ANNOUNCES AN INTERNATIONAL TRAINING AND STUDY TOUR ON

TECHNOLOGY ADVANCES IN
AGRICULTURAL PRODUCTION,
WATER AND NUTRIENT MANAGEMENT

USA
(Alabama, Arkansas, Illinois, Missouri, Tennessee and Washington, D.C.)

August 21 – September 1, 2017

Registration Fees:

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BACKGROUND

By 2050, the global population is projected to be nine billion, resulting in a near-doubling of global food and fiber demand. Doubling food and fiber production and sustaining the production at that level are major challenges, but doing so in ways that do not compromise environmental integrity and public health present even greater challenges. Intensification of agriculture through the use of high-yielding crop varieties, fertilization, irrigation and crop protection remain the most likely options to combat these challenges. In the past, the emphasis was on improving potential yield; but today, there is increased emphasis on improving the nutritional value of foods (e.g., protein content in grain, essential amino acids, content of other minerals, etc.), reducing post-harvest losses, improving stress tolerance and/or reducing reliance on chemical crop protection products (CPPs).

Recently, there have been enormous advances in agricultural production, not only improving productivity, but just as importantly, safeguarding the environment. Several systems-research tools relating to information technology have become available for fertilizer management. With the introduction of geographic information systems (GIS), global positioning systems (GPS) and remote sensing (RS), farmers can now refine nutrient recommendation and water management models to the site-specific conditions of each field.

Substantial variations in soil properties and nutrient and water availability exist across most fields. Thus, the ability to apply site-specific nutrient and irrigation management to match spatially and temporally variable conditions can increase application efficiencies, reduce environmental impacts, while improving yields. Precision farming technologies have now been developed to spatially vary nutrients and water prescriptions within a field based on various information sources (soil properties maps, terrain attributes, remote sensing, yield maps, etc.). Precision agriculture involves the integration of the new technologies (including GIS, GPS and RS) to allow farm producers to manage within field variability to maximize the benefit-cost ratio. Variable rate

2016 PROGRAM EDITION

“It is a very excellent eye opener program for policy maker and managers in private and public sectors on considering the future of agriculture. I am concerned more than ever before of the need for development a new mindset, skills and attitudes of agriculture in developing countries is to be transformed. I will recommend the program among colleagues and ensure attend in a bid to develop a critical number and change agents”

- Assistant Commissioner, Uganda

“Key points were stresses: Ag. Is a business, Technology advances avoidable, Economics of AG, Research and Extension as key pillions, Fertilizer agricultures, lobbing platform, will recommend program”

- International Agricultural Organization Country Representative - Guyana

“The program was well organized and there was a lot of information about the topics that interest most persons in agriculture”. Marvelous work.

- Research officer, Antigua and Barbuda.

“I was very pleased with the helpfulness and congeniality of the IFDC staff”

- Farmer & Civil Engineer, Jamaica

“Thank you for your kindness,”

“Transportation with WiFi and electric outlet is great, WiFi for outside visit is great”

- Floriculture and Herb Promotion Expert, Thailand

“Thanks to this program, I have enough idea, knowledge, information and contacts to start my agribusiness project. Thank you IFDC. Executive Secretary of Agricultural Research Network, Kenya
technology (VRT) available with farm implements, such as fertilizer or CPP applicators and yield monitors, has evolved rapidly and has fostered the growth of precision agriculture. For example, in the Midwestern United States, chlorophyll meters, a recent development in agriculture, are used for corrective nitrogen (N) management where N fertilizers are applied based only on crop needs to ensure increases in fertilizer use efficiency and return on fertilizer investment.

In-season prediction of crop yield potential using models is becoming available for cereals. This technique offers possibilities for real-time nutrient and water management in prescriptive and/or corrective concepts. The models are based on a quantitative understanding of underlying processes and integrate the effects of soil, weather, crop, pests and management factors on growth and yield.

According to the Food and Agriculture Organization (FAO) of the United Nations, nearly 40 percent of the world’s food is produced by irrigated agriculture, which covers about 250 million hectares (corresponding to 17 percent of total arable land) and is the major user of fresh water, accounting for 70 percent (on average, and up to 90 percent in many countries) of worldwide water taken up for human use. Since high-quality irrigation water is becoming increasingly scarce, it is becoming more important to use available water efficiently. One approach being adopted to overcome this constraint is the use of soil moisture sensors to control irrigation. Soil moisture sensors can detect when the substrate water content drops below a grower-defined set point and can be used to automatically turn on the irrigation when needed.

These emerging technologies are ushering in a new era that will affect farmers’ day-to-day operations and improve their ability to compete in the global market. These innovations will also contribute to increased agricultural productivity and transformation of agribusiness infrastructure. Many of these advanced technologies, as well as the concepts and approaches in strategic

Conceptual system layout of in-field wireless sensor network for site-specific irrigation (Source: Kim et al., 2008)

2015 PROGRAM EDITION

“This is one of the best training/tour I have ever attended. Thanks to IFDC”.
- CEO, Nigeria

“Well done, I really enjoyed it. Thank you so much”
- Production Research Manager, South Africa

“Tours were very well planned. IFDC is very well connected and respected. Well done”
- Operations Manager, Australia

“This program has enlightened and enhanced my knowledge more in precision agriculture and new advanced technologies in water and nutrient management especially the talk on nanotechnology and USDA grants/support”
- Lecturer/Researcher, Nigeria

“It was a good experience and quite an informative training and exposure. I really liked the travel and interaction although we did not have much time!”
- Agricultural Research Specialist, Tanzania

“Thanks for giving me the opportunity to learn a lot of interesting developments in crop farming, water and nutrient management in the U.S. Many of the technologies I saw will definitely help sharpen my thinking about simple things that can be done here in Nigeria to improve production of our farmers.”
- Group Head Commercial Services, Nigeria

“It was a worthwhile program, and I will recommend it to others. It gave me exposure into aspects of research cum precision-ag, fertilizer (recent trends), activities of commodity associations, with input policy lobbying. It was indeed very much worth it, to say the least”
- Managing Director, Nigeria
farming in the U.S., are directly applicable to agricultural production in developing and developed country environments. Therefore, the study tour will provide participants with a unique opportunity to develop their professional skills and at the same time build collaborations.

IFDC is uniquely positioned to stay abreast of the latest technologies related to soil fertility and water management and how they can be applied to developing and developed country agriculture. IFDC has well-established relationships with essentially all public and private sector organizations that impact agricultural production in the U.S. This study tour will allow participants to visit some of these organizations including, but not limited to: farmer cooperatives; the U.S. Department of Agriculture; Monsanto; The Fertilizer Institute; research and education centers of major agricultural colleges and universities; and many large- and small-scale farmers. Interactions with these entities will provide the participants with an opportunity to see how farmers, agribusinesses and policymakers are adjusting to today’s agriculture challenges in ways that ensure agriculture in the United States remains competitive on a global scale. While in the Midwestern U.S., participants will be offered the unique opportunity to visit the Farm Progress Show, which is the largest outdoor farm show in U.S. agriculture and features the most extensive state-of-the-art farm equipment and information and technology available for today’s agricultural producers.

**TRAINING PROGRAM OBJECTIVES**

The objectives of the 10-day training program and study tour are to:

- Improve participants’ knowledge and understanding of recent technological advances in the areas of biotechnology, sensor-based irrigation, information management, precision agriculture and remote sensing technologies.

- Familiarize the participants with the farm-level impact of each of these advances on water and nutrient management under changing climatic conditions.

- Provide an opportunity for participants from many countries and backgrounds to observe and discuss the practicality and economics of integrating these innovations into the mainstream of major crops.

- Expose participants to trends and challenges in the agricultural global market and show how farmers, agribusinesses and policymakers are adjusting to them by using state-of-the-art
information and technology available for today’s agriculture production.

**TRAINING PROGRAM CONTENT**

The program will cover various topics including, but not limited to:

- Overview of U.S. agricultural production and fertilization.
- Economic benefits of integrating agricultural technology advances in U.S. agriculture.
- Fertilizer and nutrient use efficiency in agricultural production.
- Nutrient management using precision agriculture and remote sensing technologies.
- Overview of advances in water management in agricultural production, e.g., sensor-based irrigation management.
- Precision agriculture involving nutrient and water spatial and temporal variability management.
- Precision agricultural systems farm-level impacts (real and/or potential) from national policies and international agreements on trade and the environment (e.g., biofuel production and its impacts on commodity prices, reserve stocks and national fiscal, environmental and energy policies).
- Information management and agricultural extension services: Smart phone applications and advisory services (crop management, fertilizer use, irrigation schedules, weather and pest control).
- Strategic planning and risk management in times of uncertainty.
- Biotechnology and advances for crop improvement.
- Managing natural resources and environment under changing climatic conditions.
- Advances in sustainable, environmentally-safe use of CPPs and bio-engineered agriculture.
- U.S. Government policies and regulations on fertilizer and crop protection.

“I have gained much knowledge regarding fertilizer manufacturing and importance globally, regionally and nationally.”
– Director, Agricultural Information Centre, Bangladesh

“I am glad to have attended this training, and I now have many friends from different countries. I will share my knowledge from this training with my partners, because it is very useful to agricultural production.”
– Key Laboratory Manager, China

“The program is an eye opener for me. I am now well informed about fertilizer and how everything within agriculture, farming and the politics of trading works.”
– Provost, Nigeria

“I sincerely thank the IFDC organizers for putting up such a wonderful program this year. I learned a lot and received a lot of inspiration and aspirations that I hope to put into practice. I intend to setup a precision farm of my own, both educational and research-oriented, as well as a small food production, processing and storage center. I am also better informed now about fertilizer use and management and will be in a better position to impact the right knowledge to my students. I also wish to thank all the participants for being wonderful, generous and warm hearted in all interactions. I urge all to keep in contact and create opportunities for future collaborations with members of the group, universities and research institutes. Thank you.”
– Senior Lecturer, Nigeria

“I would like thank you and all the team from IFDC involved for this excellent training. I have returned home with a lot of new information and more important than anything, having met a lot of people from the USA and many other countries. I will strongly recommend this training for my fellow colleagues.”
– Research Manager, Brazil
WHO SHOULD ATTEND

This workshop is designed for innovative farmers, agronomists, soil scientists, researchers and extensionists from national and international agricultural research institutes and universities, as well as policymakers from governments and ministries in charge of agricultural productivity and planning. Executives and managers of fertilizer and agricultural input organizations will find this program extremely interesting. Government officials involved in developing strategies for increased agricultural production through the use of emerging technologies that promote resource conservation and increased efficiencies should also benefit from the program. Participants should be fluent in English.

PROGRAM FEATURES

The program offers exceptional highlights and features including, but not limited to:

- International faculty from IFDC, leading U.S. agricultural producers and other international experts.
- Diverse and participatory activities based on training activities, key lectures and films.
- Written training materials for permanent reference.
- Eight-and-a-half (8½) days of field visits to observe recent advances in irrigation and nutrient management, biotechnology, precision agriculture, etc., and one-and-a-half (1½) days of classroom-style presentations and discussion opportunities.
The discussions and interactions will generate considerable information which will help prepare participants to improve their abilities to compete in the global market and assist farmers in their day-to-day operations.

**FACULTY**

Faculty for this training program and study tour will include IFDC specialists with more than 25 years of soil science experience with a focus on improving nutrient use efficiency and facilitating the transfer of innovative agro-technologies. Other faculty participating in this training will include farmers, extension agents, public sector researchers, entrepreneurs and other representatives of the private sector involved in using, supplying or developing the technologies.

**TRAVEL**

The program will begin Monday morning, August 21, 2017, at IFDC headquarters in Muscle Shoals, Alabama. Thus, participants are expected to arrive on Sunday, August 20, 2017. After two days in Alabama, participants will travel as a group via bus to Tennessee, Arkansas and finally to St Louis, Missouri. Participants will travel as a group via plane from St. Louis to Washington, D.C., where the program will conclude on Friday, September 1, at approximately 5:00 p.m. While the training will officially end Friday evening, an optional half-day bus tour of Washington, D.C., will take place on Saturday, September 2, provided that we have enough participation. Participants should return to their home country from Washington, D.C. It is up to the participants to select their departure date, bearing in mind that the negotiated room rate in D.C. may not be available for extended stays past September 2.

Further details about flight booking and lodging will be provided later.

**VENUE**

To be determined

**VISA AND MEDICAL INSURANCE**

APPLICATIONS FOR NECESSARY VISAS SHOULD BE MADE AS EARLY AS POSSIBLE. A visa is required for entry into the United States. Each participant must obtain a visa from the Embassy or Consulate of the United States in their country of residence. Participants should fulfill all required immunizations and health formalities before departing their country of residence. Medical insurance should be obtained by participants. The program fee does not cover any medical insurance or expenses.

**COST AND ENROLLMENT**

The program fee for this training course is US $2,500 per participant (inclusive of a US $250 non-refundable deposit) and should reach IFDC no later than July 24, 2015, four (4) weeks before the program is scheduled. Those received thereafter will be accepted at IFDC’s discretion and incur a late fee. Participants will be given the opportunity to take advantage of an early bird rate if registration and payment is received by IFDC prior to June 24, 2015. Please refer to the table below for pricing:
The program fee, less the non-refundable deposit, will be refunded for cancellations made two (2) weeks before the commencement of the program. Ninety percent of the paid fee will be returned and 10 percent, in addition to the deposit, will be charged to cover administrative costs for cancellations made between two (2) weeks and one (1) week before the commencement of the program. Cancellations made less than one (1) week before the commencement of the program will receive no refund.

Registration will be on a first-come, first-served basis. Paid participants will receive priority. An organization wishing to enroll more than one participant should supply information and payment for each participant.

Payment of the program fee can be made by: (1) check or draft payable to IFDC; (2) wire transfer to IFDC’s account in the U.S.A. through First Metro Bank, 406 West Avalon Avenue, Muscle Shoals, Alabama, U.S.A., ABA number 062203955 for credit to IFDC account number 55281; or (3) major credit card – MasterCard, Visa or American Express.

The program fee covers registration, training and reference material, coffee/tea breaks, all lunches and surface transportation on field trips. The fee does not include air travel, lodging and dinner expenses, or medical and communication expenses.

**ABOUT IFDC**

IFDC is a nonprofit, public international organization (PIO) dedicated to increasing agricultural productivity and food production through the development and use of plant nutrients in sustainable crop production systems. Headquartered in Muscle Shoals, Alabama, U.S.A., IFDC is involved in human resource development, research and technical assistance in collaboration with public, private, national and international organizations throughout the world. IFDC has conducted more than 700 formal workshops, study tours and training programs for over 11,000 participants from over 150 countries since 1974. The programs have covered a wide range of subjects including integrated soil fertility management and fertilizer use efficiency, fertilizer production technology, agro-input dealership management, competitive marketing, supply chain management, investment analysis, policy reforms and numerous specialized topics.

**FOR MORE INFORMATION:**

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IFDC
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Telephone: +1 (256) 381-6600
Telefax: +1 (256) 381-7408
E-Mail: training@ifdc.org
Website: www.ifdc.org`

NOTE: As a nonprofit organization, IFDC does not finance or sponsor any participant.

[IFDC Training](https://www.ifdc.org)
Program Registration Form

Technology Advances in Agricultural Production and Fertilization


Register Online: https://www.etouches.com/usastudytour

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IFDC reserves the right to cancel any program or change the dates and/or venue of any program without liability for compensation.

Please PRINT or TYPE your legal name as you would like it to appear on ALL printed materials

(Dr., Mr., Mrs., Ms., Miss)  Given Name (First Name)  Surname (Last Name)

Position

Organization or Employer

Work Mailing Address

City  State  Country

Work Tel. No.:  Fax No.:  Home Tel. No.: 

E-Mail:

Organization/Company Funding Your Participation

Arrival Date and Time:  Flight Number:  Departure Date and Time:  Flight Number:

Signature of Applicant  Date

Signature of Employer/Funding Organization  Date

Note: A non-refundable deposit of US $250 is included in each program fee. The program fee, less the deposit, will be refunded for cancellations made two (2) weeks before the commencement of the program. Ninety percent of the paid fee will be returned and 10 percent, in addition to the deposit, will be charged to cover administrative costs for cancellations made between two (2) weeks and one (1) week before the commencement of the program. Cancellations made less than one (1) week before the commencement of the program will receive no refund.

The program fee covers registration, training and reference material, coffee/tea breaks, all lunches and surface transportation on field trips. The fee does not include air travel, lodging and dinner expenses, visa and medical insurance or communication expenses. All of these costs fall under participants’ responsibilities.

☐ By checking this box, I acknowledge that I have read and understand the cancellation policy and program fee coverage.