

## Publications

### **Publications between January 1, 2014 and December 31, 2014**

#### **List of all academic staff members:**

**Emeritus Professors:** Estey, R.H. (passed on January 31, 2014); Buszard, D.J.

**Professors:** Dutilleul, P. (Interim Chair, Sep.-Dec.); Smith, D.L.; Watson, A.K.

**Associate Professors:** Bede, J.C.; de Blois, S.; Donnelly, D.J.; Jabaji, S. (Associate Dean – Research); Kushalappa, A.C.; Seguin, P. (Chair, Jan.-Aug.); Singh, J.; Stewart, K.A. (Post-retirement, May 31, 2010); Strömvik, M.V.; Waterway, M.J.

**Assistant Professors:** Charron, J.-B.; Gravel, V.

**Faculty Lecturers:** Begg, C.B.; Wees, D.

**Adjunct Professors:** Bertrand, A.; Ma, B.L.

## Publications in Refereed Journals

### **BEDE, J.C.**

Dury, G.J., **Bede, J.C.**, and Windsor, D.M. 2014. Preemptive circular defense of immature insects: Definition and occurrences of cycloaexy revisited. *Psyche* (open access) [doi: org/10.1155/2014/642908].

Lan, Z., Krosse, S., Achard, P., van Dam, N.M., and **Bede, J.C.** 2014. DELLA proteins modulate Arabidopsis defenses induced in response to caterpillar herbivory. *Journal of Experimental Botany*, 65: 571-583.

Prado, A., Sierra, A., Windsor, D., and **Bede, J.C.** 2014. Leaf traits and herbivory of a tropical gymnosperm, *Zamia stevensonii* (Zamiaceae). *American Journal of Botany*, 101:437-447.

### **BEGG, C.B.**

Luoh, J.W., **Begg, C.B.**, Symonds, R.C., Ledesma, D., and Yang, R.-Y. 2014. Nutritional yield of African indigenous vegetables in water-deficient and water-sufficient conditions. *Food and Nutrition Sciences*, 5:812-822.

### **BERTRAND, A.**

Aung, B., Gruber, M.Y., Amyot, L., Omari, K., **Bertrand, A.**, and Hannoufa, A. 2014. MicroRNA156 as a promising tool for alfalfa improvement. *Plant Biotechnology Journal* (open access) [doi: 10.1111/pbi.12308].

**Bertrand, A.**, Piva, A., Tremblay, G.F., Bélanger, G., Castonguay, Y., and Séguin, P. 2014. Elevated CO<sub>2</sub> and temperature affect the composition and in vitro degradability of timothy roots. *Crop Science*, 54:2893-2902.

Brito, A.F., Tremblay, G.F., **Bertrand, A.**, Castonguay, Y., Bélanger, G., Michaud, R., Lafrenière, C., Martineau, R., and Berthiaume, R.R. 2014. Alfalfa baleage with increased concentration of nonstructural carbohydrates supplemented with a corn-based concentrate did not improve production and nitrogen utilization in early lactation dairy cows. *Journal of Dairy Science*, 97:6970-6990.

Colton-Gagnon, K., Ali-Benali, M.A., Mayer, B.F., Dionne, R., **Bertrand, A.**, Do Carmo, S., and Charron, J.-B. 2014. Comparative analysis of the cold acclimation and freezing tolerance capacities of seven diploid *Brachypodium distachyon* accessions. *Annals of Botany*, 113:681-693.

Hoffman, L., DaCosta, M., **Bertrand, A.**, Castonguay, Y., and Ebdon, J.S. 2014. Comparative assessment of metabolic responses to cold acclimation and deacclimation in annual bluegrass and creeping bentgrass. *Environmental and Experimental Botany*, 106:197-206.

Tremblay, G.F., Morin, C., Bélanger, G., **Bertrand, A.**, Castonguay, Y., Berthiaume, R.R., and Allard, G. 2014. Silage fermentation of PM- and AM-cut alfalfa wilted in wide and narrow swaths. *Crop Science*, 54:439-452.

#### **CHARRON, J.-B.**

Chen, F., Li, B., **Charron, J.-B.**, Demone, J., Shi, X., and Deng, X.W. 2014. The photoreceptor chaperone FHY1 has an independent role in gene modulation and plant development under far-red light. *Proceedings of the National Academy of Sciences of the U.S.A.*, 11:11888-11893.

Chen, F., Li, B., Li, G., **Charron, J.-B.**, Dai, M., Shi, X., and Deng, X.W. 2014. Arabidopsis phytochrome A directly targets numerous promoters for individualized modulation of genes in a wide range of pathways. *The Plant Cell*, 26:1949-1966.

Colton-Gagnon, K., Ali-Benali, M.A., Mayer, B.F., Dionne, R., Bertrand, A., Do Carmo, S., and **Charron, J.-B.** 2014. Comparative analysis of the cold acclimation and freezing tolerance capacities of seven diploid *Brachypodium distachyon* accessions. *Annals of Botany*, 113:681-693.

#### **DE BLOIS, S.**

Beauregard, F., and **de Blois, S.** 2014. Beyond a climate-centric view of plant distribution: Edaphic variables add value to distribution models. *PLoS ONE*, 9 (open access) [doi: 10.1371/journal.pone.0092642].

Boisvert-Marsh, L., Périé, C., and **de Blois, S.** 2014. Shifting with climate? Evidence for recent changes in tree species distribution at high latitudes. *Ecosphere*, 5 (open access) [doi: org/10.1890/ES14-00111.1].

#### **DONNELLY, D.J.**

Bethke, P.C., Nassar, A.M.K., Kubow, S., Leclerc, Y.N., Li, X.-Q., Haroon, M., Molen, T., Bamberg, J., Martin, M., and **Donnelly, D.J.** 2014. History and origin of 'Russet Burbank' ('Netted Gem') a sport of Burbank. *American Journal of Potato Research*, 91:594-609.

Kubow, S., Hobson, L., Iskandar, M.M., Sabbally, K., **Donnelly, D.J.**, and Agellon, L.B. 2014. An extract of Irish potatoes (*Solanum tuberosum* L.) decreases body weight gain and adiposity and improves glucose

control in the mouse model of diet-induced obesity. *Molecular Nutrition and Food Research*, 58:2235-2238.

Nassar, A.M.K., Kubow, S., Leclerc, Y.N., and **Donnelly, D.J.** 2014. Somatic mining for phytonutrient improvement of 'Russet Burbank' potato. *American Journal of Potato Research*, 91:89-100.

#### **DUTILLEUL, P.**

Allaire, S.E., Cambouris, A.N., Lafond, J.A., Lange, S.F., Pelletier, B., and **Dutilleul, P.** 2014. Spatial variability of potato tuber yield and plant nitrogen accumulation in two commercial fields. *Agronomy Journal*, 106:1-9.

Aziz, S., Gill, J., **Dutilleul, P.**, Neufeld, R., and Kermasha, S. 2014. Microencapsulation of krill oil using complex coacervation. *Journal of Microencapsulation*, 31:774-784.

Carrière, Y., Degain, B., Hartfield, K.A., Nolte, K.D., Marsh, S.E., Ellers-Kirk, C., van Leeuwen, W.J.D., Liesner, L., **Dutilleul, P.**, and Palumbo, J.C. 2014. Assessing transmission of crop diseases by insect vectors in a landscape context. *Journal of Economic Entomology*, 107:1-10.

**Dutilleul, P.**, Han, L., and Beaulieu, J. 2014. How do trees grow? Response from the graphical and quantitative analyses of computed tomography scanning data collected on stem sections. Comment les arbres poussent-ils ? Réponse des analyses graphique et quantitative de données de tomographie pour des sections de la tige. *Comptes Rendus Biologies (Académie des Sciences de Paris)*, 337:391-398.

Haltigin, T.W., Pollard, W.H., **Dutilleul, P.**, Osinski, G.R., and Koponen, L. 2014. Co-evolution of polygonal and scalloped terrains, southwestern Utopia Planitia, Mars. *Earth and Planetary Science Letters*, 387:44-54.

Pan, L., Adamchuk, V.I., Ferguson, R.B., **Dutilleul, P.**, and Prasher, S.O. 2014. Analysis of water stress prediction quality as influenced by the number and placement of temporal soil-water monitoring sites. *Journal of Water Resource and Protection*, 6 (open access) [doi: 10.4236/jwarp.2014.611091].

Van der Heyden, H., **Dutilleul, P.**, Brodeur, L., and Carisse, O. 2014. Spatial distribution of single nucleotide polymorphisms related to fungicide resistance and implications for sampling. *Phytopathology*, 104:604-613.

#### **JABAJI, S.**

Aliferis, K.A., Faubert, D., and **Jabaji, S.** 2014. A metabolic profiling strategy for the dissection of plant defense against fungal pathogens. *PLoS ONE*, 9 (open access) [doi: 10.1371/journal.pone.0111930].

Ngwa, F.F., Madramootoo, C.A., and **Jabaji, S.** 2014. Comparison of cyanobacterial microcystin synthetase (mcy) E gene transcript levels, mcy E gene copies, and biomass as indicators of microcystin risk under laboratory and field conditions. *Microbiology Open*, 3:411-425.

#### **KUSHALAPPA, A.C.**

Chamarthi, S., Kundan, K., Gunnaiah, R., **Kushalappa, A.C.**, Dion, Y., and Choo, T.M. 2014. Identification of fusarium head blight resistance related metabolites specific to doubled-haploid lines in barley. *European Journal of Plant Pathology*, 138:67-78.

Gunnaiah, R., and **Kushalappa, A.C.** 2014. Metabolomics deciphers the host resistance mechanisms in wheat cultivar Sumai-3, against trichothecene producing and non-producing isolates of *Fusarium graminearum*. *Plant Physiology and Biochemistry*, 83:40-50.

Pushpa, D., Yogendra, K., Gunnaiah, R., **Kushalappa, A.C.**, and Murphy, A. 2014. Identification of late blight resistance related metabolites and genes in potato through non-targeted metabolomics. *Plant Molecular Biology Reporter*, 32:584-595.

### **MA, B.L.**

Gillespie, A.W., Diochon, A., **Ma, B.-L.**, Morrison, M.J., Kellman, L.M., Walley, F.L., Regier, T.Z., Chevrier, D., Dynes, J.J., and Gregorich, E.G. 2014. Nitrogen input quality changes the biochemical composition of soil organic matter stabilized in the fine fraction - a long-term study. *Biogeochemistry*, 117: 337-350.

Gregorich, E.G., McLaughlin, N.B., Lapen, D.R., **Ma, B.-L.**, and Rochette, P. 2014. Soil compaction, both an environmental and agronomic culprit: Increased nitrous oxide emissions and reduced plant nitrogen uptake. *Soil Science Society of America Journal*, 78:1913-1923.

Jiao, X., Kovacs, J.M., Shang, J., McNairn, H., Walters, D., **Ma, B.-L.**, and Geng, X.Y. 2014. Object-oriented crop mapping and monitoring using multi-temporal polarimetric RADARSAT-2 data. *ISPRS Journal of Photogrammetry and Remote Sensing*, 96:38-46.

Li, P.-F., Cheng, Z., **Ma, B.-L.**, Palta, J.A., Kong, H.-Y., Mo, F., Wang, J.-Y., Zhu, Y., Lv, G.-C., Batool, A., Bai, X., Li, F.-M., and Xiong, Y.-C. 2014. Dryland wheat domestication changed the development of aboveground architecture for a well-structured canopy. *PLoS ONE*, 9 (open access) [doi: 10.1371/journal.pone.0095825].

**Ma, B.-L.**, Wu, T.-Y., and Shang, J. 2014. On-farm comparison of variable rates of nitrogen with uniform application to maize on canopy reflectance, soil nitrate and grain yield. *Journal of Plant Nutrition*, 177:216-226.

Nimir, N.E.A., Lu, S., Zhou, G., **Ma, B.-L.**, Guo, W., and Wang, Y. 2014. Exogenous hormones alleviated salinity and temperature stresses on germination and early seedling growth of sweet sorghum. *Agronomy Journal*, 106:2305-2315.

Wang, Z., Gao, J., and **Ma, B.-L.** 2014. Concurrent improvement in maize yield and nitrogen use efficiency with integrated agronomic management strategies. *Agronomy Journal*, 106:1243-1250.

Wu, W., Li, C., **Ma, B.-L.**, Shah, F., Liu, G., and Liao, Y. 2014. Genetic progress in wheat yield and associated traits in China since 1945 and future prospects: A review. *Euphytica*, 196:155-168.

Zhao, B., **Ma, B.-L.**, Hu, Y.G., and Liu, J.H. 2014. Characterization of nitrogen and water status in oat leaves using optical sensing approach. *Journal of the Science of Food and Agriculture*, 95:367-378.

Zhao, H., Wang, R.Y., **Ma, B.-L.**, Xiong, Y.-C., Qiang, S.C., Wang, C.L., Liu, C.-A., and Li, F.-M. 2014. Ridge-

furrow with full plastic film mulching improves water use efficiency and tuber yield of potato in a semiarid rainfed ecosystem. *Field Crops Research*, 161:137-148.

Zhou, H., Zhang, H., Mo, F., Zhao, H., Wang, R.Y., Wu, S., Deng, H., Asfa, B., **Ma, B.-L.**, and Xiong, Y-C. 2014. Ecological process of water transformation in furrow and ridge mulching system in oat field under extreme drought scenario. *Acta Ecologica Sinica*, 34:1757-1771.

#### **SEGUIN, P.**

Bertrand, A., Piva, A., Tremblay, G.F., Bélanger, G., Castonguay, Y., and **Seguin, P.** 2014. Elevated CO<sub>2</sub> and temperature affect the composition and in vitro degradability of timothy roots. *Crop Science*, 54:2893-2902.

Delaquis, E., Samson, R., **Seguin, P.**, Mustafa, A.F., and Martel, H. 2014. Impacts of improved switchgrass and big bluestem selections on biomass yield, quality, and morphological characteristics. *Advances in Agriculture* (open access) [doi: 10.1155/2014/192824].

Ker, K., **Seguin, P.**, Driscoll, B.T., Fyles, J.W., and Smith, D.L. 2014. N dynamics of switchgrass: Effects of inoculation by endophytic plant growth promoting rhizobacteria on establishment year N use efficiency. *Archives of Agronomy and Soil Sciences*, 60:1553-1563.

Kurian, J.K., Garipey, Y., Lefsrud, M., Orsat, V., **Seguin, P.**, Yaylayan, V.A., and Raghavan, G.S.V. 2014. Experimental study on calcium hydroxide assisted delignification of hydrothermally treated sweet sorghum bagasse. *International Journal of Chemical Engineering* (open access) [doi: 10.1155/2014/684296].

**Seguin, P.**, Chennupati, P., Tremblay, G., and Liu, W. 2014. Crop management, genotypes, and environmental factors affect soyasaponin B concentration in soybean. *Journal of Agricultural and Food Chemistry*. 62:7160-7165.

#### **SINGH, J.**

Nandha, P., and **Singh, J.** 2014. Comparative assessment of genetic diversity between wild and cultivated barley using gSSR and EST-SSR markers. *Plant Breeding*, 133:28-35.

Syan, H.S., Prasher, S.O., Pageau, D., and **Singh, J.** 2014. Dissipation of major herbicides applied in transgenic and non-transgenic canola production in Quebec. *European Journal of Soil Biology*, 63:21-27.

#### **SMITH, D.L.**

Jung, W.J., Mabood, F., Souleimanov, A., Whyte, L.G., Niederberger, T.D., and **Smith, D.L.** 2014. Antibacterial activity of antagonistic bacterium *Bacillus subtilis* DJM-51 against phytopathogenic *Clavibacter michiganense* subsp. *michiganense* ATCC 7429 in vitro. *Microbial Pathogenesis*, 77:13-16.

Mabood, F., Zhou, X., and **Smith, D.L.** 2014. Microbial signaling and plant growth promotion. *Canadian Journal of Plant Science*, 94:1051-1063.

Miransari, M., and **Smith, D.L.** 2014. Plant hormones and seed germination. *Environmental and Experimental Botany*, 99:110-121.

Singh, A.K., Madramootoo, C.A., Goyal, M.K., and **Smith, D.L.** 2014. Corn yield simulation using the STICS model under varying nitrogen management and climate change scenarios. *Journal of Irrigation and Drainage Engineering*, 140 (open access) [doi: org/10.1061/(ASCE)IR.1943-4774.0000682].

Singh, A.K., Madramootoo, C.A., and **Smith, D.L.** 2014. Impact of different water management scenarios on corn water use efficiency. *Transactions of the ASABE*, 57:1319-1328.

**Smith, D.L.** and Zhou, X. 2014. An effective integrated research approach to study climate change in Canada. *Canadian Journal of Plant Science*, 94:995-1008.

Vessey, J.K., Fei, H., Burton, D.L., Bradley, R.L., and **Smith, D.L.** 2014. The bilateral influence of plant and rhizosphere characteristics in Brassicas varying in seed oil productivity. *Canadian Journal of Plant Science*, 94:1113-1116.

**WATSON, A.K.**

Bae, J., Mercier, G., **Watson, A.K.**, and Benoit, D.L. 2014. Seed germination test for heavy metal phytotoxicity assessment. *Canadian Journal of Plant Science*, 94:1519-1521.