

Conference Activities

Conferences

International Ginseng Conference, Jilin China – September 2012. Approximately 200 experts, whose main focus is on ginseng research, attended this international conference in September 2012. Their latest achievements in ginseng research were outlined in both oral and poster presentations. About 30 students from Jilin University, Jilin Agricultural University, Changchun University of TCM presented their research; topics included both basic research and applied research. Many pharmaceutical companies from China like Jilin Zixin Pharmaceuticals, Ji An Yisheng Pharmaceuticals and Tonghua Dongbao Pharmaceuticals presented their products and delivered updates on their ginseng and ginseng-related products.

Ganjian Zhao from Dr Karmazyn's Pre-clinical PTG attended this prestigious conference, and presented his research findings on the effect of ginseng on the cardiovascular system in a poster format to conference delegates.

Phytochemical Society of North America (PSNA), 51st annual meeting, London – August 2012. In August, the PSNA held their 51st annual meeting here in London at Western. The meeting covered a broad range of topics: biosynthesis and metabolism; botanicals and medicinal; genomics and bioinformatics; phytochemicals in the interaction between plants and their environment; and, bioproducts from Canadian forests and production of valued attributes. Dr John T Arnason of the OGIRC's Phytochemical PTG was a member of the meeting's organizing committee. Chike Azike presented a poster at the meeting entitled: Paradoxical Immuno-modulating Effect of North American Ginseng Aqueous and Polysaccharide Extracts on Macrophage Immune Function.

Recent Events

Korean Ginseng Growers Lecture/Information Exchange



A delegation of Korean ginseng farmers and academics from Choong-book Provincial Meister College in Korea arranged to visit Western and OGIRC on Thursday, September 13, 2012 for a two-hour lecture and information exchange on the Science of Ontario Ginseng & Other Natural Bioactives. The session was a post-conference activity of the Cultivating Natural Bioactives for Health & Disease 2012 International Conference that was held in early July.

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The delegation was interested to hear about the historic background of North American ginseng in Ontario, the uses of Ontario ginseng, cultivation, and pesticides. The delegates were provided with a lecture outline, material from Agriculture and Agri-Food Canada (AAFC), and samples of Ontario ginseng tea and root slices provided by Ontario Ginseng Growers Association.

The group heard short lectures from three OGIRC researchers, and engaged in brief question and answer sessions after each presentation.

- Dr EMK Lui: The science of Ontario ginseng and other natural bioactives
- Dr S Zhou: Application of plant biotechnology to North American ginseng (*P. quinquefolius*) production
- Dr D Wu: Root transcriptome profiling and gene expression during the seasonal development of North American ginseng

The initial portion of Dr. Ed Lui's presentation covered the background of Ontario ginseng and its development as well as the issues and challenges facing Ontario ginseng growers. He went on to describe the work of OGIRC in product quality, safety and contaminants, medicinal properties, developments in advanced processing, agriculture and breeding program. The very real need for quality standards for not only ginseng but other Chinese medicines was a well-received component of the presentation. Ginseng as a raw herb is currently a priority in the International Organisation for Standardization (ISO) program.

Dr Sijun Zhou provided the delegates with details on current research addressing the genetic variation in cultivated ginseng and quality control issues relating to crop improvement. Research into plant breeding is important as there is great variability on a farm-to-farm and root-to-root basis as commercial North American ginseng is a collection of semi-land races originally collected from the wild. The plant breeding research aims to stabilize the plant population for specific traits.

Dr Di Wu's presentation focused on the process of root classification, DNA sequencing, and the bio-synthesis of ginsenosides.

After a lunch on campus, the group continued on to visit the ginseng research garden at AAFC's Delhi Research Station where they met with representatives

of the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA).

Royal Agricultural Winter Fair - 2012



The Ontario Ginseng Innovation & Research Consortium (OGIRC) was an active presence at the prestigious Royal Agricultural Winter Fair in Toronto for the week of November 4 to 11, 2012.

The OGIRC exhibited at Journey to Your Good Health under the Research for Your Good Health pavilion which links food, agriculture and health themes together by focusing on education, health protection, research, healthy meals and farming. The Journey attracts upwards of 200,000 visitors each year including more than 4,000 youth and is always a good opportunity for OGIRC to bring our research to the general public.

On Sunday, November 4, 2012, Dr Ed Lui represented the OGIRC under the Research for Your Good Health banner. The OGIRC exhibit featured pickled ginseng root, samples of ginseng root, our Ginseng Fun Facts poster, and other materials giving details on the project and North American ginseng. Ed provided fairgoers with a delicious ginseng drink combining ginseng powder, citron honey and flavoured black tea. A large poster prepared for the event offered insights into the health benefits of Ontario-grown North American ginseng, and featured the latest scientific progress in a variety of areas of interest to the public, such as cardiovascular disease, diabetes, cancer therapies, immune system functioning, athletic performance, muscle injury, etc.

Mary Alton Mackay, a renowned consultant and speaker at our recent *Cultivating Natural Bioactives* conference, monitored the OGIRC display so fairgoers had an opportunity to access the OGIRC poster and information until the Fair wrapped up on November 11.

News & Announcements

OGIRC in the news

CBC's The National. Dr David Bailey from the OGIRC's Safety Platform Technology Group was featured on the CBC's *National* on Monday, November 26, 2012. The interview and story focused on Dr Bailey's research into the growing number of pharmaceuticals with which



grapefruit interacts increasing the drugs' bioavailability and the potential for serious side effects. Dr. Bailey's work with the OGIRC's Safety PTG involves addressing the effect of ginseng extracts on human CYP3A4 enzyme. An active ingredient of grapefruit irreversibly inhibits the CYP3A4 enzyme. The full article and a short video are available on the CBC website at:

<http://www.cbc.ca/news/health/story/2012/11/26/grapefruit-juice-drug-interactions.html>.

The Globe and Mail. On October 11, 2012, The Globe and Mail ran advertisement for Brescia University College continuing Brescia's "Face of Brescia" campaign. The October ad featured Adrianna Cimo, a former OGIRC MSc student supervised by Dr Sharareh Hekmat in Brescia's Food and Nutrition Sciences Department.

Come Innovate. The Fall 2012 edition of Come Innovate, the Erie Innovation and Commercialization Quarterly, featured an article on the OGIRC's *Cultivating Natural Bioactives* conference – its program and contents. In his article, Ed Lui restated the importance of research and innovation to advance and sustain business development in natural health products and functional foods which was a focus of the conference.

Presentations by, and panel discussions with, various stakeholders from agriculture through to regulatory agencies demonstrated the importance of combining innovation and research with collaboration and communication, all of which are critical at every stage of the value chain.

Journal Club

On Thursday October 25, 2012, Sima Manifar from the Advanced Processing PTG and Al Hassan Kyakulaga from the Pre-Clinical PTG presented at our first Journal Club of the new semester. Al Hassan's presentation was - North American Ginseng & *Auricularia* sp. mushroom aq. extract have beneficial effect on cyclophosphamide induced immunosuppression in mice. Sima presented on - Flow enhancement of ginseng and other fine powders with rotational fluidized bed.

Welcome

Michele Calder has joined Dr Andrew Watson's lab in the Safety PTG. Michele is continuing Danyka Belanger's work on the effects of ginseng on pregnancy and post-natal growth.

Lijun Wang from the department of Agricultural Products Quality and Food Safety at the Institute of Crop Sciences, Beijing, People's Republic of China will be working on her project, *Products Development of American Ginseng Polysaccharide*, at Western from October 2012 to January 2013. Lijun is a visiting graduate student of Dr Ed Lui.

Dr Zach Suntres, Pre-Clinical PTG at NOSM, welcomes Karina Kachur, a new graduate student, working on the effects of ginseng aqueous extracts and polysaccharides on the formation of bacterial biofilms.

Jing Tang, a postdoctoral fellow, has joined Dr Feng's lab in the Pre-Clinical PTG. Jing will be working on the cardioprotective effects of ginseng in mice.

A warm welcome goes out to our new office work study student, Tharmitha Suyeshkumar, and to our new central lab work study students: Joy Hur, Paul Kim, Sam Lee and Alvin Tieu.

The lab also welcomes two new volunteers this fall – Michelle Lee and Jennifer Lim – and, one returning

volunteer – Kourosh Karimi-Shahri. Bryan Wong, a former lab volunteer, has returned to volunteer in the central office this semester.

Over the 2012-13 academic year, Dr Lui will be working with three fourth-year students – Sara Asmail, Bryant Lam and Clayton Law.

Dr Lui's lab welcomes two new lab technicians to the project - Maha Hoseh, and Inna Stetsenko – as well as a new research associate, Tahira Fatima.

website - <http://www.nhprs.ca/content/nhprs-annual-conference>.

Consortium for Globalization of Chinese Medicine: 12th Meeting, August 27 - 29 2013, Graz, Austria. The meeting is organised by the University of Graz and provides a platform for regulatory / industrial / academic exchanges and potential research collaborations on various frontiers of Traditional Chinese Medicine among CGCM members and guests. Details and the preliminary program will be announced soon at the CGCM website: <http://www.tcmedicine.org/en/default.asp>.

Congratulations!

Dr Andy Watson of the Safety PTG has been re-appointed Associate Dean, Research (Graduate & Postdoctoral Studies). Dr Watson's appointment runs from January 2013 to December 2017.

Upcoming Events

The Best of Both Worlds - Traditional & Modern Approaches The 10th annual NHPRS Conference & Trade Show will be held this year at Caesar's Casino in Windsor, Ontario. Full details on the program, hotels, abstract submission, etc are available at the conference

Questions or Comments?



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Publications & Presentations

Authors	Journal or Event	Title
Chike G. Azike, Paul A. Charpentier, John T. Arnason and Edmund MK Lui	Phytochemical Society of North America (PSNA) 51st Annual Meeting, August 11-15, 2012 at Western University, London	Paradoxical Immuno-modulating Effect of North American Ginseng Aqueous and Polysaccharide Extracts on Macrophage Immune Function
D Belanger, A Gianetto-Berruti, V Feyles and AJ Watson	Canadian Fertility and Andrology Society (CFAS) 58th Annual Meeting, September 6-9, 2012, Ottawa, ON	Ginseng Treatment Affects Preimplantation Development In Vitro, but Not Pregnancy and Post-Partum Development in the Mouse
Mehrnaz Salarian, Edmund Lui, and Paul A. Charpentier	Natural Health Product Research Society of Canada (NHPRS), Kelowna, B.C. May 2012	Synthesis and Characterization of Ginsenoside Rg1-loaded PPF Microspheres
Raziye Samimi, Paul Charpentier, Edmund Lui	Natural Health Product Research Society of Canada (NHPRS), Kelowna, B.C. May 2012	Controlled Release and Anti-inflammatory Effect of Ginseng Extracts from Microsphere Hydrogel Combination System
Ganjian Zhao, Tracey Gan, Cathy Huang and Morris Karmazyn	2012 International Ginseng Conference Jilin, China September 2012	Cyclo-oxygenase 2 (COX-2) as a target for the inhibition of the hypertrophic effects of endothelin-1 by ginseng