The ECOBIO training

Assessment of the physiological status of plants: Application of ecophysiological and biochemical tools

Objectives : Be able to use the main ecophysiological and biochemical technics used to assess the physiological status of plants. Be able to assess the response of plants to abiotic stress from measured data.

Targeted audience: MSc & PhD students, researchers and technicians with basic knowledge in plant physiology or agronomy, breeders or agronomists wishing to gain knowledge on diagnostic tools on the physiological status of plants.

Method : The training will be based on case studies on perennial species (especially rubber tree) but it will also propose some work with annual plants like rice. Water stress will be addressed more particularly.

After being introduced to the theory and some equipment, the participants will perform ecophysiolgical and biochemical measurements on plants grown in greenhouse and in the field. Analysis and interpretation of the collected data will focus on understanding the mechanisms involved in stress response.

- ✓ **Duration: 5 days**
- ✓ **Dates: 18-22 November 2013**
- ✓ **Venue : Kasetsart University, Thailand**
- ✓ **Trainers:**
  Mr Denis Fabre, CIRAD
  Mrs Anne Clement-Vidal, CIRAD
- ✓ **Number of participants: 15 max**
- ✓ **Language : English**
- ✓ **Contacts :**
  Dr Frederic Gay (fgay@cirad.fr)
  Dr Chompunut Chayawat (chompunut7@hotmail.com)

Program

Six topics will be address theoretically first, then through practical works. Those six topics are:

- ✓ **Gas exchange, structure of the canopy and carbon balance:** at the crop level (Beer law…), at the organ level (stomatal resistance, photosynthesis, respiration…), diagnostic tools.
- ✓ **Water balance and water stress:** atmospheric demand, soil water status, plant water status and its regulation, diagnostic tools.
- ✓ **Plant components**: major components, main functions, critical threshold, mass balance, energy content.
- ✓ **Biochemical markers of stress :** oxidative stress, defense mechanisms at cell level, diagnostic tools.
- ✓ **Data acquisition:** environmental variables (micro-climate, soil), plant variables, instruments and software.
- ✓ **Data analysis and interpretation:** assessment of the physiological status of the plant, usefulness for agronomist and breeders.

cirad
AGRICULTURAL RESEARCH FOR DEVELOPMENT

HRPP

LUSES