Last updated 26 January 2018

Seminar on "Precision farming for water-use efficiency: Model-aided irrigation scheduling for cassava yield improvement"
5– 6 March 2018
Lecture 2, Sirindhorn Science Home, Thailand Science Park, Pathum Thani

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Organized by: National Center for Genetic Engineering and Biotechnology
National Science and Technology Development Agency
Ministry of Science and Technology

In collaboration with King Mongkut's University of Technology Thonburi
Forschungszentrum Jülich, Germany

Rationale and background:

Nowadays, global warming and climate change do not only have an influence on crop species but also on weeds, insect pests, and crop diseases. Extreme temperature changes can interfere with healthy soil and life processes and can diminish the ecosystem services provided by the soil such as the water holding capacity, soil carbon, and other nutrients in soils. Cassava is one of the most important economic crops in Thailand with the largest growing areas in the Northeast of the country. While cassava yield can be increased by expanding land use, improving the crop yield in terms of the application of water, fertilizer, and precision farming, which is certainly a more attractive alternative. Cassava is a well known resistant crop, especially to climate and to soil dry conditions. Still, water is considered as the most important compound in an active plant and constitutes more than 80 percent of the growing tissue. Plant health and yield greatly depend on the amount of water applied during irrigation, the time and the method of water application, the quality of the irrigation water, and prevailing micro-meteorological conditions. As a result, water use efficiency must be accordingly monitored and adjusted, which is a critical part of precision agriculture. To boost cassava productivity, breeders should thusly understand and appropriately apply precision technology to predict and increase their potential yields in the near future.

National Center for Genetic Engineering and Biotechnology (BIOTEC), National Science and Technology Development Agency (NSTDA), King Mongkut's University of Technology Thonburi (KMUTT) and Forschungszentrum Jülich, Germany have realized the importance of precision agriculture on accessing agricultural risks of climate change and the need for training personnel in educational, research and private sectors in these aspects. Thus, BIOTEC, NSTDA, KMUTT and Jülich agreed to organize the seminar on "**Precision farming for water-use efficiency: Model-aided irrigation scheduling for cassava yield improvement**"

The course is led by the collaborative teams of KMUTT and NSTDA, Thailand, and the distinguished scientists from Forschungszentrum Jülich for providing the lecture class. The event is opened for involved and interested persons in academic, research and private sectors to attend.

Aims:

- To enable the Thai participants to learn and understand precision agriculture for developing decision support system (DSS) that enables yield improvement under water-used efficiency for cassava crop production.
- To provide the platform for the participants to exchange their experiences and resources amongst themselves and the speakers.

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Tentative program:

Day 1: 5 March 2018

08.30 - 09.00	**Registration**
09.00 – 09.30	**Introduction to the workshop: Modeling in precision farming** By Assist. Prof. Dr. Treenut Saithong King Mongkut's University of Technology Thonburi, Thailand Dr. Tobias Wojciechowski Forschungszentrum Jülich, IBG-2, Germany
Session 1: Problem definition	
09.30 – 10.00	**Development and transfer technology for cassava production by participatory approach** By Miss Benjamas Kumsueb Department of Agriculture, Thailand Mr. Sukit Rattanasriwong Department of Agriculture, Thailand
10.00 - 10.30	**Information management and mobile cloud computing for precision farming** By Dr. Donghui Ma Biosci (Thailand) Co., Ltd.
10.30 - 11.00	Coffee Break
Session 2: Available resources	
11.00 – 11.30	**Precision irrigation for cassava** By Assist. Prof. Dr. Sodchol Wonprasaid Suranaree University of Technology, Thailand
11.30 - 12.00	**Discussion**
12.00 – 13.00	Lunch
13.00 – 14.00	**Modeling in precision farming: Basic concept & applications in crop yield improvement** By Dr. Johannes Postma Forschungszentrum Jülich, IBG-2, Germany
14.00 - 14.30	**Cellular crop modeling: a next generation crop modeling for precision farming** By Assist. Prof. Dr. Treenut Saithong King Mongkut's University of Technology Thonburi, Thailand
14.30 – 15.00	Coffee break
Session 3: Opportunities	
15.00 – 15.30	**Cassava field experiment at Rayong**: CASSAVASTORe project By Dr. Tobias Wojciechowski Forschungszentrum Jülich, IBG-2, Germany
15.30 – 16.00	**Automation &measurement technology for precision farming** By Dr. Amporn Poyai National Electronics and Computer Technology Center (NECTEC), Thailand

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Registration Form

Please type or print CLEARLY all information requested

Name	**(Ms./Mr./Mrs.)**				
Title	**(Assist., Assoc., Prof., Dr.)**				
Position					
Dept./Unit					
Organization					
Address					
State/Prov.		**Country**		**Postal Code**	
Tel.			**Fax.**		
Mobile phone					
E-mail					

Registration Fee: Free of Charge

Dietary restriction (please choose one):

☐ None ☐ Vegetarian ☐ Muslim ☐ Others.....

Please return this form by Fax or E-mail before 20 February 2018

Please send the registration form to:
Technical Training Unit, BIOTEC
113 Thailand Science Park, Phahonyothin Rd.,
Khlong Nueng, Khlong Luang, Pathum Thani 12120
Tel: (66) 2564 6700 ext 3379 – 82 Fax: (66) 2564 6574
E-mail: ttu@biotec.or.th