Organic Research and Extension

RESEARCH NEEDS ASSESSMENT OF SASKATCHEWAN ORGANIC FARMERS

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Acknowledgements

Thank you to all of the producers who took time to fill out the survey. Your cooperation is sincerely appreciated. I am especially grateful to the many who took time to add suggestions and insights, and additional materials, and to those who took time out of their busy lives to attend a workshop to give us further feedback. As always, it is a delight to work with you.

Several groups helped distribute this survey. The Canada office of the Organic Crop Improvement Association provided us with mailing labels for their membership. Eco-Cert provided an electronic mailing list. Quality Assurance International directed me to their client list online. Pro-Cert and Organic Producers Association of Manitoba mailed out our surveys to their clients and members respectively. I thank them all.

This survey was initiated at the suggestion of Blaine Recksiedler, with of Saskatchewan Agriculture and Food, as a follow up to a previous needs assessment carried out by Saskatchewan Agriculture and Food in the winter of 2000/2001. Many of the questions were taken from that survey. My steering committee reviewed various drafts of the survey and provided helpful comments. This group included, at various stages of this project, Mike McAvoy, Ralph Martin, Graham Scoles, Rick Burton, Dale Risula, Brent Blackburn, Darryl Jordheim, Donna Youngdahl, Bruce Coulman and Andy Hammermeister. Glen Haas also provided helpful comments. I thank them all. I thank Andy, especially, for his detailed reviews of the survey instrument.

The needs assessment process included a series of regional workshops to allow producers to participate more fully in the process, and to discuss research needs directly with researchers in their areas. Many people helped facilitate this process, and I thank them all. Chantal Jacobs and Daphne Gottselig helped with the entire process and deserve special thanks.

- ✓ In Regina: Joanne Thiessen Martens, William May, Garth Johnson, Marion Leniczek, Dean Kreutzer, Brent Blackburn
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- ✓ Kim Tomilin of OCIA SK#6 who invited me to their AGM, and then let me run through a brief workshop process with the producers

I thank Tracy Salisbury, who transferred the survey data from sheets and transcribed comments from flip charts to electronic form. I also thank Debbie Miller, Chantal Jacobs, Joanne Thiessen Martens, Andy Hammermeister and Tracy Salisbury for reviewing this report and suggesting the corrections that improved its quality.

The survey portion of this project was expanded to include a national needs assessment process and will contribute to development of national research priorities. Andy Hammermeister has directed and overseen this process. Ron Pidskalny provided some data analysis and Roxanne Beavers compiled this and several other surveys into a national report. Joanne Thiessen Martens and I compared notes extensively as we developed the Manitoba and Saskatchewan reports, respectively. I thank you all.

Brenda Frick

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Executive Summary

Over 1600 research needs surveys were distributed to farmers across Saskatchewan with a 12% response rate including 125 Rural Municipalities across the province. Approximately half of these were in the brown soil zone and nearly a quarter each in the dark brown and black soil zones.

Most respondents grew field crops (95%). Approximately 38% raised livestock and 19% grew horticultural crops. Many respondents were involved in more than one production sector. Average farm size was 1464 acres, with 1094 of these certified organic. Most land was cultivated, with pasture and other (natural areas, wood lots, slough, perennial orchards, etc.), making up smaller percentages.

Many producers were relatively new entrants to organic agriculture; 72% had 10 or fewer years in organic farming. Despite the large number of new entrants, most farmers were over the age of 40; only 11% were younger than 40 years of age. These statistics suggest that many respondents entered organic farming later in life, either after farming conventionally or as a second career.

The top research needs in crop production emphasized holistic management systems, including crop rotations, managing soils and managing weeds. Rotations for soil building and soil biology were the top concerns in soil research. In comments, producers frequently expressed interest in green manures, rotations and intercropping. Several topics were considered a priority for weed research, including Canada thistle and wild mustard management, and cultural, mechanical and biological controls. Comments included many cultural and mechanical control suggestions, and questions about the potential value of weeds. All aspects of crop rotations were ranked highly. Comments suggested that rotations were the primary management tool for the organic farmer, and expressed the hope that rotations could be designed for specific problems.

Among other production concerns, cultural controls of insects and disease, and breeding and variety testing ranked highly. In comments, producers suggested a great variety of crops that would benefit from breeding efforts targeting organic production systems. More unusual among these were winter crops and perennial cereals.

Few animal related issues rated highly. Parasites and breeds did rank highly among sheep producers. Producers suggested research on the integration of livestock and field crops.

Production economics did not rate highly overall, but grain production and value added research ranked highly within this category. Producers suggested that a number of alternative crops be researched, including camelina, hemp, storage vegetables and fruits. Livestock producers rank mixed farm production and livestock production highly within this category. Several animal products including grass finished beef, poultry, swine, fish, and alpaca were mentioned. They also identified a wide range of value added research topics, such as cleaning plants, wild oat oatmeal, cooling and storage of fruits, various emerging products and livestock slaughter facilities.

Food quality was ranked highly, especially for field crops. Several specific foods were mentioned: oat, wheat, flax, beef, vegetables and others.

Respondents considered environmental sustainability as a research priority. They were especially concerned with soil quality, pesticide reduction, energy use and biodiversity.

Overall, producers were most interested in having research conducted on farm, with farm scale equipment.

In post production needs, respondents identified consumer education on organic benefits, and market information as primary concerns. Livestock producers highlighted the need for slaughter facilities; horticultural producers, the need for processing facilities.

Respondents identified factsheets as their top priority in extension and technology transfer, and commented that online sources were important to them.

Saskatchewan producers identified a number of barriers to the growth of organics. They struggled with outside forces: skeptical farmers, hostile detractors, and chemical and biotechnology companies. They found regulations frustrating, and they had a number of marketing issues primarily related to an immature infrastructure. A few identified production issues as barriers.

Overall, Saskatchewan respondents were overwhelmingly optimistic about the future of organics. They saw tremendous growth in consumer awareness and consumer demand. Some of the production and infrastructure issues are being addressed.

Predictably, survey results from Saskatchewan had marked similarity to those from the other Prairie Provinces. A majority of respondents grew field crops on large acreages. Rotations, weeds and soil fertility were primary production concerns. Food quality and environmental sustainability were also important. The perception of barriers differed somewhat, but there was an overwhelming optimism for the opportunities of the future.

Many of the priorities of prairie producers are also priorities nationally. Differences presumably reflect the emphasis of field crops on the prairies, and the greater emphasis on small scale horticultural or livestock operations with local markets nationally.

1. Introduction

In 2001, organic farmers identified a number of research needs. Top priorities in production research and development were managing soil fertility and quality, studying crop rotations and managing weeds.

In response to this need, Saskatchewan Agriculture and Food funded a number of research projects, including a University of Saskatchewan project headed by Diane Knight and Steve Shirtliffe on soil fertility and weed management.

Top priorities in marketing were the need for an internationally recognized certification system, market insight, consumer education and dedicated organic processing facilities.

Organic agriculture is a rapidly growing sector within agriculture. By 2005, the initial research projects were completed and a mandatory organic standard was in the works. A new survey was needed.

In 2006, Saskatchewan Learning funded a Learning Needs Assessment which included a survey process. As it was not possible to coordinate the research needs process with the learning needs process, we delayed the survey until the fall of 2007. We had planned to kick off the survey at a Saskatchewan Agriculture and Food research workshop, but a winter election delayed this to February 2008.

OACC, with funding from Agriculture and Agri-Food Canada's Advancing Canadian Agriculture and Agri-food (ACAAF), expanded the Saskatchewan survey to include most provinces throughout Canada. Reports are available on the national results, and will soon be available for individual provinces or regions.

This report summarizes the findings of the Saskatchewan survey and workshops. It is complemented by reports for other provinces, and by the national report. Numbers reported here may differ slightly from the results presented for Saskatchewan in the national report. This is the result of including late surveys in the current report, and also of differences in groupings (for instance there were not enough dairy producers in Saskatchewan to analyze them as a separate group).

Where appropriate, this report follows the format of the OACC National Report, even sharing entire passages. This facilitates comparisons of Saskatchewan data with the national results. In other areas, this report follows more closely to the format of the survey instrument itself. The national study and other provincial reports can be found at www.oacc.info.

1.1. Survey Description

The survey was modeled on the 2001 Saskatchewan Agriculture and Food survey. Questions were redesigned to ask more detail or to reflect changes in the intervening years. The survey focused on production, including soils, crops, weeds, livestock, but included a larger range of topics such as sustainability and marketing (Appendix 1). This report deals with these major topics, corresponding to the organization of the survey.

Producers were asked to rate the importance of various types of research, from 1 to 5. Each set of questions included room for comments. Producers were also asked production and demographic questions, to aid in interpreting their responses. We asked producers to respond

to as many or as few sections as they wished. In our analysis, we did not include those questions to which producers did not respond. In this report, the number of producers who responded to a question is referred to as “n”.

1.2. Survey Distribution and Response Rate

With the assistance of our partners, we distributed 1600 surveys to organic or transitional producers in Saskatchewan. There were 191 surveys returned, corresponding to a 12% response rate.

1.3. Respondent Demographics

Respondents came from 125 Rural Municipalities in Saskatchewan. They are spread throughout Saskatchewan; no RM was represented by more than 4 respondents.

Approximately half of the respondents were from the brown soil zone, with nearly a quarter in the dark brown and a quarter in black or grey zones (Figure 1). Producers of horticultural crops differed somewhat from other producers, with fewer respondents in the brown soil zone and more in the black (Figure 2).

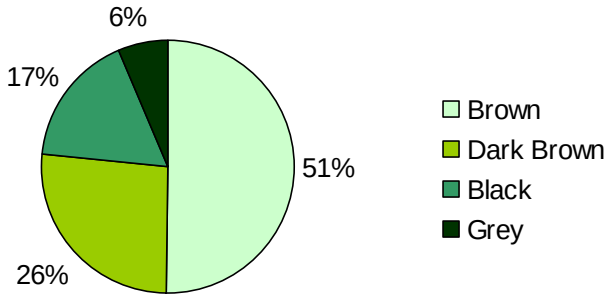

Figure 1 - Soil zones of respondents

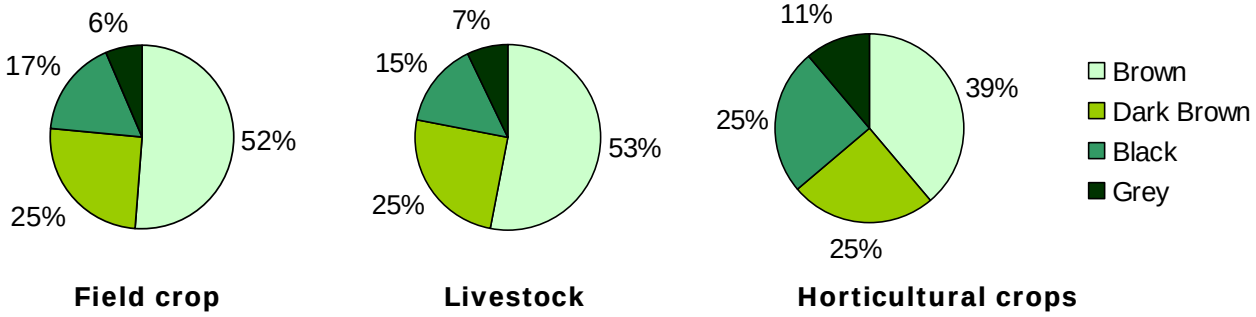

Figure 2 - Soil zones of respondents by agricultural sector

Analyses are presented for all producers, and for 3 sectors: field crops, horticultural crops and livestock. Each of the sector analyses includes all producers who indicated that they currently produce or intend to produce products in that sector. All those who answered yes to “Do you raise livestock?” are included in the livestock sector as future producers, whether or not they

checked off specific animals in the demographic section. Some respondents chose to list the plants or animals they produced in the "other" category. Responses to "other" production were sorted as follows: cereal included oats, barley, Kamut, wild rice, pearled grains, and durum; oilseeds included hemp; pulses included chickling vetch; forages included alfalfa, alfalfa seed and seeds for sprouting. Cherries were included with fruit. Vegetable and flower seeds were included with vegetables. Eggs and chickens were included in poultry.

The analysis of the groups by sector means that a producer with a mixed farm could be considered as part of the field crop, livestock and horticulture sectors and their rankings would be considered for all three sectors. However, their answers would only be considered as one response in the analysis of "all" sector data combined.

Over 95% of the respondents produced or planned to produce field crops (Table 1). Cereals dominated field crops, with 97% of respondents who grew field crops growing cereals. Surprisingly, far more respondents indicated that they grew forage than indicated they had livestock. Pulses were grown by fewer producers than oilseeds or forages.

Table 1 - Summary of 191 survey respondents by sector and product

	Current Producers	**Future Producers***	**Current and Future Producers**		
	number	Number	number	% of all	% of sector
All			**191**	**100%**	
Field crops	**182**	**0**	**182**	**95%**	
Cereals	174	3	177		97%
Oilseeds	100	17	117		64%
Pulses	84	16	100		55%
Forage	99	13	112		62%
Horticulture Crops	**25**	**12**	**37**	**19%**	
Fruit	11	7	18		49%
Vegetables	14	4	18		49%
Herb/spice	10	9	19		51%
Livestock	**34**	**39**	**73**	**38%**	
Beef	26	22	48		83%†
Bison	2	1	3		5%†
Dairy	0	2	2		3%†
Swine	4	5	9		16%†
Sheep	5	0	5		9%†
Poultry	6	8	14		24%†
Honey	1	0	1		2%†

*includes only those who indicated no current production, but plans to produce in the future

†Although 73 livestock producers are recorded, 15 answered "yes" to "do you have livestock?" but did not indicate species. These percentages are of the 58 producers who indicated the species of their livestock.

The livestock sector was next highest, at nearly 40% of all respondents (Table 1). The number of future organic livestock producers in this survey was as high as the number of current organic livestock producers, suggesting that certified organic animal production could double. Beef animals dominated livestock production, with some interest in poultry, swine and sheep.

The horticulture sector included nearly 20% of respondents (Table 1). Again, a relatively large proportion of the sector indicated future production, suggesting that this sector has growth potential. Among horticultural respondents, most grew products in more than one horticultural category (i.e. vegetables, fruit, and herbs).

Approximately half (51%) of respondents who grew field crops grew field crops only. Only one respondent indicated only livestock production, and only 2 respondents indicated only horticultural crops. The rest of responses indicate some form of mixed farm. Usually those who produced horticultural crops or livestock also produced field crops (89% and 96% respectively). Nearly half (46%) of those who indicated that they produced horticultural crops also produced livestock.

The average farm size across all respondents who reported acreage was 1464 acres, 1094 acres (75%) of which was certified organic (Figure 3). The average cultivated area was 1093 acres and a similar percentage of this (79% or 860 ac) was certified organic. The average area devoted to pasture or grazing was 252 ac, 148 of which was certified organic (59%). "Other" included on average 120 ac, 85 of which were certified organic (71%). This includes natural areas, sloughs, woodlots, wild harvest or perennial fruits/orchards.

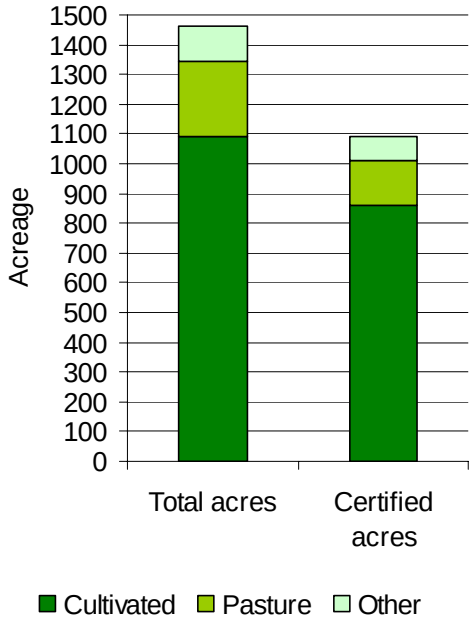

Figure 3 - Average acreage by land use type among all respondents

Farm size by sector was calculated in an inclusive manner (Figure 4). The horticulture sector, for example, included all producers of horticultural crops regardless of what other crops or livestock they produced. Among sectors, the average farm size was largest for livestock producers, at 1210 certified organic acres, followed closely by field crop producers at 1122

certified organic acres. Farms producing horticultural crops were smallest, averaging 875 certified organic acres.

All sectors had the largest proportion of their land in cultivated acres. The livestock and horticulture respondents had more pasture land (23% each relative to 14% for field crop respondents); horticulture respondents had more "other" land (13% relative to 8% for field crop respondents and 7% for livestock respondents), perhaps indicating land in perennial fruit crops.

Figure 4 - Certified organic acreage of respondents by agricultural sector

Gross farm income (Figure 5) ranged across all categories. Approximately half of respondents had between $50,000 and $250,000 in gross income. Operations with income below $50,000 made up approximately 40% of respondents; operations with income over $250,000 made up less than 10% of survey respondents.

Gross income levels were similar for the field crop and livestock respondents, but somewhat lower for the horticulture respondents (Figure 6).

Many respondents were relatively new entrants to organic agriculture; 72% had 10 or fewer years in organic farming, and only 12% had been farming organically for longer than 15 years (Figure 7). Despite the large number of recent entrants, over 40% of respondents were in their 50s. Nearly equal numbers were older or younger than the main age group.

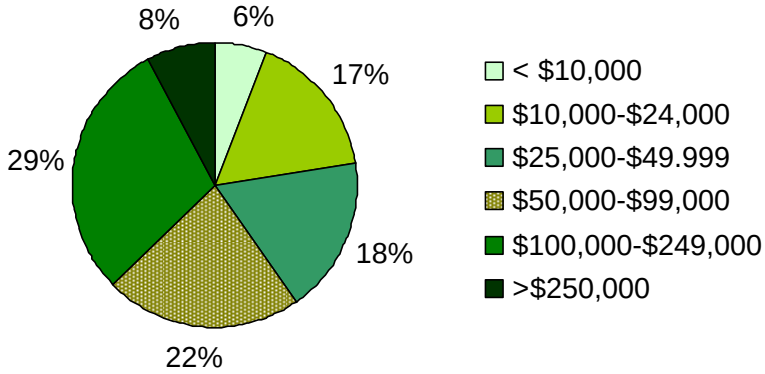

Figure 5 - Gross income of respondents

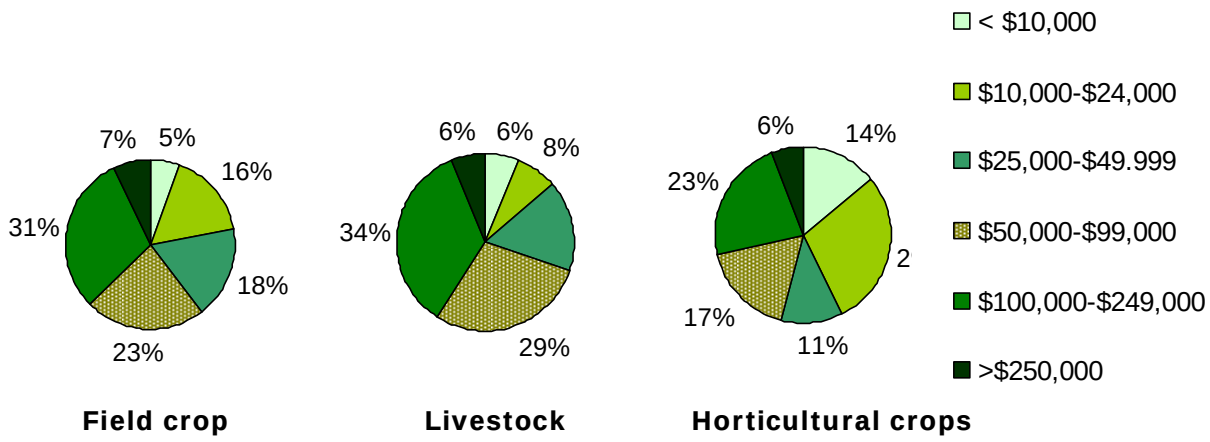

Figure 6 - Gross income of respondents by agricultural sector

Results were similar for respondents who identified themselves as producers of field crops, livestock or horticulture (results not shown), except that no respondents indicated that they had more than 20 years experience in organic horticulture; none over the age of 70 produced horticulture products.

Overall, 87% of all respondents identified themselves as male and only 8% as female. Five percent of respondents included a partnership of both genders. These percentages applied to field crop respondents as well. Women were better represented among livestock respondents (10% female; 7% as partners) and among horticultural respondents (16% female, 8% as partners).

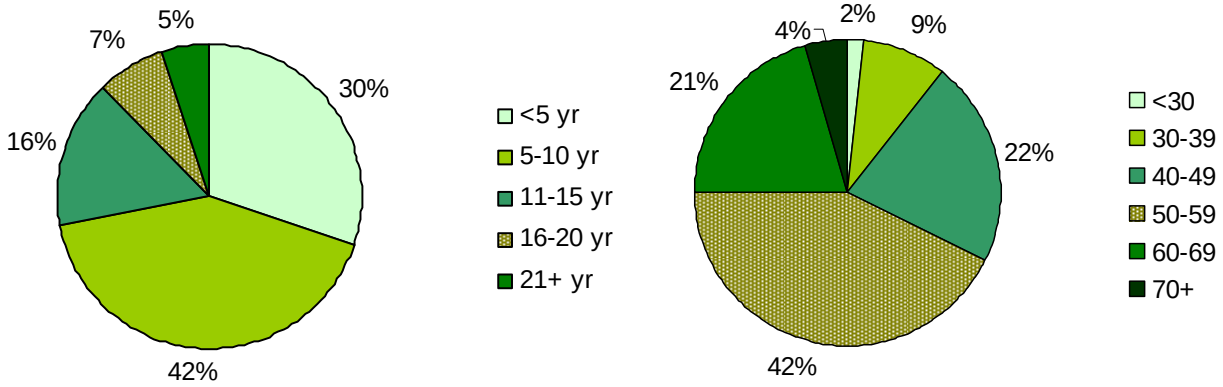

Figure 7 - Respondent age and number of years in farming for all respondents

2. Production Research

We asked about 11 major subject areas of research, each with a number of specific topics within them. When all responses were considered, the top production research areas were crop rotations, managing soil fertility, quality and health, and managing weeds (Table 2).

The survey asked producers to rate the importance of issues from one to five. Not all respondents answered every question. Both the rating and the number of responses can be seen as an indication of the importance of an item. Only about a third of respondents who had livestock responded to the animal health question. Among these respondents, it ranked with the top concerns.

Respondents were also concerned with the broader context of organic production. They rated research into food quality and nutrition, and environmental sustainability highly.

Table 2 - Importance of production research categories among all respondents

Research area	Average of score*	N†
Crop rotations	4.63	165
Managing soil fertility and soil quality/health	4.61	173
Managing weeds	4.58	169
Animal health and nutrition	4.52	23‡
Quality and nutrition of organic foods	4.40	149
Contribution of organic to sustainability	4.34	146
Managing crop insect pests	4.16	162
Breeding/testing varieties for suitability in organic systems	4.16	147
Managing crop diseases	4.08	157
Production economics	3.90	153
Specialized equipment for organic production systems	3.79	135

*'5' indicates an issue of top importance, while '1' indicates an issue with very little importance.

†Blank responses to a question were not included in the analysis. 'N' is the total number of respondents to this question

‡Producers were asked to answer this question only if they had livestock

Ratings for specific topics were compared (Table 3). Not surprisingly, many of the top ranked topics are aspects of the top ranked categories.

- ✓ Three of the four highest rated topics were aspects of crop rotations.
- ✓ Seven of the top 20 topics mention weeds. Designing Canada thistle management strategies ranked 3rd.
- ✓ Four of the top 20 topics mention soil.
- ✓ Pesticide reduction and energy use were high rated environmental concerns.
- ✓ Field crops were the only area identified within food quality to rank in the top 20.
- ✓ Parasites were the only animal issue to rank in the top 20.

Table 3 - Top 20 production research areas among all respondents

Rank	Research area	Average score*	n†
1	Rotations for soil fertility	4.57	175
2	Understanding soil, weed, insect, disease interactions in rotations	4.55	180
3	Designing weed control programs for Canada thistle	4.52	176
4	Identifying beneficial crop rotations for specific problems	4.51	177
5	Soil quality	4.44	157
6	Soil biology - management	4.39	175
7	Cultural weed controls	4.39	178
8	Rotations for weed control	4.38	175
9	Long term cropping systems research	4.37	160
10	Pesticide reduction	4.37	155
11	Mechanical weed controls	4.31	175
12	Cultural insect controls	4.31	167
13	Quality and nutrition of Field crops	4.30	138
14	Strategies for Wild mustard control	4.27	163
15	Energy use	4.23	148
16	Cultural disease control	4.21	168
17	Managing crop insect pests	4.16	162
18	Breeding/testing varieties for suitability in organic systems	4.16	147
19	Animal Parasites	4.15	41‡
20	Biocontrol of weeds	4.13	172

*'5' indicates an issue of top importance, while '1' indicates an issue with very little importance.

†Blank responses to a question were not included in the analysis. 'n' is the total number of respondents to this question

‡ This topic ranked only by livestock producers

In workshops as well, an integrated approach that includes crop rotation, soil quality and weed management was considered a priority. Topics within this paradigm were consistently at or near the top when priorities were ranked.

2.1 Soils

Rotations (green manures and crop rotations for soil fertility) ranked highest among soil concerns (Figure 8). Rotation was the highest ranked topic over all research areas as well. Soil biology topics (managing for the existing soil organisms and adding more soil organisms) ranked next. Nitrogen (N), phosphorus (P), potassium (K), and sulphur (S) management was also seen as an important concern.

The top 4 soil topics were seen as the top concerns for all sectors. Sectors differed slightly in the ranking of their secondary concerns. Manure management was predictably more important for livestock producers. Trace elements and salinity were of more concern to horticultural producers.

Comments on other soil research indicated a high level of interest in green manures, rotations and intercropping. Suggested green manure topics include volunteer crop and weed green

manures, grazing green manures, combining green feed and green manure, greenhouse gas budgets for green manures relative to N fertilizer use, nurse crop options for clovers, and use of green manure replacements such as dehydrated alfalfa pellets. Some respondents wanted a better understanding of green manures in general, including the relative nutrient benefits and possible disadvantages of different crops and varieties, how often to green manure, break down rates, drought proofing soil by adding organic matter, specific green manure recommendations for different soil conditions. Other respondents asked about intercropping, specifically where one crop was the cash crop, and the other provided soil benefits. Other respondents asked for research on the sequence of crops to improve nutrient demand and supply. Soil biota and sodium were specifically mentioned.

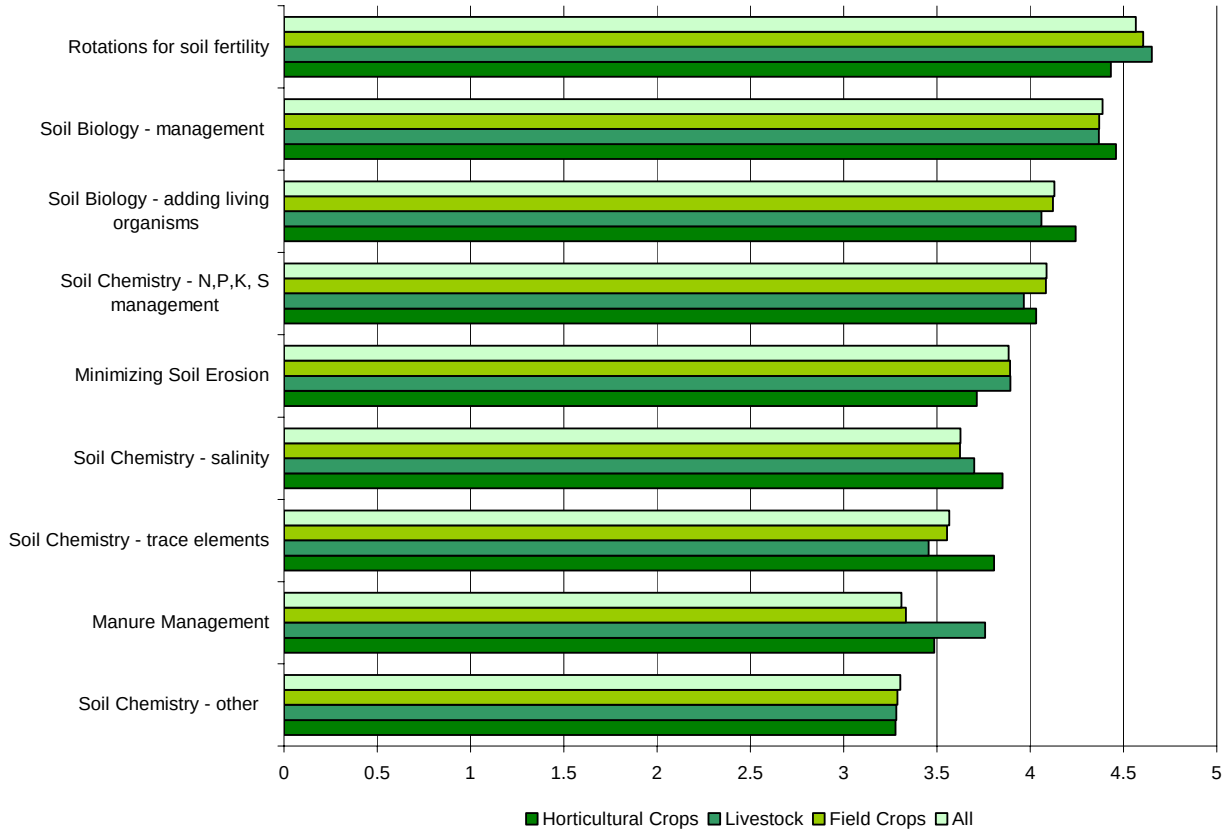

Figure 8 - Research needs in soils, by sector

Other comments included concern with nutrient levels, including how to balance mineralization; the effects of calcium, including its role in regulating flow of other nutrients; and how to do soil tests. There was interest in soil tests that included soil organisms and those that used the Albrecht method.

Amendments were mentioned by some respondents. They wanted to see research into alternatives to phosphate, use of composting and compost teas, and enzymes. There was also interest in equipment for application of teas, enzymes, etc.

Several respondents indicated tillage as an important component of soil research. Some wanted more information on reducing tillage; others were concerned with research on the

pros and cons of deep tillage. There was interest in research aimed at adapting reduced tillage methods to organic systems for soil moisture conservation and to maintain soil residues and soil aggregate size.

Additional comments included dealing with solonetzic soil and handling spots of low fertility in a field.

Much of the emphasis in workshops was also on soil quality. Producers were especially interested in soil organisms at the Melfort workshop. They wanted to know how to encourage the soil biology, and they wanted testing of various biological amendments available for soil fertility. At the Regina workshop producers were especially concerned about rotations as they impacted on soil quality. At Swift Current, the top priority was the testing of amendments for organic production.

2.2 Weeds

Respondents indicated a high importance for all areas of weed research except organic herbicides (Figure 9). They ranked Canada thistle control as their top priority overall, with wild mustard control also important. They ranked rotations for weed control, and cultural, mechanical and biological weed control all highly, suggesting a systems approach to weed management.

The importance of weed control topics varied slightly among sectors. Weed control seemed slightly less of a concern for horticultural respondents than for livestock or field crop respondents. Livestock producers showed the greatest concern with Canada thistle control, rotations for weed control, and wild mustard control. Wild mustard particularly seems to be less of an issue for horticultural respondents.

Respondents indicated several weeds other than Canada thistle and wild mustard that were of particular concern to them. Although 21 species were named, the most common concerns (with four or more nominations) were quack grass, kochia, green foxtail and wild oats. At the Canora workshop, producers were especially concerned with wild mustard. The top two priorities were control of wild mustard, and the potential value of wild mustard when used as a green manure. Wild oats and Canada thistle were also highly ranked; the former for its utility and the latter for its control.

When asked to comment on other weeds research they would like to see, the respondents named a variety of cultural controls, including use of rotations, and green manures such as red clover and sweetclover, of fall rye, and of intercrops. They suggested use of old cultivars such as Bonanza barley, and development of winter varieties of barley, lentil, pea, oat, canola, and mustard. There was a desire to see the long term pros and cons of summerfallow, and of using weeds and volunteers as green fallow. They asked for cost benefit analysis of various weed management systems and demonstration of how crop rotation can work to suppress weed populations.

Mechanical controls were also mentioned. Suggestions included in-crop tillage, inter-row tillage, row cropping, post-emergent harrowing, and spring cutting of weeds to postpone soil disturbance. Water conservation was a concern in weed management, as well as in soils.

Respondents commented on organic herbicides, both for and against. One respondent suggested a chemical that would stimulate germination of weed seeds in the soil; another suggested the use of hot water on a field scale, possibly with some organically approved

additives to improve efficacy. One respondent asked if calcium affects weed growth; another if soil fertility increases weed growth, and thus is counterproductive.

Several respondents suggested research on the benefits of weeds, including their potential as indicators of soil health, and as amendments to improve soil health. They expressed a desire to see weeds as a symptom rather than a problem and to understand why they grew. They also asked about weeds as food or feed. These attitudes were reflected at the workshop at Canora where wild oat and wild mustard were of particular interest.

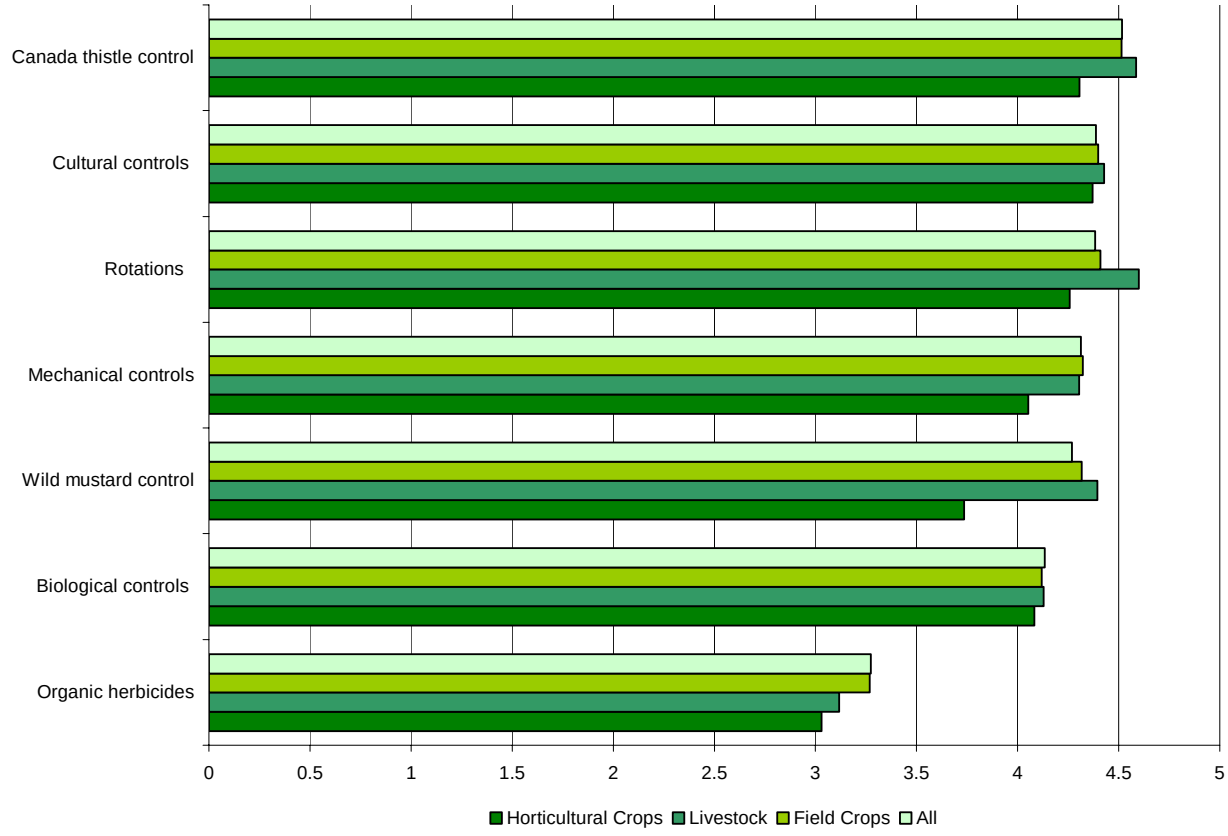

Figure 9 - Research needs in weeds, by group

2.3 Crop Rotations

All areas of crop rotation research ranked highly (Figure 10). Respondents in the horticultural sector consistently ranked the rotation categories lower than did the livestock or field crop respondents.

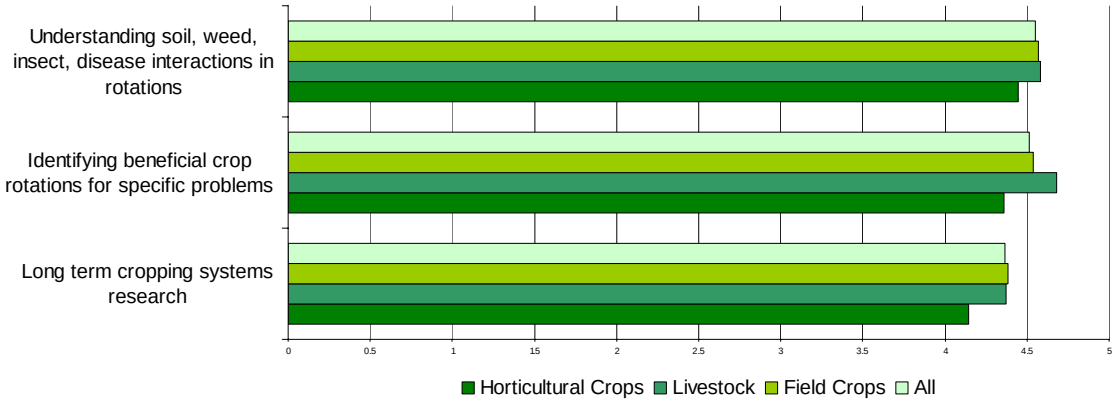

Figure 10 - Research needs in crop rotations, by sector

When asked what additional crop rotation research they would like to see, producers had many suggestions:

- ✓ Several respondents mentioned that rotations were the primary or only tool that organic farmers have for all areas of crop management.

- ✓ Some hoped research could identify rotations for specific problems, such as low phosphate, Canada thistle, wild mustard, grasshoppers, wheat midge, sawfly, poor weather.

- ✓ Several producers suggested intercropping research, including some specific suggestions: oat/pea, flax/wheat, hemp/pea, crops under-seeded to clovers, and using different varieties.

- ✓ Several respondents mentioned rotations that would allow the reduction of tillage, including no-till termination of green manures, zone tillage.

- ✓ Other topics including the role of alfalfa and rye in rotation, forage rotations, vegetable rotations, the potential of perennial rye, extended rotations with several years in perennial crops, green manure options, the necessity of summer fallow in the southwest, nitrogen and phosphorus fertility.

2.4 Other crop production research

Other crop production research included insect and disease management, crop breeding, and specialized equipment (Figure 11).

Insect and disease research was a lower priority for respondents than research into rotations, soils and weeds, but a higher priority than breeding or equipment. Within insect or disease management, the highest priority for all sectors was for cultural controls.

Livestock producers placed more importance on natural insect controls and less importance on breeding/testing varieties or on equipment than did producers of field or horticulture crops. Horticultural respondents were more interested in breeding and variety testing.

Within insect research, producers identified wheat midge as by far the greatest concern. Other species mentioned included sawfly, lygus bugs, wild rice worms, potato beetle, gall midge, black fruit fly and Richardson ground squirrel (we didn't offer a vertebrate category).

In workshops, producers identified concern over wheat midge, sawfly, grasshoppers and gophers.

The importance of beneficial insects was mentioned, as pollinators and as predators of insect pests. Ladybugs and painted lady butterflies were specifically mentioned. Concern over leaf cutter bees was also expressed.

Several respondents asked about sugar content or Brix readings, and whether high sugar content protected plants from insects. This question also arose during the Regina workshop. Suggested methods of insect control included cultural practices such as rotation, border or trap strips, and resistant varieties.

Producers identified diseases of concern as *Fusarium*, ergot, smut, and tan spot. Within disease research, they suggested crop breeding and cultural practices.

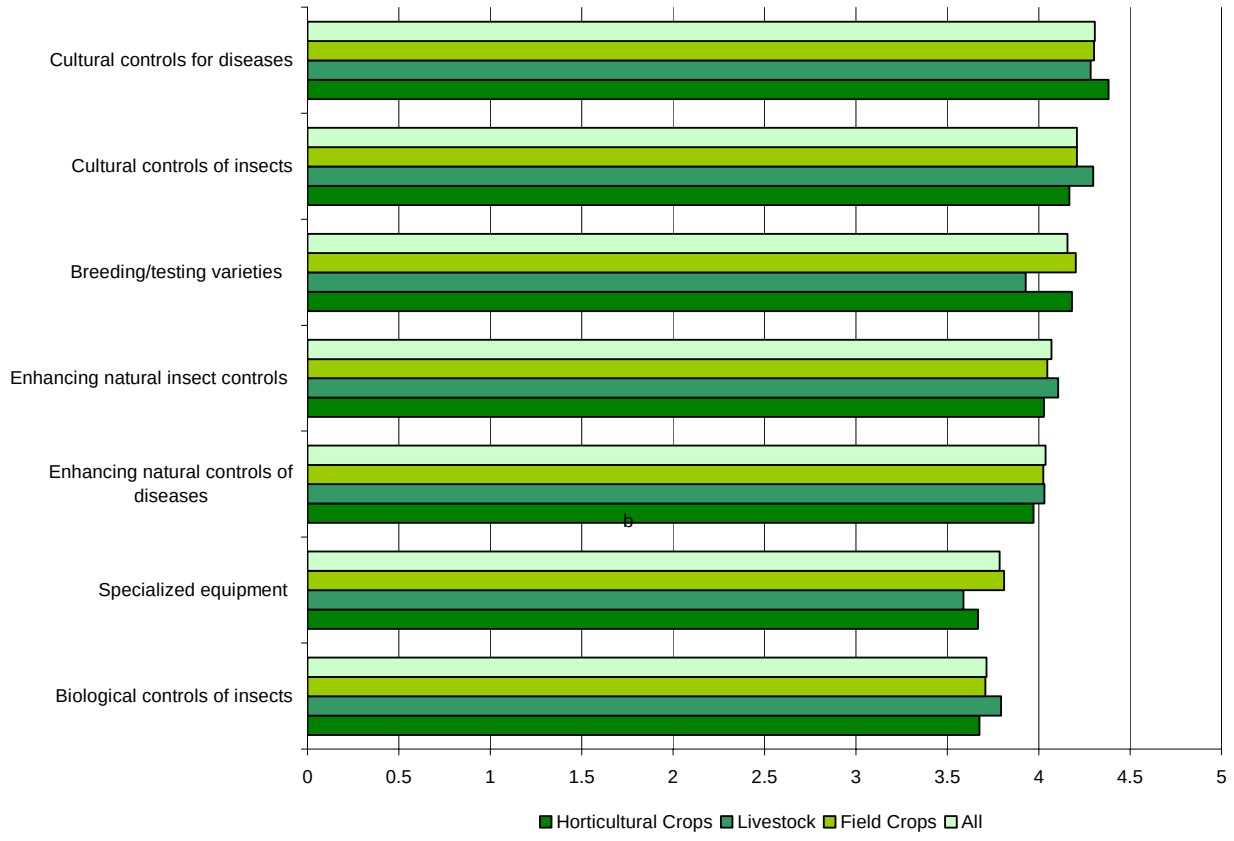

Figure 11 - Other research needs in crop production, by group

We asked which crops should be targeted for breeding or variety testing for organic systems. The following crops and crop groups were named:

- ✓ Several producers identified crop types. Cereals were named most often, followed at a distance by pulses, then oilseeds. “All” was also a popular choice. Within crop type, they identified barley, pea, lentil, durum, camelina and flax.

- ✓ The most commonly named specific crops were wheat, oat and flax.

- ✓ Producers also identified rye, perennial cereals, ancient grains, winter varieties, spelt, winter wheat, canary seed, rape, canola, hemp, alfalfa, clover and forage.

- ✓ Vegetables were named 3 times; fruit were named 3 times, including both apples and haskap.

In workshops, producers mentioned perennial grain crops, winter crops, green manure crops, crop varieties in general and publically owned varieties.

When asked about specific types of breeding research that they would like to see, several producers mentioned specific crops: Andante mustard, Bonanza barley, camelina, hemp, flax, durum, soft white wheat, CPS white wheat, CWRS wheat, fall seeded peas, winter canola, winter barley, raspberries, apples, grapes, cherries, saskatoons, leaf vegetables, and blue aleuron wheat.

Other breeding concerns included adaptability to our weather, and to soils under organic management, with “natural” fertilizers.

Several respondents suggested specific characteristics for specific crops:

- ✓ Flax: competitive ability, shorter growing season

- ✓ Wheat: high protein, competitive ability, midge resistance, milling quality

- ✓ Oilseeds: suitable for organic biodiesel

- ✓ Apples: storage and hardiness

- ✓ Alfalfa: lygus bug resistance

- ✓ Peas: more competitive

Some respondents were concerned with yield, though others indicated this might be less important. Some did not specify crop, but did specify protein level, early maturity, ability to access nutrients, root development, ability to suppress sprouting so crops can be fall seeded, disease resistance, profitability, drought resistance, non-crossing to genetically modified crops, heritage and older varieties, perennial and winter varieties.

Research into specialized equipment did not rate highly on the list of crop related issues. Two respondents wrote that equipment design is better left to farmers than to researchers. However, producers did indicate that they were interested in the types of equipment suggested. Weed clippers were most popular, followed closely by chaff collectors and crimper/rollers. A number of mechanical weeders were listed: finger weeders, inter-row cultivators, various harrows, mowers, rod weeders, rotary harrow, flamers, and wide blade cultivator. Some respondents mentioned that better efficiency was needed with this equipment. Several respondents suggested that reduced tillage options should be

investigated. Other equipment concerns included grasshopper zappers, manure spreaders, pelleters for screenings, systems to add water to the furrow during seeding, better seeding equipment, and the need for both small and large scale vegetable production equipment.

One respondent suggested that there be a list compiled of small plot equipment manufacturers and their products; another suggested a CD to show equipment in operation.

2.5 Animals

On average, 57 livestock producers replied to each question on the survey. On average only 38 livestock producers responded to the following livestock questions.

Livestock producers differed in their priorities according to the species of animals they raised (Figure 12). The top concerns of beef producers were feed, grazing, breeds and parasites, in that order. Parasites and breeds were the highest ranked concerns of swine, sheep and poultry producers. Feed and grazing were also highly ranked concerns of poultry producers. Sheep producers seemed to have the least concerns, ranking everything except parasites and breeds much lower than other livestock producers.

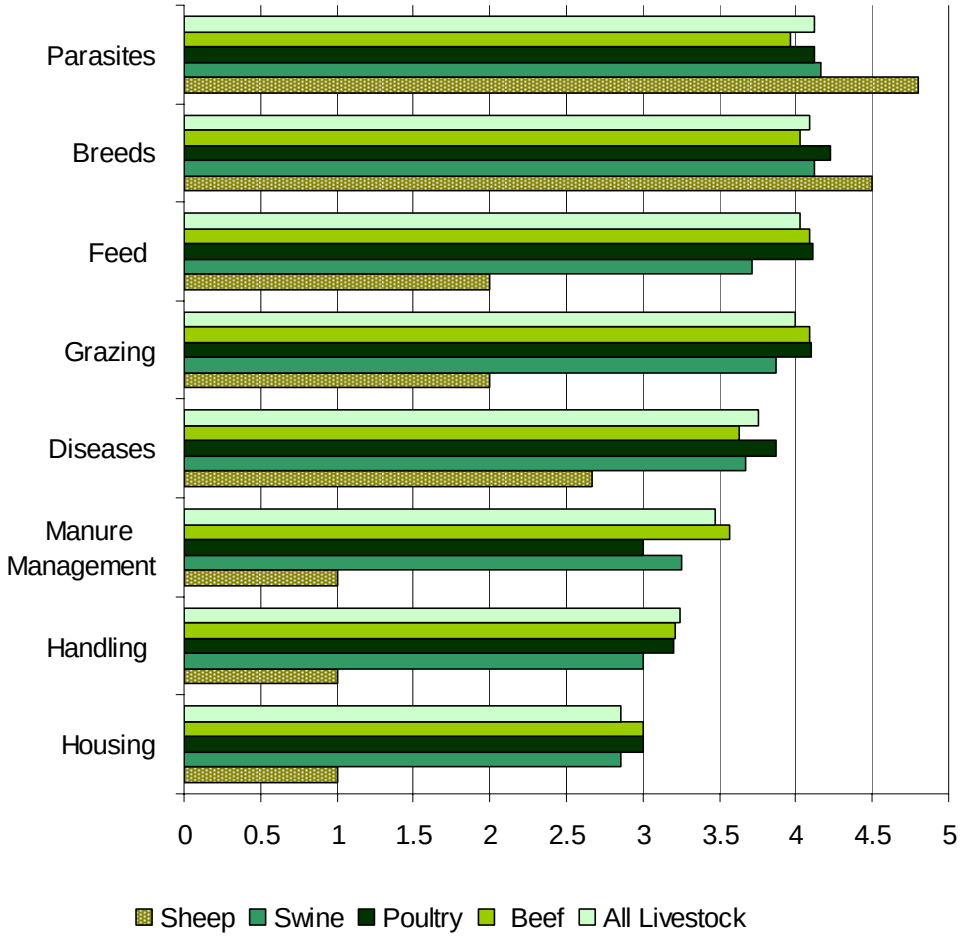

Figure 12 - Research needs ratings for livestock production issues by livestock type

Although parasites were a top priority overall, only one producer mentioned parasites (lice) in the written response. Producers mentioned integrating livestock and cropping, using weeds and dockage for feed and using livestock to improve soil fertility; forage and pasture for cattle; rotational and mixed species grazing; fencing problems; cross breeding; use of salt blocks; meat quality issues such as tenderness quotient, raw milk, local consumption of pork; and concerns about Avian flu.

Livestock were a major concern at the Melfort workshop. Here producers suggested holistic studies of the farm, considering the benefits of integrating livestock. They were particularly interested in the areas where livestock provided benefits to cropping, such as manure, weed control and animal power, and where cropping provided benefits for the livestock such as adding forage to rotations, and consuming screenings. Producers were also interested in livestock production issues, such as breeds, predator control, parasites, free-range pork, weaning, and castration.

3. Other Research Needs

We identified three additional areas of research and asked producers to rank a number of categories within each: production economics, food quality and the contribution of organics to sustainability. These subject areas ranked 10th, 5th and 6th, respectively (Table 2).

3.1 Production Economics

Production economics did not rate highly overall and rankings varied among sectors (Figure 13). Respondents who grew field crops rated grain production economics highest, followed by value added research. Respondents who raised livestock indicated these same subjects, but included mixed farm and livestock production as equally important. Horticultural respondents were most interested in value added research. Interestingly, even horticulture respondents did not indicate that production economics for horticultural crops was a priority. Dairy production economics did not rank highly at all.

The survey asked for which crops producers would like to see production economics research. Responses included a variety of new and traditional crops and livestock:

- ✓ New crops such as camelina (21 respondents) and hemp (14 respondents)
- ✓ Beef (including grass fed), poultry, swine, fish, heritage breeds, alpacas
- ✓ Cereals including canary seed, oats, Einkorn wheat, spelt, wheat, Kamut, durum, buckwheat; pulses, alfalfa, green manures; oilseeds, flax, canola; old varieties, intercrops and winter crops
- ✓ Vegetables such as carrots, potato, pumpkin, squash, zucchini, garlic, corn, beans, beets, turnips, parsnips, root vegetables
- ✓ Fruit such as haskap, sea buckthorn, Mongolian cherry, saskatoons, berries, apples

One respondent suggested that many crops are “too labour intensive, too market sensitive, too expensive to store and we are too far from the market.”

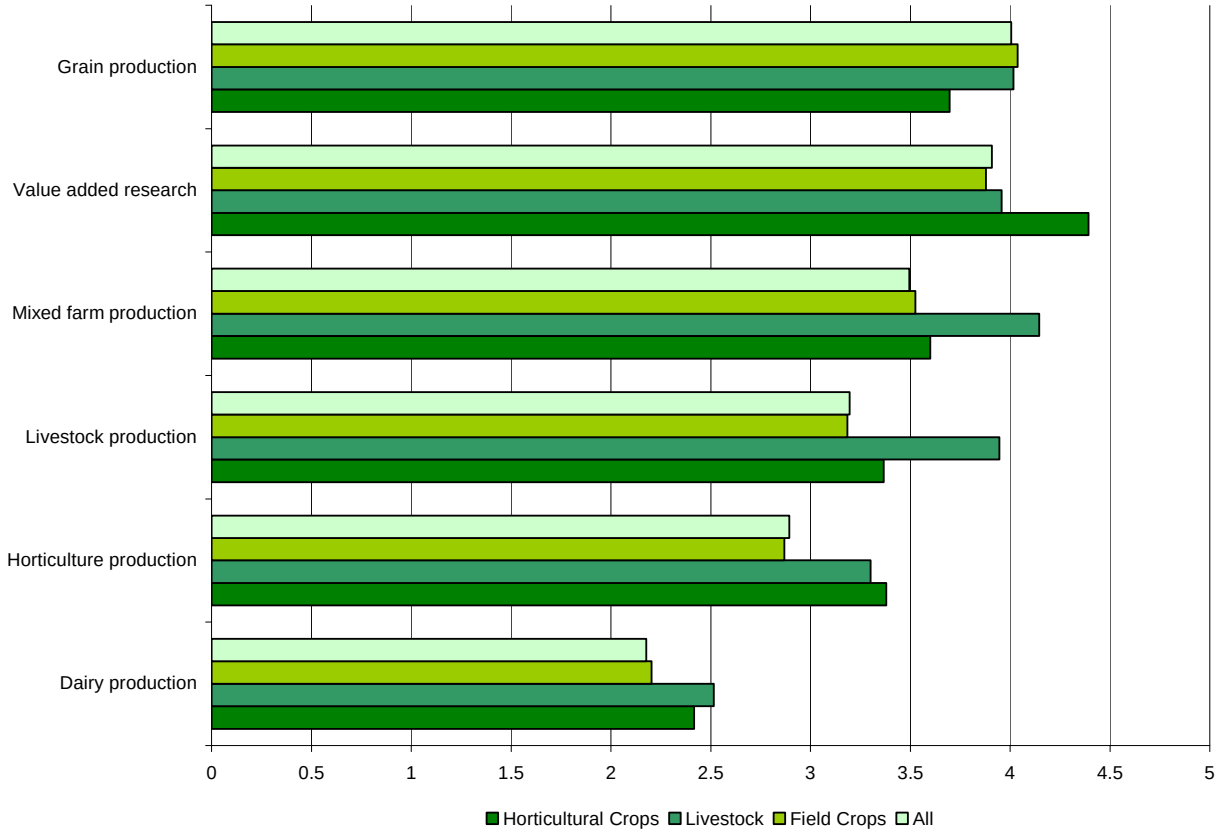

Figure 13 - Research needs ratings for production economics issues by sector

Producers were also asked what value added projects they would like to see. Their answers were broad ranging:

- ✓ Cleaning plants (29 respondents) and use of dockage for chicken feed, biodiesel
- ✓ Wild oat oatmeal (29 respondents)
- ✓ Cooling and storage of fruits, fresh pick moving toward other products such as wine, cider, jams, preserves
- ✓ Development of new or emerging products: Wild mustard as a condiment or for biodiesel, birdseed, camelina oil, pumpkin seed oil, rhubarb fiber
- ✓ Small scale processing such as flax and hemp fibre plants, flour and oat milling, biodiesel, packaging lines, hemp and spelt dehulling, custom breads such as Red Fife, sauerkraut
- ✓ Custom spraying of biologicals, custom operations
- ✓ Beef finishing, feedlots, manure usage, slaughter and processing plants, mobile slaughter, jerky and sausage products, direct market beef, sheep, poultry

At the Melfort workshop, horticultural producers identified the need for small scale processing of vegetables. At Canora they suggested value adding for crops; at Swift Current, they were interested in grain cleaning.

Some respondents argued against funding research in this area, arguing that this was not so much a research as an investment opportunity.

3.2 Quality and Nutrition of Organic Foods

Quality and nutrition of organic foods scored high in the overall analysis; ranking 5th highest of research concerns (Figure 14). Surprisingly, all respondents ranked the quality of field crops of higher concern than the quality of animal products or horticultural products. Perhaps this reflects the fact that most livestock and horticultural respondents also grew field crops. Livestock respondents ranked animal products higher than other respondents and horticultural respondents ranked horticultural products higher than did other respondents.

Figure 14 - Research needs ratings for quality and nutrition issues by sector

Respondents indicated that they would like to see food quality research in the following crops:

- ✓ Cereals such as oat (48 respondents), wheat (45 respondents), barley, durum, Kamut, rye, spelt, wild rice
- ✓ Oilseeds such as flax (34 respondents), mustard, camelina, hemp
- ✓ Pulses such as pea, lentil
- ✓ Forages, fruit, root vegetables, salba

Respondents suggested that beef was the research priority in value added animal products (21 respondents). The interest included grass fed *vs.* grain finished beef. Secondary concerns included chicken, dairy products, pork, lamb, bison, eggs and goat.

"Vegetables" was the research priority among respondents to the horticulture section. Those who specified included vine vegetables, root vegetables, garden vegetables, tomatoes, carrots, peas, potatoes, lettuce. Several respondents indicated "all" or "all that can be grown in Saskatchewan". There was also interest in fruit research, including cherries, raspberries, "different kinds of berries", soft fruits, and saskatoons.

The survey also asked what kind of food quality research producers would like to see. Besides indicating the varieties listed above, producers included the following:

- ✓ Comparisons of nutrient value between organic and non-organic products including protein, mineral content, pesticide (especially glyphosate) residues, omega-3 content, hormone content, bacterial load, northern vigour

- ✓ Food allergy or intolerance research, including gluten in Red Fife wheat, and other heritage or ancient varieties such as Kamut

- ✓ Research tying food quality to environmental costs, particularly energy consumption and rotation and soil quality

Nutritional quality of grains was also an area of interest at the Swift Current workshop.

3.3 Contribution of Organic to Sustainability

Respondents valued all areas of sustainability research, including soil quality, pesticide reduction, energy use, biodiversity and sequestering carbon. All sectors responded similarly (Figure 15).

Producers indicated a number of additional sustainability projects that they would like to see:

- ✓ Several reaffirmed the key topics of soil, energy, pesticide reduction, stressing the need for hard data for skeptics and in order to make their farms carbon neutral, soil sustaining, and self-sufficient.

- ✓ Additional related topics include water quality, using marshes and sloughs sustainably, endangered species, global warming, vegetable oil fuel, no-till organics, soil building, erosion management, perennial wheat, planting trees, GMOs, financial sustainability, and social sustainability.

- ✓ One producer asked “Can we feed the planet if we spent as much on research in organic agriculture as there is spent for conventional agriculture?”

Reducing soil damage through tillage, growing crops that remove carbon and green house gasses from the air, and reducing pesticide contamination were goals expressed at workshops.

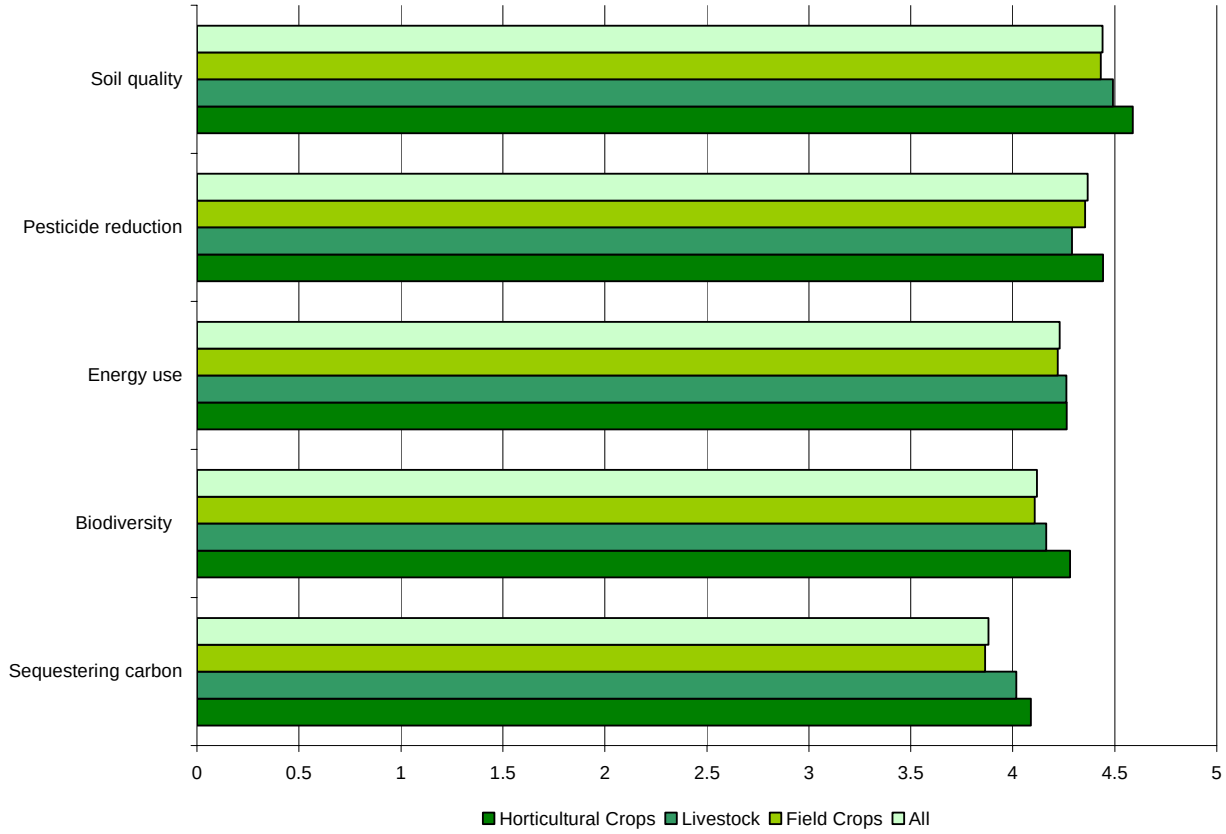

Figure 15 - Research needs ratings for sustainability issues by sector

4. 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 or using farm scale equipment (Figure 16). Additional comments include:

- ✓ Producers should be compensated for on farm research. This should be cheaper than research plots at research stations.
- ✓ Research should be “real”, practical and of use to farmers. Research needs to be done in every soil zone. It needs to be cost effective.
- ✓ Farmers needed to be considered integral to the farm management. “Organic farmers are in many cases 10 to 20 years ahead of researchers” and thus their collaboration is imperative. Research needs to benefit farmers and consumers, rather than agri-business.
- ✓ Respondents suggested integration of results – theoretical and practical, demonstration farm and on-farm, using the internet to improve networking.

Producer advisory boards for research projects were not highly favoured; they were seen as expensive financially and in terms of farmers' time. One alternative might be that researchers come to existing organic meetings to get feedback.

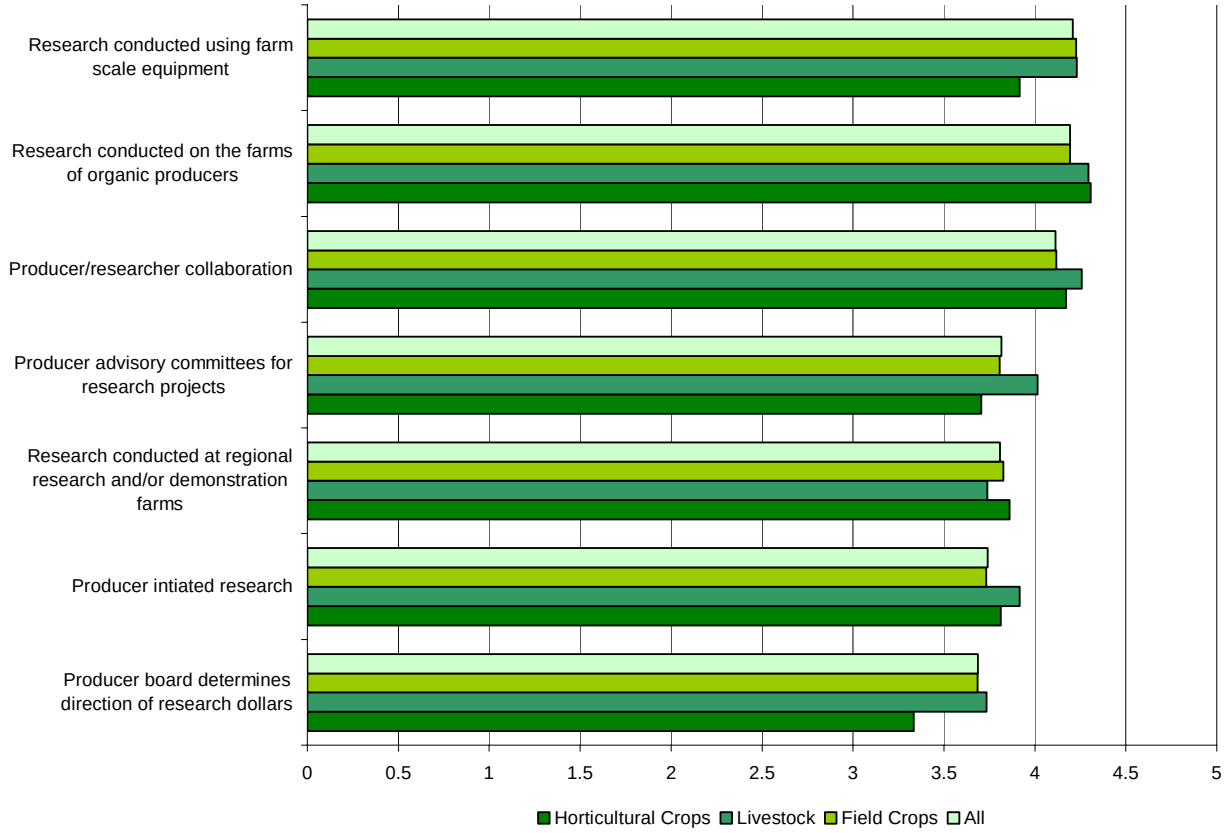

Figure 16 - Research management ratings by sector

5. Post Production Needs

This section of the survey dealt mainly with marketing and processing issues. The top need in this area was consumer education on organic benefits (Figure 17). Market information such as prices, buyers and market trends also rated highly, as did consumer education on organic standards. Respondents commented that organic education should begin in the schools, and include a critical look at industrial agriculture and ecological footprints. It should include advertising campaigns and organic labeling. There was also demand for a marketing website that would include products for sale; a buyers' registry, including a rating for reliability; market transparency and more information from certifiers.

In general, the horticulture sector rated processing and market information (other than information on commodities) higher than other sectors. The livestock sector was especially concerned about slaughter facilities, both mobile and stationary. Several felt that the organic livestock sector was most limited by the lack of slaughter facilities.

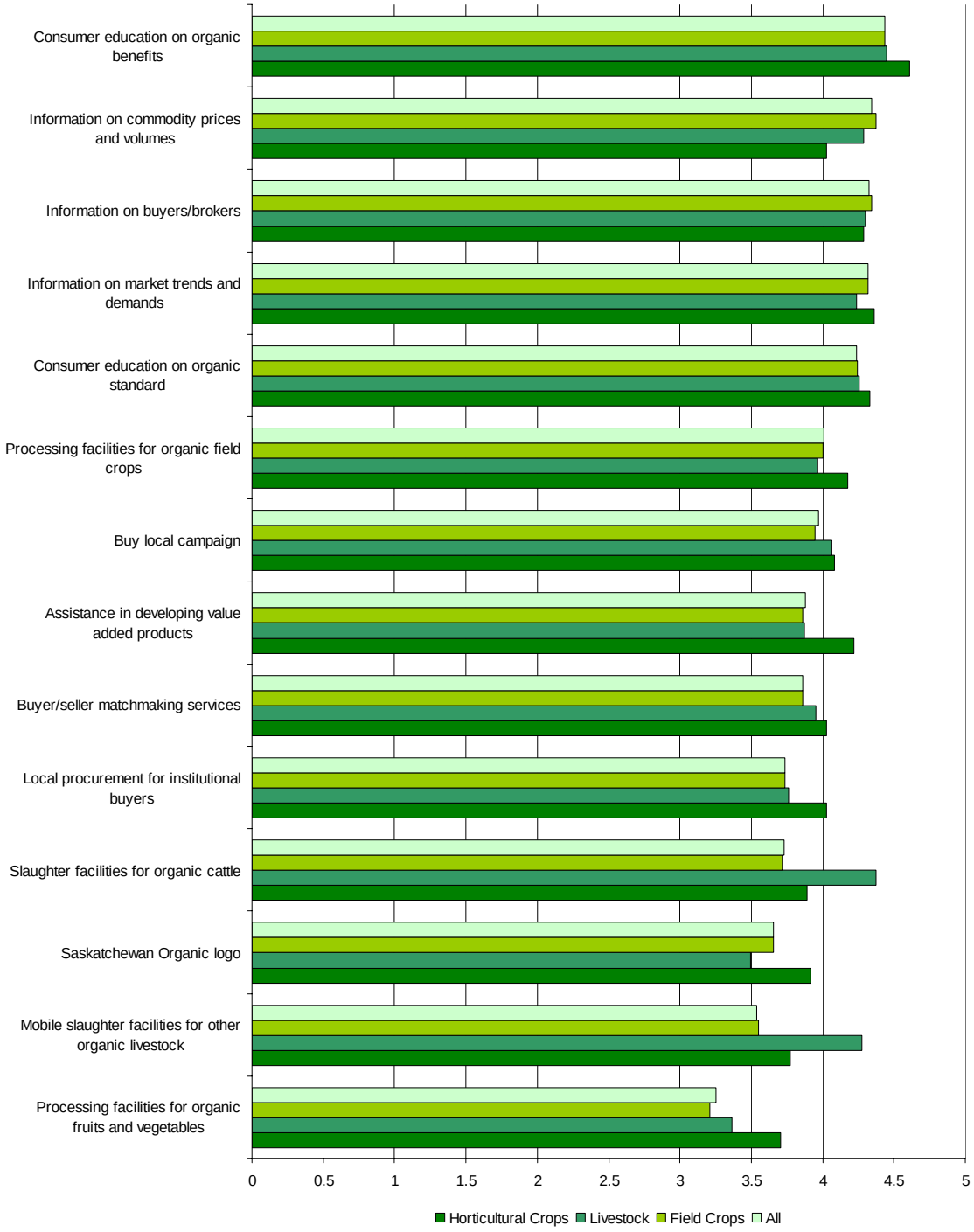

Figure 17 - Post Production Needs ratings by sector

Marketing information, consumer education and coordination of marketing training were identified at workshops in Melfort and Canora.

6. Extension / Technology Transfer

Knowledge transfer is a very important part of agriculture, especially organic agriculture. Factsheets on organic farming practices was a strong leader; formalized training such as distance education, regional colleges and degree courses ranked lowest.

Responses differed somewhat by sector, with the horticultural sector more in favour of web based information than other sectors (Figure 18). The horticulture and livestock sectors rated a variety of information sources higher than did field crop respondents.

In response to the question “How do you prefer to access information?” the most popular method was online (49% of respondents), with mail coming a very close second (42%). Secondary methods include publications such as books, articles, factsheets, newsletters, newspapers such as *Western Producer* (24%), email (20%) and conferences (18%). Less popular methods included direct talk with producers, field tours, fax, phone, and courses.

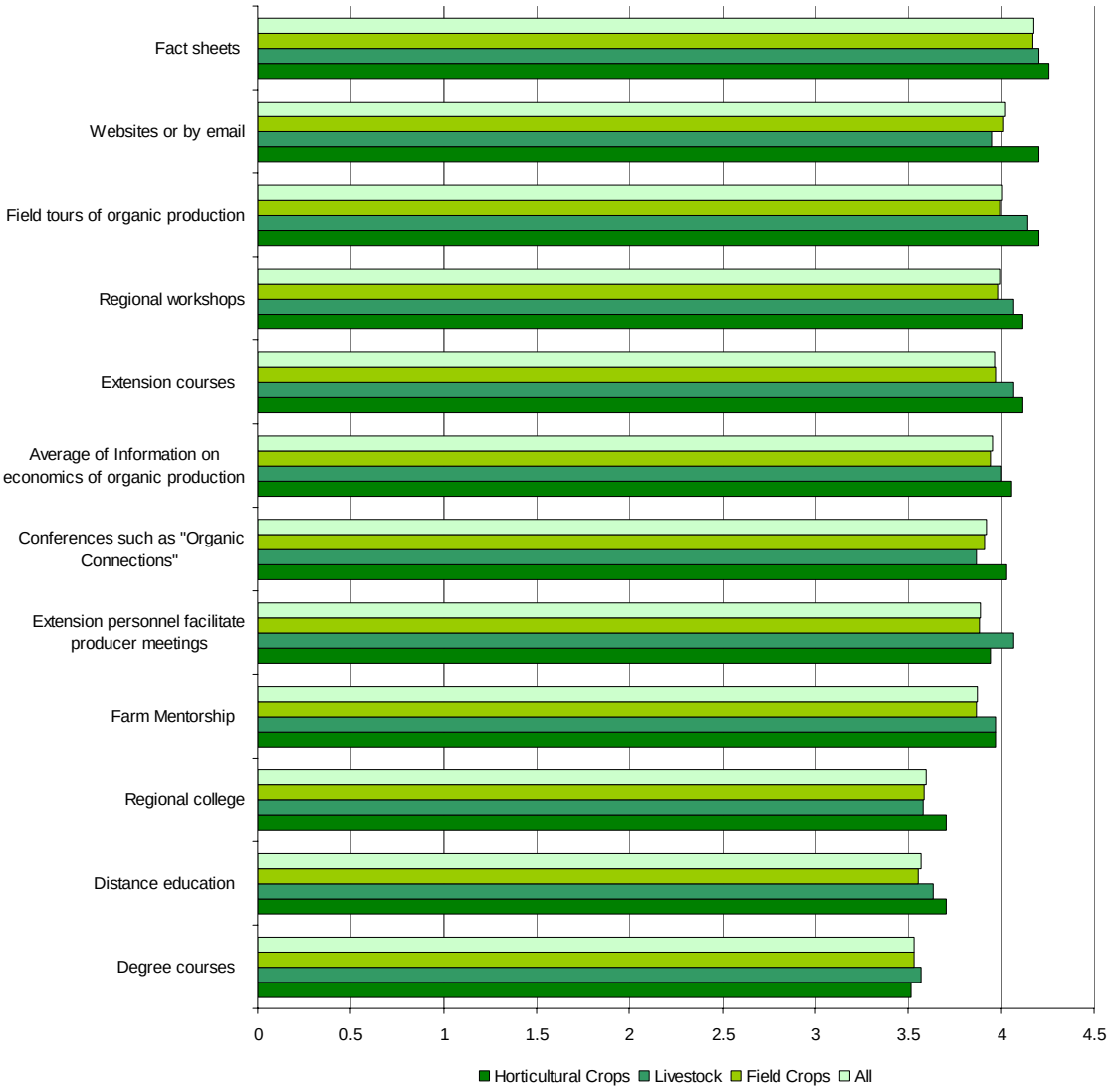

Figure 18 - Extension and Technology Transfer ratings by sector

In terms of specific information that farmers would like to have, between 20 and 30% of respondents noted an interest in each of the three options provided as examples on the survey: Soil test fact sheets, buyers' preferences, and nutrient management planning. In addition to those topics, approximately 26% suggested marketing topics such as buyer information, market trends, and various types of market information. Other popular suggestions were "everything" (18%); weed information (10%); soil, crop, and rotation fact sheets; insect forecasting maps; long term studies; livestock breeds for organic production; processing regulations; manure management; tillage options; feed nutritive value; cost benefit analyses; and an updated production manual.

At the Regina workshops, producers identified a need for factsheets, especially on interviewing a buyer and on getting soil tests done. They also identified a need for regional organic crop specialists, and the desire for an organic producer directory. At Melfort, producers recommended an organic "Centre of Excellence". They also suggested factsheets for consumers on pesticide contamination and organic benefits. They also valued workshops with researchers and other producers.

7. Barriers and Opportunities for Growth

The survey also asked producers to identify perceived barriers and opportunities in the organic sector.

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

The largest group of respondents indicated that farmers, governments, and media are skeptical of organics and misrepresent it. Vocal and well funded detractors injure organic credibility. Some respondents specifically named biotechnology, chemical and grain companies and multinational retailers as setting up barriers, potentially causing damage to the organic community.

Many respondents were concerned that consumers were not sufficiently aware of the importance of organic products; several were concerned that organics is seen only as high-end niche market items, and not a practical option to "feed the world".

Regulation issues were mentioned frequently as barriers to the growth of organics. There was frustration with the amount of paperwork, with too much bureaucracy, and with lax certifiers. Specific certifiers, government policies, university experts and the Canadian Wheat Board were mentioned as presenting difficulties.

A variety of marketing issues surfaced, including cash flow issues, unstable prices, unreliable buyers, rising fuel costs. Respondents were on both sides of the price issue, concerned with cheap food policies but also that organic products were expensive for consumers. Some felt greater responsibility for the problems, citing weak marketing skills.

Several production issues were identified as barriers. Weeds were most common, followed by soil concerns, and of lesser concern, insects, disease, and contamination with chemicals and genetically modified organisms, cost of fuel and transition issues.

Other issues included concerns over corporatization, lack of small farms and young farmers, not enough unity among organic producers, downward pressure on prices, cheap imports,

dishonest buyers, lack of available labour and land, immature marketing channels, and distance from markets.

Several respondents specifically mentioned the cost of certifying organic beef when there were no opportunities for cow/calf operators, no facilities to slaughter and no markets to sell into.

Several producers responded that there were no barriers.

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

Respondents were overwhelmingly positive about the future of organics. They are seeing tremendous growth in consumer awareness, acceptance and demand for organic products. Much of this demand seems to relate to the health benefits of organic food, but environmental sustainability, local food and social factors were also important. Several mentioned the greater trust consumers have in organic products.

Marketing issues are also being resolved. There is greater infrastructure, including cleaning, processing and value-adding facilities, more buyers, and more direct marketing opportunities. Farmers are more willing to work together in cooperative or like minded groups. Respondents even feel positively about the potential in organic livestock, if infrastructure was put in place.

There were also positive signs in production with increased availability of information on cropping and livestock methods.

7.3 Additional comments

Most of the additional comments were captured in the sections added throughout the survey. A few were comments to me personally, or about other researchers. Several were from producers giving testimonials such as “I think going organic was the smartest thing I've ever done except for getting married.”

8. Prairie Regional Concerns

Survey results across the prairies were generally similar. Field crop production dominated the organic sector in all three Prairie Provinces, followed by livestock production (primarily beef) and then horticultural crops. The proportion of respondents producing livestock was somewhat greater in Manitoba than in Saskatchewan and Alberta. Farm size was largest in Saskatchewan and smallest in Manitoba. The proportion of total acreage that was certified organic was highest in Alberta, where over 90% of organic producers’ land was certified. Survey respondents from Alberta had more experience in organic farming and were older than respondents from Saskatchewan and Manitoba.

The priorities for production research were very similar. Respondents in all three Prairie Provinces ranked the same production research categories as the top 6. In Saskatchewan the top ranked category was crop rotations, in Manitoba it was managing soil fertility and soil quality/health, and in Alberta it was animal health and nutrition.

Weeds, soil fertility, and crop rotations were high priority crop production issues across the prairies and producers in all three provinces emphasized cultural approaches to weed, disease and insect management.

Livestock issues were generally ranked higher by Alberta producers than by Manitoba and Saskatchewan producers. The top animal-related issue was parasites in Manitoba and Saskatchewan, while the top issue in Alberta was breeds. Manitoba respondents ranked grazing higher than the other two provinces.

In each of the Prairie Provinces, producers were interested in food quality and environmental sustainability. They preferred research conducted on organic farms, using farm scale equipment. They wanted more consumer education on the benefits of organics. In each of the Prairie Provinces, fact sheets were the preferred approach to extension.

In terms of barriers, Saskatchewan respondents were more concerned with their social environment and identified poor infrastructure as a limitation to further marketing. In Manitoba, respondents identified marketing difficulties, issues related to certification and regulation, and agronomic challenges as key barriers. Alberta respondents emphasized concerns regarding the integrity of organic standards, the need for consumer education, and production costs.

Manitoba, Saskatchewan and Alberta share a healthy optimism for the future of the organic sector, driven by increased public awareness and consumer demand. They see opportunities both in export and in the local marketplace, as health and environmental concerns drive up consumer demand even further.

9. How do Saskatchewan results compare to the National Survey?

Many of the trends that emerged from the results of the Saskatchewan survey were also evident in the national results. However, there were certain differences.

In Saskatchewan, virtually all respondents grew field crops. Nationally, less than 2/3 of respondents did. The national study included dairy producers, which the Saskatchewan study did not. Nationally, there were far more horticultural producers.

Saskatchewan producers, on average, manage much larger farms than the national average. Nationally, many horticultural producers operate with fewer than 100 cultivated acres; in Saskatchewan, the average for horticultural growers (who also generally grow field crops) is close to 600 cultivated organic acres.

In Saskatchewan, we had fewer respondents in the lowest income levels than in the national study. We also had fewer in the highest income levels.

Production issues in Saskatchewan tended to reflect the needs of field crop producers: rotations, soils, and weeds, more than they did nationally, where there were fewer field crop producers. National concerns such as insect and disease control were less important in Saskatchewan.

Animal research tended to be ranked lower in Saskatchewan than nationally. Interestingly, Saskatchewan respondents were less concerned even about animal housing.

In Saskatchewan, as in Manitoba, but not nationally, respondents rated field crop quality as a priority for every sector. In the national study, each sector rated the quality of its own product highest. This probably comes from a greater number of producers in other sectors on the prairies still connected to field crop production.

Environmental sustainability rated similarly in Saskatchewan and nationally.

Factsheets topped the list of extension preferences both nationally and for Saskatchewan respondents. Formal university or regional college programs were at the bottom of both lists.

Barriers to organic production were different in Saskatchewan. While Saskatchewan respondents were more concerned with organic detractors, nationally there were more issues with processing facilities. Again this may reflect the dominance of field crops in Saskatchewan and the greater importance of local markets for horticultural products in other provinces.

Opportunities for organics seem to abound both provincially and nationally, with growing demand and greater pull from consumers. Local food initiatives were more important nationally than in Saskatchewan.

10. Summary

The organic community in Saskatchewan is still based on field crop production, but many of the farms incorporate livestock or horticultural production. Organic production is well established in Saskatchewan, but many producers have fewer than 10 years in organic production. A majority of Saskatchewan organic producers are between 40 and 60 years of age.

Crop rotations, soil and weeds were of high priority to the organic producers who responded to the Saskatchewan survey. Producers seem to be thinking of these areas of research in an integrated fashion. The highest ranked topics combined rotations with soil and weed interactions. Canada thistle was identified as top concern.

Respondents were also concerned with the context of farming – with the quality of the food they produce, and the contribution that they make to environmental sustainability.

Producers strongly favoured factsheets as a method of obtaining information, though approximately half of those who provided additional comments favoured online information.

Respondents struggled with the image of organics in their communities and on the world stage. They find regulations frustrating, and have a number of marketing challenges.

Producers are finding that consumer demand provides a strong opportunity for organics.

Appendix 1 – Survey instrument

SASKATCHEWAN 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 306-966-5015. If you have any questions, comments or concerns about this process, please contact Brenda Frick, at 306-966-4975 (office), 306-260-0663 (cell), or organic@usask.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.)

___ Cereals ___ Oilseeds ___ Pulses ___ Forages ___ Fruit

___ Vegetables ___ Herbs/Spices ___ Beef ___ Bison ___ Dairy

___ Swine ___ Sheep ___ Poultry Other: _____

Other: _____ Other: _____ Other: _____

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

___ Cereals ___ Oilseeds ___ Pulses ___ Forages ___ Fruit

___ Vegetables ___ Herbs/Spices ___ Beef ___ Bison ___ Dairy

___ Swine ___ Sheep ___ Poultry Other: _____

Other: _____ Other: _____ Other: _____

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 me (Brenda Frick) directly. My 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.

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

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

What other soil research would you like to see? _____

_____

_____

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

What other weeds research would you like to see? _____

_____

_____

B3. Managing crop insects pests	1	2	3	4	5
Enhancing natural controls (eg. encouraging grasshopper predators)	1	2	3	4	5
Cultural controls (crop rotations, intercrops, crop management)	1	2	3	4	5
Biological controls (eg. releasing insect diseases or predators)	1	2	3	4	5

What other insect research would you like to see? _____

_____

_____

B4. Managing crop diseases	1	2	3	4	5
Enhancing natural controls (eg. encouraging beneficial bacteria)	1	2	3	4	5
Cultural controls (crop rotations, intercrops, crop management)	1	2	3	4	5

What other disease research would you like to see? _____

_____

_____

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

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

_____

_____

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

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 1 2 3 4 5

..... What types of equipment would you like to see researched (eg. weed clippers, chaff collectors, crimper/rollers, etc.)? _____

_____

_____

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

B8. Animal health and nutrition	1	2	3	4	5
(For the questions below, please specify the animals (beef, dairy, sheep, etc.) in which you are interested)					
Breeds (specify animal: _____)	1	2	3	4	5
Parasites (specify animal :_____)	1	2	3	4	5
Diseases (specify animal :_____)	1	2	3	4	5
Grazing (specify animal: _____)	1	2	3	4	5
Feed (specify animal: _____)	1	2	3	4	5
Handling (specify animal :_____)	1	2	3	4	5
Housing (specify animal :_____)	1	2	3	4	5
Manure Management (specify animal :_____)	1	2	3	4	5

What other livestock research would you like to see? _____

_____

_____

SECTION C: Other Research

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

Which crops or animals would you like to see researched (eg. hemp, camelina, carrots, ostrich)?

_____

_____

Value added research 1 2 3 4 5

Which value added projects would you like to see researched (eg. cleaning plant, custom operations, birdseed, wild oat oatmeal)? _____

_____

C2. Quality and nutrition of organic foods	1	2	3	4	5
Field crops	1	2	3	4	5

Please specify which crops:_____

Animal products 1 2 3 4 5

Please specify which animal products:_____

Horticultural crops 1 2 3 4 5

Please specify which crops:_____

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

_____

_____

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

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?)

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

Additional comments? _____ _____

_____

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

E1. Information on commodity prices and volumes	1	2	3	4	5
E2. Information on buyers/brokers	1	2	3	4	5
E3. Information on market trends and demands	1	2	3	4	5
E4. Assistance in developing value added products	1	2	3	4	5
E5. Processing facilities for organic field crops	1	2	3	4	5
E6. Processing facilities for organic fruits and vegetables	1	2	3	4	5
E7. Slaughter facilities for organic cattle	1	2	3	4	5
E8. Mobile slaughter facilities for other organic livestock	1	2	3	4	5
E9. Buy local campaign	1	2	3	4	5
E10. Saskatchewan Organic logo	1	2	3	4	5
E11. Local procurement for institutional buyers	1	2	3	4	5
E12. Buyer/seller matchmaking services	1	2	3	4	5
E13. Consumer education on organic standard	1	2	3	4	5
E14. Consumer education on organic benefits	1	2	3	4	5

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?	1	2	3	4	5
Extension courses on advanced specific aspects of organic production	1	2	3	4	5
Fact sheets on organic farming practices	1	2	3	4	5
Information on economics of organic production	1	2	3	4	5
Organic information available on websites or by email	1	2	3	4	5
Extension personnel to facilitate specialty producer meetings	1	2	3	4	5
Organic Farm Mentorship programs (experienced organic farmers)	1	2	3	4	5
Field tours of organic production	1	2	3	4	5
Conferences such as “Organic Connections”	1	2	3	4	5
Regional workshops	1	2	3	4	5
Organic Agriculture program offered through distance education at the University of Saskatchewan	1	2	3	4	5
Organic Agriculture program at a regional college	1	2	3	4	5
Degree courses in Organic Agriculture at the University of Saskatchewan	1	2	3	4	5

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?)

	Cultivated	Pasture/grazing	Other	
H1. How many acres do you operate?	_____	_____	_____	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. How many years have you been an organic producer?

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

H5. What is your age? ___< 30 ___30 - 39 ___40 - 49 ___50 - 59 ___60 - 69 ___70+

H6. What is your gender? ____male ____female

H6. What is your RM? _____

H7. What is your soil type? ____ brown ____ dark brown ____ black ____ grey

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.

Appendix 2 - Research Priorities Identified at Workshops

At four workshops held around Saskatchewan in the winter of 2008, producers were invited to discuss their interests with researchers, and identify their priorities. Producers were invited to "vote" on their most important information priorities; these numbers appear below. Producers were each allowed 5 votes, to be split among priorities as they saw fit (they could use all 5 on one concern or spread them among up to 5 concerns).

Melfort

In Melfort, producers asked for studies that helped to enhance the value of the whole farm, such as integrating screenings, composting, using less or different fuel, and tightening cycling to gain more value from neglected components of the farming system. They also asked for more work on soil biology, ways to enhance existing microbes, and tests for soil amendments.

Producers were divided into three groups, according to the main type of production that they had, and were asked to identify both research and extension priorities.

Grains Research

5 - Enhancing value of all production on organic farms eg. screenings for feed, compost value, energy value for burning
4 - Soil microbiology-soil amendments, testing new products currently being sold
4 - Enhancing existing beneficial soil organisms
1 - Controlling wheat midge
1 - Additional winter crops eg. Winter peas
1 - Reduced tillage systems and weed control
1 - Testing for allelopathic effect

General Extension Information

4 - Organic Centre of Excellence
3 - Pesticide contaminants in organic *vs.* conventional food
2 - Direct contact between producers and researchers (like now)
2 - Seminars for producers to share on farm research/best management practices
1 - Benefits of organics to consumers

Livestock Research Needs
5 - Whole farm – livestock on farm
2 - Small scale animal power/forage needs/rotations/equipment
2 - Small-scale diesel/ethanol/biomass
1 - Necessity of castration
1 - Necessity of weaning related to social behavior in <80 herd size

Livestock Extension
2 - Breeds/condition matching
1 - Predator control
1 - Parasites

1 - “Hands-off” management
1 - Free-range pork

Horticultural Research

2 - Pelleted alfalfa as fertilizer
2 - Intercropping between rows of fruit crops
2 - Small-scale processing for vegetables
1 - Organic mulch
1 - Economic threshold for weed control
1 - Weed control in fruit crops

Horticultural Extension

2 - Coordination of marketing training, public education of organic benefits, and local feed initiative

Canora

At Canora, producers identified two weed species that were problematic. They wanted to know the value of wild mustard as a green manure “crop” and the uses of wild oats. They were also interested in perennial grain crops.

Producers at Canora “voted” for priorities as a single group.

28 - Wild mustard control
12 - What nutritional value does wild mustard add as a green manure
12 - Wild oat use
11 - Perennial grain crops
9 - Marketing – price quotes, current price range
8 - Atmospheric absorption by plant
8 - Value adding for crops
7 - Canada thistle control
7 - Crop varieties for organic production
6 - Sawfly, wheat midge control/avoid
5 - Publicly owned varieties
4 - Local networking, more local products
4 - Carbon removal from air by crop rotations, including legumes

Regina

In Regina, the top priorities were rotations, plow-downs, and pest control including grasshoppers and gophers

Producers in Regina voted as a single group, for both research and extension concerns.
9 - Rotations – plow downs, timing for greatest benefit, crop quality, fertility, phosphorus release
7 - Pest control including grasshopper, gopher, midge, sawfly, including Brix
2 - Continuous cropping
2 - Case study of on farm projects
1 – Drought

1 - Zero till organics (openers, equipment)
1 - Soil sampling

Extension

5 - Factsheets – paper and internet, mailed out
4 - Factsheet – what to ask a buyer
3 - Regional organic crop specialist, field consulting agrologist, may be willing to pay (or not)
2 - Factsheet on how/where to get soil analysis
1 - All organic producer list, with crops and soil zones

Swift Current

In Swift Current, the priority was independent testing of inputs, especially soil amendments.

7 - Independent testing of inputs being sold to organic producers
3 – Green manure plow downs, different kinds, multiple varieties, advantages of each, following crop, different incorporation
3 - Grazing instead of plow down, soil fertility, perhaps faster replenishing of soil
3 - What grows best after certain crops (like the North Dakota dryland study)
2 - Intercropping, multivarieties, cleaning
2 - Nutritional quality of grains
1 - Winter crop, plant in fall; market opportunities
1 - Crop rotations for soil improvement during transition/economical as possible
1 - Vermicompost
1 - Alfalfa mulch, perennial forages as mulch