



Reports on the 18th World Congress of Soil Science - July 2006

by participants from China, Brazil, USA, Tanzania, Syria and Canada

It was my very first time to go for a scientific congress of this size on soil science although I have been working in the field for more than 20 years. As I had been told before, that people would not get much with such kind of meetings, as they are too broad and general, and you would not meet many scientists working in the same specific area as you do there. However, the experience with the congress make me feel that this trip was worthwhile and fruitful. The congress was really beneficial for me.

Firstly, I have understood more deeply with the concept of the frontiers of soil science today, both global priorities in soil science both in general and in some specific areas, such as rhizosphere research, soil organic matter stabilization and carbon sequestration, soil microbial ecology and the studies in interfaces becomes more promising. Even more impressing, some new research area such as hydropedology, emerges and new technologies have been developed and applied to the soil science research, especially in the rhizosphere research and soil-related environmental issues. It seems to me, soil science is still alive and very active. We have to find out our way not just for survival rather for new perspectives.

Multi-disciplinary research is becoming the trend in soil science research. For solve the environmental problems, it becomes unavoidable to bring scientists in the different fields to work together. Even for the research in production aspects, soil scientists have to work and integrate ourselves with agronomists, plant breeders, food scientists, economists, as well as the soil scientists in different research areas in order to have a sustainable agricultural development. The congress provided a good opportunity for people to learn what the soil scientists in the areas other than ours have been doing so that it become easier for us to find out the partners in other area. It also clearly demonstrates that we could get to have much broader knowledge with the congress of this kind than with other conferences, seminars or workshops on some specific topics or area.

Facing the trend of economical globalization as well as that the environmental problems have become global issues, international cooperation in both soil science research and education are highly desirable. Cooperation could only take place between the people who know each other well. Nowadays, people with common interests may easily get to know and communicate with others through the electronic media. However, face-to-face communication is still not replaceable. It is often that writing may bring some misunderstandings, and will not know much about the personalities of the people.

Soil science education has brought the great international concerns to soil scientists. Decline in both undergraduates and post-graduates student enrolments, as indicated by Dr. Alfred Hartemink, have been very significant in Europe, USA and Australia, over the past 10 to 20 years. Besides, teaching methods have been changed as wells as the number of academic staff has been reduced. Students in soil science are getting strong in computer skill and information technology, more international experiences and more in-door activities than the field excursions. I believe this is a global phenomena, although student enrolled in soil science has been increased dramatically over last 10 years in China. Increase in student numbers do not means that there will be more soil scientists later. Rather, more and more graduates get jobs in governmental, industrial and busyness sectors other than in agriculture. To have a major in soil science is not their first choice for majority of the students. They come to agricultural university because they could not find other better universities to go. This is something to do with the infrastructure of China's higher education system and the government new policy in dramatically expanding the college student enrollment, as well as the great uneven development between urban and rural areas. Soil science education is in a transitional period. With changes in department and

major names, Soil science major is being replaced by resources and environment, will not be left many. Soil science has been partly integrated with environment and resource management and partly with crop science. However, the numbers of students taking the courses of soil sciences may increase, since soil is an important component of the environment. Soil science, as one of the major branches in earth and life sciences, will have a brilliant future, if we keep pace with global economical and social development. From this point, international cooperation in soil science education and international experiences for students are necessary.

Besides, I am glad to see that soil science research were addressed with both environmental and productivity orientations. The latter is still a big issue for the soil scientists in the developing countries to work with for ensuring the food security. In addition, a growing concern for food safety becomes obvious too.

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To participate in the 18th World Congress of Soil Science was an exciting experience in many ways. One, the city of Philadelphia could not be better qualified, due to its history of multiple people origins and quest for independence, at the same time preserving and protecting old markers. Just as in science we look for the new but keep a foundation in the past from previous research and literature review. That brings another high point of attending the meeting. The opportunity to meet and listen to references on my field of research, as I believe happened to other new scientists. For instance, to hear Dr. Arnold presentation in the session No. 62 was a magic moment. From my studies at Purdue University, under Prof. Don Franzmeier, learning the bases of Soil Taxonomy, the name of Dr. Arnold became a reference, with others. Thus, to really meet Dr. Arnold was very moving, added to the nice presentation that only his experience could provide for such a broad audience.

The other highlight was to see Ethnopedology and Indigenous Soil Classifications as themes on the session No. 108, oral and posters. This subject is one of my interests in Brazil and, so far, there has been a sense that it is just a curiosity or a technical subject not genuine science. Thus, the effort of the IUSS to bring all perspectives on science to a soil science meeting is a very noble one, and to participate and be exposed to different points of view, even if we disagree from some of them is very enlightening. On national meetings, after a while, we start to see some of the presentations as the same, no scientific advances or they are just not shown on the meetings, also the same people giving presentations. This brings a sensation of stagnation and we start to go to the meetings to get-together with friends or to sight-seeing places. The international meeting breaks this pattern, with so many people, different cultures, nations, points of view, and in the case of researches from less developed countries opportunities to share information from similar conditions, such as between Brazil and African countries, which have similar highly weathered soils.

The last high point was the beginning of the 18th World Congress of Soil Science - the opening ceremony with the speech from Dr. Sachs. I think that soil scientists, as in other groups, tend to get so involved in our research that we forget one of the main reasons of our studies, to contribute for a better management of our environment, also that the human species is part of it, for good or for worse. Thus, the call about the importance and the responsibility of soil scientists, from a strange fellow in the field, especially someone well known as Dr. Sachs, was very stimulating for me and I believe for many people in the audience.

Thus, finishing this report on my first experience attending the World Congress of Soil Science, it was worth and I am waiting for the next, and my only regret is that the one after that will not be in Brazil.

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After weeks of (occasionally frantic) preparation, several colleagues and I from the National Geospatial Development Center of the US Department of Agriculture-Natural Resources Conservation Service arrived in Philadelphia, Pennsylvania on the opening day of the 18th World Congress of Soil Science. The 18th World Congress was the first World Congress for most of us, and we were excited to have the opportunity to attend.

Sunday evening's opening reception was preceded by a chance to preview the exhibits. As is the case at most conferences, the place to find an NRCS employee is at the NRCS display and the World Congress was no different. The display, which included soil monoliths, informational materials, and computer terminals to access the Web Soil Survey, was generally well attended by NRCS employees and other conference participants. One colleague mentioned that while working the display, a conference attendee asked to purchase one of the soil monoliths. While the monoliths were not for sale, we did provide a set of instructions for making monoliths, which has hopefully been put to good use. It's certainly much easier to mail a set of instructions than a soil monolith!

After the exhibits closed on Sunday evening, we were treated to famous foods of Philadelphia including soft pretzels, hoagie sandwiches, and Tastykakes and a chance to mingle informally with colleagues from around the world. This was an excellent opportunity to renew acquaintances, catch up with old friends, and meet new people from all segments of the soil science community, before the business of the week began.

As my interests lie in the areas of application of digital soil mapping and representation of the resulting data, I chose to attend oral and theater sessions on New Frontiers in Soil Resource Assessment, Soil Sampling in Space and Time, and Multiscale Mapping of Soil Properties, among other topics. For the most part, the talks I heard were interesting and well presented. I've been spending a lot of time recently thinking about sampling methods, so I greatly appreciated the introduction provided in the talk ♦Sampling in Space and Time for Natural Resources Monitoring♦ by D. Brus et al.

On a different topic, the discussion of human-induced changes in soil New York City presented by J. Galbraith in the talk ♦Human Effects on Soils in Urban Area♦ was quite interesting and served to remind one of the sheer amount of earth-moving and shaping that has occurred and continues to occur in support of modern society. A colleague, in response to the question ♦What was one of the most interesting or unexpected things you learned during the meeting?♦, cited links between adverse health impacts in the Caribbean due to increased amounts of transported dust and changes in dust composition presented by V. Garrison in the talk ♦From *Aspergillus* to Timbuktu: African Dust, Coral Reefs, and Human Health♦.

A number of interesting Mid-Congress field trips, ranging from primarily cultural to primarily scientific were also offered to conference attendees. I was a presenter for the New Frontiers in Soil Survey tour, which provided participants an overview of methods and technologies being used to update and maintain soil survey information in a southeastern Pennsylvania soil survey office. After a discussion of several office-based data capture and analysis tools and methods including GIS and landscape modeling, soil information systems, and custom soil interpretation, two field sites were visited and a variety of field data collection tools were demonstrated. I appreciated the chance to see demonstrations of field tools such as ground penetrating radar and to learn more about soil survey activities in other countries from other tour participants.

One innovation that I found particularly interesting was the concept of poster theaters. The poster theaters were oral/poster presentation hybrids where authors prepared both posters and brief oral presentations describing the poster content. In the poster theater sessions I attended, typically 10 to 12 presentations were made

over the course of two hours with limited time for questions and discussions in between each talk. The chance to both hear and read about a project is, in my opinion, ideal, as questions that arise while viewing a poster may be answered during the talk and vice versa. Unfortunately, the physical environment in which the poster theaters were held was less than optimal; the combination of competition from concurrent poster theaters and echoing exhibition hall conspired to make hearing presenters a challenge. I would like to see this format adopted at future conferences, though perhaps in quieter surroundings and with a focus on discussion and interaction among presenters and between presenters and the audience.

Unfortunately, we had to leave Friday afternoon before the official conclusion of the Congress. While it felt good to arrive home after, what had been for me at least, several long weeks of travel, there was at the same time the slightly melancholy sense of leaving behind the unique and diverse community of soil scientists represented in Philadelphia.

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The 18th World Congress of Soil Science (WCSS) brought in Philadelphia professional and scholars devoted to the development of Soil Science from all over the world for a period of seven days. The response was very good; the congress was very well attended. Soil scientists convened to share scientific results, new knowledge, appreciate technological advancement in soil science and share views on pertinent issues pertaining to the future of the discipline.

The organizing committee and the residents of Philadelphia made the congress a success from the scientific, social and cultural points of view. The supportive opening remarks from the Governor of Delaware, Honourable Ruth Ann Minner, his great welcome and recognition of the fundamental role of the soil science profession at a national and global level adequately sent a comforting signal and assurance to all participants. This brought joy to many participants and confirmed the correctness of the choice of the 18th WCSS venue reached by IUSS council in Bangkok during the 17th WCSS.

The IUSS chairman, Prof. Don Sparks, the 18th WCSS organizing committee and the community in Philadelphia, offered their best to the congress participants. The arrangement for Hamilton residence to be used by a the majority of congress participants and the availability of guide shuttle service between this residence and the convention centre are just among the many privileges enjoyed by most of the participants. The receptions, the tourist attractions, the city's harmonious environment and the high degree of quality in every aspect of the congress made days pass unnoticed.

A wide range of recent technological advances in soil/earth sciences was displayed during the 18th WCSS. A greater portion of the display covered modern equipment for measuring soil moisture (soil moisture probes), soil hydrological properties, ground water monitoring, gas (CO₂, CO, CH₄ NH₃ and N₂O) emission monitoring, data loggers, combined soil moisture, salinity and soil temperature monitoring equipment for field use, crop performance/development monitoring technology and sensor-based mapping equipment, just to mention a few. Congress participants had ample time to interact with the manufactures and exchange views on areas for improvement.

Equally, journal and book publishers as well as service providing organisations such as the Natural Resource Conservation Service of the United States Department of Agriculture displayed wide range of new publications in soil science and related disciplines. One of the most interesting publications is the IUSS (2006) release *The future of Soil Science*, a publication to which 55 soil scientists from all over the world contributed. The book shows a wide range of views with regard to the future of this noble profession. The future is bright, according to majority of the authors. Nevertheless, in future soil science should face challenges of sustaining production to

feed the current over 6.1 billion people, at an annual increase of 1.3% and projected decrease in per capita arable land area from 0.23ha at present to 0.14ha in 2050, global warming, changes in weather pattern (Nieder, 2006), management of soil as the ultimate sink of all sorts of pollutants (Minhas, 2006), land degradation and many other problems of global interest such as scarcity of water resources (Noble, 2006) and environmental sustainability (Nortcliff, 2006). For soil scientists to effectively contribute to the global village in facing these challenges, multidisciplinary cooperation with other relevant professions is absolutely essential (Nieder, op.cit.). The global soil science community ought to take these challenges and develop joint strategic studies and possibly report success in the forthcoming soil science congresses. Such approach would probably influence even the arrangements of some of the sessions of the congress. Future congresses may find it appropriate to include in the programme special multidisciplinary oral or poster presentation sessions.

Both oral and poster sessions were loaded a wide range of scientific information. Poster and oral sessions could be easily identified in the congress booklet and the well-designed labelling congress program enabled interested persons to locate the whereabouts of a given poster very easily. Authors of posters did very well by indicating the time when they would be available for interaction. It was also a very good arrangement that many authors left behind their business cards, reprints of their posters and some even provided paper and pen for comments. A handful of the poster presentations were accompanied with a full paper. Such approaches enabled interested persons to get extra useful details without excessive exchange of e-mails and other communication. In indeed, preparation of a full paper over and above the poster or power point presentation requires an extra effort of the author(s). Handling of full papers, if it were to be adopted by IUSS as a requirement on top of the oral/poster presentation would demand more human and financial resources as well as more time for the congress preparation. This could be an issue of discussion for future congresses if deemed necessary. However, in view of the rapid developments in information technology, handling of such large information in electronic format may not be a big issue in the future. An editorial committee of each respective commission or working group could handle the editing of the papers and submission deadlines could be changed to accommodate such changes.

The style of having different thematic session for oral presentation scattered within the convention centre and a similar approach for the poster presentations split the participants into small groups for nearly most of the time during the congress. The opening ceremony was one of the few occasions during when one could see the true size of the 18th WCSS, appreciate the age spectrum of the participants and some aspects of gender equity or balance. Such an appreciation was much easily captured during the opening reception due to the free interaction. Men largely dominated the congress community. Young soil scientist, irrespective of gender appeared far fewer than the experienced professionals. Young ladies were even fewer in number. I had the same impression for the Commission and working group meetings that I attended. Details of distribution are not the purpose of this short account but representation from developing countries notably those in Africa was certainly low. The latter is certainly related to the comparatively low capacity building, low investment in soil science that is associated with low pace of acquiring appropriate research and testing equipment for soil/land resources in the national soil bureaux of most developing countries of which Thiombiano (2006) elaborated the case of Africa. Africa, whose economic problems, according to the keynote speech of Professor Jeffrey Sachs, are related to under utilization of land resources mainly caused by knowledge barrier of the small-scale land user. Professor Sachs considers such problems too miniscule in view of the existing global treasure in soil science knowledge, expertise and experience. It is in recognition of such resourcefulness that IUSS at the 18th WCSS gave awards to certain key personalities in the soil science community: Prof. Victor Turgulian, Prof. Rattan Lal, Dr. Herman Mucher and the late Dr. A. Jongerius for their exemplary scientific contribution.

Gachene (2006) considers lack of support for local and regional soil science societies being one of the causes for failure of young people studying in universities in developing countries like Kenya to loose enthusiasm in soil science. Professor Sachs requested the global community of soil science, under the direction of IUSS to recognize its global responsibilities and look for ways to strengthen soil science in the

most needy countries, particularly in Africa.

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This world congress was a great opportunity for many activities including different which were held prior the world congress; first on the "Measuring water content, water potential and water flow in soils; a short course for soil scientists held in July 8th. And "the use of nuclear techniques in addressing soil-water nutrient issues for sustainable agricultural production" the later organized by the International Atomic Energy Agency, Austria. From the above, it could be highlighted the important to tackle the issue of soil water for the sustainable agricultural system. The later workshop held in 9 July and consists of 15 oral presentation and 15 posters and were concentrated on the use of the nuclear techniques to study the soil water as well as nutrients balance. Also, they stress on the important of splitting evapo-transpiration into soil evaporation and plant transpiration.

The congress started in 9 July and in the present of over 2000 participants from over 100 countries. In the opening ceremony, the organizers had addressed the issues of hanger and the need to secure good food and sustainable agricultural and resources systems. Then, it was announced the start of the world congress.

The congress consists of 179 sessions of oral and poster presentations over the period of the congress. Several impotents issues cover all the range of soil science starting from basic to applied topics and could be highlighted as following:

- 1- Soil classification and related issues still hot issue and need further works especially in the developing countries. Also, the use of GIS is to be further used for better land use.
- 2- Soil organic mattes and its important as a buffer zone for physical and chemical stress and the need to sustain it in the soil by slow break down.
- 3- Soil erosion, both wind and water and the need to eliminate this phenomenon using appropriate agricultural practices. Also, the use of simulation models to monitor the soil erosion and find solution to it.
- 4- Dry land research and it's important in all over the world, and since, more of the land becomes dry every year, and this illustrated the important in either escape or avoids the drought or lives with it. The later solution is a new thought in which the people will accept the dry land and accommodate themselves in these areas. Having this strategy, they will gradually have better solutions to dry land. Another issue is

the zero tillage technique to conserve the soil water and eliminate the wind erosion.

5- Long term research to explore the influence of different crop rotation and influence of different cropping system on soil physical components which could not been seen in a short term period.

6- Soil water research and use of advance technique to maximize the efficient use of the soil water and as a result water use efficiency (units of water used per unit of water and units of area). Also, an attempt is on the simple technique to split evapo-transpiration into soil evaporation and plant transpiration and use of nuclear technique to assist in this advanced research.

7- Simulation models and its use to assist in better planning of research and better use of the farm resources using a different scenarios and run for long period of time to cover the full climatic cycle of the test location.

8- Pedotranfer function research, which is down stream research, relating texture (easy measurements) to water retention curve and hydraulic properties of the soil (difficult measurements). This filed of research required intensive measurements and could yield significantly important out put results.

9- Education in soil science, which indicates some alert. The numbers of new soil graduate decreased as function of time for number of countries. The reason behind this could be due to the fact that not enough positions in the market. So, solution should be found to solve this problem, by may be educating the policy makers to generate new position for soil scientist as well as providing public awareness of the important of soil science by giving seminars and have public meetings and may be spending more effort in the preparation of graduate lectures towards close tie between students and lecturer and getting students involve in research to bridge between theory and practice.

10- Using resources (nutrients) in an efficient way; including rock phosphate, as raw and organic source which would be very useful in reaching sustainable agricultural system and eliminate the use of chemical fertilizer.

11- Use of conventional water to get a higher yield and use of this waste water after having it treated in a proper way.

12- Exhibition which go along the congress and enrich the congress with some demonstration of advanced instruments and publisher in the related fields.

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Like other participants from Teaching College Universities, I returned from WCSS in Philadelphia, USA with a renewed sense of enthusiasm and objectives for the academic activities that we all consider so crucial *conducting research and integrating it to more innovative and effective teaching*. I benefited greatly from that and subsequent meetings- I felt a part of the soil research community, learned about the International latest research, findings, recommendations, techniques, renewed guidance from more experienced scientists, presented my own research for validation and criticism and commiserated with other scientists about struggles and challenges. I enjoyed a great deal of support on my journey to becoming a more skilled soil science teacher as well as researcher through my participation in WCSS.

However, there is one interest that I would like to share regarding to the value of International Soil Science Research Projects (SSRP), especially for undergraduate students (with thesis). Based on my previous experiences working with Soil Science undergraduate students at the University of Bengkulu, Sumatra, Indonesia for over than 10 years, the value of SSRP must be emphasized. Part of the challenge in the action plan is usually trying to overcome the perception that SSRP must be complex and difficult. Another perception that SSRP is only for those already interested in Soil Science. There were a significant number of students who often tried to avoid SSRP because they thought the research were too complicated. In this case, the role of SS Professor is important to help switching these paradigms. After discussing with

International Soil Scientists at WCSS meeting, several ideas may help to reduce the burden of students in doing SSRP.

First, SSRP represent an alternative learning path in which students must use the skills they have developed previously or as an addition for hands-on experiences. Second, the students must learn the importance of seeking quality in the facts that they use and in the volume of data necessary to draw valid conclusions. Third, the learning process in doing SSRP is trying to utilize the local soil-related problems as a basic question and link them with global Soil Science Research as a big picture inside the professor's long-term research planning.

Finally, the Professor can help seeking a feasible economical path to expand the availability of SSRP to more students and should do more cooperate with local community partners, local extension service agents, local companies and or national/international organizations. Hopefully, we can establish and prove the value of SSRP in terms of local, national and international perspectives. I look forward to seeing more participation on related issues above at our next meeting and watching our future undergraduate students have more opportunities to unfold the soil's mystery.

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I was one of the 65 Canadian registrants at the 18th World Congress of Soil Science held at the Pennsylvania Convention Center, Philadelphia, PA, USA, July 9-15, 2006. The Canadian Society of Soil Science (CSSS) was well represented, including President Craig Drury and President-Elect Gerry Neilsen.

There were several simultaneous sessions. The 188-page *Program* was helpful in planning my participation. The ♦Poster theatre sessions♦ were introduced at this Congress. They provided an opportunity for authors to present brief synopses of their posters. Another feature introduced here was the fact that all posters were available for viewing throughout the Congress. The poster authors were asked to display a two-hour period of time when they will be present at their posters. The one-on-one discussions with the presenters (e.g., Bipin B. Mishra) were very useful. Each delegate received a copy of the book ♦*Future of Soil Science*♦.

The Congress gave us a great opportunity to meet old friends and make new ones. I renewed my friendship with Soil Science Society of America (SSSA) Past President John J. Mortvedt with whom I served on Committee S889 (Coordination of Official Methods of Soil Analysis) about 10 year ago. I met Rudy Dudal who has participated in 13 of the 18 congresses. The first time I met him was at the 11th International Congress of Soil Science in Edmonton in 1978. Richard W. Arnold and I reminisced about the 8th International Soil Conservation Organization Conference that we attended in India in 1994. The exhibits and publisher displays were excellent meeting places. I have been involved with the Canadian Society of Soil Science and the Soil and Pant Analysis Council for several years. Some of the books of these two societies have been published by CRC Press, Boca Raton, Florida. It was beneficial to discuss with John Sulzycki, of Taylor and Francis Group LLC-CRC Press at Booth 303, the books to be published in the near future. A representative at the National Research Council Canada exhibit and I discussed the Canadian Journal of Forest Research and other publications. At another display I learnt about the contributions being made by the Potash and Phosphate Institute in agronomic research and education and met Terry L. Roberts (President), Paul Fixen, Tom Bruulsema, Cliff Snyder, and the scientific staff from various regions around the world, e.g., K.N. Tiwari and T. Nagendra Rao of the India Program. At the banquet I saw several friends including D. Keith Cassel who served as SSSA President during the same year when I served as CSSS President (1996-97).

During the mid-congress Tour 24, it was certainly a pleasure to meet Benno Warkentin whom I met a few months earlier at the CSSS-Canadian Geophysical Union conference in Banff, Alberta. He is the editor of the book ♦*Footprints in the Soil - People and Ideas in Soil*♦. A full report on the tour is published below.

Members of the Executive Organizing Committee (Lee Sommers, Larry Wilding, Don Sparks, Gary Petersen, and Lois Peterson) are to be congratulated for an excellent meeting. The 18th WCSS was my seventh international congress of soil science. Earlier I participated in the following six congresses: Canada (1978), India (1982), Germany (1986), Japan (1990), France (1998), and Thailand (2002). I am looking forward to participating in the 19th WCSS in Brisbane, Australia, August 1-6, 2010. I have very pleasant memories of this beautiful city where I participated in the 6th International Symposium on Soil and Plant Analysis in 1999. At the conclusion of the meeting, Vinod K. Suri and I explored the historical and cultural attractions of Philadelphia.

A mid-congress tour on July 12

The tour started at 7:15 a.m. from the Pennsylvania Convention Center, Philadelphia, PA. There were 45 people on the tour, including 20 scientists from USA and the others from Australia, Canada, China, Croatia, Czech Republic, France, Germany, Ghana, Indonesia, Japan, the Netherlands, Puerto Rico, South Africa, Switzerland, and U.K.

The tour took participants from Philadelphia, through the Pennsylvania Dutch Country, to Stevens, PA. We were welcomed to his preserved farm by Pennsylvania State Senator Noah Wenger. Dennis Wolff, Secretary, Pennsylvania Department of Agriculture and Matt Knepper, Director, Lancaster County Agricultural Preserve Board gave an overview of the Farmland Preservation Program. Ed White, U.S. Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) and Richard Cronic discussed the profiles of the Hagerstown limestone soils. Then we traveled through the Amish Country. Kathleen Eshbach explained the Amish culture. We had the unique opportunity to enjoy an excellent home cooked meal for lunch at Esh Farm, an Old Order Amish Farm, in Kinzer, PA.

In the afternoon, we visited Cedar Meadow Farm, Holtwood, PA. Here Steve Groff and his family farm 175 acres of vegetables and other crops on hilly land. Steve has pioneered the *Permanent Cover Cropping System* which includes no-tillage, cover crops, and effective rotation as a way to enhance soil and water quality. Research programs that are being conducted on the farm were presented by Lisa Stocking from the University of Maryland and Joel Gruver from the North Carolina State University. The following USDA-NRCS scientists discussed the soils on the farm and other research programs: Mark Goodson, John Hudak, Natalie Irizarry, Rob Knight, and Ed White. Research summaries were distributed, but not discussed due to shortage of time, from Ray Weil, University of Maryland, Ron Hoover, and David Dowds. Otto Spaargaren of the International Soil Reference and Information Centre (ISRIC), Wageningen, the Netherlands explained the World Reference Base (WRB) soil classification at all the sites. We observed the soil profiles and the soil differences under long-term no-tillage, conventional cropping, and woodland within the Pennsylvania Piedmont in Lancaster County. The photograph given below shows a soil profile in a pumpkin field where sweet corn was the previous cash crop and was followed by a clover and rye cover crop in which the pumpkins were planted. A brochure entitled *Biodrilling with forage radishes* conveyed the following message: *Soil is meant to be covered.*

We arrived back at the Pennsylvania Convention Center at 7:00 p.m. Ed White and the members of his team are to be complimented for this educational tour. The tour was sponsored by the USDA-NRCS and the Lancaster County.

Pennsylvania is the only state that has a geologic time period (Pennsylvanian, 290-330 million years ago) named after it. This state has over 252,296 acres under permanent preservation through 2,132 agricultural conservation easements. Lancaster County is the most productive non-irrigated county in USA. Of the 630,000 acres in this county, 55% of the land is considered to be prime farmland. More than 68,000 acres of farmland on 865 Lancaster County farms are permanently preserved for agriculture. There is an increased urban pressure on the farms.

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Three Cuban scientists, all members of the Cuban Society of Soil Science (CSSS), had approved papers at the 18 WCSS: Graciela Dueñas and Aurelio García from Soil Institute, Havana and the young scientist Sandra Lok from Institute of Animal Science also at Havana. The first two ones, with financial support of the International Atomic Energy Agency (IAEA) and the third one, supported by her Institute. Nevertheless and despite the efforts of the Organizing Committee (Donald Sparks) and IUSS (Stephen Nortcliff), nobody participated because they do not received USA Visa on time. Graciela and Aurelio received them several days after the Congress finished.

In 2005, the actual President of the CSSS, Olegario Muñoz, neither received Visa for the 2005 Annual Meeting of the Soil Science Society of America (SSSA) where he was invited in order to have the final check of the Pre - 18 WCSS Tour to Cuba, for that reason, he did not apply to 18 WCSS and Cuba was not present at the IUSS Council Meeting. Finally, the previously mentioned Tour, that was completely organized since 2005, was cancelled because 16 of the 21 interested delegates were USA citizens and they needed an special authorization from USA Department of Treasury.

CSSS is member of the IUSS but no Cubans had the possibility to participate in 18 WCSS. Nevertheless, we will keep relations with scientists and National Societies all over the world as an IUSS member.

Olegario Muñoz
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