



# CSA Newsletter

Canadian Society of Agronomy

November 2005



## President's Message

Over the coming weeks, the CSA executive will put the finishing touches on the goals for 2006 and marshal the resources needed to achieve them. The review and planning process was geared up to determine what worked, what didn't, why and why not. Would improvements in the structure and content of our annual conference, as well as activating new programs, allow us to achieve our goals over the next three years? Would expanding the governance structure to include representatives of younger members, graduate students and post doctorates, insure the continued relevance or revitalization of our organization? Our plan for 2006 is partly about energizing the CSA presence nationally and internationally, by expanding programs delivered by the CSA and increasing member involvement. It is also time to have former members reactivate their involvement and their membership, as well as consider how to attract young agronomists back into our organization.

While actively exploring new plans and options, your executives have been working closely with the memberships in the Maritimes and Saskatchewan, planning for invigorating our conferences during the 2006 and 2007 annual meetings in Halifax and Saskatoon, respectively. I believe the CSA is yours and the elected executives are responding to your suggestions. New ideas can and will be added to the newly developed strategy as we receive them. Once again I encourage you to become more involved and help us fulfill the CSA mandate.

*Yousef A. Papadopoulos,  
President*

## From the Office

Things are getting exciting. The dominant action in CSA at the moment is planning the upcoming meetings. The Atlantic Canada Agronomy Workshop is this winter, thanks to Jerry Ivany, Yousef Papadopoulos and their volunteers.

The 2006 CSA Annual conference and business meeting is in Halifax. This is along with Animal Science, so there is a good selection of forage type papers along with the usual other agronomy topics. The setting is right on the harbor, so both the program and the venue sound excellent. I'm planning to book flights now to burn off some Aeroplan points. There are only a limited number of rooms reserved for CSA people, there are lots more available but the early birds get the discounts. There are more details in the newsletter and on our web site [www.agronomycanada.com](http://www.agronomycanada.com).

Planning for the 2007 meeting is already well underway. This will be in Saskatoon along with Plant Canada – our second meeting with them. This is a good synergy, Plant Canada brings lots more people and papers, and a broader perspective. At the same time, we have to be sure to put a strong 'CSA stamp' on the meeting. Same as this year in Halifax, the meetings are as good as we make them. The planning horizon for CSA meetings is now out to 2009, but is less certain there.

About membership renewals. The on-line system with SPORG is up and running for 2006. So you can join on line with credit card or check, but we will also send you a hard copy invoice. On line is efficient. A note to make things simpler. When you link to the SPORG registration page, there is a slot for user name and password. You do not need this to renew. However, if you do set one up, the system will save your address information so you will not have to enter it again next year. It does not save any credit card information, just like any other reputable on-line credit card service, that information exists only for a few seconds on the system, just long enough to register the purchase.

Look for some new initiatives from CSA this year. The Executive Committee (Yousef, Tom, Shabtai and I) had a 'think tank' session Nov 3, and the full Executive are engaged now too.

Thanks

*Steve S.*

*Executive Director, Canadian Society of Agronomy*

## Growing Our Membership

Consolidation and down-sizing have reduced the numbers of active agronomists, both in industry and in academia. Nonetheless, agronomy is a science essential to sustain the development of the intensive crop production that the future demands.

Though our numbers be small, what we do impacts all people on the planet. It is especially when our numbers are small that we need to network to ensure the maximum benefits from our efforts, and that we need to strive to include all whose work has relevance to agronomy.

Canada possesses resources for crop production that are both unique and enormous, and our role in world agriculture is distinctly different from that of our neighbour to the south.

Most of us are involved with the American Society of Agronomy (ASA), and we will continue to be. But there are activities that only a Canadian society can help us with.

The ASA membership roll currently lists more Canadians than our current total number of members. There is no doubt that ASA offers member services that we can-

not compete with – broader networking opportunities, and more widely read publications. But being smaller and nimbler, we can do unique things to support a distinctive Canadian agronomy. There are differences in the way we approach agricultural sustainability, and in the way we deal with international agreements on greenhouse gases.

Getting specific about our distinctives is not an easy task. We need to get together and discuss which of them are real and which are perceived. And we need to identify the opportunities around the world where Canadian agronomic scientists have something distinctive to offer.

I offer you a challenge: pick up the telephone today and call a colleague who isn't on our membership roll. Talk, not only about the value the Canadian Society of Agronomy is providing today, but about how we as Canadian agronomists could provide more if our Society was twice its current size. This is an achievable goal. All it takes is each one of us to make one convincing call. Let's see what we can do!

*Tom Bruulsema, PhD  
Chair-elect, Canadian Society of Agronomy*

**Call for Papers**  
**THE ATLANTIC AGRONOMY WORKSHOP**  
**Rodd Charlottetown Hotel, Charlottetown, PEI**  
**January 17-18, 2006**

The Canadian Society of Agronomy (CSA) is organizing a meeting for agronomy people (cereals, corn, forages, pulse crops, soybeans, etc) to get together to exchange ideas and research results. The meeting which will be run as an "at cost" event covered by registration fees.

This meeting, aimed at both researchers/graduate students and advisers, is planned to provide a forum for presentation of new information and discussion on all aspects of agronomic crop production in the Atlantic Region including;

**Crop Production**

- Crop management practices - conventional and organic
- Crop rotations.
- Crop fertility
- Cropping effects on environment and greenhouse gasses
- Cultivar development and evaluation
- Soil and water

**Pest Management (diseases, insects, nematodes, weeds)**

- Field experiments and results from long-term / rotation studies.
- Interaction of management practices for pest control
- Plant and pest bio-diversity and changes in cropping systems
- Management and control of individual pest species and weeds.

Invited guest speakers will give lead presentations on selected areas of the above listed subjects. The organisers invite offers of spoken

and poster presentations. Slots are available for approximately 35 oral papers which are related to the session topics. The papers are to be 12 minutes in length plus a 3 minute period for questions. Volunteer papers will be assigned to appropriate session based on topic of submission and offers that cannot be accommodated in the oral sessions will be allotted space for a poster presentation. Abstracts of all papers/posters will be published in a volume of Canadian Journal of Plant Science. A prize will be offered for the best paper and poster presented by a graduate student. Authors must indicate on the form whether the paper or poster is intended for the graduate student competition.

Titles and abstracts are to be submitted to:  
Jerry A. Ivany PhD, P,Ag.  
Agriculture and Agri Food Canada  
Crops and Livestock Research Centre  
440 University Ave.  
Charlottetown, PE, C1A 4N6  
Tel: 902 566 6835  
Fax: 902 566 6821  
EM: IvanyJ@agr.gc.ca

**Deadline for offer of Paper / Poster Title is December 9, 2005**

**DEADLINE FOR SUBMISSION OF ABSTRACT IS JANUARY 6, 2006**

**Additional information concerning the program, submitting volunteer papers / posters, hotel, and registration is available under Events on the Canadian Society of Agronomy web page at: <http://www.agronomycanada.com>**

## 2005 Annual Meeting Best Paper Awards

The CSA executive instituted two “best paper” awards for the 2005 Annual Meeting to promote the quality of presentations from our technical sessions. The CSA’s members themselves participated in the competition as all members in attendance were invited to cast their ballots for these two recognition awards. After totalling all the ballots, we are pleased to announce the following winners and the abstracts from their presentations:

### 1. **Best Overall Presentation:**

#### ***Intercropping pulse species with barley: assessing agronomic feasibility and benefits.***

Strydhorst, S.M.<sup>1</sup>, King, J.R.<sup>1</sup>, Lopetinsky, K.J.<sup>2</sup>, Harker, N.K.<sup>3</sup> and Clayton, G.W.<sup>3</sup>

1. Univ. Of Alberta, Dept. Of Agricultural, Food and Nutritional Science, Edmonton, AB T6G 2P5.
2. Alberta Agriculture Food and Rural Development, Crop Diversification Centre North, 6203-49 St. Barrhead, AB T7N 1A4
3. AAFC, Lacombe Research Centre, 6000 C&E Trail, Lacombe, AB T4L 1W1

Research is being conducted to develop more sustainable cropping systems for the black soil zones of Alberta by intercropping pulses with barley to increase spatial species diversity. To assess intercrop feasibility and benefits, field experiments were conducted at three sites in north-central Alberta in 2004. Faba bean (*Vicia faba*), lupin (*Lupinus angustifolius*) and pea (*Pisum sativum*) were grown at four plant densities (50, 100, 150, 200% of the recommended monoculture planting density (PD)) as monocultures and intercropped with barley (at 25% normal PD). All tests were grown without added nitrogen (N) fertilizer. Preliminary results indicate that pea and faba bean can successfully compete and grow with barley. Faba bean comprised 46-78% of the intercrop seed yield (depending on pulse PD) while pea comprised 50-76% of the intercrop seed yield. Over-yielding (land equivalent ratio >1) occurred in 63% of the faba bean-barley and pea-barley intercrops. Barley from faba-barley intercrops had a higher protein content (119.6 g protein kg<sup>-1</sup>) than monoculture barley (104.3 g protein kg<sup>-1</sup>), while barley from pea-barley intercrops contained 115.6 g protein kg<sup>-1</sup>. This suggests that high protein barley could be grown without additional N fertilizer thereby reducing input costs. Lupin did not compete well with barley and may be unsuitable for intercropping as it comprised only 7-22% of the intercrop seed yield. Lupin, however, showed promise as a new monocrop. In high rainfall environments, lupin monocultures yielded 2.2-3.5 t seed ha<sup>-1</sup>. This pulse crop may be suitable for increasing temporal and economic diversity in Alberta cropping systems. Using pulses to increase species diversity in Alberta cropping systems appears feasible. To further understand intercropping ecology this project is also investigating plant competitive interactions, soil microbial diversity, plant residue decomposition and nutrient cycling.



**Sheryl Strydhorst**

## **2. Most Thought-Provoking Presentation:**

### ***Influence of forage management and species on soil mineral nitrogen supply rates and seasonal dynamics***

Baron, V.S.<sup>1</sup>, Lemke, R.L.<sup>2</sup>, Chanasyk, D.S.,<sup>3</sup> Naeth, M.A.<sup>3</sup> and Greer, K.<sup>4</sup>

1. AAFC, Lacombe, AB T4L 1W1
2. AAFC, Swift Current, SK S9H 3X2
3. Univ. Of Alberta, Edmonton, AB T6G 2P5
4. Western Ag. Innovations Inc., Saskatoon, SK S7N 4LB

Soil mineral-N (MN) supplies have ecological, agricultural and environmental implications. Grasslands are noted for low MN dynamics under short term forage stands and impacts of management. Species were 30-yr-old grass (OG), 3-5 yr.-old alfalfa (A) (*Medicago sativa* L.), meadow brome (MB) (*Bromus riparius* Rhem.) and annual cereal (ANN). The OG was a mixture of smooth brome (*Bromus inermis* Leyss.), quackgrass (*Elytrigia repens* (L.) Nevski) and Kentucky bluegrass (*Poa pratensis* L.); the ANN was mixture of winter triticale (*X Triticosecale* Wittmack) and oat (*Avena sativa* L.) Management was either hay or pasture. Pasture was a grazed, 1.2 ha-paddock, while hay was an enclosure within each paddock, all replicated three times for 3 yr. Each year OG, MB and ANN received 100 kg N ha<sup>-1</sup> of fertilizer-N; all species received 30 kg P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O. MN supply rate was determined as a biweekly flux using paired cation and anion probes (PRSTM) inserted and removed from identical slots in three locations within the paddock and enclosure from May to October. Nitrate-N (NN) and MN supply rates were 9 to 10 times higher in May compared to Oct. Initially, MN and NN supply rates for hay > pasture, but by mid summer pasture > hay and by fall hay = pasture. Averaged over season and years NN supply rate for ANN was 2 to 5 times more than OG; A and MB were intermediate and similar. Spring MN and NN supply rates for ANN were higher than others; by July OG was very low and remained constant until Oct. MN and NN supply rates of others declined more slowly from spring to fall, but ANN, MB and OG were similar by Oct.; A maintained higher MN and NN supply rates into fall despite receiving no fertilizer-N. In spring ammonium-N (AN) supply rate for OG was 3 times other species, then, decreased to the same level as others by July. The NN:AN ratio peaked for hay in June, then decreased until a low level by fall; the ratio for pasture rose above hay to peak in July after one grazing then decreased. The NN:AN ratio for OG was 5 to 20 times lower than other species from May to August. The NN:AN ratio of ANN was 3 to 4 times greater than MB and A from May to July. MN supply rates of short term species were larger, had higher NN content and were more dynamic throughout the season than OG. Management effects were more subtle than species effects on MN supply.



**Vern Baron**

## Plant Canada 2007

**Plant Canada 2007** will be held in **Saskatoon, June 10-14**. The plenary sessions have been established as follows:

**Plenary 1: Natural products: Biology, Chemistry and Application**

**Plenary 2: Plant Health Network: Quarantine and Invasive Issues**

There will also be invited and volunteer paper sessions and mini-symposia (may be concur-

rent). This will include student and industry sessions.

The mini-symposia will relate to the plenary subjects and/or feature volunteer papers intermingled from the six disciplines (Agronomy, Horticulture, Pathology, Botany, Physiology and Weeds). We have been asked to poll our society members to get ideas for mini-symposia sessions. Please send your suggestions to Bruce Coulman at [coulmanb@agr.gc.ca](mailto:coulmanb@agr.gc.ca) who is the CSA representative on the Plant Canada 2007 organizing committee.

## American Forage and Grassland Council 2005 Merit Award

**Shabtai Bittman**  
**Pacific Agri-Food Research Centre, British Columbia**

Dr. Shabtai Bittman is a highly innovative agronomist who has made substantial wide ranging contributions to our knowledge of the management of forage crops and livestock waste. After spending the last 25 years doing forage research in British Columbia, Dr. Bittman has earned the respect and admiration of his colleagues. He has pioneered in North America the use of sub-canopy surface banding of dairy slurry to improve the effectiveness of slurry nutrients. Dr. Bittman also invented a procedure enriching Selenium (SE) in annual crops by supplying Se through a seed coating. While collaborating with the University of Missouri, Dr. Bittman was instrumental in the application of Magnesium and Calcium in conjunction with a new fescue variety to reduce grass tetany.

Dr. Bittman contributed to the education of producers through his development of a farmer-oriented website with the latest forage information. He has been one of the driving forces behind the British Columbia Forage Council. Because of his efforts, Shabtai has become known as "Mr. B.C. Forage," in British Columbia.

Dr. Bittman has published 44 peer reviewed scientific publications, 60 conference proceedings and over 90 popular press articles on all aspects of nutrient and fertilizer management in forage crops. He has also authored two books on forage management and garnered many prestigious awards. Dr. Bittman is currently working with Agassiz Research Center, British Columbia.

Dr. Bittman's faithful dedication in the field of fertility management will continue to benefit agricultural development for years to come.





## **TERRY L. ROBERTS TO BECOME PRESIDENT OF POTASH & PHOSPHATE INSTITUTE**

October 1, 2005---The Board of Directors of the Potash & Phosphate Institute (PPI) has named Dr. Terry L. Roberts to become President of the international agricultural research organization, effective January 1, 2006. The announcement came from Bill Doyle, Chairman of the PPI Board and President and CEO of PotashCorp.

“Terry Roberts is highly qualified as an agronomic scientist and also as an effective administrator with a wide spectrum of experience. His understanding and insight related to PPI programs, staff, the academic community, and the fertilizer industry will be great assets in the transition to this new responsibility,” Mr. Doyle explained. “This is an important time in meeting the challenges of growing more food on limited land, while protecting the environment and using resources wisely. We are pleased that Dr. Roberts is accepting this key position with PPI.”

He will be only the sixth president in the 70-year history of the Institute. Dr. David W. Dibb, who had served as president since 1989, recently announced his retirement effective December 31, 2005.

Currently serving as Senior Vice President of PPI and the Potash & Phosphate Institute of Canada (PPIC), Dr. Roberts is International Programs Coordinator and in charge of member services and communications. He previously served as president of the Foundation for Agronomic Research (FAR) and continues as a vice president of that organization. A native of Alberta, Canada, Dr. Roberts grew up in a family fertilizer business. He received a B.S.A. degree in Crop Science in 1981 and a Ph.D. in Soil Fertility and Plant Nutrition in 1985 from the University of Saskatchewan. He joined the PPI/PPIC staff in 1989 as Western Canada Director, with responsibility for agronomic research and education programs in the region.

In June 1999, Dr. Roberts was transferred to PPI’s headquarters in Norcross, Georgia, and named President of FAR. At the same time, he was appointed Vice President of PPIC for the Latin American Program, and coordinated the Institute’s regional programs in Brazil, Northern Latin America, Latin America-Southern Cone, and Mexico/Northern Central America. In February 2002, Dr. Roberts was appointed PPI Vice President, Communications and Member Services. In that role he directs the communications group of the institute, including publication of *Better Crops with Plant Food* magazine, as well as the website and electronic communications.

In November 2004, Dr. Roberts was elected Senior Vice President, PPIC, and in January 2005 he became Senior Vice President, PPI, and International Program Coordinator.

An effective communicator and internationally respected as a speaker and writer, Dr. Roberts has given more than 300 invited lectures, seminars, symposia, and other presentations around the world and has written more than 160 technical and non-technical papers. He is a Fellow of the American Society of Agronomy.

Dr. Roberts and his wife, Marianne, have five children and now live near Atlanta, Georgia.

The Potash & Phosphate Institute/Potash & Phosphate Institute of Canada (PPI/PPIC) is a not-for-profit organization which encourages and supports agronomic research and education programs involving sound agricultural use of potash, phosphate, and other inputs in a way that is efficient, profitable, and protective of the environment. Funding for PPI/PPIC is provided by member companies that are producers of potash and phosphate.

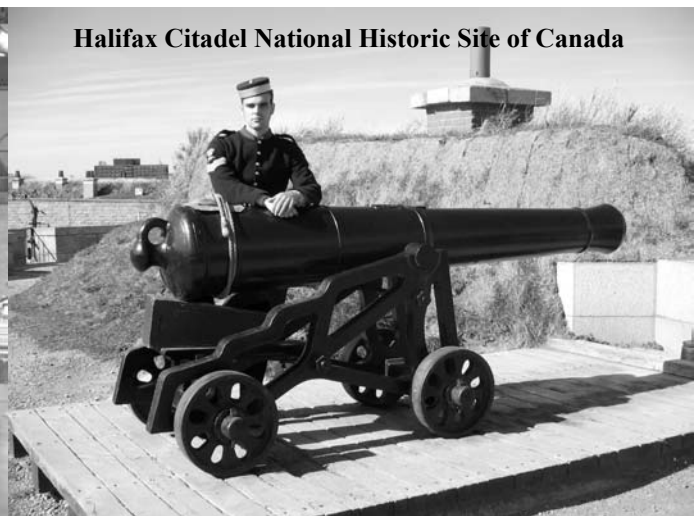
## CSA - New Executive Members:

Tiequan Zhang (Eastern Director):

Dr. Tiequan Zhang obtained his B.Sc. (1982) in Soil Science and Plant Nutrition and M.Sc. (1988) in Soil Chemistry and Fertility from Shanxi Agricultural University, China; and his Ph.D. in soil Chemistry and Fertility from McGill University (1997). Dr. Zhang has been employed as a Research Scientist working in soil fertility area by Agriculture and Agri-Food Canada since 1998.

Dr. Zhang's major research has focussed on soil fertility management and its relationships with crop productivity and water quality. This includes research on bio-availability of nitrogen and phosphorus from livestock manures and composts, agronomic values of soil residual phosphorus, both short- and long-term transformation pathways of soil phosphorus and their relationships with phosphorus losses, and development of soil phosphorus index and BMPs for commercial fertilizers and organic wastes. Other areas of research are relationships between nutrients (nitrogen, phosphorus, and potassium) and crop (both field and horticultural crops) productivity and quality (e.g. isoflavones in soybeans and lycopene in processing tomatoes). He has authored/co-authored numerous peer-reviewed scientific papers, book chapters, technical reports, and scientific meeting/conference presentations.

Dr. Zhang has been invited to conduct external review for grant proposals submitted to NSF (U.S.A), FCAR, and OMAF New Direction Research Program. He has been an advisor on one graduate student committee and a principle advisor for three others since 2000. He serves as a member for 4 Ontario Soil and Crop Management Research and Services Committees. He served as the Secretary/Treasurer (2003/04) and Vice-President (2004/05), and currently serves as the President for the Association of Chinese Soil and Plant Scientists in North America. He serves as a member for the International Service in Agronomy Award Committee, America Society of Agronomy.





## CSA 2006 Annual Meeting

The **2006 Annual Meeting** of the **Canadian Society of Agronomy (CSA)** will be on **August 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup>**, in **Halifax, Nova Scotia**. The Meeting will be jointly conducted with the Annual Meeting of Canadian Society of Animal Science (CSAS). We have compiled a list of possible symposia for this conference which include:

- Whole Farm Nutrient Management
- Organic Food Production and Farming
- Feed and Food Quality
- Farm Nutrient Management
- Forages and Pasture Management
- Cropping Systems
- Oil Seeds and Other High-Value Crops
- Heavy Metals and Other Toxins in Soils, Plants, and Animals
- Genetics for an Uncertain Climate
- Novel Animal, Feeds, and Foods
- Modeling – Biological and Agricultural Systems Dynamics and Complexity.

We would appreciate any input regarding selecting the right program for the 2006 conference. Suggestions for other symposia are welcome. Please forward your comments and ideas directly to the co-chairs of the local organizing committee.

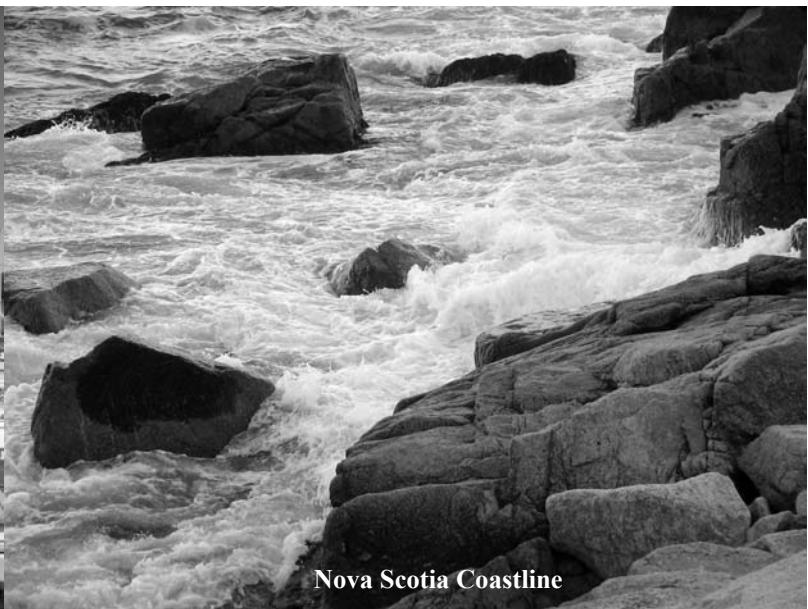
Co-chairs of the local organizing committee from the CSA:

Dr. Yousef Papadopoulos at AAFC, Ph: 902 896 0400, [papadopoulosy@agr.gc.ca](mailto:papadopoulosy@agr.gc.ca)

Dr. Kris Pruski at the NSAC, Ph: 902 893 6032, [kpruski@nsac.ca](mailto:kpruski@nsac.ca)



Marina near Halifax



Nova Scotia Coastline

## The First Canada-China Forum of Agriculture and Agri-Food Science Managers

In tandem with the 35th anniversary of the establishment of diplomatic relations between Canada and the People's Republic of China, the International Scientific Cooperation Bureau of Agriculture & Agri-Food Canada held the First Canada-China Science Managers Forum on Agriculture and Agri-food, on October 11 and 12, 2005.

Nearly one hundred managers, scientists and university representatives working in agriculture and agri-food met to exchange views regarding research and to explore partnership mechanisms for the next few years in animal production, food processing, biotechnologies and the environment.

This forum saw ratification of an agreement between the State Administration for Foreign Expert Affairs (SAFEA) and Agriculture and Agri-Food Canada (AAFC) to promote cooperation and exchanges of managers, researchers and graduate students in research areas that are priorities for both countries.

The success of this event made it possible to develop bonds of trust and to anchor mechanisms for scientific cooperation between China and Canada. The Chinese representatives expressed an interest in organizing a next one in Beijing in 2006.

**Contact: Dr. Joe Zhou**  
[zhouj@agr.gc.ca](mailto:zhouj@agr.gc.ca)



Photo: Yvon Martel, AAFC

Signing ceremony: Dr. Li Bing (left), Vice-President of SAFEA and Dr. Yvon Martel (right), Acting Assistant Deputy Minister, Research Branch, Agriculture and Agri-Food Canada.

## CSA Executive Committee Think Tank

So what is 'agronomy'? Could you ever sell that name to the public? Does it register with anyone other than us? The Think Tank on November 3 started from this most basic position, and developed from there to ideas to move forward. Yousef led the session, and Tom, Shabtai and Steve bounced ideas.

A revised Mission Statement was proposed:

*'The Canadian Society of Agronomy promotes the sciences of plants and soils applied to sustainable production systems'*

We like it because it says 'science', 'plants', 'production' and 'sustainable', and it is short and simple enough to be memorable. There are things about it we are less sure of. Of course, every word in a mission statement needs to be debated, and you will all have ideas. Let us know what you think!

We did a score card for CSA. CSA passed on average, but there were a lot of things that could be

done more effectively. One area that has potential is mentoring. Agronomy should be recognized as a discipline at a level that employers and future agronomists know exactly what it means and how valuable an agronomist can be. This means we need to describe ourselves as agronomists, define what we are compared to others, and mentor new agronomists. Two ideas came up. One was agronomy clubs at universities, such as the soils clubs orchestrated by the American Society of Agronomy. Another was to link students and dyed-in-the-wool agronomists face to face or by phone contact. A little more extroverted a role than CSA has played in the past.

The ideas from the Think Tank are still incubating. One day was not really long enough, and the full Executive need to weigh in on this. You will hear more.

*Thanks!*  
*Steve Sheppard*

# CSA Corporate Sponsors 2005



## CSA EXECUTIVE

### PRESIDENT

Yousef Papadopoulos  
Agriculture & Agri-Food Canada  
14 Fundy Drive  
Truro, NS B2N 5Z3  
Phone: (902)896-0400  
papadopoulosy@agr.gc.ca

### EXECUTIVE DIRECTOR

Steve Sheppard  
P.O. Box 637  
Pinawa, MB R0E 1L0  
Phone: (204)753-2747  
sheppards@ecomatters.com

### PAST-PRESIDENT

Paul Jefferson  
AAFC-Semiarid Prairie Ag. Res. Center  
P.O. Box 1030  
Swift Current, SK S9H 3X2  
Phone: (306)778-7252  
jeffersonp@agr.gc.ca

### PRESIDENT-ELECT

Tom Bruulsema  
Potash & Phosphate Institute of Canada  
18 Maplewood Drive  
Guelph, ON N1G 1L8  
Phone: (519) 821-5519  
tbruulsema@ppi-ppi.org

### SECRETARY-TREASURER

Shabtai Bittman  
Agriculture & Agri-Food Canada  
Pacific Agri-Food Research Center  
Agassiz, BC V0M 1A0  
Phone: (604)796-2221  
bittmans@agr.gc.ca

### WESTERN DIRECTORS

Rigas Karamanos  
WESTCO  
P.O. Box 2500, 11111 Barlow Trail  
Calgary, Alberta T2P 2N1  
Phone: (403)279-1120  
r.karamanos@westcoag.com

Gavin Humphreys  
Agriculture & Agri-Food Canada  
Cereal Research  
195 Dafoe Road  
Winnipeg, MB R3T 2M9  
Phone: (204)984-0123  
ghumphreys@agr.gc.ca

### EASTERN DIRECTORS

Valtcho Jeliaskov  
Nova Scotia Agricultural College  
50 Pictou Road,  
Cox 151, P.O. Box 550  
Truro, Nova Scotia B2N 5E3

Tiequan Zhang  
Agriculture & Agri-Food Canada  
2585 County Rd. 20  
Harrow, ON N0R 1G0  
Phone: (519)738-2251 ext. 476  
zhangt@agr.gc.ca

## Canadian Society of Agronomy

*Steve Sheppard, Executive Director*

P.O. Box 637

Pinawa, Manitoba, R0E 1L0

Ph: 204-753-2747 Fax: 204-753-8478

E-mail: sheppards@ecomatters.com Website: www.agronomycanada.com