

Final Results of the First Canadian Organic Farmer Survey of Research Needs



**Organic Agriculture Centre of Canada
Nova Scotia Agricultural College
Truro, NS**

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Acknowledgements

Thank you to all of the producers who took time to fill in the survey and convey their opinions and insights. The response from so many farmers at such a busy time of year (late winter/spring) was truly appreciated.

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- In **British Columbia**: the Certified Organic Association of British Columbia
- In **Alberta**: Alberta Agriculture and Rural Development
- In **Saskatchewan**: the Organic Crop Improvement Association, Eco-Cert, Organic Producers Association of Manitoba, Pro-Cert and Quality Assurance International.
- In **Manitoba**: the Organic Producers Association of Manitoba, Pro-Cert, the Organic Crop Improvement Association and CSI (Centre for Systems Integration)
- In **Ontario**: the combined assistance of the Ecological Farmers Association of Ontario, the Canadian Organic Growers and the Ontario Ministry of Agriculture and Food
- In the **Maritimes**: the Atlantic Canadian Organic Regional Network

The template for this survey (see Appendix 1) was developed by Brenda Frick in consultation with researchers, government personnel and farmers in Saskatchewan and Andy Hammermeister of OACC. Regional reviews were done by Hugh Martin (Ontario Ministry of Agriculture, Food and Rural Affairs) and Rochelle Eisen (Certified Organic Association of BC). The survey data was entered by Joanne Thiessen-Martens, Kristen Lowitt, Tracy Salisbury, and Roxanne Beavers. The analysis of data and summary report was written by Roxanne Beavers and Kristen Lowitt, with assistance from Ron Pidskalny. The report was reviewed and edited by Andy Hammermeister.

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Agriculture and Agri-Food Canada (AAFC) is pleased to participate in the production of this OACC Canadian Organic Needs Assessment Survey. AAFC is committed to working with our industry partners to increase public awareness of the importance of the agriculture and agri-food industry to Canada. Opinions expressed in this document are those of OACC and not necessarily those of AAFC.



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Table of Contents

List of Tables.....	iii
List of Figures.....	iii
Executive Summary.....	iv
1. Introduction.....	1
1.1. Survey Description	1
1.2. Survey Distribution and Response Rate.....	1
1.3. Respondent Demographics.....	2
2. Research Management	6
3. Top 20 Research & Marketing Needs Identified by Producers across Canada	8
4. Animals	9
5. Plants.....	10
5.1. General.....	10
5.2. Weeds	10
5.3. Insects.....	10
5.4. Disease.....	12
5.5. Other	12
6. Soils	13
7. Ecological Systems.....	14
8. Health and Food Quality	15
9. Marketing, Economics and Processing Needs	16
10. Extension/Technology Transfer	18
10.1. What barriers do you see for the growth of organics?.....	20
10.2. What opportunities do you see for the growth of organics?	20
11. Summary.....	22
12. Appendix 1. Canada Organic Needs Assessment Survey.....	23
13. Appendix 2. Research Need Rankings by Region.....	30
13.1. British Columbia:	30
13.2. Alberta:	30
13.3. Saskatchewan:	31
13.4. Manitoba:	31
13.5. Ontario:	32
13.6. Maritimes (Nova Scotia, New Brunswick, PEI, and Newfoundland):	32
13.7. Québec (taken from CRAAQ 2006):	33

List of Tables

Table 1. Summary of survey respondents by producer category and region. 3
Table 2. Top 20 research needs ratings among all respondents. 8

List of Figures

Figure 1. Average cultivated, pasture/grazing and other acreage among respondents. 3
Figure 2. Certified organic acreage of respondents by agricultural sector. 3
Figure 3. Gross income of respondents. 4
Figure 4. Marketing channels used by respondents. 4
Figure 5. Respondent age and number of years in farming. 5
Figure 6. Research management need ratings by producer categories. 7
Figure 7. Research needs ratings for livestock issues by producer category. 9
Figure 8. Research need ratings for plant issues by producer categories. 11
Figure 9. Research need ratings for soil issues among by producer categories. 13
Figure 10. Research needs for sustainability issues by producer category. 14
Figure 11. Research needs ratings for health and food quality issues by producer category. 15
Figure 12. Research need ratings for marketing issues by producer category. 17
Figure 13. Extension and technology transfer needs ratings. 19

Executive Summary

Over 3700 research needs surveys were distributed to farmers across Canada with a 16% response rate. The top research needs identified in this survey will be used to inform a prioritization process for research projects in different sectors.

Many producers were relatively new entrants to organic agriculture; 66% had 10 or fewer years in farming, and only 17% had been farming organically for longer than 15 years (n=567). Despite the large number of new entrants, most farmers were over the age of 40; only 14% were younger than 40 years of age. The majority of producers were between 40-60 years of age (62%, n=580). Close to 25% of respondents were over the age of 60.

Most producers were interested in having *research conducted on organic farms* (highest priority) or using *farm scale equipment*. There was less enthusiasm for research conducted at *regional research and demonstration farms*. Research conducted on demonstration or government/university research facilities was perceived to not always be representative of organic farm conditions. Producers underlined the need for *relevant, practical, current research projects with wide application*, while many noted that *regional research was needed for their particular crop/location*.

The top rated research needs in production emphasized holistic management systems including rotations, soil quality, ecological interactions and energy use, with pest control also a top issue. Farmers also indicated a high need for consumer education about organic benefits, which needs to be supported by analysis of the quality and nutrition of organic food. The rankings of research needs varied considerably among producers in different sectors (e.g. field crop producers as opposed to producers of livestock or fruits and berries). Field crop producers were more interested in *information on commodity prices, sales volumes, buyers/brokers and market trends and demands* than producers in other sectors.

Parasites were the highest rated issue of concern for livestock producers across Canada. Producers mentioned both *internal and external parasites* for a variety of livestock (primarily cattle, sheep and poultry), including lice, flies, ticks, mange, scours, ringworm, roundworm, pinworm and coccidiosis. Also of interest was livestock breed selection (both modern and heritage breeds) and feed research.

Overall, organic crop producers clearly indicated that research relating to cropping systems and rotations must be emphasized as opposed to development of pest control products. The top four research needs over all sectors and regions related to different aspects of crop rotations:

- *Identifying beneficial crop rotations for specific problems*
- *Understanding soil, weed, insect, and disease interactions in rotations*
- *Managing weeds with rotations (green manures, crop order)*
- *Long term cropping systems research*

Field crop producers were proportionally more interested in these top four rotation topics than were other growers, especially the fruit/berry sector (who mostly grow perennial crops). When the results were analyzed for the 35 producers of exclusively fruits and berries, the top priorities were: *Mechanical weed controls in perennial crops, Enhancing natural insect controls, Biological insect controls, Organically approved fungicides and Organically approved insecticides*.

In the soils category, the top research need related to the effect of rotations on soil. Producers identified *rotations (green manures and crop rotation for soil fertility)* as their most important research subject (also ranked 1st in the whole national survey and in Saskatchewan, Manitoba, and Ontario), followed closely by *soil biology – management to improve existing soil life (e.g. mycorrhizae)* which was 6th overall and rated in the top 8 for every region except BC. Other priorities were not ranked as highly as these top two.

The inadequacy of conventional soil tests for organically managed soils was noted by several producers. Interest was high in soil microorganisms, both for novel biological soil tests and ways of improving the soil biota. Other areas of interest were the use of compost and compost teas, vermiculture, use of local amendments (rock powders, high N organic fertilizers), biodynamic soil management (chromatography), and reduced tillage/no-till in a system with cover crops.

For specific information needs, many producers noted an interest in the three options provided as examples on the survey: soil test fact sheets, preferences of buyers, and nutrient management planning. In addition to those topics, marketing, weed control, pest management and soil building were also listed as important information needed by organic producers.

The most significant barriers to the growth of organics described by the farmers were “the lack of infrastructure” and “production costs”. In terms of infrastructure, many farmers identified deficiencies or challenges with processing facilities, transportation, machinery, marketing structures, and storage as barriers to growth. For small farms, access to processing facilities and slaughterhouses emerged as a prominent challenge.

Many farmers also described the cost of farming as a challenge. High production costs included feed for livestock, labour, organic materials, and the rising land prices. Rising land prices were a particular challenge in BC and Ontario, described by one respondent as “*exorbitant*,” and were mentioned as deterring new, younger entrants to farming. Other barriers included certification and regulations issues, potential contamination issues due to pesticides and genetically engineered crops in the production process, lack of consumer knowledge about organic and its misrepresentation.

The most significant opportunity described by organic farmers is the growing demand and markets for organic products. Many farmers described “*huge consumer demand*,” “*growing consumer awareness and demand*,” “*expanding markets*,” “*better markets, more buyers*” and suggested demand will keep growing as consumers become more educated. Another important opportunity expressed by the farmers was the movement towards local food which is contributing to the growing demand for organic foods.

1. Introduction

The foundation for growth in the organic sector has always rested on the farmers who have brought organic to the forefront of agriculture. The development of organic in Canada rests firmly on the success of the farmers. In considering this, the Organic Agriculture Centre of Canada (OACC) has endeavoured to consult with organic farmers whenever possible to identify barriers and opportunities that can be addressed by Canadian research. The OACC has worked closely with the Expert Committee on Organic Agriculture, which includes representation from across the country and from all sectors of organic, to identify research priorities. In 2007, the OACC received funding from Agriculture and Agri-Food Canada's Advancing Canadian Agriculture and Agri-food (ACAAF) program to inventory organic research in Canada and prioritize organic research needs. A multi-stage project has resulted, involving identification of trends affecting the Canadian organic sector, opportunities and threats arising from these trends, strengths and weaknesses in the organic sector for addressing the opportunities and threats, and finally a research prioritization process arising from the preceding process. A key component of this process has been conducting a national survey of organic producers in Canada, asking them to rate the importance of different areas of research. This report outlines the findings of that national survey and will be complemented by reports for individual provinces or regions.

1.1. Survey Description

A survey was designed based on the known key subject areas requiring research in organic agriculture (Appendix 1). Slight variations in the survey were made for different regions in the country, however, differences were minor. The survey primarily included questions relating to production (soils, crops, pests, and livestock) but also included sections related to production economics, quality and nutrition of organic food, sustainability, design of research and extension needs. Questions also were included to characterize the farmers by their categories of production and demographics.

The respondents were asked for input on as many or as few sections as they desired to fill in. If a farmer chose not to respond to a question, it was not included as part of the analysis. The importance of a statement or question was ranked on a five point scale. Most survey sections included a space for comments. There were some minor differences between versions sent to different provinces; those questions which were not asked in each region are noted with an asterisk (*).

The report is divided into six sections to match the sectors identified by the Expert Committee on Organic Agriculture. The Expert Committee, originally founded by OACC, was established to provide a national forum for exchange of information and scientific advice about research priorities in organic agriculture (see: http://oacc.info/ResearchDatabase/res_priorities08.asp). Two additional sections relating to the execution and communication of research (Research Management and Extension) are also discussed.

1.2. Survey Distribution and Response Rate

With the assistance of our partners, OACC distributed 3781 surveys to organic or transitional producers across Canada. There were 613 surveys returned, corresponding to a **16.2%** response rate. Approximately 60 growers indicated that

they were using organic methods but were not presently certified; the responses from these growers are included in this analysis.

- Maritimes: distributed 169 surveys. 69 total returned = 40.8%
- Alberta: distributed 245 surveys. 56 total returned = 22.9%
- BC: distributed 577 surveys. 97 total returned = 16.8 %
- Ontario: distributed 832 surveys. 147 total returned = 17.7%
- Manitoba: distributed 358 surveys. 54 total returned = 15.1%
- Saskatchewan: distributed 1600 surveys. 190 total returned = 11.9%

There were **613** total respondents (not including ~ 15 late returns). For each sector (i.e. crops, livestock, vegetables, etc.) the analysis included respondents both current producers and those planning to enter the sector in the near future. The analysis of the respondents by sector means that a producer with a mixed farm, for example, could be considered as part of the field crop, livestock and vegetable sectors and their responses would be included in all three sectors. However, their survey results were only included once when all of the data was combined.

In Québec, an assessment of *Research, Innovation and Technology Transfer Priorities in Organic Agriculture* had been prepared by the Centre de Référence en Agriculture et Agroalimentaire du Québec (CRAAQ) in 2006, with representatives from different organic sector groups and the provincial government. Twenty-seven priorities were identified for the organic agriculture sector; seven were noted to be high priority. The Québec priorities are included in full at the end of this document (Appendix 2) or by following the link below:

http://oacc.info/Docs/PRIORIT%C9S_DE_RECHERCHE_CRAAQ_e.pdf

1.3. Respondent Demographics

Almost 2/3 of the respondents produced or planned to produce **field crops**, 260 of whom were from the prairies (SK, MB or AB). Thirty seven percent of respondents grew vegetables and 46% raised livestock (not including dairy). Not all of these vegetable and livestock producers were commercial producers. The three smallest sectors were **dairy** (7%), **herbs and spices** (20%) and **fruit and berry** (31%). There were 35 respondents who produced only fruit/berries (mostly in BC), and 5 who produced only herbs/spices indicating these crops were part of a mixed farm.

The average farm size across all respondents was 743 acres, 622 acres of which was certified organic (83%) (Figure 1). The average cultivated area was 509 acres and a slightly higher percentage of this (80% or 407 ac) was certified organic. Pasture/Grazing and "Other" were also included as categories – the "other" category was used less frequently but had various applications - woodlots, maple syrup bush, wild harvest or perennial fruits/orchards. Farm size by sector was calculated in an inclusive manner (Figure 2). The Field Crop sector, for example, included all producers of field crops regardless of what other crops or livestock they produced. Among the sectors, the certified organic acreage of the farm was greatest for field crop producers followed by livestock producers.

Table 1. Summary of survey respondents by producer category and region.

	All	Field Crops	Livestock	Dairy	Vegetable (incl. grnhse)	Fruit/ berry	Herbs/ spices
	---number / percentage of producers---						
Current producers	-	347	163	35	195	151	98
Plan to produce in the future	-	37	55	7	30	35	24
All respondents:	613	384	218	42	225	186	122
Current + future producers	-	63%	45%	7%	37%	30%	20%
BC	97	8	22	7	58	60	26
Alberta	56	43	23	2	10	6	4
Saskatchewan	190	175	53	4	18	17	19
Manitoba	54	42	24	2	10	6	4
Ontario	147	85	73	22	88	62	49
Maritimes	69	31	23	5	41	35	20

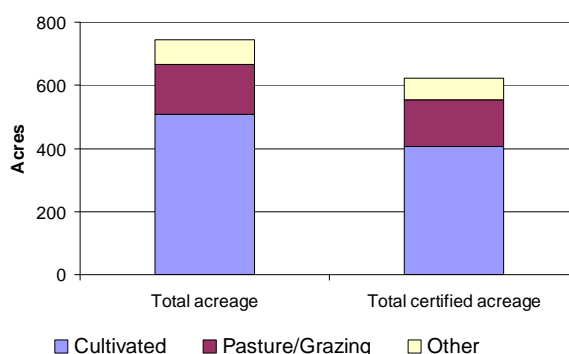


Figure 1. Average acreage by type among respondents.

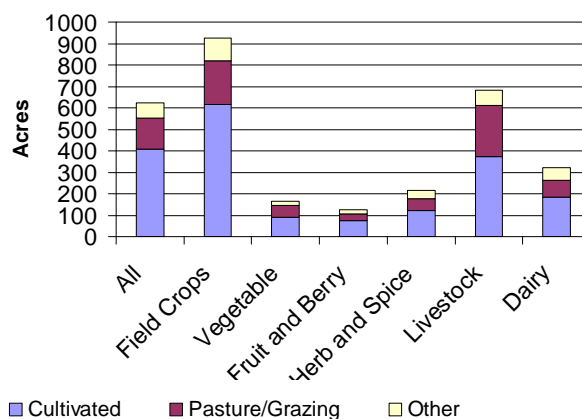


Figure 2. Certified organic acreage of respondents by agricultural sector.

Gross farm income was split quite evenly among categories (n=530). Approximately half of respondents were smaller operators, with gross farm incomes below \$50,000, while half had incomes above that amount. Large operations (>\$250,000) made up 12% of survey respondents.

In BC, Ontario and Alberta, producers were asked to indicate where they marketed their product (n=275). Direct to consumer was the most common response, although larger operations were more likely to sell wholesale or to a processor.

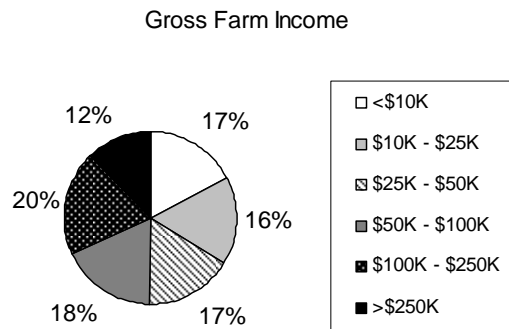


Figure 3. Gross income of respondents.

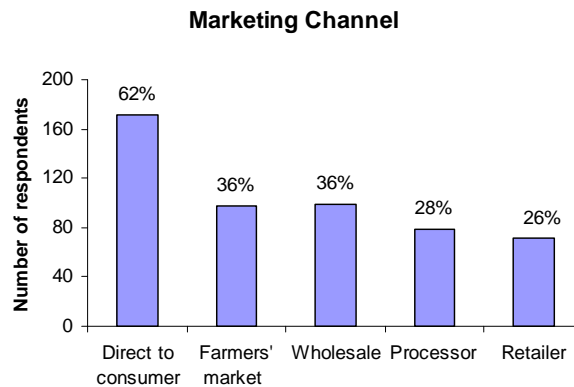


Figure 4. Marketing channels used by respondents.

Note: Each respondent could indicate multiple marketing channels.

Many producers were relatively new entrants to organic agriculture; 66% had 10 or fewer years in organic farming, and only 17% had been farming organically for longer than 15 years (n=567) (Figure 5). Despite the large number of new entrants, only 14% were <40 and 62% were between 40 and 60 (Figure 5). Close to 25% of respondents were over the age of 60. These demographic statistics are very interesting; these 'mature' new entrants are either experienced farmers or they are entering organic production as a 'second career'. In retrospect, we should have asked how many years the individuals had been farming in total.

Approximately 25% of respondents over the age of 50 had been farming for less than 5 years compared with 39% in the 40-49 age range and 55% in the 30-39 range. Considering that 63% of respondents were over the age of 50, new entrants in the older categories should not be overlooked.

Among the new entrants that were <5 years in organic production, 64% grew field crops, 43% raised livestock, 9% raised dairy, 39% grew vegetables, 29% grew fruits and berries, and 22% grew herbs and spice. Vegetables have long been viewed as an easy entry point into organic, however, field crop producers appear also to be an important group. Considering the capital investment involved in field crop production, we can speculate that these producers would be transitioning from existing farming operations, rather than being new entrants to farming.

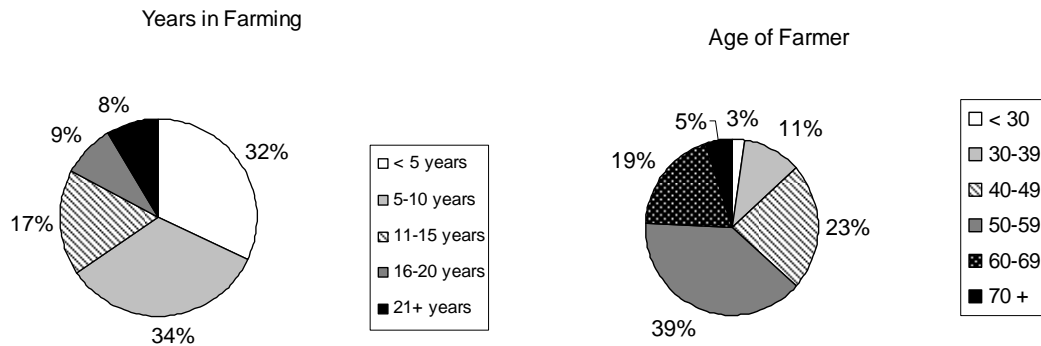


Figure 5. Respondent number of years in organic farming and age.

Seventy seven percent of producers identified themselves as male and 23% as female (n=579). Although not a survey choice, several producers indicated that they were a partnership between a couple or several family members. These answers were divided evenly between genders.

2. Research Management

This portion of the survey attempted to gauge organic producer opinions about where research should be conducted and the level of involvement of producers in research.

Most producers were interested in having *research conducted on organic farms* (highest priority) or using *farm scale equipment*. There was less enthusiasm for research conducted at *regional research and demonstration farms*. Many comments supported work on farms with producers and researchers or students, although some were concerned about practicality of on-farm research. Research conducted on demonstration or government/university research facilities was perceived to not always be representative of organic farm conditions. Producers underlined the need for relevant, practical, current research projects with wide application, while many noted that regional research was needed for their particular crop/location. Several expressed concerns with the high cost of doing research.

In terms of research involvement, most farmers felt that *collaboration with researchers* was the best system for their needs. *Advisory committees* and *research initiated by producers* were ranked slightly lower; *producer board* prioritization was ranked lowest of all. Producers indicated concern about additional demands on their time (in addition to farming and volunteer commitments) and that compensation might be a factor in farmer participation. Several producers underlined the importance of keeping research in the public sector and limiting the influence of agribusiness.

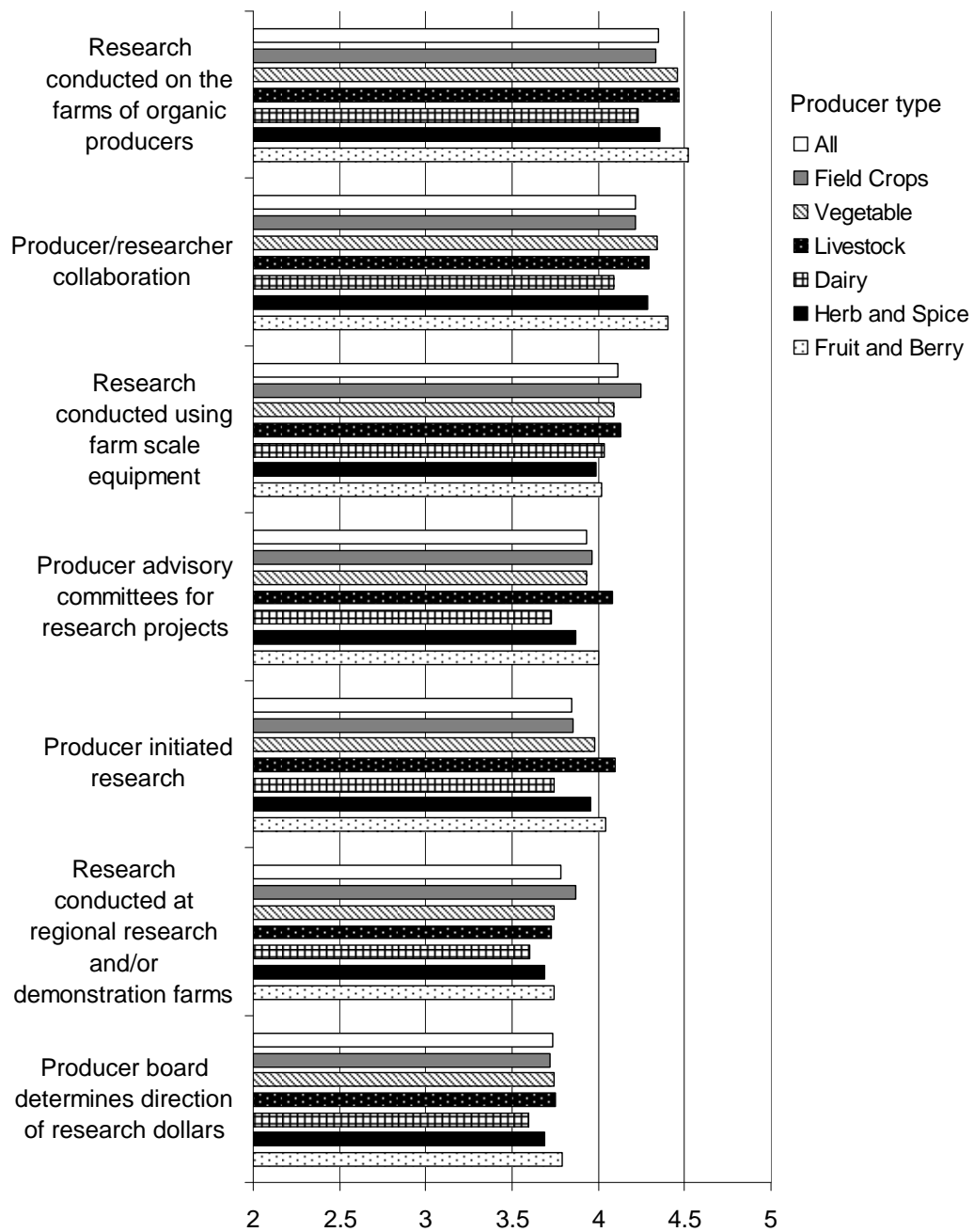


Figure 6. Research management need ratings by producer categories.

Note: The livestock category includes all livestock except dairy production. A rating of 5 indicates a very important need, 1 indicates a less important need.

3. Top 20 Research and Marketing Needs Identified by Producers across Canada

This is a brief overview of the top ranked research needs across all sectors and regions. We will go into greater depth about each of these research need rankings in the following analysis by subject category. The top rated research needs in production emphasized holistic management systems including rotations, soil quality, ecological interactions and energy use, with pest control also a top issue. Farmers also indicated a high need for consumer education about organic benefits, which needs to be supported by analysis of the quality and nutrition of organic food. The top research needs rankings for each province are included in Appendix 2.

Table 2. Top 20 research needs ratings among all respondents.

Rank	Category	Subject area	Average Score ^z	n ^y
1	Soil	Soil fertility and crop rotations	4.52	523
2	Marketing	Consumer education on organic benefits	4.50	525
3	Ecological Systems	Soil quality	4.49	498
4	Plants	Beneficial rotations for specific problems	4.44	529
5	Plants	Ecological interactions in rotations	4.43	535
6	Soil	Biology - improve existing soil life	4.39	541
7	Health & Food Quality	Quality & nutrition of organic foods, overall	4.37	445
8	Plants	Rotations and weed control	4.34	540
9	Ecological Systems	Pesticide reduction	4.32	488
10	Animals	Livestock parasites	4.32	189
11	Marketing	Consumer education on organic standard	4.31	525
12	Ecological Systems	Biodiversity	4.29	475
13	Ecological Systems	Energy use	4.28	475
14	Marketing	Buy local campaign	4.27	512
15	Health & Food Quality	Quality & nutrition of organic field crops	4.24	389
16	Plants	Long term cropping systems research	4.23	482
17	Plants	Cultural disease controls	4.19	514
18	Animals	Livestock breeds	4.17	186
19	Plants	Cultural weed controls	4.17	530
20	Animals	Livestock feed	4.17	175

^z This is the average importance rating of all individuals who responded to the question; 5 indicates a very important need, 1 indicates a less important need. In all cases, responses ranged from a rating of 1 to 5 (i.e. responses ranged from less important to very important). Blank responses to a question were not included in the analysis, hence, the variation in the number of respondents to each question.

^y 'n' is the total number of respondents to this question.

4. Animals

Parasites were the highest rated issue of concern for livestock producers across Canada. In comments, producers mentioned both internal and external parasites for a variety of livestock (primarily cattle, sheep and poultry), including lice, flies, ticks, mange, scours, ringworm, roundworm, pinworm and coccidiosis. The Québec research priority list includes research into sheep and goat parasites.

Breeds were listed as the second most important research need. Producers often mentioned a specific breed, both standard and heritage or less well known breeds, for which they wanted more research. Specifically of interest were: Beef – Angus, Hereford, Limousin, Dexter; Dairy – Holstein, Jersey, Brown Swiss; sheep - Cotswold, Dorset, Polypay, Lincoln, Katahdin; Boer goats and Berkshire pigs.

Research needs related to feed were ranked third most important in this category and the third highest need for all BC producers. Specific issues of concern related to nutrition of grass fed beef and pastured poultry, feed value of novel products (organic oilseed cakes), the nutritional value of different weeds and mineral supplements appropriate for organic.

Others were interested in more general questions about the best breeds of cattle for grazing, poultry for pasture, or a productive non-hybrid meat chicken. Dairy producers were relatively less interested in breeds, and rated grazing and disease as more important research needs. In the Québec assessment, a top provincial priority was to develop control methods to reduce the somatic cell count in dairy cows.

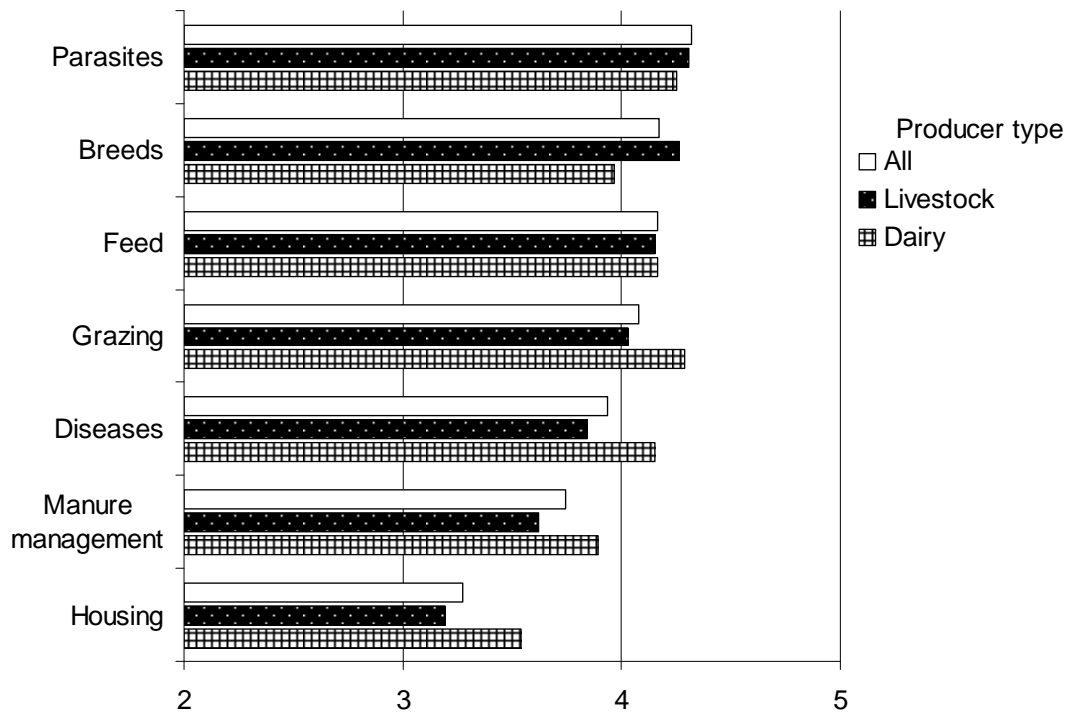


Figure 7. Research needs ratings for livestock issues by producer category.
 Note: The livestock category includes all livestock except dairy production. Rating of 5 indicates a very important need, 1 indicates a less important need.

5. Plants

5.1. General

Overall, organic crop producers clearly indicated that research relating to cropping systems and rotations must be emphasized as opposed to pest control products (Figure 8). The top four research needs over all sectors and regions related to different aspects of crop rotations:

- *Identifying beneficial crop rotations for specific problems*
- *Understanding soil, weed, insect, and disease interactions in rotations*
- *Managing weeds with rotations (green manures, crop order)*
- *Long term cropping systems research*

The first two priorities were ranked fourth and fifth in the analysis of all needs across Canada, and were in the top four needs for producers from Saskatchewan and Ontario. Field crop producers were proportionally more interested in these top four rotation topics than were other growers, especially the fruit/berry sector (who mostly grow perennial crops). When the results were assessed for the 35 producers who exclusively produce fruit and berry, the highest ranked research needs were *Mechanical weed controls in perennial crops*, *Enhancing natural insect controls*, *Biological insect controls*, *Organically approved fungicides* and *Organically approved insecticides*.

5.2. Weeds

Field crop producers were also interested in methods of weed control for *Canada thistle* and *wild mustard*, and in *breeding for organic production*. *Canada thistle* was ranked third in the provincial assessment for both Manitoba and Saskatchewan.

In the comments section, producers listed many weeds which were troublesome. Quackgrass (also known as couch grass or twitch grass) was mentioned across regions and sectors. Pigweed, field bindweed and dandelions were also identified frequently. In the Prairies, wild oat, kochia, millet and leafy spurge were of concern, while Ontario producers were concerned with crabgrass, sow thistle and ragweed. General weed research interests included use of tillage, cover crops, steam, vinegar, and the effect of soil chemistry on weeds.

5.3. Insects

Vegetable producers had a greater interest in *natural* and *cultural insect control*. Herb and spice sector ranked more highly the priorities of *cultural disease controls*, *natural insect controls*. In the Québec assessment, the following two topics were identified as top research priorities: for fruit growers, methods to manage the tarnished plant bug and the strawberry and raspberry weevil; for vegetable growers, methods to manage tarnished plant bug, striped cucumber beetles, cabbage maggots, carrot rust fly, flea beetles and cauliflower cecidomyia.

Prairie grain producers were most concerned with the wheat midge, sawfly, lygus bug, and grasshoppers. Fruit producers (most in BC) had many insect concerns: clearwing moth (identified as a new threat), rosy apple aphid, cherry fruit fly. Soybean aphids, carrot rust fly, flea beetles, Colorado potato beetle, wireworm and striped cucumber beetle were also of concern. More general research interests related to attracting and retaining beneficial insects, the interaction of pests, plant health and soil health, and how low brix level in crops may attract insects.

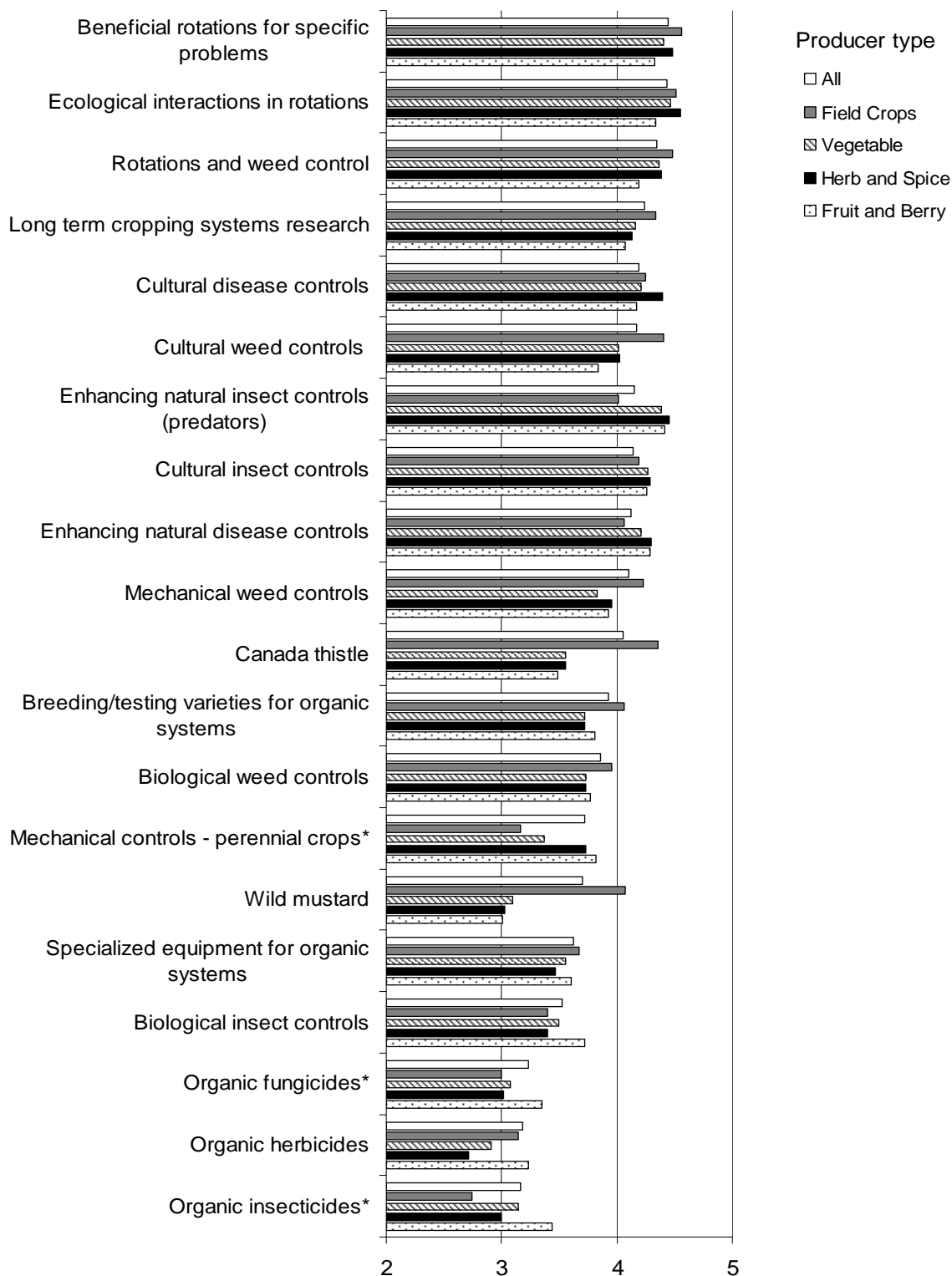


Figure 8. Research needs ratings for plant issues by producer categories.

Note: A rating of 5 indicates a very important need, 1 indicates a less important need.

* Indicates a need that was not included in all provincial surveys.

5.4. Disease

Overall, fewer comments were received in this section. Grain producers were concerned with fusarium, smut, tan spot, and ergot. Vegetable producers noted problems with potato blight and scab, tomato blight, downy and powdery mildew, white rot in alliums, botrytis, anthracnose and viruses. Some interest was noted in breeding disease resistant varieties, plant spacing to reduce disease, and use of compost tea, horsetail spray or effective microorganisms (EM) for disease control. In the Québec assessment, pathogen management in greenhouse production for gray mold and stem canker was noted as a concern, as was developing effective organic seed treatments for field crops.

5.5. Other

While Breeding/testing varieties for organic systems was not highly ranked (12th), the Québec assessment prioritized “Selection of lines of cereal for human consumption (and other grains) adapted to organic cultivation and/or tolerant to pressure from weeds”.

Many comments were received about specific equipment needs although the ‘Specialized equipment’ subject area was not highly rated. Producers echoed the equipment needs that were provided as examples for this question in the survey (weed clippers, chaff collectors, crimpers/rollers and season extension/hoophouse) and also mentioned insect vacuums, harrows, mowers, flammers for weeds and insects and zero-till equipment. Several noted the importance of keeping a focus on equipment needs of small scale producers and mixed farms, while others stated that farmers are best at developing their own equipment.

6. Soils

As with crops, the top research need in the soils category related to the effect of rotations (Figure 9). Producers identified *rotations (green manures and crop rotation for soil fertility)* as their most important research subject (also ranked 1st in the Canada analysis and in Saskatchewan, Manitoba, and Ontario), followed closely by *soil biology – management to improve existing soil life (e.g. mycorrhizae)* which was 6th overall and scored in the top 8 for every region except BC. Other research needs were not ranked as highly as these top two needs.

The inadequacy of conventional soil tests for organically managed soils was noted by several producers. Interest was high in soil microorganisms, both for novel biological soil tests and ways of improving the soil biota. Other areas of interest were the use of compost and compost teas, vermiculture, use of local amendments (rock powders, high N organic fertilizers), biodynamic soil management (chromatography), and reduced tillage/no-till in a system with cover crops.

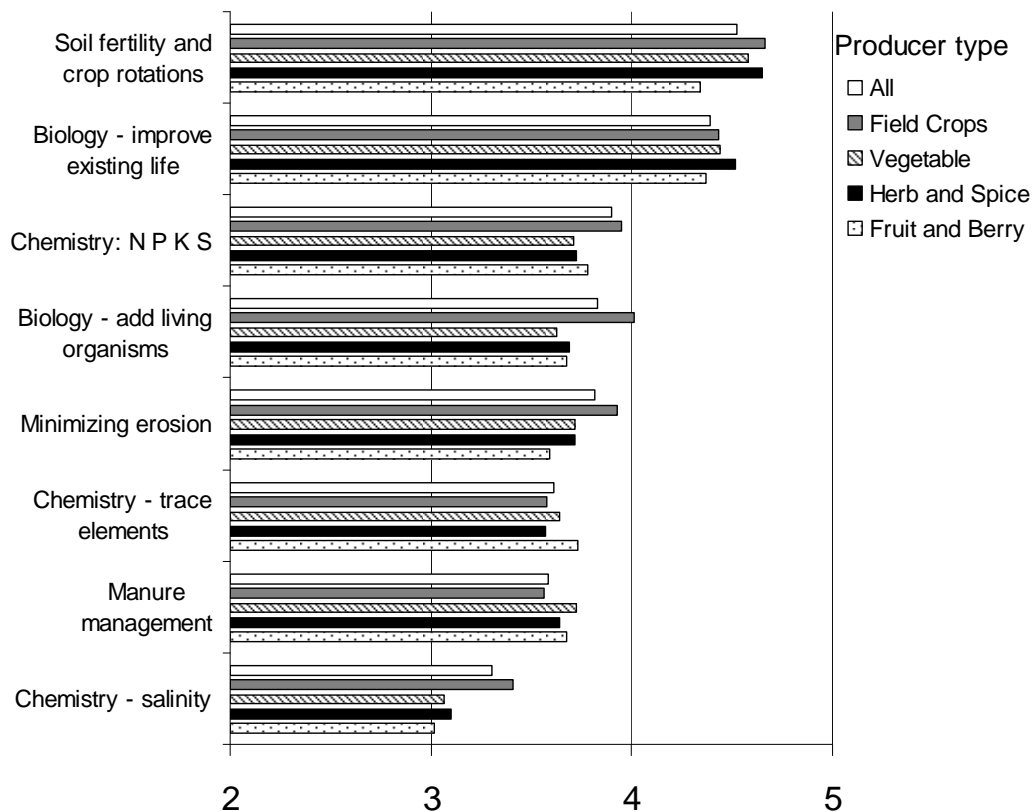


Figure 9. Research needs ratings for soil issues among by producer categories.

Note: A rating of 5 indicates a very important need, 1 indicates a less important need.

7. Ecological Systems

Across sectors and provinces, many producers were very interested in research relating to the sustainability of organic farming systems (Figure 10). In general, these research needs scored highly in the overall analysis (three of the top 14 research needs). BC in particular ranked these needs highly (4 of their top 10). The top four needs as listed above all were quite similar, but soil quality was of slightly greater interest among all producers, and scored highly in the analyses for BC, Ontario, Saskatchewan and Manitoba. Carbon sequestration received a low rating in this category, but comments were received about carbon credits for organic growers. The emphasis on soil quality as a whole as opposed to carbon sequestration indicates that organic producers see the soil as a dynamic system as opposed to just a sink for carbon. Producers wanted whole-system energy / carbon comparisons between organic and conventional farms to be done; also assessments of the energy requirements for imported vs. local products.

In the comments, reduced use of fossil fuels, on-farm energy generation (biodiesel, horse power), and the effect of tillage on organic matter were all of interest. Water quality and conservation was noted by producers across the country. More broadly, the economic and social sustainability of organic farms was felt to be of research interest.

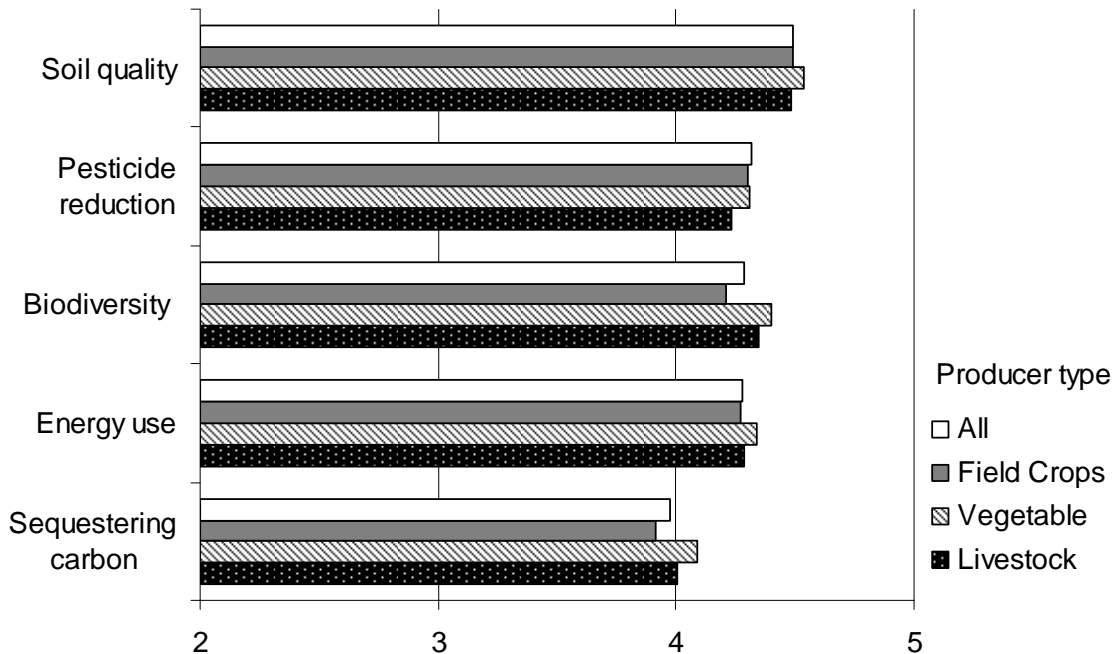


Figure 10. Research needs for sustainability issues by producer category.
 Note: The livestock category includes all livestock except dairy production. A rating of 5 indicates a very important need, 1 indicates a less important need.

8. Health and Food Quality

Quality and nutrition of organic foods scored high in the survey (Figure 11); the 'overall' sub-category was the eighth most important research need across all regions and sectors. The distribution of respondents by sector meant that quality and nutrition of field crops scored more highly than did horticultural and animal products, however, people in the sector of interest were more interested in research for their own crops (i.e. vegetable producers ranked quality and nutrition of horticultural crops more highly than field crops), so there was little benefit to ranking by sector.

Value-added product research scored as slightly less important than food quality and nutrition (ranked 33rd overall). It was of slightly more interest to Field Crop producers than those in other sectors. A similar topic in the next section (Assistance in developing value-added products) ranked 36th overall, but was ranked #8 in the Maritimes. In answer to the question of which value added project would you like to see researched, several producers echoed the examples provided - especially grain cleaning plants and wild oat oatmeal. Across the country, other areas of interest noted were dairy products, milling/baking operations, drying and processing herbs, meat cutting and retailing, organic wool and textiles, and processing for vegetables – coolers/storage, canning, and freezing.

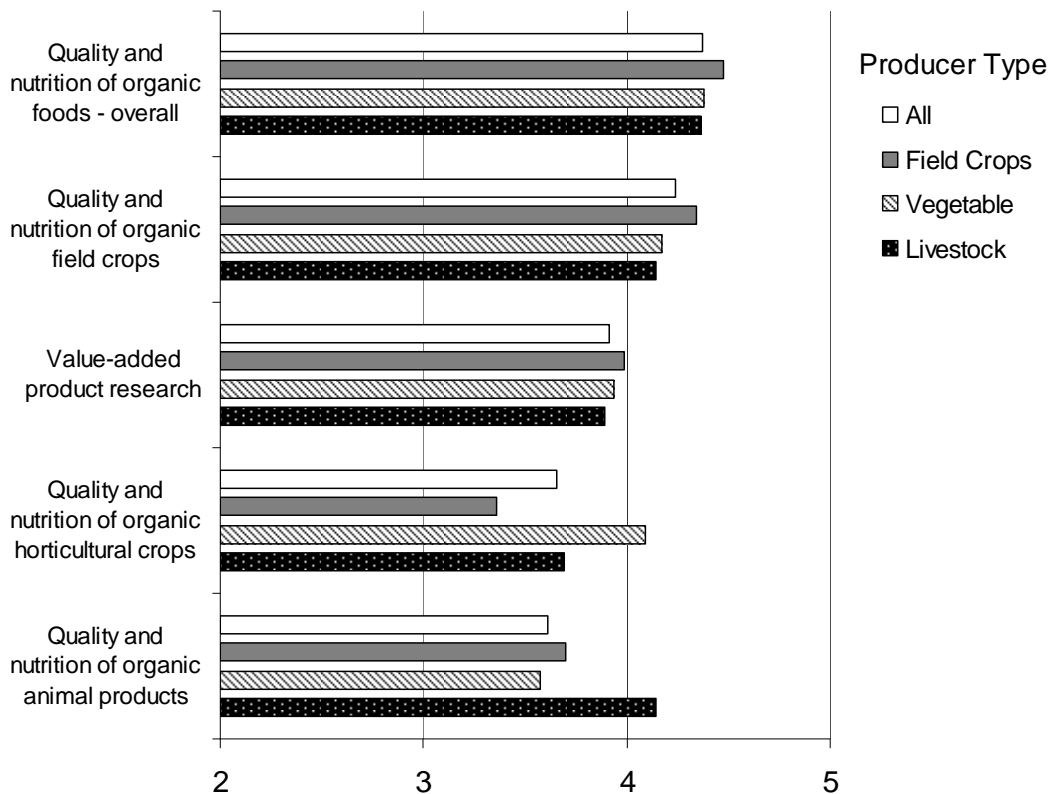


Figure 11. Research needs ratings for health and food quality issues by producer category.

Note: The livestock category includes all livestock except dairy production. A rating of 5 indicates a very important need, 1 indicates a less important need.

9. Marketing, Economics and Processing Needs

This section deals primarily with the marketing, processing and economic analysis needs of the farmers. The ratings among vegetable, fruit and herb & spice producers were all very similar; only data for vegetable producers is shown.

Two priorities related to consumer education came out on top as needs for the marketing section (Figure 12). *Consumer education on organic benefits* and *consumer education on the organic standard* were ranked very highly from producers in all sectors (2nd and 11th in the overall national summary, respectively). Developing a *buy local campaign* was also highly ranked, though more so by vegetable and livestock producers, and growers in the Maritimes, Ontario and BC.

Field crop producers were more interested in *information on commodity prices and volumes, buyers/brokers* and *market trends and demands* than producers in other sectors. These three priorities were in the top 15 of all needs identified by Saskatchewan producers.

Livestock producers were proportionately more interested in *slaughter facilities for organic cattle* and *mobile slaughter facilities* which are not surprising considering they have a vested interest in these issues.

Production economics scored uniformly low compared to other priorities, although field crop and livestock producers were proportionally more interested in economics for their respective sectors. Dairy respondents rated “dairy economics” with an average score of 4.40, indicating that dairy producers were more interested in economics than any other producers.

Comments in this section covered a wide range of topics including the need for testing of organic vs. conventional products to demonstrate benefits to consumers, clear identification of certified products compared to non-certified, requests for funding of certification fees, storage and transport facilities, local processing capacity and the development of cooperative marketing groups. Better market analysis and assessment of consumer needs was also noted as an interest, especially for smaller or niche sectors.

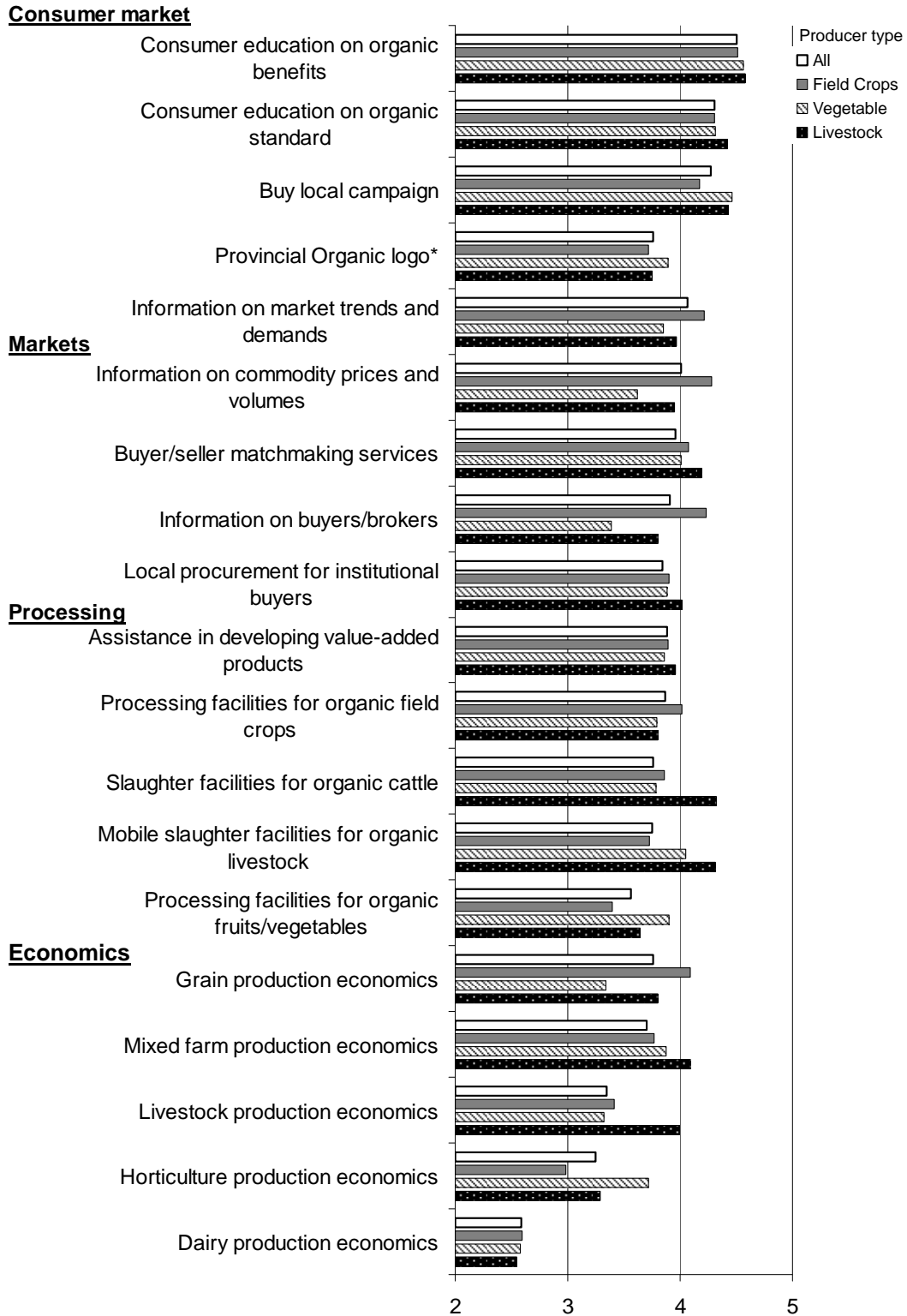


Figure 12. Research needs ratings for marketing issues by producer category

Note: The livestock category includes all livestock except dairy production. A rating of 5 indicates a very important need, 1 indicates a less important need.

* Indicates a need that was not included in all provincial surveys

10. Extension/Technology Transfer

Knowledge transfer is a very important part of agriculture, especially organic agriculture. The majority of producers ranked information that could be accessed at a distance or on their own time ahead of conferences/workshops (Figure 13). College and university level courses ranked lowest, although many comments noted that these would be useful for new entrants into agriculture. *Factsheets* and *websites or email* were the top two ways by which farmers prefer to receive information. Other popular choices were in-person events with a regional emphasis like *field tours, workshops, extension courses* and *conferences*. Producers noted that it was difficult to attend events that were at a distance in the winter or during the busy growing season.

In response to the question “How do you prefer to access information,” the most popular method noted in the comments was the internet. Approximately 25% of respondents to this question preferred accessing information online. An equal number of respondents preferred receiving information by mail and email. Newsletters/factsheets/flyers were mentioned by 10% of respondents as a preferred way of obtaining information, while an additional 10% mentioned books. Approximately 5% of respondents did indicate they prefer to obtain knowledge directly, such as from farm visits or extension personnel. An additional 5% preferred to access information through conferences/workshops/information sessions.

In terms of specific information that farmers would like to have, several producers noted an interest in the three options provided as examples on the survey: soil test fact sheets, preferences of buyers, and nutrient management planning. In addition to those topics, marketing, weed control, pest management and soil building were also listed as important information needed by organic producers.

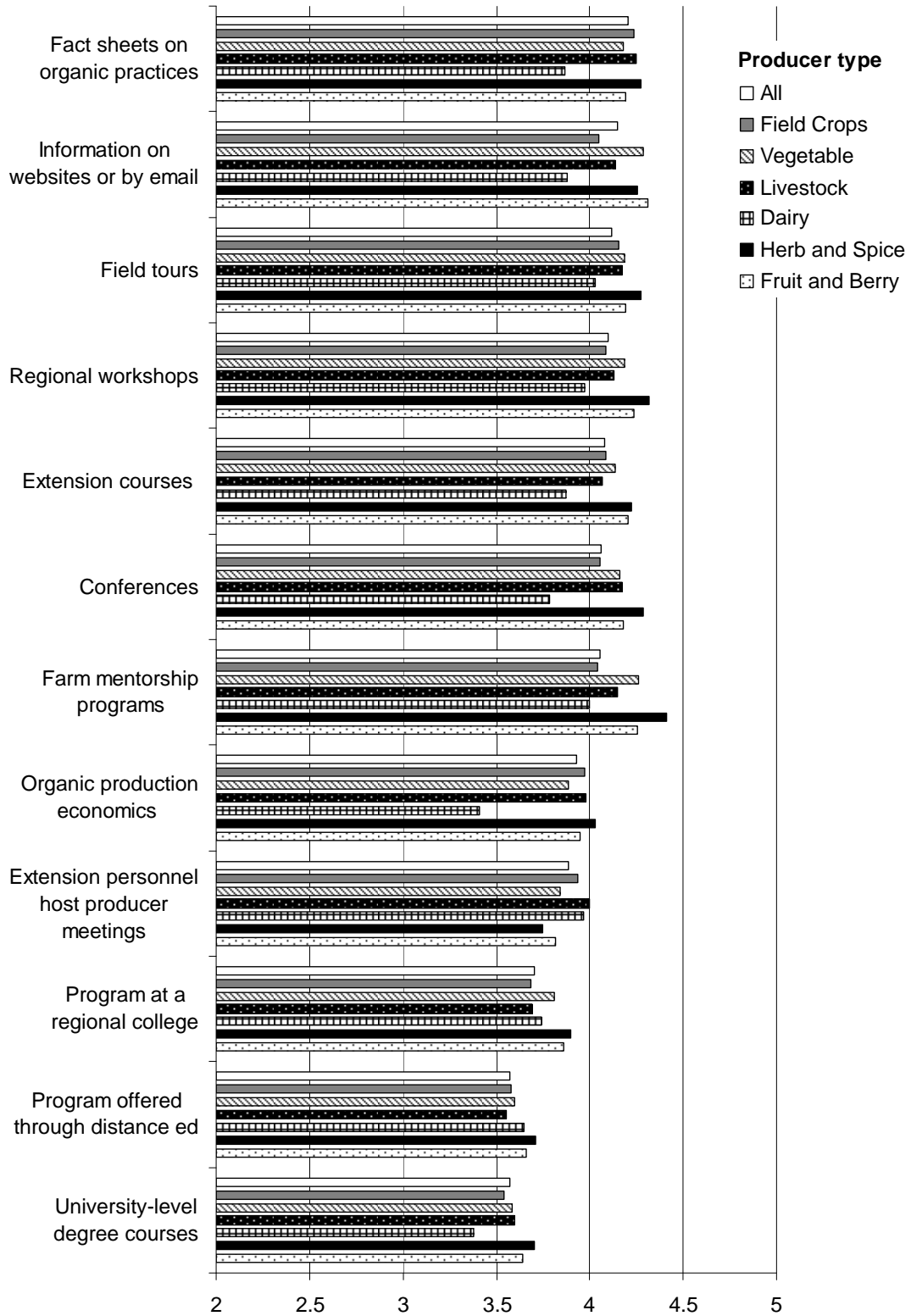


Figure 13. Extension and technology transfer needs ratings.

Note: The livestock category includes all livestock except dairy production. A rating of 5 indicates a very important need, 1 indicates a less important need.

* Indicates a need that was not included in all provincial surveys.

10.1. What barriers do you see for the growth of organics?

The most significant barriers to the growth of organic agriculture described by the farmers were the lack of infrastructure and high production costs. In terms of infrastructure, many farmers identified deficiencies or challenges with processing facilities, transportation, machinery, marketing structures, and storage as barriers to growth. For small farms, access to processing facilities and slaughterhouses emerged as a prominent challenge.

Many farmers also described the cost of farming as a challenge. High production costs included feed for livestock, labour, organic materials, and the rising land prices. Rising land prices were a particular challenge in BC and Ontario, described by one respondent as "*exorbitant*," and were mentioned as deterring new younger entrants to farming. Adding to financial challenges was the cited lack of government funding and subsidies for organic farmers as well as the expense of certification. Slow "*harvest to cash*" flow on farms was also mentioned by some as a further economic challenge.

A variety of challenges also emerged related to certification and regulation. In addition to the cost of certification, some farmers mentioned varying standards and the "*questionable integrity of foreign certification bodies*", particularly with regards to imported 'organic' foods that compete with Canadian organic products in the marketplace. Many farmers were also concerned about corporate involvement in farming, and the efforts of these corporations in "*watering down*" standards. Within Canada, too many regulatory bodies, changing regulations, and the "*red tape*" and paperwork associated with certification were challenges.

Some farmers also mentioned the conventional farming sector, including the use of pesticides and genetically modified seed, as a barrier to organic farming. Many farmers were concerned about biological and chemical pollution of their fields and suggested GMO foods pose a risk to the environment and human health and need to be labeled.

A final important challenge to the growth of organics described by the farmers was the lack of knowledge about organics among consumers and the misrepresentation of organic. Many farmers suggested consumer education about standards, the cost of organic farming, and the benefits of organic needs to be improved. Many farmers suggested there is misinformation about organics among the public and the media confuses people about the values of organics. Others suggested there is "*no protection of the word organic*" and were concerned about the integrity of the organic label.

10.2. What opportunities do you see for the growth of organics?

The most significant opportunity described by organic farmers is the growing demand and markets for organic products. Many farmers described "*huge consumer demand*," "*growing consumer awareness and demand*," "*expanding markets*," "*better markets, more buyers*" and suggested demand will keep growing as consumers become more educated.

The demand for organic products can be connected to growing consumer awareness and education particularly about the environmental and health benefits of organic

foods. Many farmers thought opportunities exist to improve the well being of the natural environment and human health as a result of organic practices and that increasing numbers of consumers and the public more generally are becoming more aware of these potential benefits. Ongoing consumer education was mentioned as an opportunity for continuing to grow organics.

Another important opportunity expressed by the farmers was the movement towards local food which is contributing to the growing demand for organic foods. As one respondent said, *"These [buy local] carry simple concepts strongly connected to organics which consumers understand."* Similarly, another respondent said, *"We all hear of how there is increased demand for organic food. At the same time, sourcing local food is a growing phenomenon."*

Farmers suggested consumers increasingly understand the *"importance of small scale, local, organic food production"* and consumer awareness is increasing through popular authors and Buy Local campaigns. One respondent described the local food movement as an *"impetus"* for the growth of organic. More local food markets may provide opportunities for organic farmers, such as meeting their customers and participating in direct marketing outlets like farmers' markets. This may also encourage community building. For example, some farmers described *"growers and processors working together with educators to develop long term relations with each other and consumers"* and *"going back to the old fashioned way where purchaser and buyer are friends and neighbours."* Other benefits of a more local food system include spending less on fuel and increasing pride in local food production. Many farmers saw continued opportunities for organics in the growth of more local food systems.

Some farmers saw opportunities to improve the economic viability of their own farm operation and small scale farming more generally through organic practices. Some described organics as *"making smaller farms more viable," "saving family farms,"* and *"economically better than chemical farming."* In this way, some farmers saw the rising cost of inputs as an opportunity for growing organic food. As respondents said, *"As costs of inputs continue to trend upward organic will look more reasonable"* and organic farming may be *"a sustainable system in times of scarce energy."*

Lastly, it is of interest to note that in Ontario specifically, some farmers suggested that organic may provide the opportunity for more young people to become involved in farming. Respondents said, *"I think it's a great opportunity for young new farmers with low equity," "it offers young people an entry point for agriculture,"* and there is *"finally a way for young people to get involved."*

11. Summary

As expected, the results of the national survey varied by region and by sector. A larger proportion of respondents from the prairies brought issues relating to field crops to the forefront, notably the need for research integrating soil fertility, and biology with crop rotations and pest management (including weeds). Fruit and berry producers placed greater emphasis on insects and diseases as a priority, while livestock producers emphasized parasite control and breed suitability research.

The producers identified extension bulletins and websites/email as the most effective means of information transfer (as opposed to more formal learning settings). Key barriers to growth were infrastructure and cost of production. Key opportunities were the growing consumer awareness and demand coupled with the local movement. Related to this, farmers identified a need for more effective consumer education/awareness programs.

The demographics of the survey respondents is of interest and potentially concern as a large proportion of respondents were new entrants (<10 years), but the age of the respondents was largely over 50. Further analysis and verification of this trend is required as these demographics have considerable impact on the nature of organic operations new entrants are undertaking, and the turnover rate of producers. High turnover rates will place increasing pressure on mentorship and transition training programs to sustain our current organic production capacity.



12. Appendix 1. Canada Organic Needs Assessment Survey

OACC recognizes that the value in agricultural research and other farm services comes from **meeting the needs of farmers**. The purpose of this survey is to help us to more effectively meet your needs. The results of the survey will

- ✓ give you an opportunity for direct input into the priorities for future funding initiatives
- ✓ help researchers plan their research programs with your concerns in mind
- ✓ help extension staff provide extension materials relevant to your needs

Please answer as many questions as you wish. This information helps us to understand your needs, but if you feel that you do not wish to share some information, or feel that it doesn't apply to you, please skip that question, and go on to the next question.

Your responses to this survey are completely anonymous. Any release of this information will be aggregated to assure anonymity. Please return this questionnaire in the enclosed envelope or fax it to 902-896-7095. If you have any questions, comments or concerns about this process, please contact Margaret Savard, at 902-893-7256 (office) or oacc@nsac.ca.

Thank you for your time and thought in completing this survey.

SECTION A: Products

A1. What organic products do you currently produce? (Check all that apply.)

In Saskatchewan, Manitoba, Alberta and the Maritimes, the options were:

- | | | | | |
|-------------------------------------|---------------------------------------|----------------------------------|----------------------------------|--------------------------------|
| <input type="checkbox"/> Cereals | <input type="checkbox"/> Oilseeds | <input type="checkbox"/> Pulses | <input type="checkbox"/> Forages | <input type="checkbox"/> Fruit |
| <input type="checkbox"/> Vegetables | <input type="checkbox"/> Herbs/Spices | <input type="checkbox"/> Beef | <input type="checkbox"/> Bison | <input type="checkbox"/> Dairy |
| <input type="checkbox"/> Swine | <input type="checkbox"/> Sheep | <input type="checkbox"/> Poultry | Other: _____ | |

In Ontario, the options were:

- | | | | | |
|---|---------------------------------------|---|--------------------------------|----------------------------------|
| <input type="checkbox"/> Fall cereals | <input type="checkbox"/> Hay | <input type="checkbox"/> Vegetables | <input type="checkbox"/> Dairy | <input type="checkbox"/> Poultry |
| <input type="checkbox"/> Spring cereals | <input type="checkbox"/> Pasture | <input type="checkbox"/> Fruit | <input type="checkbox"/> Beef | <input type="checkbox"/> Sheep |
| <input type="checkbox"/> Soybeans | <input type="checkbox"/> Corn | <input type="checkbox"/> Berries | <input type="checkbox"/> Bison | <input type="checkbox"/> Swine |
| <input type="checkbox"/> Pulses | <input type="checkbox"/> Herbs/Spices | <input type="checkbox"/> Greenhouse/hoophouse | Other: _____ | |

In British Columbia, the options were:

- | | | | | |
|-------------------------------------|---------------------------------------|----------------------------------|---|--------------------------------|
| <input type="checkbox"/> Cereals | <input type="checkbox"/> Oilseeds | <input type="checkbox"/> Pulses | <input type="checkbox"/> Forages | <input type="checkbox"/> Fruit |
| <input type="checkbox"/> Vegetables | <input type="checkbox"/> Herbs/Spices | <input type="checkbox"/> Beef | <input type="checkbox"/> Bison | <input type="checkbox"/> Nuts |
| <input type="checkbox"/> Swine | <input type="checkbox"/> Sheep | <input type="checkbox"/> Poultry | <input type="checkbox"/> Dairy (cow, goat, sheep) | |
| <input type="checkbox"/> Greenhouse | Other: _____ | | Other: _____ | |

A2. What organic products do you intend to produce in the near future? (Check all that apply.) (As above for each region)

For the pages that follow, we have asked two types of questions.

- ✓ We would like to know how much interest there is in each type of research. For these questions, please circle the number that indicates how important each is to you as an organic producer, on a scale of 1 to 5
- ✓ We would also like to know of any specific sorts of research or other concerns that you have. Please write in any comments you would be willing to share with us.
- ✓ If you have more comments than will fit, please include another page, or contact OACC directly. Our phone, fax and email contacts are listed above.

Thank you! We really appreciate the time and effort that you give us to help us help you.

NB: on the original survey distributed, the rankings of 1 – 5 were reversed (i.e. 1 was the most important and 5 was the least important)

SECTION B: Production Research (production research is directed to all those areas that help you grow a crop or raise livestock)

		Very		Less	
		Important		Important	
B1. Managing soil fertility and soil quality/health	5	4	3	2	1
Soil Biology – management to improve existing soil life (e.g. mycorrhizae).....	5	4	3	2	1
Soil Biology – adding living organisms (e.g. inoculants)	5	4	3	2	1
Soil Chemistry – N, P, K, S management	5	4	3	2	1
Soil Chemistry – other (specify _____).....	5	4	3	2	1
Soil Chemistry – trace elements	5	4	3	2	1
Soil Chemistry – salinity	5	4	3	2	1
Manure Management.....	5	4	3	2	1
Minimizing Soil Erosion.....	5	4	3	2	1
Rotations (green manures and crop rotation for soil fertility).....	5	4	3	2	1

What other soil research would you like to see? _____

B2. Managing weeds	5	4	3	2	1
Mechanical (tillage) controls.....	5	4	3	2	1
Mechanical (tillage) controls in perennial crops (BC only)	5	4	3	2	1
Biological controls (natural and introduced diseases and predators of weeds)..	5	4	3	2	1
Cultural controls (seeding rates, varieties, cropping management)	5	4	3	2	1
Rotations (green manures, crop order)	5	4	3	2	1
Organic herbicides	5	4	3	2	1
Other (specify _____)	5	4	3	2	1
Designing weed control programs to manage specific weeds					
Canada thistle	5	4	3	2	1
Wild mustard	5	4	3	2	1
Field bindweed (BC only)	5	4	3	2	1
Other (specify _____)	5	4	3	2	1

What other weeds research would you like to see? _____

	Very Important			Less Important	
B3. Managing crop insects pests	5	4	3	2	1
Enhancing natural controls (e.g. encouraging grasshopper predators).....	5	4	3	2	1
Cultural controls (crop rotations, intercrops, crop management)	5	4	3	2	1
Biological controls (e.g. releasing insect diseases or predators).....	5	4	3	2	1
Organically approved insecticides (BC and Ontario only)	5	4	3	2	1

What other insect research would you like to see? _____

B4. Managing crop diseases	5	4	3	2	1
Enhancing natural controls (e.g. encouraging beneficial bacteria).....	5	4	3	2	1
Cultural controls (crop rotations, intercrops, crop management)	5	4	3	2	1
Organically approved fungicides (BC and Ontario only)	5	4	3	2	1

What other disease research would you like to see? _____

B5. Crop rotations	5	4	3	2	1
Understanding soil, weed, insect, disease interactions in rotations	5	4	3	2	1
Identifying beneficial crop rotations for specific problems	5	4	3	2	1
Long term cropping systems research	5	4	3	2	1

What other crop rotation research would you like to see? _____

B6. Breeding/testing varieties for suitability in organic systems	5	4	3	2	1
--	---	---	---	---	---

Which crops would you target for this research? _____

What specific variety or breeding research would you like to see? _____

B7. Specialized equipment for organic production systems	5	4	3	2	1
---	---	---	---	---	---

What types of equipment would you like to see researched (e.g. weed clippers, chaff collectors, crimper/rollers, hoop house, season extension techniques etc.)?

		Very Important		Less Important
Do you raise livestock? If not, please go on to C.	Yes		No	

B8. Animal health and nutrition 5 4 3 2 1
 (For the questions below, please specify the animals (beef, dairy, sheep, etc.) in which you are interested)

- Breeds (specify animal: _____) 5 4 3 2 1
- Parasites (specify animal : _____) 5 4 3 2 1
- Diseases (specify animal : _____) 5 4 3 2 1
- Grazing (specify animal: _____) 5 4 3 2 1
- Feed (specify animal: _____) 5 4 3 2 1
- Handling (specify animal : _____) 5 4 3 2 1
- Housing (specify animal : _____) 5 4 3 2 1
- Manure Management (specify animal : _____) 5 4 3 2 1
- What other livestock research would you like to see? _____

SECTION C: Other Research

- C1. Production economics** (quantifying cost of production, comparing costs of options; identifying new enterprises and ventures) 5 4 3 2 1
- Grain production 5 4 3 2 1
 - Mixed farm 5 4 3 2 1
 - Horticulture production 5 4 3 2 1
 - Livestock production 5 4 3 2 1
 - Dairy production 5 4 3 2 1

Which crops or animals would you like to see researched (e.g. hemp, camelina, carrots, ostrich – **examples not used in ON and BC surveys**)?

Value added research 5 4 3 2 1
 Which value added projects would you like to see researched (e.g. cleaning plant, custom operations, birdseed, wild oat oatmeal – **examples not used in ON and BC surveys**)?

	Very Important			Less Important	
C2. Quality and nutrition of organic foods	5	4	3	2	1
Field crops	5	4	3	2	1
Please specify which crops: _____					
Animal products	5	4	3	2	1
Please specify which animal products: _____					
Horticultural crops	5	4	3	2	1
Please specify which crops: _____					

What other organic food quality research would you like to see? _____

C3. The contribution of organic to sustainability	5	4	3	2	1
Biodiversity (diversity of wildlife and soil organisms).....	5	4	3	2	1
Sequestering carbon	5	4	3	2	1
Energy use.....	5	4	3	2	1
Soil quality.....	5	4	3	2	1
Pesticide reduction.....	5	4	3	2	1

What other sustainability research would you like to see? _____

**SECTION D: Research Management (Where should research be conducted?
 How should organic producers be involved in organic research?)**

D1. Research conducted on the farms of organic producers	5	4	3	2	1
D2. Research conducted at regional research and/or demonstration farms	5	4	3	2	1
D3. Research conducted using farm scale equipment	5	4	3	2	1
D4. What level of organic producer involvement is important to you?					
Producer advisory committees for research projects	5	4	3	2	1
Producer / researcher collaboration	5	4	3	2	1
Producer initiated research	5	4	3	2	1
Producer board determines direction of research dollars.....	5	4	3	2	1

Additional comments? _____

SECTION E: Post Production Needs (includes processing and marketing information)

	Very Important			Less Important	
E1. Information on commodity prices and volumes	5	4	3	2	1
E2. Information on buyers/brokers	5	4	3	2	1
E3. Information on market trends and demands	5	4	3	2	1
E4. Assistance in developing value added products	5	4	3	2	1
E5. Processing facilities for organic field crops	5	4	3	2	1
E6. Processing facilities for organic fruits and vegetables	5	4	3	2	1
E7. Slaughter facilities for organic cattle	5	4	3	2	1
E8. Mobile slaughter facilities for other organic livestock	5	4	3	2	1
E9. Buy local campaign	5	4	3	2	1
E10. Provincial Organic logo (<i>not asked in ON, BC or Maritimes</i>)	5	4	3	2	1
E11. Local procurement for institutional buyers	5	4	3	2	1
E12. Buyer/seller matchmaking services	5	4	3	2	1
E13. Consumer education on organic standard	5	4	3	2	1
E14. Consumer education on organic benefits	5	4	3	2	1

What other initiatives would you like to see? _____

SECTION F: Extension/Technology Transfer (How does research information reach farmers?)

F1. How important are organic extension and education services?	5	4	3	2	1
Extension courses on advanced specific aspects of organic production.....	5	4	3	2	1
Fact sheets on organic farming practices.....	5	4	3	2	1
Information on economics of organic production.....	5	4	3	2	1
Organic information available on websites or by email	5	4	3	2	1
Extension personnel to facilitate specialty producer meetings	5	4	3	2	1
Organic Farm Mentorship programs (experienced organic farmers).....	5	4	3	2	1
Field tours of organic production.....	5	4	3	2	1
Conferences (regionally appropriate examples listed)	5	4	3	2	1
Regional workshops.....	5	4	3	2	1
Organic Agriculture program offered through distance education	5	4	3	2	1
Organic Agriculture program at a regional college	5	4	3	2	1
University-level Degree courses in Organic Agriculture	5	4	3	2	1
How do you prefer to access information? _____					

What specific information would you like to see (soil test fact sheet, nutrient planning, buyers' preferences, etc.)? _____

SECTION G: Barriers and Opportunities for Growth

What barriers do you see for the growth of organics? _____

What opportunities do you see for the growth of organics? _____

SECTION H: Demographics (we ask these questions in order to categorize your results (for instance, are weeds more important to new entrants in organics?))

H1. How many acres do you operate? Cultivated Pasture/grazing Other

acres

H2. How many of these are certified organic? _____ _____ _____

acres

H3. Where does your gross farm revenue generally fall? ___ <\$10,000 ___ \$10,000-
\$24,999 ___ \$25,000-\$49,999 ___ \$50,000-\$99,999 ___ \$100,000-\$249,999
_____ >\$250,000

H4. Where do you market your products? (Asked in AB, ON and BC)

___ Direct to consumer ___ Farmer's Market ___ Wholesale ___ Processor ___
Retailer

H5. How many years have you been an organic producer?

___ < 5 years ___ 5 – 10 years ___ 11 – 15 years ___ 16 – 20 years ___ 21+
years

H6. What is your age? ___ < 30 ___ 30 - 39 ___ 40 - 49 ___ 50 - 59 ___ 60 - 69
___ 70+

H7. What is your gender? ___ male ___ female

H8. What is your soil type? ___ brown ___ dark brown ___ black ___ grey (Asked in AB, SK,
and MB)

Additional Comments: (Is there anything that you'd like to add, that we missed? Add another page if you'd like!) -

Thank you, again, for your comments.

13. Appendix 2. Research Need Rankings by Region

13.1. British Columbia:

Ranking	Section	Project	Average	n
1	Ecological Systems	Soil quality	4.59	75
2	Marketing	Consumer education on organic benefits	4.54	84
3	Animals	Livestock feed	4.52	21
4	Marketing	Buy local campaign	4.46	79
5	Ecological Systems	Biodiversity	4.40	72
6	Plants	Enhancing natural insect controls	4.39	77
7	Marketing	Consumer education on organic standard	4.39	83
8	Soil	Soil fertility and crop rotations	4.38	80
9	Ecological Systems	Energy use	4.34	74
10	Ecological Systems	Pesticide reduction	4.31	80
11	Plants	Ecological interactions in rotations	4.31	72
12	Plants	Beneficial rotations for specific problems	4.29	72
13	Plants	Cultural disease controls	4.24	71
14	Plants	Enhancing natural disease controls	4.23	78
15	Animals	Livestock breeds	4.16	19

5 indicates a very important need, 1 indicates a less important need

13.2. Alberta:

Ranking	Section	Project	Average	n
1	Marketing	Consumer education on organic benefits	4.74	47
2	Animals	Livestock breeds	4.70	20
3	Soil	Soil fertility and crop rotations	4.61	44
4	Animals	Livestock parasites	4.61	18
5	Plants	Rotations for weed control	4.60	48
6	Ecological Systems	Soil quality	4.56	40
7	Plants	Canada thistle control	4.54	48
8	Soil	Biology - improve existing soil life	4.53	49
9	Plants	Beneficial rotations for specific problems	4.52	46
10	Marketing	Information on commodity prices and volumes	4.52	50
11	Animals	Livestock feed	4.50	19
12	Marketing	Consumer education on organic standard	4.49	47
13	Health and Food Quality	Quality and nutrition of organic field crops	4.49	35
14	Ecological Systems	Pesticide reduction	4.47	39
15	Plants	Cultural weed controls	4.47	47

5 indicates a very important need, 1 indicates a less important need

13.3. Saskatchewan:

Ranking	Section	Project	Average	n
1	Soil	Soil fertility and crop rotations	4.56	174
2	Plants	Ecological interactions in rotations	4.54	178
3	Plants	Canada thistle control	4.51	175
4	Plants	Beneficial rotations for specific problems	4.51	176
5	Marketing	Consumer education on organic benefits	4.44	169
6	Ecological Systems	Soil quality	4.44	156
7	Health and Food Quality	Quality and nutrition of organic foods - overall	4.40	148
8	Soil	Biology - improve existing soil life	4.39	174
9	Plants	Cultural weed controls	4.38	177
10	Plants	Rotations for weed control	4.38	173
11	Plants	Long term cropping systems research	4.36	159
12	Ecological Systems	Pesticide reduction	4.36	154
13	Marketing	Information on commodity prices and volumes	4.34	175
14	Marketing	Information on buyers/brokers	4.32	176
15	Marketing	Information on market trends and demands	4.31	176

5 indicates a very important need, 1 indicates a less important need

13.4. Manitoba:

Ranking	Section	Project	Average	n
1	Soil	Soil fertility and crop rotations	4.69	49
2	Ecological Systems	Soil quality	4.67	45
3	Plants	Canada thistle control	4.57	47
4	Soil	Biology - improve existing soil life	4.57	46
5	Plants	Rotations for weed control	4.51	51
6	Plants	Ecological interactions in rotations	4.47	49
7	Plants	Beneficial rotations for specific problems	4.47	49
8	Plants	Cultural weed controls	4.45	49
9	Marketing	Consumer education on organic benefits	4.44	48
10	Health and Food Quality	Quality and nutrition of organic foods - overall	4.43	44
11	Plants	Wild mustard control	4.39	46
12	Ecological Systems	Biodiversity	4.39	44
13	Health and Food Quality	Quality and nutrition of organic field crops	4.38	40
14	Plants	Mechanical weed controls	4.33	48
15	Plants	Long term cropping systems research	4.33	48

5 indicates a very important need, 1 indicates a less important need

13.5. Ontario:

Ranking	Section	Project	Average	n
1	Soil	Soil fertility and crop rotations	4.61	114
2	Plants	Ecological interactions in rotations	4.58	132
3	Plants	Beneficial rotations for specific problems	4.58	131
4	Ecological Systems	Soil quality	4.56	128
5	Marketing	Consumer education on organic benefits	4.54	128
6	Marketing	Buy local campaign	4.49	130
7	Soil	Biology - improve existing soil life	4.49	131
8	Health and Food Quality	Quality and nutrition of organic foods - overall	4.48	108
9	Ecological Systems	Biodiversity	4.46	118
10	Ecological Systems	Energy use	4.45	119
11	Plants	Long term cropping systems research	4.41	115
12	Plants	Rotations for weed control	4.39	138
13	Animals	Livestock parasites	4.39	64
14	Ecological Systems	Pesticide reduction	4.35	119
15	Animals	Livestock breeds	4.34	62

5 indicates a very important need, 1 indicates a less important need

13.6. Maritimes (Nova Scotia, New Brunswick, PEI, and Newfoundland):

Ranking	Section	Project	Average	n
1	Animals	Livestock parasites	4.62	21
2	Marketing	Buy local campaign	4.50	59
3	Marketing	Consumer education on organic benefits	4.39	57
4	Soil	Biology - improve existing soil life	4.32	59
5	Health and Food Quality	Quality and nutrition of organic foods - overall	4.24	45
6	Soil	Soil fertility and crop rotations	4.24	62
7	Marketing	Consumer education on organic standard	4.23	53
8	Marketing	Assistance in developing value added products	4.19	52
9	Plants	Enhancing natural insect controls	4.17	59
10	Ecological Systems	Soil quality	4.16	55
11	Health and Food Quality	Quality and nutrition of organic horticultural crops	4.15	39
12	Animals	Livestock feed	4.13	16
13	Ecological Systems	Biodiversity	4.09	56
14	Marketing	Local procurement for institutional buyers	4.08	51
15	Ecological Systems	Pesticide reduction	4.08	52

5 indicates a very important need, 1 indicates a less important need

13.7. Québec (taken from CRAAQ 2006):

Sectors	Priorities	Type
Fruit and berry	1. Methods for fighting against the plum curculio in orchards.	R
Fruit and berry	2. Methods for fighting against the tarnished plant bug and the strawberry and raspberry weevil.	R
Fruit and berry	3. Control of strawberry patch weeds in the 2 nd year of production: soil covering, mulch, weeding, etc.	I
Fruit and berry	4. Methods for fighting against gray mold (botrytis) and powdery mildew (oidium) in strawberries.	R
Vegetables	5. Develop effective methods for fighting against pests that are difficult to control in organic farming: tarnished plant bug, striped beetles affecting cucurbitaceae, cabbage maggots affecting cruciferae, carrot rust fly, flea beetles, cauliflower cecidomyia.	R,I,T
Vegetables	6. Evaluate the effectiveness of various low-risk products for use in phytoprotection, including hydrogen peroxide, sodium bicarbonate, vegetable purines and compost extracts.	R, I
Vegetables	7. Develop effective weed control methods that are adapted to organic farming.	R,I, T
Vegetables	8. Develop new fertilization strategies for organic vegetable farming.	R, I, T
Greenhouse production	9. Develop criteria for using basic materials for the production of potting soil and of programs for fertilizing transplants that are adapted to different types of soil.	I,T
Greenhouse production	10. Identify indicators of activity in the soil in order to increase the rates of mineralization, thereby making the soil's CEC reserves available quickly.	T
Greenhouse production	11. Define the optimum fertilization strategies for the creation and maintaining of a sustainable system, i.e. that will not produce any surplus (losses into the environment) or nutritional imbalances.	T
Greenhouse production	12. Define the optimum irrigation strategies for different types of soil in order to optimize the diffusion of gases in the soil, soil activity, the efficiency of water absorption by the crop, and to avoid excessive losses into the environment.	R,I,T
Greenhouse production	13. Manage pathogens such as gray mold, stem canker and excess eelworms and pillbugs.	R,I
Economics and management	14. Determine organic vegetable farming production costs.	T
Maple sugaring	15. Determine the effect of sodium hypochlorite when used as a resin channel disinfectant, so it can be approved for use.	R
Maple sugaring	16. Determine the effects of acetic acid in terms of residue left in the finished product when it is utilized as a pot cleaner during the season.	R
Medicinal plants	17. Mechanization of the growth, harvesting and post-harvest processing of medicinal plants with high commercial potential.	I, T
Field Crops	18. Develop new fertilization strategies for crops with high nutritional requirements.	I, T
Field Crops	19. Selection of lines of cereal for human consumption (and other grains) adapted to organic cultivation and/or tolerant to pressure from weeds.	R,T
Field Crops	20. Develop reduced tillage systems for large-scale organic farming.	I, T

Sectors	Priorities	Type
Field Crops	21. Develop seed treatments accepted by organic certification standards.	I, T
Animals	22. Tests on the effectiveness of various natural products in maintaining and restoring the health of animals, particularly in the case of internal parasites affecting ovines (sheep) and caprinae (goats) as well as mastitis among dairy cows.	R, I, T
Animals	23. Develop control methods that make it possible to reduce the somatic cell count in dairy cows.	I, T
Animals	24. Identify and check the sources of feed/ingredients that contain natural vitamins, or order to replace synthetic vitamins in the rations.	R, I
Animals	25. Identify strategies that will make it possible to increase the fertility rate among dairy cows.	R, I
Animals	26. Develop methods of organic management to optimize the growth of beef cattle in the finishing phase.	I, T
Soil	27. Identify indicators of organic activity in soil, in order to improve their management.	T

R – Research

I – Technological Innovation

T – Technology Transfer (extension)

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