

INTERNATIONAL CONSORTIUM FOR SUGARCANE MODELLING

Minutes of the meeting held at Education Room - Kwa-Shukela, Mount Edgecombe, South Africa on Friday, 3 August 2007

PRESENT: Chairman: Jim Shine - Sugar Cane Growers Cooperative, Florida, USA
Secretary / Vice-Chairman: Jean François Martiné - CIRAD, Reunion, France
Treasurer: Maurits van den Berg - South African Sugarcane Research Institute

Matthew Jones - South African Sugarcane Research Institute
Abraham Singels - South African Sugarcane Research Institute
Rianto van Antwerpen - South African Sugarcane Research Institute
Michiel Smit - South African Sugarcane Research Institute
Geoff Inman-Bamber - CSIRO Sustainable Ecosystems, Australia
Peter Thorburn – CSIRO Sustainable Ecosystems, Australia
Simbarashe Chinorumba - Zimbabwe Sugar Association Experiment Station
Pedro Rounds - Sugarcane Research Centre, Fiji Sugar Corporation Ltd
Caroline Kirungu - KESREF
Graham Kingston – BSES Limited, Australia

APOLOGIES: Attachai Jintrawet – Chiang Mai University, Thailand

1. OPENING

Jim Shine, the Chairman opened and welcomed everyone to the meeting. He thanked SASRI for its hospitality.

The Chairman asked if anyone wished to make changes to the Agenda. It was decided to address point 8 (Round table discussion) right after point 4 (Treasurer's report). Motion to accept this was done by Graham Kingston and seconded by Peter Thorburn.

2. SELF-INTRODUCTION OF MEMBERS & VISITORS

The Chairman asked each person to introduce themselves and to state their interest in the ICSM.

3. REVIEW AND ACCEPTANCE OF THE MINUTES FROM THE THAILAND MEETING

The Chairman asked if everyone was satisfied with the Minutes and everyone **AGREED**. Motion to approve the Minutes was done by Graham Kingston and seconded by Maurits van den Berg.

4. TREASURER'S REPORT – STATUS OF FINANCES

Maurits van den Berg presented an overview of ICSM's financial status (period covering from inception until 2 August 2007). Main figures:

- All ICSM members have paid the 2006/07 membership fees
- One payment (US\$ 808,40) is outstanding for the DSSAT-Canegro project; this is due to late provision of the invoice.

- In 4 cases there were discrepancies (totalling US\$ 110,00) between the amount of money that was transferred to ICSM and the amount received by ICSM. So far, the reason for these discrepancies and where they occurred (country of origin or country of receipt) remain unclear. It was **AGREED** to waive this amount.
- The balance until now (2 August 2007) is as follows:

Total received:	R 249 009
Total expenditure:	R 108 558
In Cash:	R 140 451
- At current exchange rates, the amount in cash corresponds to approximately USD 20 000
- Expected expenditure (that will be deducted from this amount):
 - From “core-funds” (i.e. excluding projects) are limited to DSSAT licences for ICSM members (at reduced rate of ca USD 100 x 8) and business meeting lunch, coffee, etc.
 - For the DSSAT-Canegro project: USD 13 963 (= USD 12 563 to Florida + USD 1 400 to SASRI), as budgeted in the Memorandum of Agreement for that project.
- The treasurer **NOTED** that:
 - There has been considerable delay in making international payments due to a requirement of formal approval by the SA Central Bank;
 - Due to exchange rate fluctuations, accounting in USD is not straightforward (e.g. USD 1 + USD 1 ≠ USD 2).
 - At constant exchange rate (ca R 7 per USD), after accounting for expected income (excluding 2007/08 membership fees) and expected expenditure, around R49 000 (ca. US\$ 7 000) is expected to be in cash.
 - The figures above may change according to currency fluctuations.

The Chairman asked Graham Kingston and Jean François Martiné to check the books before leaving.

The Chairman also said that if anyone else wishes to view the books they could do so.

The motion to accept this was done by Geoff Inman-Bamber and seconded by Graham Kingston.

5. DISCUSSION OF FUTURE EXPENDITURE

After some discussion about membership fees, buy-in fees and expenditures, it was **AGREED** that:

- Membership fees would be maintained at USD 1000 per annum
- Buy-in fees for new Members will be USD 900 (to be added to the USD 1000 2007/08 Membership fees). The benchmark date is 1 September.
- The rationale for the amount of the buy-in fees is based on the idea that the contribution by ICSM Members to the ICSM reserves should be shared evenly.
- Accounting will be done in South African Rands
- It is too early to decide on expenditure from the core-funds apart from the “routine expenses” as stipulated in section 3.2.1 of the ICSM MoU. The reserve should be somewhat higher, so that parts of it could be used for substantial contribution to specific ICSM activities. On the other hand, there is no sense in building up a huge capital amount.

A motion to approve this was done by Maurits van den Berg and seconded by Peter Thorburn.

6. TEA / COFFEE BREAK

7. ROUNDTABLE DISCUSSION / SUGGESTIONS FOR POTENTIAL NEW PROJECTS

7.1 Physiology Mini-workshop

Abraham Singels reported on the informal Sugarcane Physiology mini-workshop held on 26 and 27 July at SASRI, Mount Edgecombe. The theme was "Latest thinking of Genotypic and Environmental Control of Photosynthesis, Expansion Growth and Sucrose Accumulation". He gave a brief rundown of what each delegate presented:

- Genotypic and environmental control of sucrose accumulation by Rasack Nayamuth
- Genotypic and temperature control of sucrose accumulation by Graham Bonnett
- Latest Findings on Source-Sink Feedback by Derek Watt
- Increasing sucrose accumulation in sugarcane by manipulating leaf extension and photosynthesis with irrigation by Geoff Inman-Bamber
- Genotypic and temperature control of stalk extension, photosynthesis and sucrose accumulation: recent findings from field and glasshouse trials by Michiel Smit
- Concepts/ideas for modelling stalk growth and sucrose accumulation by Abraham Singels

The conceptual framework proposed by Abraham Singels was used to review the availability of suitable data and knowledge to develop an internode based source sink model of biomass accumulation and partitioning. It was agreed that collaboration was needed to make the best use of available data and expertise.

Abraham Singels will produce a short report of the Workshop.

7.2 Discussion/suggestions for potential new projects

No formal concept notes have been received. Several ideas were discussed which need to be worked out into proposals over the coming months:

- The Chairman asked Abraham Singels and Geoff Inman-Bamber about the possibility to do a project about cultivar coefficients in the model that relate to genes. Maurits van den Berg **NOTED** that this project could possibly yield an opportunity for an MSc or even PhD project for any of the participants with less experience in crop modelling; which could partly be financed by the ICSM. Hence the advantages would be triple: improved knowledge, improved models and capacity building.
- Maurits van den Berg suggested a project to conduct growth monitoring trials in each participating country, with combinations of sugarcane varieties from each country. The data generated could be used to test the robustness of models and identify aspects to be improved. It was **NOTED** that there would be a huge problem with exchanging varieties due to quarantine

issues. This problem could possibly be circumvented because many countries already have a collection of exotic varieties as part of their plant breeding programmes. It was further **NOTED** that the growth monitoring would involve a lot of work by each participating member.

- Peter Thorburn indicated the existence of a database project in Australia called Sugar Research Experimental Management Systems – “SREMS”. The idea is to expand this project and put it on a webserver so people will be able to more freely access the datasets. He will make enquiries to see how consortium members could have access to this database. They would be able to upload data and query the database from anywhere in the world.

The Chairman asked Peter Thorburn to send the consortium more information on the status of development, options and access if possible.

- Matthew Jones suggested that the trash model under development at SASRI could be incorporated into DSSAT. This would be relevant to most (or all) members, as green cane harvesting is an issue across the sugarcane producing world; and trashing has considerable effect on crop growth conditions. This could augment the existing nutrient mulch model in DSSAT.

8. REPORT ON THE CURRENT DSSAT – CANEGRO PROJECT

Abraham Singels reported back on the 1st ICSM project namely the incorporation of an up to date Canegro model into the DSSAT v4.5 software package. The participants are BSES, SASRI, ZSAES, SCGC, Chiang Mai University, University of Florida, University of Georgia and University of KwaZulu-Natal. The total budget is US\$ 25 833.

The following objectives were achieved since the start of the project in June 2006:

- The SASRI programmer has received DSSAT training and is fully capable of operating DSSAT programmes and of amending DSSAT modules.
- An up to date Canegro model with enhanced capabilities was incorporated into DSSAT v4.5 structure.
- Cultivar and species parameters were defined and are accessible to users for calibration.
- The new DSSAT Canegro model was verified successfully. All discrepancies between the DSSAT and SASRI versions could be traced back to coding differences in modules outside the plant module.
- The DSSAT v4.5 model was validated by comparing simulated values of biomass components to observations for two South African field experiments. The performance of the model was satisfactory and better than DSSAT v3.5.

A validation workshop is going to be held next week (6-9 August 2007). Nineteen delegates have registered for hands on training on how to run, calibrate and validate the new DSSATv4.5 Canegro model. During a closed session (8-9 August 2007), project participants will calibrate the model using experimental data from their respective countries. The workshop will identify issues that require further attention.

The project is on track to deliver a documented, up-to-date Canegro model in DSSATv4.5 for release in March 2008, as was initially envisaged.

Project methodology and results are summarized in a poster presented at ISSCT. This was shown at the meeting. It was decided to post the poster on the ICSM website.

The Chairman thanked Matthew Jones for his efforts in doing an excellent poster and also for his hard work on DSSAT.

9. SELECTION OF NEW OFFICERS / MANAGEMENT COMMITTEE

It was **NOTED** that, originally, Maurits van den Berg had been appointed as Chairperson and Jim Shine as Treasurer. Their roles were swapped because it turned out to be impossible to open an independent (sub) account for the ICSM in the USA.

Jean François Martiné expressed that he wanted to resign as Secretary / Vice Chairperson

The following composition of the ICSM Management Committee was **APPROVED** unanimously:

Jim Shine will remain Chairman

Maurits van den Berg will remain Treasurer

Graham Kingston was elected Vice-Chairman & Secretary

The Chairman thanked Jean François Martiné for his work in the Management Committee, and Maurits van den Berg for taking up the ungrateful job as Treasurer. Maurits van den Berg **NOTED** that he received much help from SASRI to do the job, notably from Julie Richards and Adri Mehl.

10. ESTABLISH NEXT ICSM MEETING DATE / VENUE

It was **AGREED** that a business meeting will be held in 2008.

Date and venue still to be decided, preferably during the DSSAT-Canegro Workshop (following week), to be attended by representatives from all Members.

11. GENERAL

- Jim Shine to follow up if Columbians want to join ICSM.
- Jim Shine also thanked all participants for their contributions, and in particular Vasie Naidoo for taking the minutes.

Meeting ended at 12:55.