

Issue: June 2011

Editorial

This is the first issue of ISTROINFO using the new template generated by the ISTRO webmaster Erik van den Elsen.

I thank Erik for all his efforts. As usual I welcome all comments on ISTROINFO – but in this case, I particularly call for comment on the new format (even though I have not fully mastered it yet!) In preparing this version I realised that I don't know how members read ISTROINFO. How many scroll through it on their computer screens, or how many print out a hard copy and read that. Certainly, I think the new format will look much better printed out and left on the table in the lunch room or coffee table where colleagues might read it and thus be inspired to become members.

Erik has also been busy updating the main ISTRO website (www.istro.org). The papers from February's conference in Nigeria are now loaded and available as pdfs. If you want to find out what is happening with tillage and crop production in that region of Africa – here is a chance. Also the page with names of recently completed PhDs who have been awarded the 3 year free membership deal is slowly growing. The abstract of each completed thesis is also available for members wanting to find out about what PhD research is going on and in which institutions.

As just mentioned in the last issue of ISTROINFO there was a report on the Nigerian branch conference. Later in this issue you will see reports from two of the active ISTRO working groups. You will also see notices of upcoming meetings organised by ISTRO branches in the Czech Republic and in association with the Iranian Branch. It is great to see all these activities being organized and run by members. Hopefully they each provide a chance to keep our membership growing.

Allen Torbert does a great job keeping our budget on track and he and the board seek to support as many of these activities as possible. Over five years ago now the then board set out the guidelines for providing financial support to working groups and branches. To help those who are starting to plan activities for the next few years it is worth reiterating these.

- 1 The ISTRO working group or branch must send the Secretary-General an indicative budget and/or explanation of how the money will be used.
- 2 The branch must be officially registered and must be up-to-date with its fees.
- 3 The workshop of conference should be announced in ISTROINFO.
- 4 A condensed report (1 to 2 A4 size pages) about the meeting should be written as a contribution for ISTROINFO.
- 5 The treasurer must confirm there is enough money for the event.
- 6 The maximum total financial support to a working group or national branch in the three years between ISTRO conferences is 1000 Euro.
- 7 The decision will be made by the President, Secretary-General and Treasurer and must be unanimous.
- 8 In case of a financial surplus for the working group or branch event, the support from ISTRO should be refunded up to the maximum surplus or the support that was received.

As with any piece of budgeting, the more time that there is to prepare, the easier it is to make the arrangements. So to help make the treasurers life easier please, can I suggest branches and working groups start thinking now of what events they are likely to hold in the three years following the 19th Triennial conference in Montevideo? These initial ideas can be put to the board at the meeting in Montevideo and where possible clashes avoided and synergies found. This will help the treasurer and all concerned ensure that the ISTRO budget is used for the maximum benefit to the most members.



ISTRO related meetings forthcoming

☞ Czech Republic ISTRO Branch conference.

August 31 – September 2 2011. Crop management practices adaptable to soil conditions and climate change. Full details available at the branch website www.istro.cz There is still time to register and registration can be done on-line!!! There is discounted registration for ISTRO members and for students.

The conference will be held in the Congress and Educational Centre Floret in Pruhonice, Czech Republic (www.floret.cz)



Keynote speakers include

M Kutilek – Soil physics and climate change

S Gonet – Carbon sequestration in soils under different management

V Smutny – Weed spectrum changes under different cropping systems

P Weisskopf – Controlled traffic farming as a strategy to reduce compaction risks

V Varallyay – Soil as a moderator of extreme hydrological events – drought and flood

M Birkas – Step-by-step adoption of adaptable soil tillage in Central Europe

Field trip includes both scientific (e.g. maize hybrids under different tillage systems) and social (castle Dobris and Brewery Velke Popovice) components.

Participants should book and pay for their own accommodation, but the website provides information about options for accommodation.

If you move quickly you may just have time to get a paper or poster accepted.

For further information contact the Czech Republic branch either Vladimir Smutny (smutny@mendelu.cz) or Barbora Badalikova (badalikova@vupt.cz).

☞ Second Human Impacts on Soil Quality Attributes in (Semi-) Arid Regions



Following on from the first meeting in 2005, HISQA2 at Isfahan University of Technology starts on 14 May 2012 and is organized in conjunction with the Iranian Branch of ISTRO

HISQA2 (<http://hisqa.iut.ac.ir/>) will consider ongoing human induced soil degradation, including salinization, alkalization, nutrient depletion, desertification, and physical, chemical and biological deterioration. The conference will address approaches and technologies that can be implemented to manage and correct unsustainable conditions impacting human life.

Registration is 500 Euro (400 for delegates from developing countries) which includes participation in the scientific program, conference proceeding, CD, welcome reception, meals (Breakfast, Lunch and Dinner), tea (coffee) breaks, and professional field trip.

The call for abstracts is now open with a deadline for abstract of 31 October 2011.

Triennial Conference

⌘ 19th ISTRO Conference Montevideo Uruguay

<http://www.congresos-rohr.com/istro2012/>



24 - 28 September, 2012 Radisson Victoria Plaza Hotel in Montevideo, Uruguay

Abstract submission by 10 December 2011 – start to prepare now!

Early bird registration by 31 March 2012, which is also the date for complete paper submission.

CONFERENCE TOPICS

SOIL PROPERTY DYNAMICS

Tillage and soil physical properties

Tillage and soil chemical properties

Tillage and soil biology

DEVELOPMENTS IN SOIL DYNAMICS, MODELLING OF TILLAGE & TRACTION.

SOIL TILLAGE, AGROECOSYSTEMS AND ENVIRONMENT

Conservation tillage and soil management for sustainable farming systems

PRECISION AGRICULTURE

GREENHOUSE GAS EMISSIONS AND SOIL CARBON SEQUESTRATION

September is springtime in the Southern Hemisphere and temperatures range from 12 to 21°C. During spring, days are longer, and crops, pastures and forests are at their best.

Pre-conference tour

The field trip will start with a visit to the humid and sandy Pampas (mixed cropping and cattle farming) and the southeast (small grain and row crops) of Argentina. This pre-tour-field trip will be organized jointly by the Argentinean No-tillage Association (www.aapresid.com.ar), and the Argentinean Association of Farm Discussion Groups (AACREA) (www.aacrea.com.ar). The trip will examine the wheat / soybeans – corn no-tillage production systems in the Pergamino area, as well as the mixed crop and cattle production systems. The tour will finish in the main farming region of Uruguay with participants visiting the National Institute of Agriculture Research Station INIA – La Estanzuela (the oldest cropping system long-term experiment in Latin American), and the no-tillage dairy systems in the region of Colonia.

Post-conference tour

This field trip will commence with a visit to the Mario A. Cassinoni Research Station of the Faculty of Agronomy, housing one of the most important and oldest tillage and crop rotation research conducted in the Northwest region of Uruguay. Participants will then visit the most important cropping areas of Uruguay in coordination with the No-Till Systems Uruguayan Association (AUSID). The visit will continue in the east part of the country (bordering Brazil) with an examination of irrigated rice production systems. The tour will finish in Southern Brazil (Rio Grande do Sul) in the region towards Passo Fundo, one of the most intensive soybeans production systems in the world.

Check the website for full details

Working group meetings

⌘ Report on working group F Visual Soil Examination and Evaluation

By Bruce Ball, Lars Munkholm and Tom Batey

16th-18th May at the Aarhus University Flakkebjerg Research Centre, Denmark. Interest in the group has now extended well beyond tillage to include all threats to soil quality. There were 26 delegates attending from 10 countries - France, Denmark, Ireland, UK, New Zealand, Australia, USA, Sweden, Germany and Norway. Unfortunately three delegates from Brazil had to withdraw; however their papers were presented by Bruce Ball.



Graham Shepherd: Visual Soil Assessment (New Zealand)

The objectives were to continue and further cooperation in the development and use of field methods of soil examination and evaluation. On the first day, 11 papers were presented which covered the use of Visual Soil Examination and Evaluation (VSEE) methods in land evaluation, in grassland, drainage and soil quality ratings for productivity and for the environment. Further papers were given dealing with the development of methods for assessing subsoil structure and relating structure to other soil physical properties. The papers will be published in a special issue of Soil and Tillage Research in 2012.



David McKenzie SOILpak (Australia)

On the second day, the advocates of five of the principal methods for evaluating topsoil and subsoil structure demonstrated their techniques in the field and in the rain. Six trenches had been dug in a long-term soil compaction experiment where different wheel loadings and number of passes had been applied to a sandy loam soil containing 12-17% clay. There were clear visual signs of compaction both in the wheat crop and in the topsoil and subsoil so that the various techniques had good material to illustrate key criteria.

The third day was allocated to Knowledge Transfer when 20 local consultants, policy makers and advisers came to learn about the relevance of visual soil examination and to be shown how to use the techniques in practice.

Discussions with both groups revealed considerable enthusiasm for the wider promotion of field techniques using numeric classes. Those to assess topsoil structure are now well established and are being used in several countries. Although all agreed that numeric methods for evaluation of subsoil structure were desirable, there were several difficulties to overcome and one of the next tasks of the Working Group is to continue cooperation in their development.



Lothar Muller with Lars Munkholm watching: Muncheberg soil quality method (Germany)

Excellent facilities both in the Conference Room and in the field were provided by the Flakkebjerg Research Centre. A further meeting of the Working Group is planned, possibly in Ireland, in 2014 or 2015.

The meeting programme, presentations and photographs are at: www.agrsci.au.dk/VSEE and the revised topsoil Visual Evaluation of Soil Structure is at: www.sac.ac.uk/vess



At the day for farmers discussion including Janne Aalborg Nielsen, Lars Munkholm, Tom Batey, and Mandy Liesch

⌘ Working group K Controlled Traffic Farming (CTF)

By Tim Chamen, Markus Demmel and Robert Brandhuber

The CTF workshop started at the Bavarian State Research Center for Agriculture. Tim Chamen, chair of the working group and Rudolf Rippel, director of the institute welcomed participants. Tim noted that practitioners were experiencing a 50% saving on fuel during crop establishment.

Robert Brandhuber spoke on Soil Conservation policy and practice in Bavaria and provided a comprehensive presentation which highlighted a number of reasons why ploughing was still the dominating basis for crop establishment in Bavaria. Discussion centred on the role of residue chopping to address the corn borer problem and head blight in wheat after maize. It was considered that good management and husbandry had the potential to overcome some of the main problems without plough tillage.

Markus Demmel outlined CTF and strip tillage research projects at LfL being run at three sites in Bavaria. The key driver for these was climate change for which CTF and strip till were seen as a possible means of offsetting its worst effects.



Markus Demmel in full flow

The workshop then “decamped” from Lfl at Freising and travelled around 80 km north west to the 280 ha farm of Thomas Muhr. Cropping includes 40-50 ha of sugar beet and 30 ha of rye (yielding 10t/ha), which has replaced wheat in the rotation. This year they have had 89 mm water deficit in April and another 86 mm in May. Over the past three years they have not ploughed for sugar beet and the alternative tillage equipment is a crucial element of the system, as are also, the combine harvester choppers. Non-plough cultivation is with a Väderstad TopDown which gives a level surface compared with their previous disc-based system. However, today’s planters are not well suited to strip till because they can’t deal with clods, which are actually beneficial for over-wintering of the soil. They have two strip till machines – a 12 row Yetter which has extension arms to allow both 45 cm and 50 cm row spacing. These units weigh 189 kg and have a star wheel which is designed to remove residues from the path of the cultivation tine. The other machine is a Dawn with units weighing 300 kg each and this machine is more compromised by moist soils.



Thomas Anken and Tim Chamen

Geo-Konzept

In addition to managing the farm, Thomas runs Geo-Konzept, a company specialising in GNSS, auto-steer of both vehicles and implements. Thomas said that GNSS is more than just straight lines and their biggest interest this year has been in auto section control on sprayers and implement steer for row crops. Steer options include side shift, disc and wheel steer and 3-point linkage shift, although the latter involves high forces. It has also been used for fruit tree planting. One key advantage of RTK row crop implement steer is no further need to have all implements widths the same – the matching of passes is so accurate that any machine width will fit. As far as alternatives to a second RTF receiver for implement steer were concerned, none of these are as accurate and the cost of RTK continues to fall. In terms of the market for RTK, Thomas considered that for farms of between 500-1500 acres, an owned base station was best.

Thomas remarked that using a single screen for both ISOBUS and RTK vehicle and implement steering certainly cut down on the clutter in cabs, but there was a certain minimum screen size beyond which managing the different systems became impractical.

Jérôme Labreuche talked about strip till research in France describing crop establishment research which had just started at Boigneville looking at emergence and yield of maize using strip till with a “Rotasemis” rotary cultivator.

Although it was too early in the trial to draw any conclusions about yields it was apparent that those under direct sowing had at least been maintained compared with traditional practice. Arvalis had also surveyed results from 35 farms using strip till where there was an average saving of €60/ha in establishment costs with strip till but a small extra cost of chemicals.



Dawn "Pluribus" strip till cultivator

Strip till in sugar beet by Südzucker Group

Veit Nübel of Südzucker, Rübenabteilung Ochsenfurt outlined the work they are doing comparing plough and mulch tillage with strip till. The trials have been running since 2009 using two prototype versions of the Horsch Focus strip till cultivator. Using John Deere's RTK iSteer and side shift on the implements they are able to use a 12 row drill in combination with a 6 row strip till cultivator. A prism roller is used to improve crop emergence. Worm activity in the spring means that most of the non-cultivated stubble under the strip till system is mixed with the soil within 8 weeks, as clearly illustrated in Veit's presentation which provides an excellent overview of their work.

Pavel Milata a leading local farmer gave a short presentation describing some software (OptiTrail) to improve the efficiency of field operations. This optimises trajectories within a field using specified swath widths, calculates the number of headland circuits, minimal turn radii and contra-flow turns.

Two venues were suggested for our next meeting, France and Sweden. Jérôme Labreuche was very happy to host this at Boigneville but could not promise that we would see any research that included CTF. The other suggestion was Uppsala in Sweden where there was a long history of research on compaction. Likely date would be as this year, late May or early June. Subsequent to this workshop in Bavaria, it had been suggested that we should approach the Visual Soil Inspection working group to see if they might be interested in combining our two meetings on this next occasion. Your views on this, the date and the venue for our next meeting are sought!

Other Scientific meetings forthcoming

Crop Diversification and No-Tillage – Basis of Conservation Agriculture and Food Security

Dedicated to 20 Year Anniversary of Republic of Kazakhstan 23-24 July 2011 Shortandy, Kazakhstan

Organizers: Ministry of Agriculture of RK, SC KazAgroInnovation, Scientific Production Center of Grain Farming named after A.I. Barayev

Applications for participation should be sent to Mekhlis Suleimenov mekhlis@yahoo.com

Topics for discussion:

Diversified crop rotations as alternative to wheat-fallow monoculture

Minimum tillage and no-till: soil moisture and nutrition management, plant protection, ecological and economic assessment.

Crop rotation and tillage interaction.

Invited speakers: from Canada – Dr. Francis Larney (Lethbridge), Dr. Guy Lafond (Indian Head), Dr. Yantai Gan and Dr. Brian McConkey (Swift Current); and Dr. Barry Haskins from Australia.

Post-Conference Tour 25-27 July no-fallow and no-till practices on farms driving about 1000 km in northern Kazakhstan.

Synchrotron Characterizations of Mineral Surfaces, Organic Particulates and Pores in Agricultural Soils and other Modified Ecosystems.

1-2 August 2011 Estes Park Colorado, USA

Focus: Enhance scientific understanding of soil particulates that impact air and water pollution and provide valuable information for the development of optimal emission controls and characterization strategies. Conference will include Abstracts (due July 1, 2011), posters, and Invited Keynote Speakers
Hotel reservations: Rocky Mountain Park Inn, www.foreverlodging.com/lodging.cfm?PropertyKey=68; Hotel fax: (970) 586-1961; Reservation deadline is 20 June 2011
Conference Coordinator: Alvin Smucker, email: smucker@msu.edu

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World Congress of Conservation Agriculture



in Brisbane in September 2011. For more information see <http://www.wcca2011.org/index.htm>.

EUROSOIL 2012



the 4th International Congress of the European Confederation of Soil Science Societies (ECSSS) will be held in Bari, Italy, from 2 to 6 July 2012, organized by the Italian Society of Soil Science (SISS). The Congress to be held at the University of Bari, will focus on and develop the various aspects of fundamental and applied soil science and technology, field approaches and social, economical and political implications in relation to the present and future needs and emergencies of mankind and environment. Any interested person should see the congress website (www.eurosoil2012.eu)

International Society for Root Research



International Society
of Root Research

26 -29 June 2012 Dundee UK (note the date change from that previously advertised. UK Keynote speakers include Jonathan Lynch, Malcolm Bennett Michelle watt, Philippe Hinsinger, Bob Sharp, Fusuo Zhang, Heljä-Sisko Helmisaari and Peter Gregory Updates and more information on the ISRR website (www.rootresearch.org/)

Joint ASSSI and NZSSS Soil Science Conference



Wrest Point Hotel and
Convention Centre, Hobart, Tasmania, Australia, 2-7
December 2012 (www.soilscience2012.com)

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