



**RESEARCH, INNOVATION AND TECHNOLOGY TRANSFER PRIORITIES IN
ORGANIC AGRICULTURE**

**PRESENTED BY
THE RESEARCH PRIORITIES WORKING GROUP
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DU QUÉBEC (CRAAQ)
[QUEBEC AGRICULTURE AND AGRI-FOOD REFERENCE CENTRE]**

**NB This English-language version has been translated from the original French
by the Organic Agriculture Centre of Canada (OACC)**

REVISED DOCUMENT

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Foreword

The organic agriculture sector makes up approximately 2% of the total food market in Québec. With an overall rate of growth of 15 % per year, the organic sector is one of the sectors, if not *the* sector, which has experienced the strongest growth in the agri-food industry. However, production is significantly lagging behind both the demand of consumers and the requirements of processors. There is an important potential for development in this agri-food sector.

There are currently not enough certified companies and companies in transition to meet the demand. For this reason, the vast majority of the organic foods consumed in Quebec are imported. It is therefore necessary to increase the number of Quebec organic products available both for our own market and for export. Do to this, Quebec organic producers need the technical tools that will allow them to develop, become more efficient and be truly competitive with the competition.

The CRAAQ's Organic Agriculture Committee, in partnership with the main stakeholders in the organic sector, has compiled a list of research, innovation and technology transfer priorities for the organic agriculture sector. The priorities identified do not just represent the needs of the different sectors of production, but are in fact problems or barriers that must be overcome.

The Committee invites you to consult this list, and hopes that projects will be undertaken that will help the organic agriculture sector to take advantage of all its potential.

Note (1) Out of these 27 priorities, seven (in bold in the text) have been recognized as being of particular concern, and should be addressed through projects in the short term.

Note (2) These research priorities should be undertaken with due regard to the context of organic agriculture specifications.

Note (3) For further information:

- www.craaq.org
- www.agrireseau.qc.ca/agribiologique/recherche

Priorities in Research, Technological Innovation and Technology Transfer Needs in Organic Farming

Key: Technological Innovation = I
 Technology Transfer = T
 Research = R

Sectors	Priorities	Type
Fruit and small fruit	1. Methods for fighting against the plum curculio in orchards.	R
	2. Methods for fighting against the tarnished plant bug and the strawberry and raspberry weevil.	R
	3. Control of strawberry patch weeds in the 2 nd year of production: soil covering, mulch, weeding, etc.	I
	4. Methods for fighting against gray mold (botrytis) and powdery mildew (oidium) in strawberries.	R
Field 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
	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
	7. Develop effective weed control methods that are adapted to organic farming.	R,I, T
	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
	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
	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

Sectors	Priorities	Type
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
	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
	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
Large-scale farming	18. Develop new fertilization strategies for crops with high nutritional requirements.	I, T
	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
	20. Develop reduced tillage systems for large-scale organic farming.	I, T
	21. Develop seed treatments accepted by organic certification standards.	I,T
Animal production	Animal health: 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
	Dairy production: 23. Develop control methods that make it possible to reduce the somatic cell count in dairy cows.	I, T

Sectors	Priorities	Type
	24. Identify and check the sources of feed/ingredients that contain natural vitamins, or order to replace synthetic vitamins in the rations.	R, I
	25. Identify strategies that will make it possible to increase the fertility rate among dairy cows.	R, I
	<u>Meat production:</u> 26. Develop methods of organic management to optimize the growth of beef cattle in the finishing phase.	I, T
Soil management	27. Identify indicators of organic activity in soil, in order to improve their management.	T

Document revised again on January 19, 2006 by a working group and submitted for consultation to certified organic farmers and stakeholders involved in organic farming, including the following:

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