

Department of Plant Science

Publications between January 1, 2011 and December 31, 2011

List of all academic staff members

Emeritus Professors: Estey, R.H.; Grant, W.F. (deceased 2011)

Professors: Dutilleul, P.R.; Smith, D.L.; Watson, A.K.

Associate Professors: Bede, J., de Blois, S.; Donnelly, D.J.; Jabaji, S.H. (Assoc. Dean – Research & Graduate Education); Kusalappa, A.C.; Seguin, P. (Chair); Stewart, K.A. (post-retirement May 31, 2010); Waterway, M.J.

Assistant Professors: Charron, J.B.; Singh, J.; Stromvik, M.

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

Adjunct Professors: Bertrand, A.; Jenni, S; Khanizadeh, S.

BEDE, J.C.

Prado, A., Ledezma, J., Rios-Cubila, L., Bede, J.C. and Windsor, D.M. 2011. Two genera of Aulacoscelinae beetles reflexively bleed azoxyglycosides found in their host cycads. *Journal of Chemical Ecology*. 27: 736-740.

CHARRON, J.B.

Lau, O.S., Xi, H., Charron, J.B., Li, G., and Deng, X.W. 2011. A direct link from the light signaling pathway to the circadian clock in *Arabidopsis*. *Molecular Cell*. 43: 703-712.

DONNELLY, D.J.

Nassar, A.M.K., Abdunour, J., Leclerc, Y., Li, X-Q., and Donnelly, D.J. 2011.

Intraclonal selection for improved processing of NB ‘Russet Burbank’ potato.

American Journal of Potato Research. 88: 387-397.

Li, X-Q., Zhang, T., and Donnelly, D.J. 2011. Selective loss of cysteine residues and disulphide bonds in a potato proteinase inhibitor II family. *PLoS ONE* 6:e18615.

Singh, A., Sebally, K., Kubow, S., Donnelly, D.J., Garipey, Y., Orsat, V. and Raghavan, G.S.V. 2011. Microwave-assisted extraction of phenolic antioxidants from potato peels. *Molecules* 16: 2218-2232.

DUTILLEUL, P.

Dutilleul, P. and Pelletier, B. 2011. Tests of significance for structural correlations in the linear model of coregionalization. *Mathematical Geosciences* 43: 819-846.

Lafond, J.A., Allaire, S.E., Dutilleul, P., Pelletier, B., Lange, S.F. and Cambouris, A.N. 2011. Spatiotemporal analysis of the relative soil gas diffusion coefficient in two sandy soils: Variability decomposition and correlations between sampling dates at two spatial scales. *Soil Science Society of America Journal* 75: 1613-1625.

GRANT, W.F.

Grant, W.F. 2011. Charles Leonard Huskins. *Genome* 54(3): iii-vi.

JABAJI, S.

Mimee, B., Avis, T.J., Boivin, S., Jabaji, S. and Tweddell, R. 2011. Effect of iron and nitrogen on the development of *Helminthosporium solani* and potato silver scurf. *Canadian Journal of Plant Pathology* 33: 506-511.

Aliferis, K., Cubeta, M. and Jabaji, S. 2011. Chemotaxonomy of fungi in the *Rhizoctonia solani* species complex using GC/MS metabolic profiling. *Metabolomics* DOI: 10.1007/s11306-011-0340-1.

Chen, J.S., Jabaji, S. and Seguin, P. 2011. Gene expression of isoflavones-related genes in soybean. *Canadian Journal of Plant Science* 91: 697-705.

Aliferis, K.A. and Jabaji, S. 2011. Metabolomics-a robust bioanalytical approach for the discovery of the modes-of-action of pesticides: a review. *Pesticides Biochemistry and Physiology*. 100: 105-117. This paper has been listed as Number 1 of 25 hottest topics published in this journal.

KUSHALAPPA, A.C.

Bollina, V. and Kushalappa, A.C. 2011. In vitro inhibition of trichothecene biosynthesis in *Fusarium graminearum* by resistance-related endogenous metabolites identified in barley. *Mycology* 2: 291-296.

Bollina, V., Kushalappa, A.C., Choo, T.M., Dion, Y. and Rioux, S. 2011. Identification of metabolites related to mechanisms of resistance in barley against *Fusarium graminearum*, based on mass spectrometry. *Plant Molecular Biology* 77: 355-370.

- Kumaraswamy, G.K., Kushalappa, A.C., Choo, T.M., Dion, Y. and Rioux, S. 2011. Mass spectrometry based metabolomics to identify potential biomarkers for resistance in barley against fusarium head blight (*Fusarium graminearum*). *Journal of Chemical Ecology* 37: 846-856.
- Kumaraswamy, G.K., Bollina, V., Kushalappa, A.C., Choo, T.M., Dion, Y., Rioux, S. and Faubert, D. 2011. Metabolomics technology to phenotype resistance in barley against *Gibberella zeae*. *European Journal of Plant Pathology* 130: 29-43.
- SEGUIN, P.
- Chennupati, P., Seguin, P. and Liu, W. 2011. Effects of high temperature stress at different development stages on soybean isoflavone and tocopherol concentrations. *Journal of Agricultural and Food Chemistry*. 59(24): 13081-13088.
- Mustafa, A.F., Seguin, P. and Gélinas B. 2011. Chemical composition, dietary fiber, tannins, and minerals of grain amaranth genotypes. *International Journal of Food Sciences and Nutrition*. 62(7): 750-754.
- Chen, H., Seguin, P., Jabaji, S. and Liu, W. 2011. Spatial distribution of isoflavones and isoflavone-related gene expression in high and low isoflavone soybean cultivars. *Canadian Journal of Plant Science*. 91(4): 697-705.
- Bouchard, A., Vanasse, A., Seguin, P. and Bélanger, G. 2011. Yield and composition of sweet pearl millet as affected by row spacing and seeding rate. *Agronomy Journal*. 103(4): 995-1001.
- Seguin, P., Tremblay, G., Pageau, D., Liu, W. and Turcotte, P. 2011. Soybean lutein concentration: Impact of crop management and genotypes. *Crop Science*. 51(3): 1151-1160. [Article featured on the Crop Science Society of America News Release webpage on 20 July 2011]
- Morales-Garcia, D., Stewart, K.A., Seguin, P. and Madramootoo, C. 2011. Supplemental saline drip irrigation applied at different growth stages of two bell pepper cultivars grown with or without mulch in non-saline soil. *Agricultural Water Management*. 98(5): 893-898.
- Sheaffer, C.C., Seguin, P. 2011. Kura clover response to K fertilization. *Communications in Soil Science and Plant Analysis*. 42(4): 450-456.

Cong, L.C., Seguin, P., Khanh, T.D., Kim, E.H., Ahn, J.K., Chung, I.M. 2011. Isoflavone concentrations and composition of soybean varieties grown in upland and lowland regions of Vietnam. *Korean Journal of Crop Science*. 56(1): 64-71.

Kim, E.H., Seguin, P., Lee, J.E., Song, H.K., Chung, I.M. 2011. Elevated ultraviolet-B radiation reduces concentrations of isoflavones and phenolic compounds in soybean seeds. *Journal of Agronomy and Crop Science*. 197(1):75-80.

SINGH, J.

Tan, H-Q. and Singh, J. 2011. High-efficiency thermal asymmetric interlaced (HE-TAIL) PCR for amplification of *Ds* transposon insertion sites in barley. *Journal of Plant Molecular Biology and Biotechnology* 2: 9-14.

SMITH, D.L.

Jung, W-J., Mabood, F., Souleimanov, A. and Smith, D.L. 2011. Induction of defense-related enzymes in soybean leaves by class IId bacteriocins (thuricin 17 and bacthuricin F4) purified from *Bacillus* strains. *Microbiological Research* 167: 14-19.

Khan, W., Costa, C., Souleimanov, A., Prithiviraj, B. and Smith, D.L. 2011. Response of *Arabidopsis thaliana* roots to Lipo-chitooligosaccharide from *Bradyrhizobium japonicum* and other chitin-like compounds. *Plant Growth Regulation* 63: 243-249.

Almaraz, J.J., Mabood, F., Zhou, X., Souleimanov, A. Smith, D.L. 2011. Effect of Nod Factor sprays on soybean growth and productivity under field conditions. *Acta Agriculturae Scandinavica, Section B – Plant Soil Science* 61: 228-234.

Begna, S.H., Fielding, D.J., Tsegaye, T., van Veldhuizen, R. and Smith, D.L. 2011. Intercropping of oat and field pea in Alaska: An alternative approach to quality forage production and weed control. *Acta Agriculturae Scandinavica, Section B – Plant Soil Science* 61: 235-244.

STEWART. K.A.

Morales-Garcia, D., Stewart, K.A., Seguin, P. and Madramootoo, C. 2011.

Supplemental saline drip irrigation applied at different growth stages of two bell

pepper cultivars grown with or without mulch in non-saline soil. *Agricultural Water Management*. 98(5): 893-898.

STROMVIK, M.V.

Hunt, M., Kaur, N., Stromvik, M. and Vodkin, L. 2011. Transcript profiling reveals expression differences in wild-type and glabrous soybean lines. *BMC Plant Biology* 11:145.

Livingstone, J.M., Zolotarov, Y. and Stromvik, M.V. 2011. Transcripts of soybean isoflavone 7-O-glucosyltransferase and hydroxyisoflavanone dehydratase gene homologues are at least as abundant as transcripts of their well known counterparts. *Plant Physiology and Biochemistry*. 49: 1071-1075.

Archambault, A. and Stromvik, M.V. 2011. PR-10, defensin and cold dehydrin genes are among those over expressed in *Oxytropis* (Fabaceae) species adapted to the arctic. *Functional and Integrative Genomics*. 11: 497-505.

WATSON, A.K.

Jinek, A., Simard, M., Briere, S.C., Watson, A.K., Tweddell, R.J. and Rioux, D. 2011. Foliage susceptibility of six eastern Canadian forest tree species to *Phytophthora ramorum*. *Canadian Journal of Plant Pathology*. 33(1); 26-37.

ADJUNCT PROFESSORS

BERTRAND, A.

Bertrand, A., Castonguay, Y., Azaez, A., Hsiang, T. and Dionne, J. 2011. Cold-induced responses in annual bluegrass genotypes with differential resistance to pink snow mold (*Microdochium nivale*). *Plant Science*. 180: 111-119.

Bertrand, A., Prevost, D., Juge, C. and Chalifour, F.-P. Impact of elevated CO₂ on carbohydrate and ureide concentrations in soybean inoculated with different strains of *Bradyrhizobium japonicum*. *Botany*. 89: 481-490.

- Castonguay, Y., Bertrand, A., Michaud, R. and Laberge, S. 2011. Cold-induced biochemical and molecular changes in alfalfa populations selectively improved for freezing tolerance. *Crop Science*. 51: 2132-2144.
- Morin, C., Belanger, G., Tremblay, G.F., Bertrand, A., Castonguay, Y., Drapeau, R., Michaud, R., Berthiaume, R. and Allard, G. 2011. Diurnal variations in nonstructural carbohydrates and nutritive value in alfalfa. *Crop Science*. 51: 1297-1306.
- Dhont, C., Bertrand, A., Castonguay, Y. and Isabel, N. 2011. Changes of carbon and nitrogen metabolites in white spruce (*Picea glauca* [Moench] Voss) of contrasted growth phenotypes. *Trees*. 25: 711-723.
- Castonguay, Y., Dube, M.-P., Cloutier, J., Michaud, R., Bertrand, A. and Laberge, S. 2011. Intron-length polymorphism identifies a Y2K4 dehydrin variant linked with superior freezing tolerance in alfalfa. *Theoretical and Applied Genetics*. 124(5): 809-819.

JENNI, S.

- Plamondon, L., Gaudreau, L., Gosselin, A., Caron, J., Van Winden, D. and Jenni, S. 2011. Optimization of irrigation of romaine lettuce (*Lactuca sativa* L.) cultivated in muck soil. *Acta Hort*. 893: 1155-1160.
- Plamondon, L., Gaudreau, L., Gosselin, A., Caron, J., Jenni, S. and Van Winden, D. 2011. Effect of soil depth on water management of romaine lettuce (*Lactuca sativa* L.) cultivated in a muck soil. *Acta Hort*. 889: 453-458.

KHANIZADEH, S.

- Fan, L., Dalpe, Y., Fang, C.Q., Dube, C. and Khanizadeh, S. 2011. Influence of arbuscular mycorrhizae on biomass and root morphology of selected strawberry cultivars under salt stress. *Botany*. 89(6): 397-403.
- Fan, L., Fang, C.Q., Dube, C., Tremblay, N.A. and Khanizadeh, S. 2011. A non-destructive method to predict polyphenols content in strawberry. *Journal of Agricultural, Food and Environmental Sciences*. 9(2): 59-62.

- Fan, L., Yu, C., Fang, C.Q., Zhang, M., Ranieri, M., Dube, C. and Khanizadeh, S. 2011. The effect of cultural practices on selected agronomic characteristics and phytochemical composition of 'Orleans' strawberry. *Canadian Journal of Plant Science*. 91(2): 403-409.
- Joshi, A.P.K., Rupasinghe, H.P.V. and Khanizadeh, S. 2011. Impact of drying processes on bioactive phenolics, vitamin C and antioxidant capacity of red-fleshed apple slides. *Journal of Food Processing and Preservation*. 35(4): 453-457.
- Kempler, C., Daubeny, H.A., Harding, B., Frey, L., Baumann, T., Finn, C.E., Khanizadeh, S., Jamieson, A.R., MacKenzie, K.C., Moore, P.P. and Sweeney, M.E. 2011. 'Stolo' strawberry. *HortScience* 46(7): 1046-1048.
- Khanizadeh, S., Groleau, Y., Granger, R., Rousselle, G.L., Prive, J.-P. and Embree, C.G. 2011. Ottawa 3 ameliore (O.3A) apple rootstock. *Acta Horticulturae*. 903: 189-190.
- Khanizadeh, S., Groleau, Y., Granger, R., Rousselle, G.L., Prive, J.-P. and Embree, C.G. 2011. St. Jean 84 (SJ84) dwarf winter hardy apple rootstock series. *Acta Horticulturae*. 903: 187-188.
- Khayyat, M., Khanizadeh, S., Tafazoli, E., Rajaei, S., Kholdebarin, B. and Emam, Y. 2011. Effects of different calcium forms on gas exchange activities, water usage and macronutrient uptake by strawberry plants under sodium chloride stress. *Journal of Plant Nutrition*. 34(3): 427-435.
- Li, D., Charles, M.T., Carisse, O., Tsao, R., Dube, C. and Khanizadeh, S. 2011. Changes in ascorbate-glutathione pathway enzymes in response to *mycosphaerella fragariae* infection in selected strawberry genotypes. *Archives of Phytopathology and Plant Protection*. 44(8): 712-725.
- Medina, Y., Gosselin, A., Desjardins, Y., Harnois, R., Gauthier, L. and Khanizadeh, S. 2011. Effect of plastic mulches on yield and fruit quality of strawberry plants growth under high tunnels. *Acta Horticulturae*. 893: 1327-1332.
- Privé, J.-P., Embree, C.G. and Khanizadeh, S. 2011. Performance of eight semi-dwarf apple rootstocks at three apple growing regions in Eastern Canada. *Acta Horticulturae*. 903: 341-347.
- Yu, C., Ranieri, M., Lv, D., Zhang, M., Charles, M.T., Tsao, R., Rekika, D., Kempler, C. and Khanizadeh, S. 2011. Phenolic composition and antioxidant capacity of newly

developed strawberry lines from British Columbia and Quebec. *International Journal of Food Properties*. 14(1): 59-67.