

# DSSAT 2012



## International Training Program

**Assessing Crop Production,  
Nutrient Management, Climatic Risk  
and Environmental Sustainability  
with Simulation Models**

**May 14 - 19, 2012**

*A Joint Training Program  
of  
Washington State University  
International Fertilizer Development Center  
University of Georgia and  
University of Florida*

## ABOUT THE TRAINING WORKSHOP

### When the Workshop Begins

The program will start on May 14 and end May 19, 2012. It will be held on the Griffin Campus of The University of Georgia (UGA), located just south of Atlanta, GA. International participants should plan to arrive two days prior to the start of the program to adjust to time zone differences and recover from travel fatigue.

### Location and Directions to The University of Georgia, Griffin Campus

The University of Georgia, Griffin Campus is on the North side of Griffin, GA and the East side of US Highways 19 and 41. You will find explicit directions to the Griffin Campus and other related information on the UGA Griffin Campus web site: [www.uga.edu/griffin/directions.html](http://www.uga.edu/griffin/directions.html). When you register for the workshop, we will forward travel directions to you as part of your confirmation package.

### Lodging Facility and Accommodations

The University of Georgia, Griffin Campus Office of Continuing Education has received a special business room rate of \$45.00 per night plus taxes at the Griffin Howard Johnson Inn & Suites for conference participants, which includes a daily continental breakfast. After you pay your registration fee, you will receive detailed information on requesting lodging in your confirmation package. Rooms have home office accommodations including voice mail, free local calling, and wireless connectivity. Also included, as part of each room's accommodation, is a hair dryer, iron/ironing board, a coffee maker and cable television. On-site is a coin-operated laundry, laundry/valet services and a small exercise room.

### Special Needs

If you have any special needs, please let us know in the space provided on the registration form. We will do our best to assist you. Call the Continuing Education office if you need more information.

### Qualifications for Application

- Participants should be university graduates currently engaged in crop production or agro-ecosystems related research, teaching, extension, outreach, or planning.
- They should have some understanding of crop and soil science and be relatively familiar with the terminology used in these fields. An in-depth knowledge, however, is not a prerequisite.
- They should be familiar with personal computers and the Windows operating environment.
- They should understand English.

### Continuing Education Units

Upon request, participants who complete the workshop can receive 4.8 continuing education units and a Program Certificate from the University of Georgia certifying that they completed the program.

### Visa Requirement

A visa is required to enter the United States. Each participant must obtain a visitor visa from the Embassy or Consulate of the United States in his or her country of residence prior to departure and is required to fulfill any required health formalities, including obtaining insurance. The program coordinator can provide a letter, confirming your participation in the workshop, to facilitate your visa application. Allow ample time for the visa approval process.

### For Workshop Information Contact:

Art Cain or Mary Ellen Mount  
The University of Georgia • Office of Continuing Education  
1109 Experiment Street • Stuckey Conference Center  
Room 125 • Griffin, GA 30223, USA  
Telephone: 1-770-229-3477; Fax: 1-770-233-6180  
E-mail: [conteduc@uga.edu](mailto:conteduc@uga.edu)

### For Program Information Contact:

Dr. Gerrit Hoogenboom  
Director, AgWeatherNet and Professor  
Washington State University  
24106 North Bunn Road  
Prosser, Washington 99350-8694, USA  
Telephone: 1-509-786-9371  
Fax: 1-509-786-9370  
[gerrit.hoogenboom@wsu.edu](mailto:gerrit.hoogenboom@wsu.edu)

### Faculty

The following faculty will lecture in this training program:  
Dr. G. Hoogenboom, Washington State University  
Dr. K.J. Boote, The University of Florida  
Dr. L.A. Hunt, University of Guelph, Canada  
Dr. J.W. Jones, The University of Florida  
Dr. J. Lisazo, Universidad Politecnica de Madrid, Spain  
Dr. S. Asseng, The University of Florida  
Dr. C. Porter, The University of Florida  
Dr. J. W. White, USDA-ARS-ALARC  
Dr. P.W. Wilkens, IFDC  
Dr. U. Singh, IFDC

### Co-Sponsors

Washington State University  
The University of Georgia  
The University of Florida  
International Center for Soil Fertility and Agricultural  
Development (IFDC)  
DSSAT Foundation



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The University of Georgia

Assessing Crop Production, Nutrient Management,  
Climatic Risk & Environmental Sustainability  
Office of Continuing Education  
Stuckey Conference Center, Room 125  
1109 Experiment Street  
Griffin, GA 30223



## DSSAT Version 4.5

# Assessing Crop Production, Nutrient Management, Climatic Risk and Environmental Sustainability with Simulation Models

### AN OUTSTANDING TRAINING WORKSHOP

#### Rationale

Today more than ever, increased crop production depends on judicious use of resources. In addition, issues such as climate change, climate variability, soil carbon sequestration, biofuels, long-term food security and environmental sustainability have become important issues. Computer simulation models of the soil/plant/atmosphere system can make a valuable contribution to both furthering our understanding of the processes that determine crop responses and predicting crop performance, resource use and environmental impacts for different environments and management scenarios. User-oriented simulation models greatly facilitate the task of optimizing crop growth and deriving recommendations concerning crop management. They can also be used to determine the potential impact of climate change on crop production and long-term soil carbon sequestration, or provide management scenarios for adapting to climate change and variability.

#### Program Goal and Objectives

The overall goal of this training program is to familiarize participants with a comprehensive computer model for the simulation of crop growth and yield, soil and plant water, nutrient and carbon dynamics and their application to real world problems.

Specifically the program will focus on:

- Operation of the Windows-based Decision Support System for Agrotechnology Transfer (DSSAT) Version 4.5 software ([www.DSSAT.org](http://www.DSSAT.org))
- Description of the DSSAT-Cropping System Model, CSM and its modules, such as CROPGRO, and CERES, and the science embedded in the models.
- Minimum data requirements and experimental data collection for systems simulation.
- Integration of crop simulation models with data base management and Geographical Information Systems.
- Application of the DSSAT-CSM model to improve management of cropping systems.

- **Windows-based DSSAT Version 4.5 Cropping System Model**
- **Receive DSSAT v4.5 Software and the book *Understanding Options for Agricultural Production***
- **CROPS: bahia, barley, bell pepper, brachiaria, cabbage, cassava, chickpea, cotton, cowpea, drybean, faba bean, green beans, maize, millet, peanut, pineapple, potato, rice, sorghum, soybean, sugarcane, sunflower, sweet corn, tanager, taro, tomato, velvet bean, and wheat**

### PROGRAM HIGHLIGHTS . . .

The program will:

- Describe a practical approach for simulating effects of soil, weather, management, and pest factors on crop production.
- Demonstrate how processes of crop growth and development, water use, uptake of water and nutrients and carbon dynamics can be simulated.
- Make extensive use of "hands on" sessions that apply the DSSAT-CSM model to cropping systems in various regions of the world.
- Describe procedures for collecting and managing crop, weather and soil data for model evaluation.
- Give participants the opportunity to work with their own data and determine the accuracy of the models for application to specific problems.
- Analyze management alternatives for single seasons or over long-term crop rotations.
- Concentrate on specific applications that include irrigation, fertilizer and nutrient management, climate change, soil carbon sequestration, climate variability, and precision management.
- Assess economic risks and environmental impacts associated with agricultural production.

- **Precision management**
- **Climate change and variability**
- **Food security**
- **Feed stock for bio-fuel**
- **Soil carbon sequestration**
- **Environmental impact**
- **Sustainability**
- **Ecosystem services**

### Cropping System Model & DSSAT

The program will make extensive use of the DSSAT-Cropping System Model (CSM). CSM is a general cropping-system model for simulating crop growth and development and soil and plant water, nitrogen and carbon dynamics. CSM is comprised of the CROPGRO module for soybean, peanut, common bean, chickpea, faba bean, cowpea, and other grain legumes, the CERES module for maize, sorghum and millet, the CERES-Rice module for rice, the SUBSTOR module for potato, the CROPSIM-CERES module for wheat and barley, the CROPGRO module for tomato, bahia, brachiaria, cotton, the CANEGRO model for sugarcane, and the CROPSIM module for cassava. The CENTURY model for the simulation of soil carbon and nitrogen has also been incorporated in CSM. DSSAT v4.5 is Windows-based and includes the CSM model as well as tools and utility programs for managing soil, weather, genetic, crop, economic and pest data, and application and analysis programs.

### REGISTRATION INFORMATION . . .

#### Registration Fee

The registration fee is \$1500 if you register by April 13 and \$1750 if you register after April 13. It covers resource material including the DSSAT v4.5 software and the book *Understanding Options for Agricultural Production*. It also includes AM/PM breaks and lunch on training days, and registration services. It does not cover breakfast, dinner, lodging, health insurance, or transportation. Each participant is responsible for these costs. If you register by April 13, you are assured of receiving a confirmation package. Lodging is \$45.00 per day plus taxes. Food should average about \$30 per day. Enrollment is limited to 40 participants.

#### How To Register: 5 Easy ways

**By mail:** Mail your registration and payment to Office of Continuing Education, The University of Georgia, Griffin Campus, 1109 Experiment St., Griffin, GA 30223.

**In person:** Come to the Office of Continuing Education, which is located in the Stuckey Conference Center, Room 125, on the Griffin Campus. Business hours 8 am-5 pm, M-F.

**By telephone:** Our telephone number is 1-770-229-3477. Payment is by credit card only.

**By fax:** Fill out your registration form and fax it to 1-770-233-6180. Payment is by credit card only.

**Online:** Go to our web site at [www.ugagriffincontinuinged.com](http://www.ugagriffincontinuinged.com). Click the DSSAT 2012 link. Payment is by credit card only.

#### Cancellations, Refunds, and Substitutions

You may cancel up to April 13 and receive a partial refund. However, there is a \$250 per person charge if you cancel. If you cancel after April 13, you will *not* be eligible for a refund. Pre-registrants who fail to attend are liable for the full registration fee. You may, however, substitute another person in your place. Notify our office if you want this option. If the program is canceled by The University of Georgia, you will receive a 100% refund. However, The University of Georgia will not be responsible for any cancellation changes or charges assessed by airlines, travel agencies, or third party entities related to your travel plans.



### Please return to:

#### Assessing Crop Production with Simulation Models

The University of Georgia, Griffin Campus  
Office of Continuing Education  
1109 Experiment Street, Stuckey Conf. Center, Room 125  
Griffin, GA 30223 USA  
1-770-229-3477 (Phone); 1-770-233-6180 (Fax)

## Registration Form

Please register one (1) person per form. Copy the form as needed.  
Pre-payment is required to guarantee your registration.

Name: \_\_\_\_\_  
(First) (MI) (Last)

Mailing Address: \_\_\_\_\_  
(street address: please check if home  or business  )

\_\_\_\_\_  
(city) (state) (zip) (country)

Name: \_\_\_\_\_  
preferred name on badge

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

Special Needs: \_\_\_\_\_

#### Registration Fee:

- \$1500 if postmarked before April 13
- \$1750 if postmarked after April 13

#### Method of Payment:

**By check** (Make check payable to: University of Georgia)

- Personal  Cashiers  Money order

#### By credit card

- American Express  VISA  MC  Discover

Name on Credit Card: \_\_\_\_\_

Credit Card No.: \_\_\_\_\_ Expires: \_\_\_\_/\_\_\_\_/\_\_\_\_

Authorized Signature: \_\_\_\_\_

**Computer:**  I will bring my laptop computer

**Needs:**  I will use a computer supplied by UGA

**Lodging:**  I plan to stay at the Howard Johnson, Griffin

I will not stay at the Howard Johnson, Griffin

Roommate's name for shared room: \_\_\_\_\_