THE AFRICAN NETWORK FOR CHEMICAL ANALYSIS OF PESTICIDES

(ANCAP)

11th ANCAP Summer School

27th- 31st July 2015

Makerere University, Kampala, Uganda

Successfully Held!

The summer school was conducted under the coordination and facilitation by the following resource persons:

Dr. John A.M. Mahugija – Treasurer and Assistant Executive Secretary of ANCAP.

Dr John Wasswa – Chairperson organizing committee, course Instructor and National coordinator of ANCAP Uganda.

Prof. Peter Nkedi-Kizza – Course Instructor, University of Florida, USA.

Dr. Jorge Armando Leiva - Course Instructor, University of Florida, USA.

Dr. Giregon Olupot - Course Instructor, Makerere University, Uganda.

Participants of the summer school were drawn from Ethiopia, Kenya, Rwanda, Sudan, Tanzania, Uganda, and Zimbabwe; mainly postgraduate students (MSc and PhD students) and technical staff involved in pesticide research and other areas in chemistry. A total of 32 scientists attended/ participated in the summer school. A detailed list of participants is shown at the end of this report. Several topics were covered during the summer school.

The course had the following major topics and activities:

Day 1 (July 27, 2015; 9:00 – 16:00 hrs)

Registration and opening ceremony

1. **Registration of participants**
2. **Welcome remarks by Chairperson of the Organizing Committee – *Dr. J. Wasswa*.**
3. **Remarks by the Executive Secretary of ANCAP – *Dr. J. Mahugija*.**
4. **Remarks by Course facilitator- *Prof. P. Nkedi-Kizza*.**
5. **Remarks by Chairman of Department of Chemistry, Makerere University-*Prof. Muhammad Ntale*.**
6. **Group photo.**

Lectures, Discussions and Practicals

1. **Brief Review of What was Covered in the Previous Weeks by the First Group.**

   Dr. J. Wasswa

2. **Pesticides: Benefits and Concerns about their Use.**

   Dr. Olupot

3. **The Solvophobic Theory and using it to Estimate Extraction Efficiency of Hydrophobic Organic Chemicals from Soils.**

   Prof. Nkedi-Kizza

4. **Review of Labs-Laboratory Observations and Demonstrations.**

Day 2 (July 28, 2015; 9:00 – 16:15 hrs)

Lectures, Discussions and Practicals

Process oriented modeling of agrochemicals in the environment using The Root Zone Water Quality Model (*RZWQM2*)-Model simulations

Dr. Jorge Leiva

1. **RZWQM2 Installation-General overview**
2. **Overview of the Soil Physical Processes (A*)**
3. **Overview of the Management Component (B*)**
4. **Overview of Environmental Fate Processes for Pesticides (C*)**
5. **Minimum Data Requirements to Run RZWQM2: Weather Data (e.g. daily solar radiation, maximum and minimum air temperature, relative humidity, rainfall, and wind speed. Precipitation event data-sub-hourly); Site Description (e.g. slope and aspect); Initial Conditions e.g. initial surface crop residue, soil temperature, soil water and inorganic soil N); Soil Data e.g. soil horizons depth, soil texture, soil bulk density, soil organic C, soil pH, soil hydraulic property (if known); Management Data e.g. planting depth and date, variety, initial planting material weight, sprout length at planting, emergence date, row spacing, harvesting dates, fertilizer and manure applications, irrigation, tillage and pesticide applications.**
6. **Creating High-Quality Weather Data Files for RZWQM2**
7. **General Discussions/Participants Feedback.**

Day 3 (July 29, 2015; 9:00 – 16:00 hrs)

Lectures, Discussions and Practicals

Process oriented modeling of agrochemicals in the environment RZWQM2-Model simulations

Dr. Jorge Leiva

1. **Creating a Project/Creating a Scenario/Input of Parameters for A*-B*-C*.**
2. **Input of Experimental Data/Running RZWQM2**
3. **Output Overview and Interpretation/Plots**
4. **Model Calibration/Validation**

Data needed to effectively evaluate RZWQM2 performance: Plant data e.g. crop yield, crop biomass and phenology observations; H_2O data-water balance measurements e.g. soil water components, leaching, runoff and ET; N data-N balance measurements e.g. residual soil N, N leaching and N uptake; C data-if soil C sequestration is of interest, soil organic C should

be measured before and after the experiments; T/energy balance-if energy balance is of interest, temperature measurements in the canopy and soil are needed. Heat fluxes should also be measured. Not all the data are essential. A balance data collection for all the categories is recommended.

5. **Other RZWQM2 Applications (Water Management, Climate Change, Plant Growth, etc.)**
6. **Final Remarks.**

Day 4 (July 30, 2015)

Kampala Tour/Literature Review.

Day 5 (July 31, 2015; 08:00 –17.00):

Symposium

Acknowledgements

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The Chemistry Department, Makerere University is highly appreciated for hosting the summer school and the symposium that followed.

List of Participants

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