEI and NB

For more information about organic support programs in PEI visit: <http://www.gov.pe.ca/agriculture/index.php3?number=1011893&lang=E> or contact Susan MacKinnon: sdmackinnon@gov.pe.ca or (902) 368-5657.

For more information about New Brunswick's Organic Development Initiative contact Claude Bérthéléme at claudio.bertheleme@gnb.ca or (506) 453-3046

4. Want to Grow Seed?

The Canadian Seed Institute has information about the processes involved in becoming an accredited seed producer: <http://www.csi-ics.com/main.asp>

5. Equipment Sharing/Cooperative Models

In addition to Quebec's CUMA model (which are all in french) the University of Saskatchewan has resources related to farm equipment sharing models in english: www.usaskstudies.coop/pdf-files/Sask%20and%20PQ.pdf

6. Speerville Storage Information:



Pure Food...Naturally!

152 Speerville Rd., Speerville, NB, E7N 1S2

Phone #: 506-277-6371 Fax #: 506-277-1006

Email: Speerville@xplornet.com Website: www.speervilleflourmill.ca

Storing Grain - On Farm

The following information is intended as a guideline, with some very basic suggestions. These will help ensure you are able to store and market your grain, without compromising its quality and reducing the value of your crop.

Preparation for storage: *Getting your site properly prepared for storing grain is an important first step and also applies to temporary storage, used at harvest.*

- *Equipment: Make sure handling augers and other equipment are working properly. They should be clean and able to operate safely. If the same auger is used for different grains, make sure proper clean out procedures are done between grain varieties.*
- *Storage structure: Look for water leaks in structure or ground water entry. Check to see if there are any structural defects. Prevent entry of birds or rodents.*
- *Cleaning: Use an industrial vacuum cleaner. Remove contents immediately after cleaning. Dispose of material, well away, from bin or building. If a vacuum is not an option, a good sound brushing and removal of dust and debris will work.*
- *Pest Control: Please adhere to the standard, Organic Protocol, for pest control. Constant vigilance is your best approach.*

Moisture and Temperature: *Grain is at risk of spoilage if the moisture content is higher than 14.5 - 15%. Ideally, grain is traded at 14% moisture. We feel safer storing grain at 13.5%. The temperature of grain, in storage, is also an important factor. In stored grain the biological activity of insects, fungi and grain doubles for every 10 deg. C rise in temperature. Low temperatures help control insect and fungal growth.*

- *Cooling: Aerate grain immediately after placing in storage. Aim to get grain below 16 deg. C within the first 2 weeks, after harvest. Continue cooling, even in damp weather, with a target of 10 deg. C. Monitor temperature every few days until target is reached, then weekly.*

Sampling: *This is, without a doubt, the most important and least understood, aspect of making sure grain is stored correctly.*

- *Collect samples using the tailgate method, for each lot being stored. For this method of sampling, use a small, 1cup capacity container. Punch the container through the complete grain stream starting at the right hand side.*

7. Shipping Information and Pricing

The vast majority of grain sales and market prices exclude the cost of shipping the commodity. As this can quite seriously make or break a market deal, included below is a chart outlining and comparing the average shipping methods and associated costs for the producer. Unfortunately, this chart will need to be updated regularly to maintain its relevancy, as the cost of oil increases, making various methods of shipping more costly. (CHART PENDING) A container load to Europe costs between \$3000-\$4000 through the Halifax port. This is actually comparable to sending grain beyond Ontario from the Maritimes.

8. Canada Grain Commission information

The Canada Grain Commission has up-to-date information about grain grading and quality, including research documents about grain sampling, drying and storing grains etc. See www.grainscanada.gc.ca.

9. Sample Contracts

Contracting can be a good way for growers to guarantee that they will be able to sell the crops they are planting. Contracts can also provide leverage, ensure bonds and loans and generally provide stability for the grower. Contracting is common outside of Atlantic Canada, and can assure that the grower gets paid a certain price. It is recommended that producers be aware of their cost of production so they can negotiate profitable contracts, and that producers leave a certain percentage of their crop for sale on the Spot Market. Below are sample contracts from Birkett Mills, Homestead Organics, and Nature's Crops International, provided here with their permission.

2010 Growers' Contract Information

February 2010

Dear Grower:

Thank you for your interest in our buckwheat program this season. We are delighted to inform you that the worldwide demand for buckwheat products continues to be strong which has resulted in our ability to increase our contract price on buckwheat again for the third year in a row.

Our contracted price this year will be \$20.00 per cwt. (\$24.00 per cwt. certified organic) and will be a guaranteed full production contract.

Please find enclosed a sample copy of our 2010 buckwheat contract. After review, if you would like to contract with us, the following procedures will apply.

1. Actual contracts can only be obtained at the time you pick up and lease buckwheat seed.
2. The Birkett Mills contracts are 100% production contracts at a guaranteed price of \$20.00 per cwt. for conventional or \$24.00 for certified organic buckwheat.
3. The Birkett Mills needs are limited and seed will be available on a first come, first serve basis starting May 3, 2010 at The Birkett Mills' Transloading Facility on North Avenue, Penn Yan, NY (Ph 315-536-2594) Monday through Friday, 8:00 a.m. until 3:30 p.m.
4. Buckwheat seed is \$22.00 per 50 lb. bag (\$25.00 organic) to lease and must be paid for at the time of pick up. Because contracts usually go fast, it is a good idea to call and reserve your seed in advance. **NOTE: SEED CAN BE RESERVED FOR A MAXIMUM OF SEVEN DAYS!** If you do not pick up your seed within a week from the time you call, the seed may be sold to others.

Organic Contracts: Note, if you are already a certified organic grower and would like to contract organic buckwheat with us, we are now accepting any size contracts this year- there is no minimum acreage requirements. Simply fill out a Certified Organic Contract when you pick up your certified seed. Please remember that your land must be already certified organic. We have no details on what is required for organic certification of property; so if you are not currently certified organic, please contact your local extension agent for all organic certification information.

For further information about raising buckwheat, ask for our booklet entitled "Commercial Buckwheat Production in the Northeast" which we'll be happy to mail to you or you may pick up at our transloading facility or download on line from **Cornell University**.

Thank you for your consideration.

Very truly yours,

THE BIRKETT MILLS

Clifford S. Orr
Vice President

Purchase Agreement for Organic Field Crops

Buyer: Homestead Organics (1997) Ltd
1 Union Street, Berwick Ont, K0C 1G0



Vendor: some one some family
(first) (name)

Business:

Address: some address
some where

Telephone: 613-830-7915

Certification: IanArmstrong

Contract: Fixed

Language: English

The vendor commits to deliver and sell, and the buyer commits to purchase the following certified organic field crops.

Crop:	<u>food soybeans</u>	Quantity:	<u>50 tonnes</u>
Grade:	Cleanable to Cda #1	Crop Year:	<u>2010</u>
Sample required (y/n)?	Yes	Variety:	Any organic clear hylum variety
Price(C\$/mt):	<u>\$ 680.00</u>	Price for screenings:	<u>Spot price for feed soybeans</u>
Special qualities:	Clear hylum, no mud pellets, minimal stains, 1% damaged and off types, minimal stones		
Specific weight (pr/1/2 L):	357	Low grade provision:	Down grade to feed price
Vendor reserves the right to take the load home before accepting a down grading.			
Dockage allowance:	Nil	Minimum protein:	40% dry basis
Dockage sieves:	Thru 23R, over 12R	Cleaning charges:	None, except excess foreign grain
Screenings sieves:	Thru 20R, over 12S	Screenings allowance:	Hand sieves increased by 50%
Moisture limit:	10% to 14%	Drying provisions:	Denied
Foreign grains:	No peas, no corn, no other beans; minimal grains	Max 1% GMO contamination:	
Storage bonus	<u>None</u>		
FOB:	Berwick, Ontario	Transportation allowance:	<u>nil</u> \$/mt
Delivery date:	Soon after at harvest time		
Payment terms:	For processing in January 2011 and payment in February 2011.		
Special notes:	Ontario producers pay OSGA fees. Grower will provide organic certificate before payment.		
<u>Please return a signed copy to confirm the agreement.</u>			
Vendor elects to make a charitable donation of		% of the crop receipts to (tax receipt provided):	
Choose one:	<u>Canadian FoodGrains Bank, or</u>	<u>Canadian Organic Growers, Inc.</u>	
The vendor transfers ownership of the crop upon delivery to Homestead Organics and accepts the agreed terms.			
Notice: Payment terms beyond 10 days are exceptional to the buyer's Grain Dealers licence in Ontario and may affect the grower's eligibility for payment protection under the Ontario Grain Financial Protection Program.			

Accepted: 10-Dec-10

Toll free: 1-877-984-0480
Fax: (613) 984-0461

Homestead Organics

www.homesteadorganics.ca

some one some family

tom@homesteadorganics.ca

Natures Crops International (NCI)

Leaders in Specialty Crop Management

PO Box 11925
Winston-Salem, NC 27116
Toll Free: 877-780-5882
Fax: 336-759-9406

2009 CRAMBE PRODUCTION PURCHASE CONTRACT

This Production Contract is for the production of Crambe and requires the grower to purchase and plant seed, grow and deliver all the commodity produced under this contract to the Buyer.

Buyer: Natures Crops International, PO Box 11925, Winston Salem, North Carolina 27116 USA;

Seller: The Grower, with details as follows:

Contract Number			Grower SS# or FEIN Number			Email Address*		
Grower's Last Name			First Name			Middle Initial or Corporation (delete one)		
Mailing Address						Telephone #		
City						Province	Postal Code	County
Production Address (if different from above)						Province	Postal Code	County
Variety		Number of Acres	Number of Bags	Seed Treatment				
Crambe Planting Seed: Grower agrees to purchase approved seed and Buyer agrees to authorize the sale of planting seed to grower.								

* Email address will be for NCI usage only and not distributed

Agreement: Buyer agrees to buy and Grower agrees to sell entire Commodity production from the above number of contracted acres. Grower agrees to buy and plant only approved planting seed for these contracted acres and will be able to verify purchase with proof of seed tag upon delivery in accordance with Buyer's specifications.

Commodity: Crambe seed for the purpose of oil extraction for food utilization and the production of meal for animal feed.

Quantity: Buyer agrees to purchase full production on the harvested acres on the terms and conditions stated herein.

Price: Grower will receive a Flat Price of \$3.20 per pound for Commodity meeting the Specification of Quality.

Specification of Quality: Clean seed basis, all foreign material and green seed deductible as dockage at 1% for 1% and a minimum erucic acid level of 54%. Deliveries with a moisture content over 10% will be subject to a discount of 1% of the contract price on moisture over 10% up to 12% and 2% of the contract price for each 1% of moisture over 12% to 14%. Discounts will be prorated for fractions of moisture content. Seed with moisture content in excess of 14% must be dried to acceptable levels prior to delivery. Maximum mustard seed allowance is 2%. Buyer reserves the right to reject seed with more than 14% moisture content and with more than 5% green immature material or that does not meet the quality specifications stated herein. Any and all costs of rejection are for the Grower's account.

Delivery: Grower agrees to deliver the entire seed production from the above identified acres to Buyer's nominated delivery point at Buyer's call within the period of August - October 2009. Grower is responsible for all cost of transportation and storage of the seed. Grower's trucks must be self-unloading. The seed remains in ownership of the Grower until delivery to the Buyer and acceptance from the Buyer. Buyer shall have the option to cancel this contract without cost if Grower fails to deliver seed at above specified time and place.

Duration: This contract has a duration for delivery between August 1, 2009 and October 31, 2009. See Delivery clause above.

Payment Terms: Payment shall not exceed 30 days from date of delivery. Payments can be split, upon written authorization by Grower; split payments may only be done as a percentage (%) of total production. No splits will be allowed without written authorization from any lien holder. Payment is conditional upon completion and receipt by Buyer of all required paperwork (including Field Record Card).

Notice Period: Buyer will endeavor to provide Grower with a minimum 10 days notice prior to intended delivery of Commodity.

Warranty: Grower warrants that no water has been added to the grain sold hereunder at any time for any purpose except when used as a carrier for residual insecticides at manufacturer's recommended levels. These representations may be relied upon by the Buyer in the resale of these commodities.

This Contract, including the terms and conditions set forth on the following pages are binding and constitute a Contract only when signed by the Grower and signed and accepted by the Buyer. Any changes to this contract need to be agreed in writing with the Buyer.

Page 1 of 3

10. Gluten-Free Oat Production information

[Reproduced with permission from Château Cream Hill Estates, originally sourced from GrainWise, a quarterly newsletter published for the Nashville Celiac Support Group.]

Article 1: *The Life Cycle of Grain and Cross-Contamination Risks*: GrainWise Volume V1, No. 3 Summer - Fall 2006 p. 35

Article 2: *Producing Oats for People with Celiac's Disease and DH: GrainWise Volume V1, No. 4 Fall-Winter 2006* p. 35

THE LIFE CYCLE OF GRAIN AND CROSS-CONTAMINATION RISKS

By Janet Lowery, Nashville

Having grown up in a rural, farming community, I always wonder why oats are the only grain considered to have a high risk of cross contamination — from the planting stage, to harvesting, transporting and processing. I've reviewed studies about oats tested for gluten contamination as to how many parts per million (ppm) of gluten they might contain, and often ponder if any other grain, like corn and soybeans, has ever gone through the same scrupulous testing. Why wouldn't corn and soybeans be exposed to the same risk of cross contamination, since they go through the same processes as oats? So I interviewed a few of my relatives to give some insight on the life cycle of oats and other grains, and where the risk of cross contamination may be.

First, Why are Oats a Problem?

The Celiac Sprue Association's position is that there have been mixed conclusions from studies that have been conducted on whether or not oats evokes an immune response — due to the protein structure, cross contamination, or individual differences. So until final proof is provided on whether they're safe, it's best to leave oats out of your diet.

www.csaceliacs.org/InfoonOats.php

More articles and studies on oats can be found at www.celiac.com Click on the word "Oats" at the bottom of the second paragraph.

The Gluten Intolerance Group (GIG) states that research suggests pure, uncontaminated oats in moderation are safe for most people with Celiac. www.gluten.net/diet.html

The following statement appeared in the NIH Consensus Development Conference on Celiac Disease, July 28 – 30, 2004: "Oats appear to be safe for use by most individuals with celiac disease, but their practical inclusion in a gluten-free diet is limited by potential contamination with gluten during processing." <http://consensus.nih.gov/2004/2004celiacdisease118html.htm>

Danna Korn states in her new book, *Living Gluten-Free*, the *For Dummies* series, "Oats are a good example of a grain that often undergoes cross contamination. ... Oats are more likely to be contaminated (and at greater levels) than other grains, which is why oats land on the forbidden list but other grains are still considered safe." www.glutenfreedom.net

The Grain Experts

My brother-in-law, Kevin Keefe, has been farming for 25 years in Ohio. He studied Ag Business at a Technical College and also worked in the Grain Elevator business for



Wheat



Oats



Barley



Corn



Soybeans

13 years. My uncle, Marion Shaull, was a Custom Grain Harvester for 35 years in the Western Great Plains. He led a nomadic life, transporting his family, three large Combine Harvestors, trucks, and crew from Texas to Wyoming for six months every year harvesting fields of grain up to 3000 acres at a time. My cousin, Gary Lowery, has worked in a Flour Mill in Ohio for 29 years and is currently the Head Miller.

STAGE I: PLANTING



Planting and harvesting schedules differ from region to region — the following schedule is for the Northwest Ohio weather season.

- The planting stage actually begins in the Fall with spreading fertilizer after the bean crop has been removed.
- Winter wheat is usually sowed in October, and is dormant through the Winter.
- Oats are planted around the end of March/beginning of April.
- Corn is planted around the end of April/beginning of May.
- Soybeans are planted starting the first of May into the middle of June.

Livestock Feed Grain vs. Cereal Grain

- 99% of wheat in general is grown for cereal grain for human consumption.
- Oats in Ohio typically are grown for livestock feed. Most cereal oats are grown in Canada due to better climate conditions.
- Corn in Ohio is mostly grown for livestock feed.
- Cereal corn is kept separate from feed corn, but is planted and harvested with the same equipment.
- Cereal corn is a specific grade factor and variety, and generally not grown in Ohio.
- Barley is typically grown in the Western to Northern Plains.

- Soybeans in Ohio are grown for soybean oil for human consumption. The leftover processed bean meal is used for livestock feed.

Crop Rotation

Crop rotation is where farmers plant a different crop in the same field the following year. There are three-year, five-year and seven-year rotation schedules. Schedules vary from farmer to farmer:

- An example of a three-year rotation might be wheat, then corn the next year, soybeans the following year, then back to wheat.
- An example of a seven-year rotation might be corn, then soybeans the next year; back to corn the following year; soybeans again, back to corn, soybeans again, then finally to wheat.
- If oats were rotated in, it would fall after soybeans and before corn. Oats would seldom follow wheat. Wheat would follow oats.

Reasons for Rotating Crops

- Plant disease
- Soil tilth — organic matter (crop residue). Wheat and corn put a lot of organic matter (compost) back into the ground.
- Break the pest life cycle — corn bore, seed maggot.
- Erosion
- Helps knock out volunteer growth (due to chemical application on new crop).

Risks of Voluntary Growth from Previous Season Crop

- Wheat is the highest risk for voluntary growth — chemicals used on the new crop of corn and soybeans generally knock out volunteer growth by 90%.
- Wheat volunteer growth in corn is a non-issue because the wheat life cycle is shorter than the corn life cycle.
- Wheat and oats are similar grains in the way the grass looks and grows, however, the kernels in wheat are tight and compact in about a 3-inch length, where oats have six- to eight-inch fountainsque hairs with a few kernels on the end.
- Wheat is a possible volunteer contaminate to oats because of the grass-like family and the closeness of the crop life cycle. However, they typically don't follow each other directly in the crop rotation.

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STAGE 2: HARVESTING



Harvesting Schedule in Ohio

- Wheat is the first crop harvested around the 4th of July and may take two weeks.
- Oats are next, approximately two weeks after the wheat harvest is complete.
- Soybeans start being harvested early to mid-September and sometimes into November.
- Corn harvest starts mid-October through Thanksgiving.

Harvesting Equipment

- The same Combine Harvester is used for all grains, however, the header is changed out for corn (picker-sheller).
- The same header is used for wheat, oats, soybeans, barley, and rye.
- The Combine bin is seldom washed out (only if it rains and the machine is left out). You would have to take the machine apart piece by piece to clean out the cross-contamination from wheat.
- Harvested grain is dumped into gravity wagons or grain trucks.
- The grain could go straight to the Grain Elevator in a nearby town or it could be put into a farm grain bin by a farm auger.

Western Great Plains Grain Harvesting

- Uncle Marion's nomadic path leads from Texas, through New Mexico, Oklahoma, Kansas, Colorado, to Wyoming then back south depending on different crop schedules.
- The harvest begins the first of May with wheat in Texas and ends in September or October in another state.
- The order of grain harvested changed from state to state. The equipment was not washed between grains.
- Size of farms ranged from 800 to 3000 acres, with 2,500 acres being the average.
- Percentage of total grains harvested: 65% wheat, 20% corn, 10% barley, 1% oats, 1% rye, 1% soybeans, 1% milo-maize, 1% popcorn.
- The grains typically were grown for the following purposes:
 - Wheat: cereal grain for human consumption
 - Barley: beer and ethanol
 - Rye: livestock feed
 - Corn: livestock feed and ethanol

- Soybean: oil, plastics and livestock feed
- Milo-maize: livestock feed

- The grain was dumped from the Combine into the trucks, and then transported to the Grain Elevator.

STAGE 3: TRANSPORTING



The Grain Elevator

- The grain is brought to the elevator via farm trucks and wagons and first must go through a grading station.
- The truck drives across a large scale for weighing.
- The grain load is dumped into a pit — a hopper, wagon-looking hole with a grate across the top that is driven over. All grain goes into the same pit.
- The grain then travels through an auger, a belt, or a drag conveyor. (Contamination varies considerably between the three, depending on the grain that went through last. Augers and belts are not washed between crops. During the fall, three different crops could run through the auger or belt.)
 - A drag conveyor uses paddles to push the grain up.
 - A conveyor belt has a "U" trough that throws grain off the end.
 - An auger has space between flights and troughs that can retain grain.
- A Leg, which has buckets, carries the grain up to a Turnhead distribution housing area, where the grain is distributed into different bins. All grain travels through this Turnhead housing. Actually, multiple grains can go through at the same time.
- The grain in each bin is rotated all the time. When bins are emptied, the bottom is only swept out before the next grain is dumped in.



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- Wheat dust and kernels will ultimately be in every grain stored at the elevator. When the elevator basement floors are swept, dry material is swept into the moving grain. When the top floor is swept, it goes into the closest bin.
- Soybeans are allowed 1% of foreign material that is not soybeans, in which they are paid for. Therefore, most of the above sweeping will go into the soybean bin.
- When grain leaves the elevator, the whole process above reverses itself and the grain is dumped into train cars or semi trucks.
- 90% of wheat and soybeans are trucked to a processor like Archer Daniels Midland (ADM is the #1 mill nationally).
- Corn is railed out by train.

STAGE 4: PROCESSING

Wheat Flour Mill

Although the company Gary works for only mills wheat flour, the processes will be similar with mills that process other grains.

- The grain is trucked or railed to the Mill.
- The grain is sampled for moisture and tested for vomitoxin, a by-product of a fungal infection called head scab.
- The grain is then dumped and transferred by conveyor belts and augers to a long-term storage bin. This Mill stores 5 million bushels of wheat to keep them in business until next harvest.
- The grain is transferred to smaller bins for blending to make a uniform mixture before going through the milling process.
- The grain is run through a series of cleaning machines.
- Then the grain is sifted through a series of screens with different size holes — there may be two to five screens. The top screen has the largest holes which filters out the corn and soybeans while letting the wheat fall through. The bottom screen is very fine so dirt falls through and wheat travels across the top.
- Other mills may use an Indented Disc Cylinder Machine for this step. It's a big disc with certain size holes where only wheat fits in by specific gravity and lifted out — other grain sizes won't fit into the holes. Oats would get picked out.
- The wheat then travels through an Aspiration Channel, which is a vacuum that sucks off oat chaff and lighter weight grains. (Oats are longer and lighter than wheat and have a hull which would need to be removed when processed.)
- The wheat then drops into a Scour — a shaft with little paddles. The center rotor rotates the paddles rubbing the wheat against the outer screen to knock off dirt.

- The wheat goes through another Aspiration machine to suck off more dirt.
- Next, a Tempering System adds moisture in order to soften the bran coat so when it goes through the mill, it doesn't break up, keeping the flour whiter.
- The wheat goes through another Scour, then finally onto the mill.
- It goes through a series of Roller Mills — at every roller are sifters (screens) with different sized holes to grade the flour stock into bran, wheat middlings (for livestock feed) or flour.
- The flour is transferred to another storage bin, if enrichment is required, it is added at this point.
- The flour is either shipped out in bags or in bulk truck or bulk rail cars.
- Gary seems to think that mills which process multiple grains would have to keep them in separate buildings because of all the separate equipment required for that particular grain.

SOYBEAN, CORN, AND OATS PROCESSING

Originally, not having personal sources for an oats farmer; oats processor; corn processor; or soybean processor; I had concluded my article here. However, the following information available at the National Grain and Feed Association website helps to fill in the gaps. Details on other grains can also be found on this site: www.ngfa.org/trygrains.asp

Soybean Processing

- When soybeans first arrive at the processing plant, they are checked for quality and then are processed to extract the oil and meal.
- The soybeans are cracked and the hull is removed, known as dehulling.
- The soybeans are then flaked in special machines and moved to tanks where they are soaked in a chemical solution. This solvent removes about 99% of the pure, crude soybean oil from the flake.
- In the refining process, crude oil can be degummed, bleached, deodorized or hydrogenated with hydrogen gas. In "degumming," the fatty acid content of the oil is neutralized with a caustic acid to produce some products (like soap). The oil also may be "bleached" by treating it with an absorbent clay material before it is "deodorized" through a vacuum steam-distillation process.
- After the oil is removed, the soybean flake is cleaned, toasted and ground to improve its nutritional value. This produces the soybean meal.

Corn Processing

- Wet corn millers soak corn in a solution of warm water and sulfur dioxide in a process known as "steeping." The soft-

ened kernels then are pulped in mills and the kernel is separated into its various parts — hulls, germ, gluten and starch.

- Dry corn millers clean and then temper the corn with hot water and steam for two to six hours to soften the bran and germ so they can be separated from the endosperm. Sifting machines separate the flinty, coarse, granular material. Then the miller extracts corn oil, flaking grits and corn flour from the kernel.
- Dent Corn accounts for about 99% of all U.S. corn production.
 - Yellow Dent Corn is used for livestock feed and for wet milling into sweeteners, starches and other products for human and industrial use.
 - White Dent Corn is used by dry corn millers to manufacture corn flour; hominy and grits, and for industrial uses.
- Sweet Corn accounts for about 1% of total U.S. corn. Sweet corn is available in the grocery store in cans or in the produce section as "corn-on-the-cob."
- Popcorn accounts for less than 1/2% of total U.S. corn.

The Life Cycle of Oats

- The world's leading oats producer is the Commonwealth of Independent States (12 countries including Russia and the Ukraine).
- The United States, Canada, the European Community, Australia and Poland also grow oats.
- The U.S. grows 300 million bushels of oats each year, but imports between 50 million and 80 million bushels annually.
- U.S. oats are grown primarily in the Northcentral states because there is plenty of moisture and cool weather.
- Four varieties are grown in the U.S.: White oats, Red oats, Gray oats, Black oats.
- Oats have a very short growing season. They need a cooler temperature and at least 25 inches of rain each year.
- Red and gray oats are planted in the fall.
- White oats are planted in the spring.
- Combines are used to harvest oats, starting in late May in the southern states and finishing in August in the northern states.
- Oats are trucked to the local country elevator, where the grain is dried, stored and conditioned.
- The country elevator then sells the oats to a buyer, which may be a local livestock feeder or feed miller, or an oats processing plant.

Oats Processing

- White oats are preferred for milling.
- Oats are cleaned and separated based

on diameter and length. Chaff (the husk covering the seed) and impurities are removed by special machines, leaving 50% to 75% of the original weight for milling. Oats are dried to about 5% moisture.

- The oats are then cooled and placed in tempering bins for 12 to 24 hours.
- Oats are graded into two classes — large (1/2-inch long) and stub (shorter) — that are milled separately.
- The hull is removed and the oats are cleaned. The remainder of the oats kernel is cut by rotary granulators for packaging. Kernels for rolled-oats production are put into a steam chamber and partially cooked, then passed through rollers where they are formed into flakes. The flakes are then cooled, weighed and packed.
- Oats are high in protein and oil. Compared to wheat, oats contain one-third more protein, nearly four times more fat and less starch.
- The bran is the inner coating of the oat grain, used particularly in baked goods.
- The hull has high-energy content. A by-product of the milling process, it is used primarily in livestock feed. The hull also produces furfural, a chemical used to produce industrial products like nylon, synthetic rubber solvents, insecticides, disinfectants, resins, pharmaceuticals, preservatives, fiber sources for paper products and fuel (mixed with coal to fuel power plants).
- The endosperm (germ) is the inner part of the oats kernel. It is high in protein and fiber and processed into human food products like oatmeal, granola, cookies, baby foods, breakfast cereals.
- Industrial uses include cosmetics and bath oil.

CONCLUSION

You can clearly see, there is a high risk of cross contamination of all grains, especially at the Grain Elevator. However, steps are taken to remove foreign matter during processing. My intent is to hopefully clarify where cross contamination occurs, NOT to limit our grain options any further: It is a possibility that an extremely sensitive reactor to gluten may discover that other grain intolerances or sensitivities they've experienced may actually be a reaction to the minute residue of gluten cross contamination instead. These people may consider consuming only grain products that have been tested for gluten contamination. Judgement on eating grain, particularly oats, is a personal decision, please be sure to do your research.

*Photos courtesy of the Kansas State University Agricultural Experiment Station and Cooperative Extension Service AND the USDA Agricultural Research Service.

PRODUCING PURE OATS FOR PEOPLE WITH CELIAC DISEASE AND DH

By Tracy B. Perry, MSc and Beth Armour, P.Dt., M.Ed. (Professional Dietitian) Montreal, Quebec, Canada, tracybperry@bellnet.ca

In the Summer – Fall, 2006 issue of GrainWise, Janet Lowery gave an excellent review of the many steps employed in the production of commercial grains, including oats, and she showed that cross-contamination occurs everywhere. Historically, oats in the gluten-free diet for people with celiac disease (CD) and dermatitis herpetiformis (DH) has been a topic of particular interest within the affected communities. The problem has been that oats have virtually always been cross-contaminated with wheat, barley, rye and other grains that are closely related to wheat (WBR), as Janet described. In fact, Tricia Thompson, a registered dietitian, published her results of a research project looking at contamination of commercial oats, in the November 4, 2004 issue of the *New England Journal of Medicine*. She found that in four different lot numbers from 3 different companies, McCann's Steel Cut Irish Oats, Country Choice Old Fashioned Organic Oats and Quaker Old Fashioned Oats, the gluten content ranged from below 3 parts per million (ppm) to 1861 ppm. In North America the generally-accepted upper safe limit of gluten content for people with CD is 20 ppm. Thompson concluded that while some packages of these oats might be safe for people with CD to consume, an individual could not rely on any of these manufacturers' oats being pure, and thus the safest policy for people with CD is to avoid them.

Oats have significant nutritional value, a low glycemic index, and they taste good, so including them in the gluten-free diet would be a welcome addition. Recent scientific studies have shown that while pure oats are well-tolerated by most people with CD/DH about 5 – 7 percent of affected individuals cannot tolerate oats no matter how pure they are. Shelley Case notes in the new edition of her book, *Gluten-Free Diet — A Comprehensive Resource Guide*, "Based on the existing research on oats in celiac disease, a growing number of health professionals, celiac organizations, celiac research centers, and other associations around the world allow consumption of moderate amounts of pure, uncontaminated oat products in a gluten-free diet..." This follow-up article describes how one company — Cream Hill Estates (www.creamhillestates.com) — has produced pure oats that are suitable for most people with CD/DH.

But first, some background information. The term "gluten" is a catch-all word used to describe the storage proteins found in all cereal grains, including corn, rice, wheat, barley, rye, oats, etc. These storage proteins have many similarities from one variety of grain to another, but each grain variety is also composed of other unique gluten components that distinguish it from the other grains. Wheat, barley and rye (plus half a dozen or so other closely-related cereal grains) have similar amino acid sequences (portions of the gluten protein chain, or "peptides") to which people with CD/DH are intolerant. Oats, and even more-so corn and rice, are more distantly related to these WBR grains and thus do not contain the offending peptides.

Oat kernels are very similar in length, shape, density and color to WBR kernels, so it has been impossible to completely separate them from one another using traditional seed-cleaning equipment. As little as one WBR kernel in 15,000 oat kernels — can cause a CD/DH reaction in affected individuals. Corn and other non-cereal seeds such as peas and beans are much larger (or smaller) than oats, so separation by traditional methods is feasible; rice, although similar in size and shape to WBR and oats, is grown and processed in different geographic areas and under completely different conditions, so WBR is seldom present as a cross-contaminant. Thus, because of size and geographic production differences, CD/DH individuals have been able to consume corn, rice, peas, beans, soy, millet and other cereals and small-seed legumes without concern

that they will suffer a gluten crisis. Oats is a different story.

When Tracy's daughter was diagnosed with CD 2.5 years ago, he became interested in the CD diet and realized that if pure oats could be produced in consumer quantities for the CD/DH community, there would be significant nutritional and palatability benefits for affected individuals. Coming from a professional background in medical research, he started with an in-depth review of the scientific literature, which revealed that pure, uncontaminated oats could indeed be tolerated by most people with CD/DH.

He then contacted Dr. Vernon Burrows, a retired scientist who specialized in oats research, who was still working at Agriculture and Agri-Foods Canada (AAFC), and who was on the Professional Advisory Board of the Canadian Celiac Association (CCA), specifically to advise them on the feasibility of including pure oats in the gluten-free diet. The CCA has determined that oats that contain no more than one foreign crop seed per kilogram of desired seed (oat, in this case) — is acceptable for most people with CD/DH to consume. (Preliminary studies suggest that one WBR seed per kilogram of oats (1 WBR per about 40,000 oat seeds) is equal to about 5 – 7 ppm of gluten.) With input from all parties a large-scale pure-oats production plan was devised and implemented.

With the assistance of Dr. Burrows and others at AAFC, about 5.5 metric tonnes of a new variety of "hull-less" and "bald" oat seed, developed by Dr. Burrows, was planted on a seed farm in Ontario in May, 2005. In the seed-growing industry, purity is the name-of-the-game, so the seed grower is focused on all the steps necessary to ensure there is no contamination of the crop with other crop seeds. Thus, a 7-stage process is followed from seed acquisition to acceptance for distribution to consumers with CD/DH.

STAGE 1: FIELD HISTORY

It is essential that no "volunteer" crops appear in the field that will grow pure oats.

- Only fields that have had no wheat, barley or rye (WBR) on them for at least the 3 previous years are used. If WBR had been present in recent previous years, seeds dropping to the ground at harvest could germinate another year among the oats and contaminate them.

STAGE 2: PLANTING & GROWTH

- Oat seed to be planted is batch-tested by a federally registered seed laboratory.
 - Seed samples are obtained using a bin probe, which is a 6-foot-long brass tube with another brass tube inside it. Both tubes have oblong holes cut into their sides. With a pointed end and the tubes rotated so the side holes are closed, the probe is inserted into a 1-tonne (2200 lb.) bag of oat seed. Then the inside tube is again rotated so the holes are lined up with those in the outside tube and seed flows into the inner tube from bottom to top (because of the way the inner holes are arranged). Five insertions of the probe produce a 1.5 kg (3.3 lbs.) representative sample of the bag contents.
 - Staff at the seed lab go through the samples one-seed-at-a-time, identifying every foreign crop and weed seed and report to the sender on the presence of WBR (and other crop and weed seeds).
 - One such purity check is done on every 1-tonne bag of seed to be planted.
 - If there is more than one WBR present per 1.5 kg of oat seed tested, that 1-tonne bag is not used. This purity is equivalent to no more than one WBR seed per 60,000 oat seeds.
- All equipment to be used in plowing, planting, fertilizing, etc. is either dedicated to pure-oat production or thoroughly cleaned

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with high pressure/high volume water and air to ensure no residual WBR is present in/on the equipment before it enters the field.

- All fertilizer to be used on the oat field is purchased in bags (which by definition are free of WBR) or in bulk, delivered in thoroughly-cleaned trucks — as specified by the seed grower.

STAGE 3: CROP INSPECTION

Inspecting the crop during growth is important to determine whether foreign crops are present, if so, how many/how much, and to remove those that are identified.

- On demand from the Canadian Seed Growers' Association, a Canadian Food Inspection Agency inspector walks the field when the oats have 'headed out' or formed seed pods. They report back to the seed grower.
 - They count at least 60,000 oat plants in different parts of the field and report on any weeds and/or foreign crops growing among them. The foreign crop plants are pulled and discarded.
 - They inspect and report on the "isolation border" — at least 6' wide — around the edge of the field to separate it from neighboring crop fields.
 - Birds flying over the oat field do not drop significant numbers of foreign seed that could grow, and wind-blown seed from nearby fields is not a problem, in part because of the isolation border.
- The seed grower also walks the oat field at different times during growth and pulls any foreign crop plants.

STAGE 4: CLEANING

Harvesting machinery is complex, intricate and expensive. There are hundreds of places where foreign grains could become lodged in the machinery and then picked up by the oats as they pass through, thus contaminating them.

- The combine — which cuts the oat stalk, transfers the cut plant into its mechanism, separates the seed from the rest of the plant and then puts the seed into a hopper on the combine — is opened and partially disassembled, and all the interior mechanism is blown out with a high-pressure, high-volume air compressor.
- Wagons, into which the combine will empty its hopper through an augur, are cleaned with high-pressure air and water; and literally, any cracks or crevices in the metal are cleaned out by hand with a knife.
- Transfer augurs/conveyors are disassembled and blown/washed out, and storage bins are dedicated to pure-oats only.
- Trucks that transport the pure oats to the processing mill are thoroughly cleaned, as above.
- The milling equipment is also thoroughly cleaned with air; water and industrial vacuum, and starting in January, 2007, we will have a new mill that is dedicated to processing pure oats only.

STAGE 5: HARVESTING

- The combine harvests about 2 tonnes of oats to "flush out" the mechanism in case cleaning was incomplete, and these are used for other purposes — not for our oat supply. Any residual offending seeds are highly unlikely to become mixed with the oats.
- Harvested oats are unloaded from the wagon by a chute into conveyors for elevation into the dedicated storage bin. Later, seed coming out of the storage bin goes directly to the cleaning line and then into new 1-tonne bulk bags before entering the processing line.
- Throughout wagon unloading, 1.5 kg samples of oats are taken from the chute for approximately each 10 tonnes of seed.
- Samples are sent to the seed lab for a purity check as described above. This gives us an idea of crop purity out of the field at harvest.

STAGE 6: SAMPLE SEED OUT OF CLEANER

Seed coming out of the combine into the storage bins is full of hulls, stalks, dirt, stones, metal, weeds, perhaps some foreign crop seeds, etc., which must be cleaned out of the seed before processing into food. Seed cleaning is done primarily with different sized screens, but also with other specialized equipment.

- The first step involves passing the seed through a machine with 4 – 5 horizontal screens, each of which has a different hole size. In some, the oats pass through the screen, and waste is blown or shaken off the top, not having passed through; in others, small particles pass through, and the oats stay on top and transfer to the next screen size. High volume air blowing up through the screens removes light contaminants such as hulls and stalks.
- Next the oats pass to a gravity table, which separates grains on the basis of different seed densities. Other equipment such as indent disks may also be used to separate seeds of similar density but different sizes and/or shapes.
- De-stoners remove stones, and the oats pass over a magnetic strip to remove metal that may have broken off the machinery.
- At the end of the cleaning process oat seed is placed into 1-tonne bulk bags and a 1.5 kg sample is removed from each bag with the bin probe.
- The samples are sent to the seed lab for a purity check.
- Any 1-tonne bag that has more than 1 WBR per kg of oats is set aside, re-cleaned and re-tested. If purity of no more than 1 WBR per kg is not achieved, that bag of oats is used for other purposes — not for our oat supply.

STAGE 7: SAMPLE PRODUCT OUT OF PROCESSING LINE

Once the oats have been transformed from seed into flakes or flour, it is no longer possible to identify what is oats and what is a foreign crop seed, so biochemical, rather than physical testing is required.

- Acceptable bags of seed are processed into rolled oats for porridge, oat flour or whole-oat groats (kernels). These are placed into 800 kg bags for shipping to the packaging plant.
- Each bag is repeatedly sampled with the bin probe to get about 1.5 kg of sample.
- The sample is ground into flour and sent to a registered biochemical testing lab (at the University of Guelph in Canada and/or at the Food Allergy Research and Resource Program — FARRP — lab at the University of Nebraska) for an R5-ELISA test.
- This test detects the presence of WBR gluten "peptides" referred to in the third paragraph of this article.
- Twenty parts per million (ppm) is generally, in North America and Europe, considered to be the safe upper limit of WBR gluten in a product for inclusion in the gluten-free diet.
- We use a test kit that has a lower limit of sensitivity of about 2 ppm — the most sensitive on the market.
- If a bag tested above 20 ppm, we would not use it. So far the maximum test result we have found is 10.1 ppm, and our average is 2.1 ppm (since most of our bags test "ND" or none detected, which means they were below the limit of detection for the test used).

We have found this pure-oat production program to be highly effective in achieving our ends — to produce oats that are safe for most people with CD/DH to consume. Our average WBR gluten content of 2.1 ppm in over 40 tonnes of processed product shows that with diligence pure oats can be produced in commercial quantities.

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However, there remain a few caveats. First, why is there a small proportion of people with CD/DH who cannot tolerate oats no matter how pure they are? The reasons for this are presently unclear, but it may be that some other peptide in the oat protein, or a small portion of WBR-type peptide that could be present in oat gluten is recognized as unacceptable in the intestinal tracts of a few people with CD/DH.

Second, it is important to note that:

- 1) individuals newly diagnosed with CD should not consider adding oats to their diet until their bodies have stabilized on a gluten-free diet — which usually will take from six months to a year;
- 2) affected individuals should consult with their physician and/or dietician about the acceptability of pure oats for themselves;
- 3) most people with CD/DH do not get much fiber in their diets. Oats are high in fiber — which is good — but if one is unaccustomed to fiber and then consumes substantial amounts of it, they may experience a “fiber reaction”, which is characterized by abdominal bloating, gas, possibly diarrhea, etc. This is due to both the insoluble fiber, which helps prevent constipation, and soluble fiber, which helps reduce cholesterol but often ferments in the intestine and causes gas production. This fiber reaction could be misinterpreted as a CD reaction, depending upon one’s own reaction to WBR gluten exposure. Thus, anyone newly introducing oats into their diet should do so slowly — no more than 1/2 cup (dry weight) oats per week for the first couple of weeks, and they should drink plenty of water. And,
- 4) once accustomed to eating oats, daily consumption should be limited to 50 – 70 grams (1/2 – 3/4 cup) dry weight.

Finally, because historically oats have been off-limits to people with CD/DH owing to cross-contamination with WBR, and because a minority of people with CD/DH remain intolerant of even pure oats, many believe that the only safe policy regarding oats is to avoid them completely. Alternatively, many of these

people feel that if oats are to be used by people with CD/DH, the oats should contain no more than zero ppm of WBR gluten. Aside from the issue of complete abstinence, this “required” level of purity does present some problems.

First, “zero”, by definition, is impossible to measure. Second, at the present time there are no test methods available that can approach near-zero detection of WBR, although scientists are continuously trying to improve the accuracy and sensitivity of test methods. Third, also at this time, nobody knows whether life-time exposure to gluten levels in the 10 – 20 ppm range (much less in the 2 – 10 ppm range) has a consequential health impact on people with CD/DH. All that is known is that the majority of people with CD/DH who are generally able to hold their WBR intake to less than 20 ppm mostly do not show obvious clinical symptoms. At least one five year follow-up study has shown that those eating oats over this period showed no abnormal signs. Now that pure oats are available it probably will take another 50 – 80 years to answer many of these questions regarding long-term exposure. Since that time-frame is beyond practicality for most of us, each of us must evaluate the importance of oats-inclusion for ourselves and decide if the risks outweigh the benefits.

CONCLUSION

Pure, uncontaminated oats are now available on the North American market. Moderate amounts of these oats are tolerated by most people with celiac disease. However, for unknown reasons, about 5 – 7% of people with CD/DH cannot tolerate oats no matter how pure they are. Before adding oats to their diet, people with CD/DH should become stabilized on a gluten-free diet, and they should consult with their health-care professionals. Upon starting, they should introduce pure oats in small amounts to avoid a fiber reaction, drink plenty of fluids, and once adjusted, they should limit daily consumption to 50 – 70 grams (1/2 – 3/4 cup) dry weight.

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Appendix C: 2010-2011 Harvest Survey



Dear Organic Producer,

As a result of the 4-year funding for the Maritime Organic Grains Network, ACORN and OACC have been working together to compile statistical information since 2007. Below, you'll find the final survey questionnaire that is a part of this project.

This year, Theresa Richards will be using the cumulative results of this survey (from 2007-2010) to create a sector profile. The profile results will inform a greater Maritime Organic Field Crops marketing study, to be completed by January, 2011. The marketing study will identify areas of opportunity and new markets for organic field crops grown in the Maritimes. This study will also help provide feedback on the next steps for the Maritime Organic Grains Network. **Your participation in this survey will help to strengthen and inform the direction of the important research being conducted.**

All of the results will be communicated back to you and available on the ACORN and OACC website. In addition, the findings of the surveys and marketing analysis will be presented at the upcoming ACORN Conference, being held this year in downtown Fredericton, NB at the Crowne Plaza (Lord Beaverbrook) hotel from March 10-12, 2011.

All information is confidential and any results released will be aggregated and compiled in order to protect your identity and information.

We have sent the survey out via e-mail and mail-out. **The deadline to complete the survey is Monday, November 15th, 2010.** It should take about 15 minutes to complete. You have the option of faxing the survey to **506-536-0221** or you can call **Theresa Richards (1-866-322-2676)** to fill it out by phone. Theresa will be following up with phone calls shortly. Please don't hesitate to call her if you have any questions or concerns.

A sincere thank-you for your participation in this significant project that will ultimately help you and the entire organic field crops sector of the Maritimes.

Beth McMahon
ACORN Executive Director

Maritime Organic Grains Network 2010 Survey

1. Overview:

a. Province New Brunswick Nova Scotia Prince Edward Island Other

b. Please select: Transitioning (Year: __) Organic Not certified

c. What year did you start growing organic grains? __

d. What reason(s) best describe why you grow grains/oilseeds?

Personal use for feed: (circle all that apply)

Hobby

dairy (cows) dairy (goat) meat animals hobby animals

Rotation crop

Selling as feed for profit

Seed production

Selling as food for profit

Other (please indicate): __

Selling to other markets for profit (biofuel, health and beauty)

2. Production:

a. What did you plant this past season (2010)? Select all that apply.

Cereals

Hard wheat Circle Spring / Winter Circle Food / Feed

Soft wheat Circle Spring / Winter Circle Food / Feed

Corn Circle Grain / Silage Circle Food / Feed

Oats Circle Food / Feed

Barley

Rye

Other (please specify) __

Other Grains, Pulses, Oilseeds

Flax

Field Peas

Soy Beans

Pumpkin seeds

Other (please specify)

—

—

b. What field amendments have you / will you use on your farm? (Select all that apply)

	Fall (2010) Tilled	Fall (2010) Not tilled	Spring (2011) Pre-seed	Spring (2011) Post-seed
Compost	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manure*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lime	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crab/Fish Meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
—	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
—	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

c. *If you indicated that you use manure, please tell us more:

Types of Manure	Please circle	Sources of manure used:	Approximate %
<input type="checkbox"/> Dairy	Solid / Liquid	Own farm	—
<input type="checkbox"/> Beef		Local area	—
<input type="checkbox"/> Poultry	Solid / Liquid / Pelletized	Out-of-Province	—
<input type="checkbox"/> Pork	Solid / Liquid		

d. What are your three biggest constraints to grain production? (Please select only 3)

- | | | |
|--|---|---|
| <input type="checkbox"/> Weeds | <input type="checkbox"/> Drying facilities | <input type="checkbox"/> Soil fertility |
| <input type="checkbox"/> Input costs | <input type="checkbox"/> Storage facilities | <input type="checkbox"/> Available land base |
| <input type="checkbox"/> Access to machinery/equipment | <input type="checkbox"/> Market demand | <input type="checkbox"/> Not profitable / lack of feasibility |
| <input type="checkbox"/> Time (i.e. part-time farming) | <input type="checkbox"/> Capital costs | <input type="checkbox"/> Disease |

Please return survey by November 15 by fax: (506) 536-0221 or email to: Theresa.anne.Richards@gmail.com

Maritime Organic Grains Network 2010 Survey

e. Please provide some additional information in the spaces below. Our goal is to record organic production levels in the Maritimes for the 2010 season.

Crop	Varieties planted in 2010	Seeding rate (lbs/acre)	Area seeded (acres)	Area harvested (acres)	Silage yield (tonnes)	Total production yield (tonnes)
Wheat						Food ___ Feed ___
Barley						Food ___ Feed ___
Oats						Food ___ Feed ___
Corn						Food ___ Feed ___
Soy Beans						Food ___ Feed ___
Flax						Food ___ Feed ___
Pumpkin Seeds						Food ___ Feed ___
Canola						Food ___ Feed ___
Sunflower Seeds						Food ___ Feed ___
Rye						Food ___ Feed ___
Mixed Crop						Food ___ Feed ___
Other						Food ___ Feed ___

f. In addition, it would help us forecast production of field crops grown if you could indicate your planned crops for the upcoming 2011 season.

Crop Type	Expected Acreage

3. Drying & Storage

a. What % of your grain harvest do you currently have storage capacity for? ___%

b. Do you have grain drying and aeration capacity on your farm or easily accessible?

Yes (drying) No (drying) Yes (aeration) No (aeration)

c. Do you have grain cleaning equipment available?

Yes No

Please return survey by November 15 by fax: (506) 536-0221 or email to: Theresa.anne.Richards@gmail.com

Maritime Organic Grains Network 2010 Survey

4. Markets

a. Please indicate how likely you are to sell into the different markets listed below:

	Most likely	Possibly	Not likely	Interested
Local (Province)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regional (Atlantic Canada)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ontario	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quebec	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
United States	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Japan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please indicate):__	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

b. How important are the following factors when deciding who your buyer(s) is/are?

	Very important	Important	Neutral	Not important
Price	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Historical Relationship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contracts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shipping and handling requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other?__	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Future

a. What best describes your field crop acreage plans for the next 10 years?

Expand Remain the same Reduce Discontinue Uncertain

b. Is this long-term projection based on:

Market Demand Price Retirement Interest Other factors

c. What new crops are you interested in growing in the future?

d. What crop research do you think would help the sector move forward?

e. The Maritime Organic Grain Network funding is completed at the end of 2010, however ACORN realizes that there is still work to be done. Please indicate educational opportunities you would find most helpful:

	Extremely helpful	Helpful	Neutral	Not helpful
Field tours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Workshops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Newsletter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seed suppliers listing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Survey results	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Market development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thank You!

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