

Emerging Trends in Agriculture

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Emerging Trends in Agriculture

The Northern Alberta Clearinghouse Project is a partnership of northern colleges who each year identify a number of priority research topics. The partner colleges are: Fairview College, Grand Prairie Regional College, Keyano College, Lakeland College and Northern Lakes College. The investigation of the emerging trends in agriculture in northern Alberta was one such priority topic.

Introduction

The past years have been difficult for Alberta farmers. Years of drought followed by years of cool, wet weather have taken a financial toll. To further compound the circumstances, world commodity prices for farm products reached a low not experienced since the 1930's. Farmers have begun to search for ways to alleviate the cyclical nature of their industry.

A number of agencies have undertaken research to find alternative, diversifying products that can be successfully grown in the Canadian prairies. Further research is occurring to locate markets for such products. Agriculture Canada, Alberta Agriculture, college and university faculties and the various stakeholder crop associations have been conducting research on the viability of new crops, methods for value added agri-food industries and the manufacture of fuel sources from grains. At the same time, the consuming public has become more conscious of the possible effects of additives in crops and cattle feed, causing a growth in the demand for organically grown food. This has given rise to new rigorous farming practices and accompanying spin-off activities.

These new activities in agriculture continue to create new practices on the traditional farm and to require new occupational skills in the emerging support industries. This paper will focus on the requirements of organic farming and its spin-off activities, alternative crops suitable for Alberta and, to a lesser extent, agri-tourism.

Methodology

A number of websites provided useful information. Both Agriculture Canada and Alberta Agriculture have extensive postings of research projects, their locations and results of the research where applicable. Several crop associations have also provided reports of new initiatives. A number of organic farming industry associations have websites that post research as well as individual contacts for further information. The website addresses are listed in the Sources section of this paper.

Several very helpful individuals from Alberta Agriculture assisted with information and suggested further contacts. An organic farmer who is also an active member of an organic farming association was interviewed, as was the Executive Director of the Independent Organic Inspectors Association. The Executive Director of Alberta New Crops Association also provided valuable information.

Organic Farming

An organic product is that which is raised, grown, stored and/or processed without the use of synthetically-produced chemicals or fertilizers, herbicides, insecticides, fungicides, or any other pesticides, growth hormones or growth regulators.

The demand for organically grown products is increasing. A Manitoba study reported that retailers and producers believed that in the year 2000 organic produce would have 10 – 15% of the market niche. The Edmonton Journal (May 5, 2001) reported that the numbers of organic farmers are growing at the rate of 38% per year. This is supported by Alberta Agriculture figures that estimate 2001 numbers of producers at 300 – 370, up from 200 in 2000. On July 11, 2001 a representative of Alberta Agriculture in a CBC Radio interview reported a growth of 20% per year in this sector. The Alberta Government has recognized the importance of diversification by naming a New Business Advisor who will assist farmers to make the transition to organic growing. The same interview informed listeners that the growing number of small specialty shops and supermarkets

specializing in organic products are currently purchasing from the United States and Mexico.

In order to market products as organic, the grower must become a certified producer. This is achieved through inspection and certification by an internationally recognized organization. The Organic Crop Improvement Association (OCIA) is the organization most commonly cited in the literature and by organic growers. OCIA International is one of the certifying bodies that have acquired the stringent International Federation of Organic Agriculture Movements (IFOAM) Accreditation needed to export to Europe.

There are four certifying bodies in the province operating under the umbrella organization, Alberta Organic Association. (See Appendix C for Contacts) It takes at least three years and adherence to the principles established internationally before crops can be certified as organically grown. A local inspection is also required. Record keeping must be precise and long-term. Farmers must adhere to the practice of audit control. The practice also requires the farmer to utilize product lot numbers, used by all industry sectors to ensure that a product can be traced back through all handling, even to the field on which it was grown. The Alberta New Crops Draft Business Plan includes the establishment of cost effective organic certification for small producers of new crops in its business plan.

Farmers who plan to switch to organic farming face a steep learning curve. Those farmers who have switched recommend changing in stages because they experienced expensive mistakes in their first several years. Learning effective methods of weed control, for example, is accomplished on a trial and error basis and occurs over years. Also, determining the best approach to crop rotation for optimum production requires considerable research and trials.

Industry standards are ensured by trained third party inspectors for all growing, storage, handling and processing practices. Currently, most inspectors receive their training through Brandon University. This approach involves completing the distance delivery program and attending a weekend residential component. Assiniboine Community College also offers a one week, on-site certification program.

Agri-Tourism

Agri-tourism is relatively new and growing world-wide. Industry activities range from hosting children's birthday parties to integrated restaurant and retail services.

The size of Alberta farms and the resulting operations have become of great interest to European tourists. A number of tour operators could welcome the opportunity to provide their customers with well-organized tours of farms.

The Alberta Bed and Breakfast Association reports that the number of country bed and breakfast establishments is growing. Unfortunately, the organization does not differentiate between rural and urban members, so a firm number is not available.

In response to the growing interest in the subject, Brandon University offers a course in rural tourism. The curriculum incorporates tourism strategies from across Canada. The students are expected to create a "made for Manitoba" rural tourism plan by the end of the course.

The University of Calgary offers an Executive Program in Destination Management designed for senior managers in visitors' bureaus, chambers of commerce, economic development officers and government tourism departments. The program is offered in distinct modules at appropriate times of the year. Students can participate on-line as of 2001.

PaSu Farms, just out of Carstairs, provides a fine example of rural destination tourism. A working farm, it provides a fine restaurant and a gift shop specializing in leather and wool products grown on the farm. Visitors can follow the wool manufacturing process from the sheep of origin to the finished product. In addition to catering to special events such as weddings, the farm also offers accommodation in a chalet on the grounds. A visit to the website of PaSu Farms offers visitors the opportunity to view the on-line catalogue and to shop on-line.

New Crops

The agriculture industry, government departments, industry associations and academics have developed a formal partnership named the Alberta New Crops Network (ANCN). The mission statement of this relatively new organization is “to provide identity, marketing support, education and networking opportunities to our members for the development of the new crops industry in Alberta”. The sector is defined to include culinary, medicinal and nutraceutical herbs, flowers, spices, ginseng, hemp, native species producers, along with value-added participants. Heritage grains commercialization and the native species industry are also included in development plans.

ANCN intends to provide educational and information workshops to interested individuals with the goal of increasing new crop production in the province. As well, the organization will establish a data base of producers, processors, marketers and buyers that will be distributed to interested members of the public.

The organization has included collaboration with educational institutions and those government departments engaged in technology transfer. A related strategy is to facilitate the setting of quality control standards for new crop producers and the industry as a whole.

The Alberta Department of Agriculture has established test plots in the Peace area of 100 different new crops and staff are currently evaluating which crops do well in the growing area. Western Canada is in the preliminary stages of developing the basis for production of many products derived from herbs and spices:

- | | |
|----------------|-------------|
| ✓ Drug | ✓ Medicinal |
| ✓ Culinary | ✓ Perfume |
| ✓ Aromatherapy | ✓ Extracts |
| ✓ Tincture | ✓ Pesto |

The Edmonton Journal reported that a press release from Alberta Agriculture shows that there is a rise in the number of farmers involved in berry production: saskatoons, black currants, wild black cherries and sour cherries. In Alberta, growers produced 670,000 pounds of saskatoon berries, with projections of an increase to 2.2 million pounds by 2004.

Discussion and Training Implications

Organic growing is experiencing a large international expansion. A number of the reports cited in the Sources Section included cautions from the growers that they were unable to keep up with demand. The growers also indicated that embarking on the course of organic growing required strict adherence to prescribed standards and rigorous record keeping. Pest and weed control were named as major issues for growers accustomed to using pesticides. The successful organic grower is knowledgeable about helpful resources, maintenance of standards, crop rotation, pest control and is involved in a growers' network.

Given the popularity of organically grown products, it is probable that farmers who are looking for methods of diversifying would take advantage of locally offered short courses in organic growing. Representatives of Alberta Agriculture expressed interest in co-developing and sponsoring such courses with area colleges.

Training for organic crop inspectors is not available in Alberta. The individuals contacted for information on this subject indicated that, while more inspectors were needed, the prospects of sufficient work for full-time employment were poor. Also, the indications are that shortages are not large at the present time. Several of the organic growers interviewed are also certified inspectors. For example, Mrs. Mihailuk from Athabasca is certified to inspect vegetables, small fruit, grains, hay, pulses, livestock, herbs and spices, medicinals and processed products. Targeting existing organic growers for training and certification could be beneficial.

Destination tourism appeals to some existing farmers. Training for destination tourism with curriculum content addressing bed and breakfast operation, special events hosting and farm tours could become popular among local farm families.

New crops appear to have gained popularity in other provinces in Western Canada. As was indicated above, growers in Saskatchewan and Manitoba are reporting that they cannot keep up with demand. Both Alberta Agriculture and the New Crops Network representatives expressed interest in working with local colleges to develop and deliver seminars in growing and marketing new crops. Alberta Agriculture would like to build on the short courses that were offered in 1999/2000 and deliver more detailed courses in new crops including herbs and spices and medicinal herbs.

International Certification Standards

Excerpts from Section One, International Certification Standards

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Effective Date: July 1, 2001

1.0 Preamble

- 1.1. The following constitute OCIA minimum standards and allowed materials for organic certification, and must be met or exceeded by all applicants seeking to use the OCI trademark.
- 1.2. OCIA certification arises from the following basic principles:
 - 1.2.1. Organic certification is a system of institutionalized trust, allowing consumers to identify and reward conscientious stewards of our natural heritage.
 - 1.2.2. Organic certification is a privilege to be earned rather than a right to be withdrawn.
 - 1.2.3. No one knows the farm system better than a farmer.
 - 1.2.4. Organic production focuses on natural processes and their management: materials and products are an adjunct to, not a replacement for, effective management.
 - 1.2.5. Diversity, interaction, adaptability and competition are characteristic, natural elements to be respected in the organic system.

- 1.2.6. The organic farming system should be structured and managed to ensure that soil lost through erosion and other degradation does not exceed natural replacement rates.
- 1.2.7. The producers, handlers, and consumers depend on processors of organic products to preserve or enhance the original nutritive value for the type of product, while continuing producer efforts to minimize contamination of the product and the environment.
- 1.2.8. The audit trail is an integral part of organic certification.
- 1.2.9. The use of products made from organisms that have been modified by genetic engineering techniques (as defined in the Materials List) is prohibited and is in direct violation of the philosophy and organic intent of OCIA.
- 1.3 OCIA reserves the right to decertify a farm, handling operation, or processing facility if its management is convicted of violating local, state, or federal labor laws or international conventions such as the UN Convention on Human Rights.

Summary of Canadian Organic Certification Standards

Excerpts from Appendix A, International Certification Standards

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Effective Date: July 1, 2001

Below is a brief summary of the "Proposed Canadian Certification Standards for Organic Food (1992)" prepared by the Certification Standards Committee of the Canadian Organic Unity Project (COUP). When these standards receive national approval, the Organic Producers' Association of Manitoba (OPAM) intends to adopt them for its members.

It must be emphasized that this is a summary of the proposed standards only. For an authoritative listing, please refer to the local certifying body, or to the approved standards, when published. Copies can be obtained by contacting:

Dr. Ian Sutherland
Food Production and Inspection Branch
Agri-Food Safety and Strategies Division
Agriculture Canada
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Sir John Carling Building
930 Carling Avenue
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Definition: Organic Product

1. An organic product is that which is raised, grown, stored or processed without the use of synthetically-produced chemicals or fertilizers, herbicides, insecticides, fungicides, or any other pesticides, growth hormones, or growth regulators.

Organic Products Certification Standards

2. A crop or field shall be certified if there has been no use of materials or methods not included on the Permitted Materials List during the year of production and for at least three years prior to harvest. (The Permitted Materials List is a compilation of allowable materials in the organic food production system. This list shall be applied only to the extent that other recommended organic production practices are not possible or feasible or otherwise adequate. Contact your local certifying body for a copy.)
3. Certification may be on a whole farm or on a field-by-field basis. If the latter, all fields of the farm unit must be committed to an ongoing program of soil building and pest management by approved organic methods. This program must be designed to bring 100% of the farm into transition within a maximum of 10 years following the first certification of any portion of that farm. Fields may not be deliberately rotated in and out of organic production and remain certified.
4. No crop shall be sold as "organic" if the same crop is also produced elsewhere on the farm using methods or materials that do not conform to these regulations, unless the farmer can clearly demonstrate to the inspector that there exists the physical facilities to ensure that there is no possibility of crop mixing.
5. In cases where there is a possibility of contamination, there must exist adequate physical barriers or an 8 metre (25 foot) minimum distance between organic crops and the source of potential contamination to maintain the integrity of certified fields. In cases of suspected contamination, the inspector shall have the right to make unannounced visits, take samples and require residue tests.
6. The area or facilities where organic agricultural products are to be grown or processed must be inspected annually in order for these products to be certified for organic status.

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7. Processing facilities shall be certified on a whole plant, specific product, or batch process basis. Processing premises which handle both must separate organic from non-organic products in time and/or space and by pre-cleaning of equipment to the satisfaction of inspectors.
 8. An audit trail must be generated to permit tracing the sources, amounts and management of all inputs, date and place of harvest, and all steps between harvest and sale to the wholesaler, retailer, or final consumer. Furthermore, every producer and processor shall keep and maintain records of all management practices and materials, all purchases and sales, laboratory analyses, diseases, etc. for at least three years.
 9. (a) Production materials and practices shall be stated as "required," "permitted," "regulated," or "prohibited."

(b) "Regulated" materials and practices shall be used only on written application for their use to, and approval thereof by the certifying body.
 10. None of the following materials shall be used for, or on, an organic agricultural product unless included on the Permitted Materials List:

Fertilizer, pesticide, mineral, foliar spray
soil amendment, growth promoter,
post-harvest material,
supplements to regular feed,
animal health products or practices,
and cleaning or disinfecting agents.

Crop Production

11. (a) On-farm crop residues and cultivation of legumes, green manures or deep-rooting plants shall be incorporated in an appropriate multi-annual rotation program.

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11.
 - (b) Application of fresh, aerated, or anaerobic manures from organic holdings on perennials or on crops not intended for human consumption is permitted, but when applied to a crop for human consumption, such crops shall not be harvested for at least four months following the application.
 - (c) Composted manure from any source is permitted, including off-farm crop residues, forestry by-products and food.
 - (d) The application of sewage sludge to fields and crops is prohibited.
 - (e) Synthetically produced seed treatments are prohibited.

Livestock Production

12. Prohibited materials in organic livestock production include:
 - (a) Non-organic feed; intentional manure refeeding; use of feeds containing antibiotics, hormones, plastic roughage, or urea; milk replacer; synthetic growth promoters, including antibiotics, hormones, urea, and trace elements used to stimulate growth.
 - (b) Vaccinations, probiotics; vitamins, parasite control substances, therapeutic doses of antibiotics, and other products and methods used in livestock management may be used only if on the Permitted Materials List or if approved by the certifying body.

Sources

Alberta Barley Commission Annual Report, 1999 – 2000.
<http://www.albertabarley.com/newpage/publications.html>

OCIA International, Inc.
World Headquarters
1001 Y Street Suite B
Lincoln, NE 68508-1172
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Phone: (402) 477-2323
<http://www.ocia.org>

Organic Production of Herbs, Agriculture, Food and
Rural Development, 1996.
<http://www.agric.gov.ab.ca/crops/special/medconf/husband.html>

A Fussy Way to Pay the Bills. Edmonton Journal, September, 9, 2001

Gary Sallows. Assiniboine Community College.
Telephone: (204) 726 - 6600

Organic Growing. Edmonton Journal, May 5, 2001

Hortners, Irene... Large Scale Organic Growing in Saskatchewan.
Cognition: the Voice of Canadian Organic Growers.
http://www.eap.mcgill.ca/MagRack/COG/COG_E_93_03.htm

Mazza, G. and Oomah, B.D. Functional Food Products from
selected Canadian Crops.
http://www.worldfoodscience.org/vol1_1/focus1-1.html

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