

Continuing Education Program, IIT Bombay
In association with
Pinnacle Knowledge Group, Dubai



Program in Precision Agriculture
International Edition

Introduction

While agriculture in good soils with plenty of water and fertilizers is a fairly well understood technique the same with poor soils and scarce water is challenging. The concept of precision agriculture avails the recent developments in sensors, green-house and protected agriculture structures. This technology can be meaningfully deployed for hot and extremely dry regions where water is scarce, soil is salty, temperature is high and rainfall low.

What is Precision Agriculture

Information Based and Technology Driven Agricultural System which is designed to improve the agricultural processes by precisely monitoring each step to ensure maximum agricultural production with minimized environmental impact



Advantages of Precision Agriculture

- Improve Crop Yield
- Provide information to make better management decisions
- Reduce chemical and fertilizer costs through more efficient application and reduce pollution

The two day course is aimed at elaborating on concepts and discussing technology details using Case-Study approach.

Topics

- Business of Agriculture and Scientific Inputs
- Concept of Precision Agriculture for Sandy soils and Inclement Weather Using Shed-net and Green House Techniques : Productivities
- Soil-Water-Plant Relationships : Available Data and Implications
- Sensor Based Non-Conventional Production techniques in Forecasting Yields and Diseases/Pests
- Case studies on Deployment of Green houses for Vegetable Production; Shade House for Nursery
- Plant Tissue Culture techniques for Commercial Agriculture
- Irrigation / Micro Irrigation Techniques (Selection of Drip/ Sprinklers /Misters/Foggers, Fertigation Techniques, Installation Techniques & Maintenance Issues and Economics)
- Project Preparation, Implementation : Success stories in Arid-Zone Agriculture techniques
- Possible 2 hr Site visit (through Local contacts)



Faculty

Dr N.G.Shah (IIT-Bombay) [webpage : www.iitb.ac.in/~ctara/people/Nshah.htm]

Teaches courses at IIT-B on (a) Agro-based Industries : Design and Case Studies and (b) Soils and Agriculture. Dr Shah was a principal investigator of a Planning Commission (GOI) and Industry sponsored TDM (Technology development Mission) Project on “Long term Storage of Foodgrains and Seeds” conducted during 1995-99 at IIT-Bombay. A recent project has enabled setting-up of a Laboratory at IIT - Bombay on Post harvest and Food Process Engineering which includes different sensors and equipment to assess post-harvest quality of agro-food commodities such as water activity, rel. humidity, temperature, colour, spectrophotometry and microbial load analysis . An out-door shed-net house facility is built for botany/protected agriculture experiments at IIT-Bombay and is equipped with a ‘Wireless Weather Station’ for precision agriculture. In addition he conducts short-term Continuing Education courses for practicing professionals on “Technology Alternatives for Rural Areas” and “Food Processing” at IIT-Bombay. Currently he is Institute Co-ordinator for a IIT-B/KVIC Project on “Technology Interface for Village Industry” funded by KVIC (2003-08).

Dr.P. Soman Ph.D from READING UNIVERSITY, UK.

Dr P. Soman is currently working with Jain Irrigation Systems (www.jains.com). He has 22 years of research experience in International crops Research Institute in India and Africa. Specialisation in crop water relations and irrigation and nutrient interaction of crops. He has 45 international publications and participation in several National and International seminars.

Dr Soman also has over 10 years experience in commercial agriculture and Horticulture with irrigation and fertigation management as specialized areas.

Traveled to many countries on consultancy and technical support for projects in Asia, Europe and Africa. Headed Agri projects and protected cultivation projects in Africa. Currently working as the leader of Training and Extension activities of Jain Irrigation Company.

About:

IIT Bombay:

The Indian Institute of Technology is one of the premier technological institutes in India with students and faculty who are comparable with the best in the world. IIT Bombay has several undergraduate, postgraduate and doctoral programmes in the engineering, basic sciences, humanities and management. The institute values the importance of interdisciplinary teaching and research. The Institute has vibrant research culture and has several linkages with Indian and International industries and institutes.

Jain Irrigation, Jalgaon, India (www.jains.com)

Jain irrigation systems, a 29 year young corporate, has pioneered indigenous Micro Irrigation industry in India. The company manufactures complete range of products for precision irrigation (drip and sprinkler systems) and provides support services and training to the farmers.

Besides micro irrigation the other divisions in the company include PVC and PE pipes, PVC and PC sheets, Vegetable dehydration, Fruit processing, Fresh fruits, Tissue culture, Bio-tech research, Green house, Solar energy and Renewable energy resources and Turn key projects in Agriculture.

Its technicians install irrigation systems in the field; provides operational and maintenance support to the farmers. Its Agriculture Experts transfers high tech cultivation methods to the farmer and build capabilities for enhanced crop production.

Transfer of technology is attained through training and extension by Jain High tech Agriculture Institute. JHAI has two large Research Farms, 1200 acre each, in Jalgaon (Maharashtra) and in Coimbatore (Tamil Nadu) demonstrating all high tech technologies on a large number of crops. Different irrigation and fertigation , land and soil management technologies are demonstrated “live” in the R&D & Demo farms.

JHAI has been recognized as an agriculture training centre by several universities and Institutions in Public domain in India and USA. It has been also approved as a agriculture training centre by FAO.

Attendee Profile

Entrepreneur/Government officers engaged in agriculture and food production



In-house Programmes (Short & Long Term)

Courses can be run exclusively for a specific company or organization. The course proposals may be made by specific industries and after initial interaction, the courses would be tailor-made and conducted to their requirement.

For further queries regarding the course:

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