

CSA Newsletter

Canadian Society of Agronomy

February 2012



PRESIDENT'S MESSAGE

Happy early-spring to everybody. In my presidential messages I have mentioned that we are living in changing times and it is up to us to try and change with them. In evolution, the organisms that change at the right time, with the right change, are the ones which succeed. That's the hardest thing; finding the right change and doing it at the right time.

The Canadian Society of Agronomy Executive has been busy during the past 6 months making changes we hope will improve our society. The Bylaws, which were last amended in 2007, have been updated, approved and will soon be posted on the web site (<http://www.agronomycanada.com/index.html>). To give society members more bang for their conference buck we are holding our annual meeting in July in Saskatoon with the Canadian Society for Horticultural Science, the Canadian Crop Advisors and the Agricultural Institute of Canada. The meetings occur just before the gathering of the North American Fruit Explorers. In 2013, we are planning to hold our annual meeting in conjunction with the American Tri-Societies which many of us attend. We are organizing a one day CSA symposium that will occur within the meetings as well as a banquet and AGM. The CSA is part of a committee overseeing changes to the Canadian Journal of Plant Science. So far we have worked on focusing the scope of the journal to concentrate on plant science relevant to Canada. Those changes will be forth coming.

It is also time to nominate one of your colleagues for a CSA award. We give out an award for Young Agronomist of the Year, Distinguished Agronomist and Fellows in the CSA. Consult the web site to find the criteria, think about your colleagues who qualify and email Rigas Karamanos with your suggestions. Don't be shy about this. Receiving an award from your peers is a great honor and gives a person a feeling of satisfaction that what they have been doing in their career is appreciated.

It is also that time of year to stand up and volunteer for an executive position on the Canadian Society of Agronomy. Everybody knows that the society is only as good as its members and you really do get more from the society when you participate in it. We need nominations for President Elect and two Directors. Consult your colleagues, or volunteer yourself. It would be great if we had to have an election because we had so many candidates to fill these jobs. It does not take a great deal of your time and it can be fun too. Rigas Karamanos as past president is handling the nomination for elections too.

Students, the annual CSA meetings offers a great opportunity to present your research, get feedback from others and compete for cash prizes. There are prizes for posters and oral presentations. Pester your advisors to send you to Saskatoon in the summer to meet future colleagues. There is also the Pest Management Research Award for graduate students which will pay part of your travel to the annual conference.

I hope everybody is getting excited about the coming field season. I look forward to meeting with you at the meetings in Saskatoon this summer.

Malcolm Morrison
President





Awards—Nominate a Colleague!

Each year the Canadian Society of Agronomy recognizes individuals who have made outstanding contributions to their science. Awards are to be presented at the annual meeting, this year from July 16-19, 2012 in Saskatoon. The following are the award categories:

- **Young Agronomist Award** - Presented each year for distinguished service to a scientist who is 40 years old or younger.
- **Fellow of the Canadian Society of Agronomy** - A maximum of three Fellows are conferred each year on those members who have made a significant contribution to agronomy in Canada and to the Society over a period of at least ten years.
- **Distinguished Agronomist Award** - presented to members who have made a significant lifetime contribution to agronomy in Canada and to the Society.

Pest Management Research Award - Made available annually to qualified graduate students enrolled in any aspect of pest management at Canadian universities. Nominations **due March 31, 2012**; contact **Steve Sheppard** at sheppards@ecomatters.com.

The guidelines for these awards as well as a list of past recipients can be found on the CSA website at <http://www.agronomycanada.com/awards.html>.

Taking the time to nominate a colleague honours that individual's contribution to the discipline but also advances the recognition of the value of agronomy to society as well. The nomination procedure is straightforward and is described thoroughly on the website. With the exception of the Pest Management Research Award, the nominations are **due May 1, 2012**. Forward nominations to: **Steve Sheppard** at sheppards@ecomatters.com.



Nominations for CSA Executive 2012

Four positions on the Canadian Society of Agronomy executive are opening in 2012. Candidates are needed for the **President-elect**, **Student Representative**, **Eastern Director** and **Western Director** positions. Holding office in the CSA provides a unique opportunity to work with your colleagues across the country, to have an impact on the society and contribute to the advancement of agronomy in Canada. Executives are required to participate in the executive meetings (teleconference calls), attend and participate in the CSA annual meeting, chair and/or serve on CSA committees as needed, and help to promote CSA within their organizations and regions. If you are interested in becoming a director for CSA or you know a colleague who you feel will be a good candidate and is interested in being nominated please contact:

Steve Sheppard at sheppards@ecomatters.com. Nominations are due **April 20, 2012**.

\$3000 in prize money
available to CSA student members!

Split among the 3 top oral and 3 top poster agronomy presentations
at the conference in Saskatoon.

Co-sponsored by SeCan and CSA

Amanda Green, Winner of the Pest Management Scholarship Award for 2011

Determining the Mechanisms of Resistance to Glyphosate in Giant Ragweed (*Ambrosia trifida* L.) in Ontario. A.C. Green¹, P.H. Sikkema², J.C. Hall¹, F.J. Tardif¹, ¹Univ. of Guelph, Guelph, ON, Canada, ²Univ. of Guelph, Ridgetown Campus, Ridgetown, ON, Canada



Glyphosate resistant giant ragweed has been documented in Ontario since 2008. The mechanism of resistance has yet to be determined. Resistant plants exhibit two different phenotypes after glyphosate treatment. One phenotype from Windsor exhibits an unusual rapid necrosis in mature leaves within 24 hours after glyphosate application, while the growing points escape injury (Fig. 1 & 2). The other phenotype from Leamington exhibits similar symptomology to a susceptible plant but recovers and re-grows after a week. An initial dose response experiment revealed the Windsor and Leamington populations to have a resistant index of 6.5 and 4, respectively for biomass reduction. The objectives of the experiments are to investigate if possible mechanisms include target site resistance, altered translocation or decreased absorption. Target-site sensitivity was determined through a shikimate assay. Shikimate is the dephosphorylated substrate of the enzyme 5-enolpyruvylshikimate-3-phosphate synthase which is the target site of glyphosate.

Leaf discs collected from young and mature tissue were placed in assay solutions of glyphosate in microtiter plates, incubated under light and shikimate was extracted and quantified. All populations had an accumulation of shikimate in the young tissue. In the old tissue the Windsor population had minimal accumulation and the Leamington population had similar accumulation to the susceptible population. [¹⁴C]- glyphosate was used to measure absorption and translocation. Absorption levels of resistant and susceptible populations were similar. A greater amount of [¹⁴C]- glyphosate was retained in the treated leaf, less translocated to the roots and a similar amount translocated in an upwards direction in the Windsor population compared to a susceptible population.



Figure 1: Glyphosate resistant giant ragweed (R) from Leamington and Windsor and a susceptible giant ragweed (S) 12 hours after glyphosate application. Notice the leaves drying and curling upwards on the Windsor R plant while the growing point shows no injury.

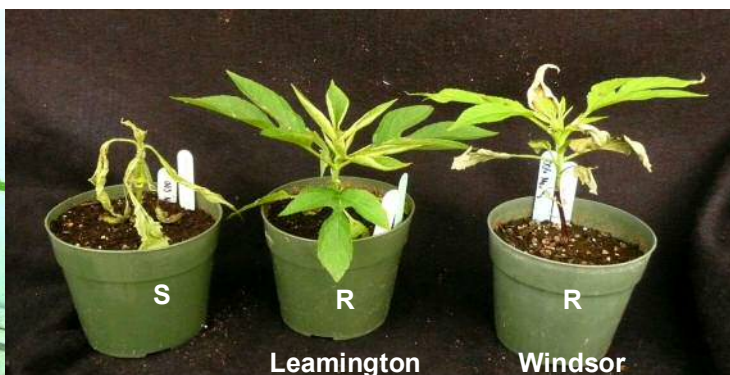


Figure 2: A susceptible giant ragweed (S) and glyphosate resistant giant ragweed (R) from Leamington and Windsor 5 days after glyphosate application. At this point the S plant is dead, the Leamington R plant shows a yellowing of the growing point but will eventually grow out of it and the Windsor R plant showing new growth at the meristematic points.

CSA Bylaw UPDATE

The process of bylaw revisions for the Canadian Society of Agronomy is moving forward. The CSA executive and interested members have reviewed the changes proposed by the Bylaws Subcommittee to update and modernize our society's bylaws.

Highlights of proposed changes:

- Updating membership categories by adding retired, emeritus, and post doc membership options
- Including a graduate student member on the CSA executive
- Updating election and voting practices to reflect electronic instead of paper ballots
- Updating bylaws to conform with the new Not-For-Profit Act.
- Now we are asking for your help as members to complete this process. Electronic voting on changes to the CSA bylaw changes will begin before June. **In order for the process to move forward, 2/3 of the membership must vote in favour of the changes - or the vote will need to be repeated.** We need EVERYONE TO VOTE, so when you receive the email inviting you to vote online, please take a moment to contribute to the society by casting your ballot. Your participation is important to the continuation of our society!

*Yvonne Lawley
Western Director*

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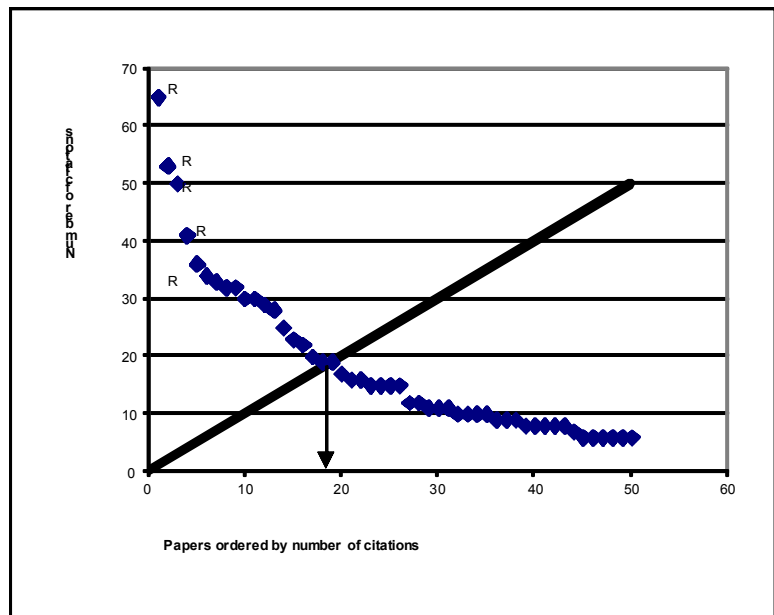


Musings about a research career and the ‘H number’

So what is it all about, this science and research thing? Are we really contributing anything of value? What criteria are relevant? No doubt one set of criteria is ‘personal jollies’: probably most scientists are in the business because it is exciting, interesting and challenging and often offers opportunities for travel and variety in type of work. Those who teach research have additional ‘jollies’ of seeing students do well. There might even be a bit of respect from the community at large ... maybe ... if they are generous.

Is it about ideas? It certainly is interesting to launch an idea and either test it yourself or convince others that it has merit. Just like an entrepreneur, but we usually just sell ideas. It is gratifying, although it is tough to maintain ownership of a good idea!

Maybe the best criterion is what your peers think of your work. Do they want you on their research teams? Do they cite your papers? The notorious ‘H number’ is an attempt to quantify the consistency with which you attract peer attention. The chart shows the H concept. The numbers of citations by each paper is plotted versus the order of the papers by decreasing citations.



The intersection of this downward curve and a 1:1 line gives the H number; in the example the H number is 19. It means the 19th most cited paper was cited 19 times. Note also in this example, the points indicated by ‘R’ were review papers: there’s a sure way to become known!

Is the H number relevant? So what if the 19th paper got cited 19 times! Consider a ‘flash in the pan’ career: one or two highly cited papers and nothing else published – it would have a high H number. This seems fair, even if unfortunate that the author only had one idea. Alternatively, if an author had one highly cited paper and then lots of drivel, the H number would be low. Was the author just lucky that one time? Clearly the H number rewards consistency of attracting citations.

A research career reduced to a number. Ah ... reductionist science come full circle!

CONFERENCE ANNOUNCEMENT and PRE-CALL FOR ABSTRACTS

“Adapting Crops to Change”

with a special joint symposium: “Technology Transfer in the 21st Century”

University of Saskatchewan, Saskatoon, Saskatchewan

July 16–19, 2012

A Joint Meeting of the:

Canadian Society of Agronomy **Canadian Society for Horticultural Science**
Certified Crop Advisors – Prairie Board **North American Fruit Explorers**
Agricultural Institute of Canada

We are pleased to announce the 2012 conference of 5 societies under the theme: “*Adapting Crops To Change*” with a special joint symposium: “*Technology Transfer in the 21st Century*” held on the beautiful campus of the University of Saskatchewan (U of S), Saskatoon, from July 16 - 19, 2012. This is the first time that the following groups are jointly meeting: Canadian Society of Agronomy (CSA), the Canadian Society for Horticultural Science (CSHS), the Certified Crop Advisors (CCA), and the North American Fruit Explorers (NAFEX). The Agricultural Institute of Canada (AIC) will also be here for part of the meetings.

“Adapting Crops to Change” signifies the importance of addressing crop improvement and adaptation not only to environmental change but to shifting world markets and consumer preferences. The special joint symposium: “Technology Transfer in the 21st Century” addresses the key issue of fast and efficient transfer of scientific knowledge to crop advisors, farmers and end users. The 2012 joint meetings features invited plenary and symposium speakers, contributed papers (oral presentations and posters), competitive presentations for graduate students, society annual meetings, and offsite tours. The magnificent campus of the University of Saskatchewan is located along the banks of the South Saskatchewan river and is composed of 12 Colleges, a vibrant student community of 20,000+ and world class facilities.

The official call for abstracts and papers will be announced soon. Members will be encouraged to submit titles and abstracts of papers and posters to be presented at sessions sponsored by their society. Each society is also hosting a Graduate Student Presentation Competition. All abstracts will be published in the colloquium proceedings and on the joint meeting website.

Canadian Journal of Plant Science Special Issue. The topics covered in “Adapting Crops to Change” meeting that contain new information of national or international significance within the scope of the journal are eligible for publication. The participants, who are presenting scientific papers, including posters, are invited to submit reviews and papers for publication. The MS should describe the original work of the authors that has not been published in a peer-reviewed journal and is not under consideration for publication elsewhere. Submission of papers for publication in the Canadian Journal of Plant Science is optional.

Instructions for authors are posted at <http://www.aic.ca/journals/instructions.cfm>; and the details for full manuscript submission via <http://mc.manuscriptcentral.com/cjps-aic> will be announced shortly.

Overall Conference Chair:	Rigas Karamanos	rigas.karamanos@viterra.ca
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CSHS president:	Samir Debnath	Samir.Debnath@AGR.GC.CA

Tentative Conference Overview (CSA)

TIME	MON 16 JULY TOURS	TUE JULY 17	WED JULY 18	THURS JULY 19
			SOCIETY SES- SIONS	SOCIETY SESSIONS
AM	Tour: potash mine	CONFERENCE PLENARY SESSIONS ADAPTING CROPS TO CHANGE 8:40 Opening <u>Three Plenary Sessions:</u> 9:00 Plenary 1 9:45 Plenary 2	CSA 8:00	CSA
BREAK		10:30 BREAK	10:00 BREAK	
		10:50 Plenary 3 11:35 Panel and open questions	10:30	
LUNCH	LUNCH	LUNCH	12:00 Society Meetings and Awards Lunch	END
PM	Campus: Horticulture field plots Kernen Farm AAFC field PBI/NRC labs Canadian Light Source (U of S)	SYMPOSIUM: TECHNOLOGY TRANSFER for the 21 st CENTURY <u>Two Plenary Sessions:</u> 1:15 Plenary 1 2:00 Plenary 2	1:30	
BREAK		2:45 BREAK	3:00 BREAK	
		3:00 Tech Transfer and Adapting Wheat 3:30 Tech Transfer and Adapting Oil-seeds 4:00 Tech Transfer and Adapting Potatoes	3:15	
4:30-6.00 pm	Poster Session Wine and Cheese	Posters		



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