

## Department of Plant Science

### Publications between January 1 and December 31, 2008

#### List of all academic staff members

**Emeritus Professors:** Estey, R.H.; Grant, W.F.

**Professors:** Dutilleul, P.R.; Smith, D.L. (Chair); Watson, A.K.

**Associate Professors:** de Blois, S.; Donnelly, D.J.; Jabaji, S.H. (Assoc. Dean – Research & Graduate Education); Kushalappa, A.C.; Seguin, P.; Stewart, K.A.; Waterway, M.J.

**Assistant Professors:** Bede, J.; Singh, J.; Stromvik, M.

**Faculty Lecturers:** Begg, C.; McClintock, K.; Wees, D.

**BEDE, J.** (Weech, M.H., Chapleau, M., Pan, L., Ide, C. and **Bede, J.C.**) Caterpillar saliva interferes with induced *Arabidopsis thaliana* defense responses via the systemic acquired resistance pathway. *Journal of Experimental Botany*, v. 59, 2008, pp. 2437-2448.

--(Babic, B., Poisson, A., Darwish, S., Lacasse, J., Merkx-Jacques, M., Despland, E. and **Bede, J.C.**) Influence of dietary nutritional composition on caterpillar salivary enzyme activity. *Journal of Insect Physiology*, v. 54, 2008, pp. 286-296.

--(Merkx-Jacques, M., Despland, E. and **Bede, J.C.**) Nutrient utilization by generalist caterpillars of the beet armyworm, *Spodoptera exigua*. *Physiological Entomology*, v. 33, 2008, pp. 51-61.

--(Darwish, S., Pan, L., Ide, C. and **Bede, J.C.**) Caterpillar-specific gene expression in *Medicago truncatula*. *Plant Molecular Biology Reporter*, v. 26, 2008, pp. 12-31.

**BEGG, C.** (Bernatchez, F., Jeannotte, R., **Begg, C.B.M.**, Hamel, C. and Whalen, J.K.) Soil fertility and arbuscular mycorrhizal fungi related to trees growing on smallholder farms in Senegal, *J Arid Environments*, v. 72, 2008, pp. 1247-1256

**de BLOIS, S.** (Schmucki, R., and **de Blois, S.**) Population structures and individual performances of *Trillium grandiflorum* in hedgerow and forest habitats. *Plant Ecology*, v. 202, 2008, pp. 67–78.

--(Roy V. and de Blois S.) Evaluating hedgerow corridors for the conservation of native forest herb diversity. *Biological Conservation*, v. 141, 2008, pp. 298-307.

**DONNELLY, D.** (Li, X-Q., Haroon, M., Coleman, S.E., Sullivan, A., Singh, M., Ward, L., DeBoer, S.H., Zhang, T. and **Donnelly, D.J.**) A simplified procedure for verifying and identifying potato cultivars using multiplex PCR. *Canadian Journal of Plant Science*, v. 88, 2008, pp. 583-592.

-- (Zhang, T., Fortin, M., **Donnelly, D.J.** and Li, X.-Q.) Constitutive expression of a new proteinase inhibitor II family gene in potato. *Journal of Huazhong Agricultural University*, v. 27, 2008, pp. 10-16.

--(Nassar, A.M.K., Ortiz-Medina, E., Leclerc, Y.N. and **Donnelly, D.J.**) Periclinal chimeral status of New Brunswick 'Russet Burbank' potato. *American Journal of Potato Research*, v. 85, 2008, pp. 432-437.

--(Hughes, B.R., Dale, A. and **Donnelly, D.J.**) 2008. Micropropagation in the Ontario Strawberry Plant Propagation Program. 6<sup>th</sup> North American Strawberry Symposium. Feb. 9-12, 2007. Ventura CA, USA.

**DUTILLEUL, P.R.** (Bona, K.A., Burgess, M., Fyles, J.W., Camiré, C., and **Dutilleul, P.**) Weed cover in hybrid poplar (*Populus*) plantations on Quebec forest soils under different lime treatments. *Forest Ecology and Management*, v. 255, 2008, pp. 2761-2770.

--(\***Dutilleul, P.**, Pelletier, B. and Alpargu, G.) Modified *F* tests for assessing the multiple correlation between one spatial process and several others. *Journal of Statistical Planning and Inference*, v. 138, 2008, pp. 1402-1415.

--\***Dutilleul, P.** A note on sufficient conditions for valid unmodified *t* testing in correlation analysis with autocorrelated and heteroscedastic sample data. *Communications in Statistics – Theory and Methods*, v. 37, 2008, pp. 137-145.

--(\***Dutilleul, P.**, Han, L., and Smith, D.L.) Plant light interception can be explained via computed tomography scanning: Demonstration with pyramidal cedar (*Thuja occidentalis*, *Fastigiata*). *Annals of Botany*, v. 101, 2008, pp. 19-23.

--(Gingras, D., **Dutilleul, P.**, and Boivin, G.) Effect of plant structure on searching strategy and searching efficiency of *Trichogramma turkestanica*. 9 pages. *Journal of Insect Science*, v. 8, 2008, p. 28, available online: [insectscience.org/8.28](http://insectscience.org/8.28).

--(Han, L., **Dutilleul, P.**, Prasher, S.O., Beaulieu, C., and Smith, D.L.) Assessment of common scab-inducing pathogen effects on potato underground organs via computed tomography scanning. *Phytopathology*, v. 98, 2008, pp. 1118-1125.

**JABAJI, S.H.** (Jeannotte, R., Hamel, C., **Jabaji, S.**, Whalen, J.K.) Comparison of solvent mixtures for pressurized solvent extraction of soil fatty acid biomarkers. *Talanta*, v. 77, 2008, pp. 195-199

**KUSHALAPPA, A.C.** (Paranidharan, V., Abu-Nada, Y., Hamzehzarghani, H., **Kushalappa, A.C.**, et al.) Resistance related metabolites in wheat against *Fusarium graminearum* and the virulence factor, DON. *Botany*, v. 86, 2008, pp. 1168-1179.

--(Hamzehzarghani, H., Paranidharan, V., Abu-Nada, Y., **Kushalappa, A.C.**, Mamer, O. and Somers, D.) Metabolic profiling to discriminate wheat near isogenic lines, with quantitative trait loci at chromosome 2DL, varying in resistance against fusarium head blight. *Can. J. Plant Sci.*, v. 88, 2008, pp. 789-797.

--(Hamzehzarghani, H., Paranidharan, V., Abu-Nada, Y., **Kushalappa, A.C.**, Dion, Y., Rioux, S., Comeau, A., Yaylayan, V. and Marshall, W.D.) Development of metabolic profiling technology for potential high throughput screening of quantitative resistance in wheat cultivars against fusarium head blight. *Can. J. Plant Path.*, v. 30, 2008, pp. 24-36.

--(Kumaraswamy, K., **Kushalappa, A.C.**, Choo, T.M., Dion, Y. and Rioux, S.) Monoisotopic mass (LC-nESI-LTQ-Orbitrap) abundances to discriminate resistance in barley against *Fusarium graminearum*. Metabolomics congress, Boston, Sept. 6-10, 2008.

--(Abu-Nada, Y., Kumaraswamy, K., Bollina, V., **Kushalappa, A.C.** et al.) Identification of resistance related metabolites in barley against fusarium head blight based on high accurate mass LC/MS (LTQ-Orbitrap). Can. Phytopath. Soc. Charlottetown, June 15-18, 2008.

**SEGUIN, P.** (Sheaffer, C.C., Mathison, R.D. and **Seguin, P.**) Vegetative establishment of Kura clover. *Canadian Journal of Plant Science*, v. 88, no. 5, 2008, pp. 921-924. [Article featured on the issue's cover].

--(Kim, M.Y., **Seguin, P.**, Ahn, J.K., Kim, J.J., Chun, S.C., Kim, E.H., Seo, S.H., Kang, E.Y., Kim, S.L., Park, Y.J., Ro, H.M. and Chung, I.M.) Phenolic compound concentration and antioxidant activities of edible and medicinal mushrooms from Korea. *Journal of Agricultural and Food Chemistry*, v. 56, no. 16, 2008, pp. 7265-7270.

--(Morales-Garcia, D., Stewart, K.A. and **Seguin, P.**) Effects of saline water on growth and physiology of bell pepper seedlings. *International Journal of Vegetable Science*, v. 14, no. 2, 2008, pp. 121-138.

--(\*Pelletier, S., Bélanger, G., Tremblay, G.F., **Seguin, P.**, Drapeau, R. and Allard, G.) Mineral and NDF concentrations, and digestibility of timothy as affected by delayed harvests. *Canadian Journal of Animal Science*, v. 88, no. 2, 2008, pp. 325-329.

--(\*Mustafa, A.F., **Seguin, P.**, Bélair, G. and Kumar, A.) Chemical composition and ruminal degradability of grain pearl millet grown

in southwestern Quebec. *Canadian Journal of Animal Science*, v. . 88, no. 1, 2008, pp. 71-77.

--(\*Gélinas, B. and **Seguin, P.**) Evaluation of management practices for grain amaranth production in eastern Canada. *Agronomy Journal*, v. 100, no. 2, 2008, pp. 344-351.

--(\*Gélinas, B. and **Seguin, P.**) Development and yield potential of grain amaranth in southwestern Québec. *Canadian Journal of Plant Science*, v. 88, no. 1, 2008, pp. 133-136. [Article featured on the issue's cover].

--(\*Pelletier, S., Bélanger, G., Tremblay, G.F., Chantigny, M., **Seguin, P.**, Drapeau, R. and Allard, G.) Nutritive value of timothy fertilized with Cl or Cl-containing liquid swine manure. *Journal of Dairy Science*, v. 91, no. 2, 2008, pp. 713-721.

--(\*Vargas-Bello-Pérez, E., Mustafa, A.F. and **Seguin, P.**) Effects of feeding forage soybean silage on milk production, nutrient digestion and ruminal fermentation of lactating dairy cows. *Journal of Dairy Science*, v. 91, no. 1, 2008, pp. 229-235.

**SINGH, J. (Singh, J.,** Freeling, M. and Lisch, D.) A position effect on the heritability of epigenetic silencing. *PLOS Genetics*, v. 4, no. 10: e1000216, 2008, pp. 1-17.

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--(**Singh, J.**, Lam, A., Blossie, P., Bregitzer, P. and Lemaux P.) Transposon-Mediated Gene Search: Finding a Needle in a Haystack. *In Proceedings of the 11th International Wheat Genetics Symposium* (Edited by Rudi Appels, Russell Eastwood, Evans Lagudah, Peter Langridge, Michael Mackay Lynne), Brisbane, Queensland, 24-29 August, 2008, p1-3.

**SMITH, D.L.** (Webber, H.A., Madramootoo, C.A., Bourgault, M., Horst, M.G., Stulina, G. and **Smith, D.L.**) Plant - soil water dynamics of alternate furrow and regulated deficit irrigation for two legume crops. *Transaction of the ASABE*, v. 51, 2008, pp.1341-1350.

--(\*Khan, W., Prithviraj, B. and **Smith, D.L.**) Nod factor [Nod Bj V (C<sub>18:1</sub>, MeFuc)] and lumichrome enhance photosynthesis and growth of corn and soybean. *J Plant Physiol.*, v. 165, 2008, pp. 1342-1351.

--(\*Bin, L., Jin-ping, Z., Wei-guo Hou, Sheng, Y. and **Smith, D.L.**) PCR-based sensitive detection of the edible fungus *Boletus edulis* from rDNA ITS sequences. *Electronic Journal of Biotechnology*, v. 11, no. 3, 2008, pp. 1-8.

--(\*Miransari, M. and **Smith, D.L.**) Using signal molecule genistein to alleviate the stress of suboptimal root zone temperature on soybean-Bradyrhizobium symbiosis under different soil textures. *Journal of Plant Interactions*, v. 3, 2008, pp. 287-295.

--(\*Jung, W.-J., Mabood, F., Souleimanov, A., Zhou, X., Jaoua, S., Kamoun, F. and **Smith, D.L.**) Stability and antibacterial activity of bacteriocins produced by *Bacillus thuringiensis* and *Bacillus thuringiensis* ssp. *Kurstaki*. *Journal of Microbiology and Biotechnology*, v. 18, 2008, pp. 1836–1840.

--(Dutilleul, P., Han, L. and **Smith, D.L.**) Plant light interception can be explained via computed tomography scanning: demonstration with pyramidal cedar (*Thuja occidentalis*, Fastigiata). *Annals of Botany*, v. 101, 2008, pp. 19-23.

--(\*Wrobel, C., Coulman, B.E. and **Smith, D.L.**) An investigation into the anatomical differences between flat and folded leaves in reed canarygrass (*Phalaris arundinacea* L.). *Canadian Journal of Plant Science*, v. 88, 2008, pp. 339–342.

--(\*Jung, W.-J., Mabood, F., Kim, T.H. and **Smith, D.L.**) Induction of pathogenesis-related proteins on biocontrol of *Rhizoctonia solani* with *Pseudomonas aureofaciens* in soybean (*Glycine max* L. Merr.) plants. *Biocontrol*, v. 52, 2008, pp. 895–904.

--(\*Jung, W.-J., Mabood, F., Souleimanov, A., Park, R.-D. and **Smith, D.L.**) Chitinases produced by *Paenibacillus illinoisensis* and *Bacillus thuringiensis* subsp. *pakistani* degrade Nod factor from *Bradyrhizobium japonicum*. *Microbiological Research*, v. 163, 2008, pp. 345-349.

--(\*Almaraz, J.J., Mabood, F., Zhou, X., Gregorich, E.G. and **Smith, D.L.**) Climate change, weather variability and corn yield at a higher latitude locale: southwestern Quebec. *Climatic Change*, v. 88, 2008, pp.187-197.

**STEWART, K.A.** (Morales-Garcia ,D. **Stewart, K.A.** and Seguin, P.) Effects of saline water on growth and physiology of Bell Pepper seedlings. *International Journal of Vegetable Science*, v. 14, no. 2, 2008, pp. 121-139.

--(Rekika, D., **Stewart, K.A.**, Boivin, G. and Jenni, S) Reduction of insect damage in radish with floating row covers. *Journal of Vegetable Science*, v. 14, no. 2, 2008, pp. 177-193.

**STROMVIK, M.** (Saeed, H., Vodkin, L. and **Strömvik, M.V.** ) Promoters of the soybean seed lectin homologues *Le2* and *Le3* regulate gene expression in vegetative tissues in Arabidopsis. *Plant Science*, v. 175, 2008, pp. 868-876.

--(Gagarinova, A., Babu, M., **Strömvik, M.V.** and Wang, A.) Recombination analysis of Soybean mosaic virus full-length genome sequences reveals co-infection of two distinct isolates in a single host cell. *Virology Journal (BMC)*, v. 5, 2008, p. 143.

--(Fauteux, F., Blanchette, M. and **Strömvik, M.V.**) Seeder: Discriminative Seeding DNA Motif Discovery. *Bioinformatics*, v. 24, 2008, pp. 2303-2307.

--(Cheng, K.C. and **Strömvik, M.V.**) SoyXpress: a database for exploring the soybean transcriptome. *BMC Genomics*, v. 9, 2008, p. 368.

--(\*Cheng, K.C., Beaulieu, J., Iqura, E., Belzile, F.J., Fortin, M.G. and **Strömvik, M.V.**) Effect of transgenes on global gene expression in soybean is within the natural range of variation of conventional cultivars. *Journal of Agricultural and Food Chemistry*, v. 56, 2008, pp. 3057-3067.

--(\*Dauch, A.L., Morissette, D., Brousseau, R., Masson, L., **Strömvik, M.V.** and Jabaji-Hare, S.H.) Analysis of enriched transcripts induced during velvetleaf-*Colletotrichum coccodes* interaction. *Canadian Journal of Plant Pathology*, v. 30, 2008, pp. 133-147.

**WATERWAY, M.J.** (\*Consaul, L.L., Gillespie, L.J. and **Waterway, M.J.**) A new species of Alkali grass (*Puccinellia*, Poaceae) from the western North American Arctic. *Novon*, v. 18, no. 1, 2008, pp. 16-20.

--(\*Consaul, L.L., Gillespie, L.J. and **Waterway, M.J.**) Systematics of North American arctic diploid *Puccinellia* (Poaceae): Morphology, DNA content, and AFLP markers. *Systematic Botany*, v. 33, 2008, pp. 251-261.

--(Consaul, L.L., Gillespie, L.J. and **Waterway, M.J.**) Systematics of three North American polyploid arctic alkali grasses (*Puccinellia*, Poaceae): morphology, ploidy, and AFLP markers. *Botany*, v. 86, 2008, pp. 916-937.

--(Smith, T.W. and **Waterway, M. J.**) Evaluating species limits and hybridization in the *Carex complanata* complex using morphology, amplified fragment length polymorphisms, and restriction fragment analysis. *Botany*, v. 86, 2008, pp. 809-826.

--(Smith, T.W. and **Waterway, M.J.**) Evaluating the taxonomic status of the globally rare *Carex roanensis* (Cyperaceae) and allied species using morphology, and amplified fragment length polymorphisms. *Systematic Botany*, v. 33, 2008, pp. 525-535.

--(Flinn, K., Lechowicz, M.J. and **Waterway, M.J.**) Plant species diversity and composition of wetlands within an upland forest. *American Journal of Botany*, v. 95, no. 10, 2008, pp. 1216-1224.

--(Dabros, A. and **Waterway, M.J.**) Segregation of sedge species (Cyperaceae) along environmental gradients in fens of the Schefferville region, northern Quebec. Chap. 6 in: R. F. C. Naczi and B. A. Ford [eds.], *Sedges: uses, diversity, and systematics of the Cyperaceae*. Monographs in Systematic Botany from the Missouri Botanical Garden, v. 108, 2008, pp. 145-161. (papers from the Sedges 2002 International symposium on the uses, diversity and systematic of the Cyperaceae).