

Research Priorities for 2011

Expert Committee on Organic Agriculture and Research and Innovation Working Group of the Organic Value Chain Round Table

The Expert Committee on Organic Agriculture (ECOYA) and Research and Innovation Working Group of the Organic Value Chain Roundtable has developed research priorities for each of 8 categories. The categories are 1) animals, 2) plants, 3) soils, 4) ecological systems, 5) food quality and health, 6) marketing and 7) policy and 8) sustainable agriculture and rural communities. The priorities for 2011 build on those developed in previous years and the Farmer Research Needs Survey (2008-9). Priorities are listed as succinct statements with some areas of concentration noted.

As a General Research Priority, ECOYA/RIWG recommends establishing funds and facilitating research in organic agriculture and food, to address the goals of carrying out research for the public good, including long term research, making research results publicly available and reducing requirements for matching funding from industry. ECOYA/RIWG also recommends investigating research accomplishments in other areas of the world that relate to the research needs of organic agriculture in Canada.

1) Animals

Design animal production systems that are most conducive to normal animal behaviour and animal health, while enhancing food safety.

Suggested areas of concentration are:

- outdoor management systems for livestock and poultry with respect to parasites and disease management (e.g. avian influenza) as well as environmental concerns
- alternative nutrition practices and supplements for balanced livestock diets
- optimally designed systems for organic swine (in light of parasites, diseases, environmental concerns and rodent management)
- animal welfare issues (includes animal health, housing, pasture nutrition, etc)
- parasite prevention and control in livestock
- balance of forage and grain in organic diets (especially beef finishing)

2) Plants

Development of cropping systems including crop rotations and cover crops for pest management and nutrient cycling.

Select and breed for plant varieties suitable for organic management that are;

- adapted to diversified landscapes, regions, and changing climates
- disease and pest resistant/tolerant and competitive with weeds, improve food quality and yield adequately

Suggested areas of concentration are:

- emerging new pests, known regional pest species and those species identified on national minor use list of pest management priorities (including weeds, insects, diseases, etc)
- for weeds, examples would be: ragweed, yellow mustard, Canada thistle, quackgrass, kochia, wild oats, sow thistle, field bindweed, chamomile
- continued research for alternative pest management products, especially to replace older products such as copper and sulphur
- plant production managements systems in protected structures
- efficacy and fertility aspects of growth promoters, and disease/insect suppressant products

3) Soils

Develop integrated nutrient management systems (soils, crops, feeds, livestock, manures/composts) and evaluate sustainability of organic production.

Suggested areas of concentration are:

- green manures, tillage reduction and crop rotation for soil fertility and soil health
- elucidating soil biological activity and how to manage it beneficially
- assessing short and long term soil fertility issues including the impact of long term use of composts and other amendments (for example the availability and/or buildup of organic matter, phosphorus, nitrate, zinc, copper, calcium and sulphur)
- evaluating acceptable input substances on a regional basis
- growing media systems for organic greenhouse production

4) Ecological Systems

To assess and improve ecological goods and services (EG&S). To evaluate the interrelationships of ecological factors in organic farming systems.

Suggested areas of concentration are:

- optimizing energy use efficiency and resources, on organic farms including greenhouse systems.
- assessing air quality (e.g. greenhouse gases) and resiliency to climate change
- assessing water quality and water use efficiency,
- optimizing soil quality (example: tillage and carbon sequestration issues)
- optimizing agro-biodiversity
- management systems for pollinators

5) Food Quality and Health

Identify links between organic systems, healthy food and risk reduction and links between food and human health.

Suggested areas of concentration are:

- enhancing food safety and quality (for example: sprouts)
- food safety systems for organic farms and processing facilities
- developing improved approaches for cleaning, sanitizing and disinfecting in organic food processing systems
- developing preservation and post harvest storage alternatives in organic food systems
- evaluating the concentration of nutrients, antioxidants and other bio-constituents in food products and developing plant and animal production systems that optimize levels of these constituents
- assessing the relationships between the quality of soils, amendments, plants, animals and food
- assessing the impact of management on the quality of soils, amendments, plants, animals and food
- identify the impacts of organic food on human health

6) Marketing

Identify emerging consumer trends and the opportunities and barriers to investment and development in domestic production that could respond to emerging markets.

Suggested areas of concentration are:

- Canadian organic market research;
 - assessing the preference for, and perceived benefits of, Canadian organic and/or regional/local products and their relationship to price
 - assessing Canadian consumer understanding and confidence in organic food systems
 - characterizing the Canadian organic market (import, export, distribution channels)
 - determining market prices and volumes and sector opportunities
- assessing the impact of a Canada Organic logo
- assessing the range and implementation of alternative marketing models including co-operatives, local marketing, CSA, other (e.g. fair trade)
- Evaluating the impact of comparative and competing market labels (fair trade, animal welfare approved, natural, free from, local, etc)

7) Policy

- a. Develop policy mechanisms for payment and/or recognition of ecological goods and services (EG&S) in organic production systems.
- b. Research models for new entrants programs to organic agriculture.
- c. Assess the social, economic and environmental risks associated with input-based agricultural production systems under increased climate variability.
- d. Conduct research to assess GE crops related to their ecological, social and economic impacts on agriculture, including organic agriculture.

Suggested areas of concentration are:

- pathways of contamination
 - effects on pollinators
 - legislative models for dealing with liability issues
 - strategies for developing GE free zones
 - practical methods of detection and limiting contamination
- e. Assess the impact of nano-technology on organic systems
 - f. Research models of land use (e.g. no-development zones) on land values and availability of land for organic farming.
 - g. Research alternative models of intellectual property ownership to ensure public access to genetic diversity of varieties in the organic sector.

8) Sustainable Agriculture and Sustainable Communities

Study, evaluate and make public policy recommendations for organic agriculture as a form of sustainable agriculture that is environmentally, socially and economically responsible, and supportive of rural and urban communities.

Suggested areas of concentration are:

- assessing how organic agriculture can strengthen the relationships between rural and urban communities
- assessing the impacts and feasibility of urban organic agriculture
- developing linkages with researchers into sustainable livelihoods in developing countries