

Canada's Organic Science Cluster II: Science with Impact for Profitability, Sustainability and Competitiveness



Organic Science Cluster II (OSCII) brings together scientists across Canada in an industry-supported research and development initiative aimed at strengthening the science of organic agriculture. Initiated by the [Organic Agriculture Centre of Canada](#) at [Dalhousie University](#) in collaboration with the industry applicant, the [Organic Federation of Canada](#), OSCII is supported by the [AgriInnovation Program](#) of [Agriculture and Agri-Food Canada's Growing Forward 2 \(GF2\) Policy Framework](#) (a federal-provincial-territorial initiative) and [65 organic sector partners](#).

OSCII aims to increase and support Canada's scientific capacity in organic agriculture, linking scientists with stakeholders and maximizing the impact of organic science through knowledge transfer. Spanning both the country and the organic sector, OSCII consists of 37 research activities that together involve over 200

researchers and graduate students working at over 45 research institutions across Canada. OSCII builds upon the work conducted in the first Organic Science Cluster, addressing research priorities identified by the Canadian organic community. Research activities in OSCII fall under five broad themes: field crops, horticultural crops, crop pest management, livestock and value adding.

Together, science and innovation enable organic agriculture to thrive in Canada. Innovation in OSCII will ensure organic producers and processors have the tools and resources they need to address barriers constraining production, increase efficiency and capture emerging market opportunities.

For more information, please visit
www.dal.ca/oacc

Theme A: Optimizing productivity and competitiveness through adaptable systems for field crops		
Activity	Lead Researcher	Industry Partners
A.1: Participatory plant breeding and seed production approaches for Canadian organic crop production	Martin Entz University of Manitoba	USC Canada
A.2: Organic oat breeding	Jennifer Mitchell Fetch AAFC Brandon Research and Development Centre	Clif Bar and Company Grain Millers Canada Corp.
A.5: Impacts of reduced tillage and diversified cropping sequences under organic management in the semi-arid Brown Soil Zone	Myriam Fernandez AAFC Swift Current Research and Development Centre	Organic Research Advisory Council Western Grains Research Foundation
A.6: Restoring yield productivity and C sequestration in organic farming systems on the Prairies: The role of composted manure in long-term studies	Martin Entz University of Manitoba	Western Grains Research Foundation
A.7: Well-established commercial organic farming: Effect of rate of composted manure application on soil mineral nutrients, yield, and crop nutrient uptake	Terence McGonigle Brandon University	Howpark Farm
A.8: Optimizing green manure and fertility management for organic cereal production	Derek Lynch Dalhousie University	Acti-Sol Inc. Homestead Organics Ltd. Horton Ridge Malt and Grain Company Ltd. Organic Valley
A.9: Applying ecology for simple, nutrient use efficient pulse-based cropping systems: Phosphorus sources for organic growers of the Prairie, and agronomic strategies for effective soil microbiology to make better use of these P sources	Chantal Hamel AAFC Quebec Research and Development Centre	International Plant Nutrition Institute Premier Tech Biotechnologies Saskatchewan Organic Directorate Saskatchewan Pulse Growers Western Ag Innovations

Theme B: Advancing the science of vegetable, fruit and novel horticultural crop production		
Activity	Lead Researcher	Industry Partners
B.10: Integrated organic practices in apple orchard management	Julia Reekie AAFC Kentville Research and Development Centre	Boates Farm Nova Scotia Tree Fruit Research Foundation Ontario Apple Growers
B.11: Exclusion nets for organic apple production in Eastern Canada	Gérald Chouinard IRDA	Dubois Agrinovation Fédération des producteurs de pommes du Québec
B.12: Microbial management in organic viticulture: Pre-inoculating vines with arbuscular mycorrhizal fungi	Miranda Hart University of British Columbia, Okanagan	Biosynterra Solutions Inc. Kalala Organic Estate Winery Summerhill Pyramid Winery
B.13: Using high tunnels to produce high-value organic vegetable and nutraceutical crops in Canadian climates	Youbin Zheng University of Guelph	DeCloet Greenhouse Manufacturing Ltd. Ralph Martin, Loblaw Chair in Sustainable Food Production Van Acker Horticulture Industry Fund
B.14: Optimization of a non traditional cooling and dehumidifying method for a semi-closed organic tomato greenhouse	Damien De Halleux Université Laval	L'Abri Végétal Serres Jardins Nature
B.15: Increased productivity and better quality of greenhouse grown organic vegetables	Martine Dorais AAFC Agassiz Research and Development Centre	Les Serres Lefort Inc.
B.16: Impact of green and organic fertilizers on the yield and safety of organic carrots grown in muck soil	Caroline Côté IRDA	Le Fermes R&R et Fils inc. Union de producteurs agricoles
B.17: Production of organic mother plants under LED artificial light for the production of cuttings and potted flowering plants	Martine Dorais AAFC Agassiz Research and Development Centre	Les Serres Frank Zyromski
B.18: Impact of organic fertilization on growth and yield of secondary hop compounds intended for food and nutraceutical processing	Martine Dorais AAFC Agassiz Research and Development Centre	La Houblonnière Gosselin
B.20: The health benefits of soil management techniques to improve flavor and phytochemical content of carrot: Linking healthy soil, healthy plants & healthy people	Marica Bakovic University of Guelph	Carrot Cache Community Resources Inc. Ralph Martin, Loblaw Chair in Sustainable Food Production

Theme C: Innovation in sustainable pest management strategies

Activity	Lead Researcher	Industry Partners
C.21: Development of organic control strategies for apple scab	Deena Errampalli AAFC London Research and Development Centre	Hewgill Orchards Inc. Ontario Apple Growers Vergers Leahy Inc.
C.22: Toward organic production of strawberry through exploitation of its natural genetic ability to absorb silicon	Richard Bélanger Université Laval	Les Fraises de l'île-d'Orléans Inc.
C.23: Development of postharvest UV light therapy for preservation of fresh organic fruits and vegetables	Marie Thérèse Charles AAFC Saint-Jean-sur-Richelieu Research and Development Centre	Awaiting confirmation
C.24: Development of validated seed disinfection strategies for the organic sprouted vegetables	Siyun Wang University of British Columbia	Eatmore Sprouts & Greens Jonathan Sprouts, Inc. Mumm's Sprouting Seeds
C.25: Organic integrated pest management for grain storage and processing facilities	Paul Fields AAFC Morden Research and Development Centre	Absorbent Products Ltd. Gardex Chemicals Ltd. Grain Millers Canada Corp. Prairie Flour Mills Ltd.
C.27: Evaluation of plant essential oils for protection against blueberry insect pests	Chris Cutler Dalhousie University	Bleuets NB Blueberries PEI Wild Blueberry Growers Association Wild Blueberry Producers Association of Nova Scotia
C.30: Development of integrated pest management strategies for new viral biopesticides	Deborah Henderson Kwantlen Polytechnic University	E.S. Cropconsult Ltd. Sylvar Technologies Inc.
C.32: Integrating weed control for organic pea and lentil production	Steve Shirliffe University of Saskatchewan	Saskatchewan Pulse Growers
C.33: Novel cultural and mechanical weed control for flax	Steve Shirliffe University of Saskatchewan	Western Grains Research Foundation
C.36: Effect of irrigation regimes on weed control in organic cranberry production	Mirella Aoun CETAB+	Hortau Nature Canneberge
C.37: New innovative weed management for organic crops	Rene Van Acker University of Guelph	Franck E. Dayan Marrone Bio Innovations Inc. Ontario Processing Vegetable Growers Rijk Zwaan Tairawhiti Pharmaceuticals
C.38: Understanding and integration of a novel technique to promote depletion of the weed seed bank: How biofumigation acts on seed dormancy and weed ecology	Maryse Leblanc IRDA	Agrocentre Fertibec Inc. Union de producteurs agricoles

Theme D: Optimizing animal health and welfare for productivity and quality

Activity	Lead Researcher	Industry Partners
D.42: Development of sustainable alternative sources of bedding for dairy cows	Renée Bergeron University of Guelph, Campus d'Alfred	Dairy Farmers of Canada
D.43: Effect of exercise and stall modifications on cow comfort and performance in tie-stall farms	Elsa Vasseur University of Guelph, Campus d'Alfred	Dairy Farmers of Canada
D.44: Evaluating alternative therapies for the treatment of clinical mastitis on organic dairies	Simon Dufour & David Francoz Université de Montréal	Dairy Farmers of Canada Valacta Inc.
D.45: Bioactive products from plants and control of internal and external parasites in large ruminants	Simon Lachance University of Guelph, Campus d'Alfred	Dairy Farmers of Canada Héloïse Laboratoire Inc.
D.46: Fruit pomaces to improve immunity and health of organic chickens	Moussa Diarra AAFC Pacific Agri-Food Research Centre - Agassiz	Aliments Bretons Inc. François Malouin Rosebank Farms Satinder Kaur Brar

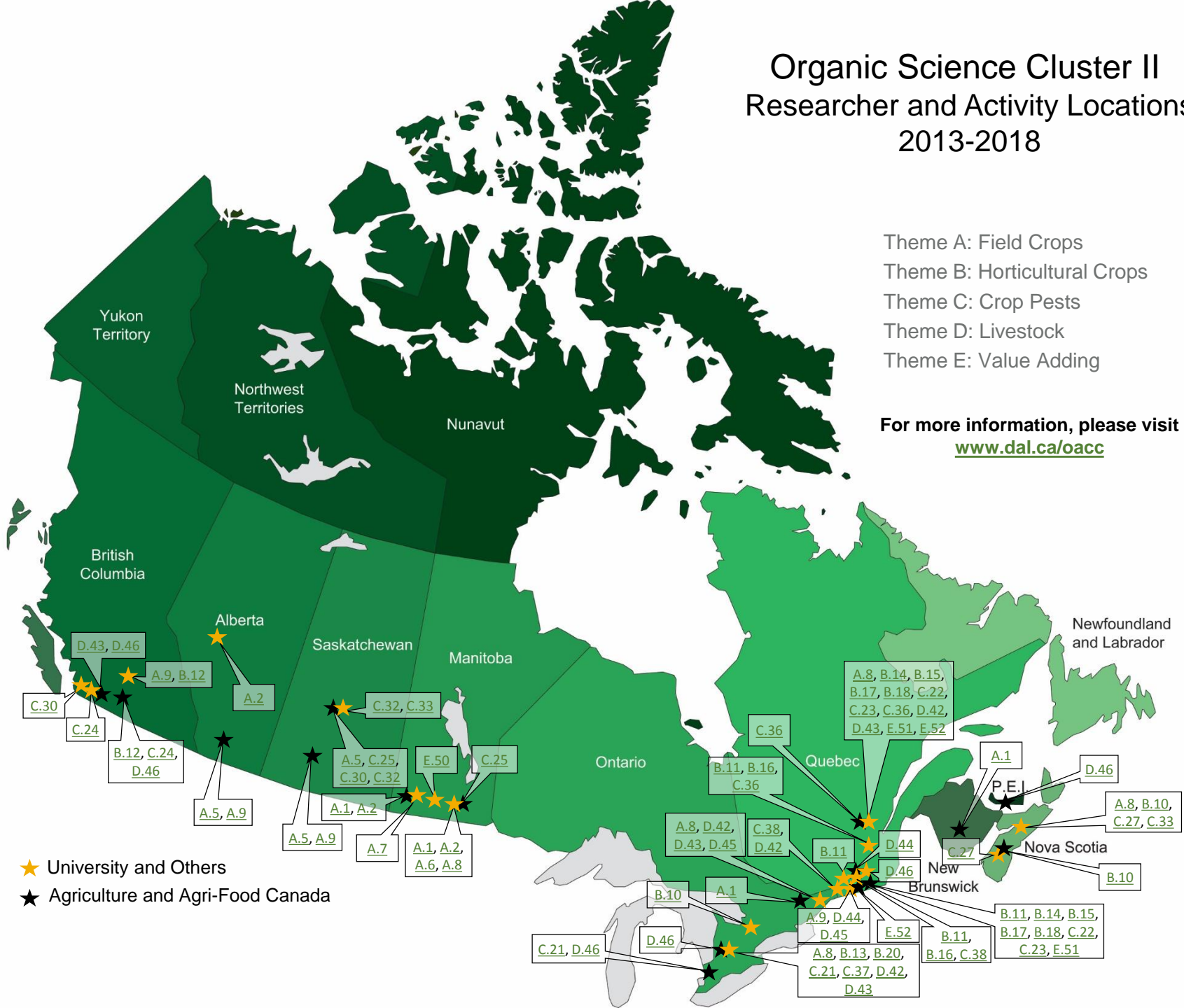
Theme E: Adding value to capture markets through innovative processing solutions

Activity	Lead Researcher	Industry Partners
E.50: Identifying and overcoming limiting factors to organic food processing in Canada	Alphonsus Utioh Manitoba Food Development Centre	Manitoba Food Development Centre Manitoba Harvest Hemp Foods and Oils Nature's Pasta
E.51: Organic production of vegetable extracts for food markets and nutraceuticals	Paul Angers Université Laval	Nutra Canada
E.52: Alternative approaches to direct addition of nitrite/nitrate for organic cured meats	Joseph Arul Université Laval	Awaiting confirmation

Organic Science Cluster II Researcher and Activity Locations 2013-2018

Theme A: Field Crops
 Theme B: Horticultural Crops
 Theme C: Crop Pests
 Theme D: Livestock
 Theme E: Value Adding

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★ University and Others
 ★ Agriculture and Agri-Food Canada