

*Indian Technical Economic Cooperation (ITEC) Programme and
Special Commonwealth African Assistance Plan (SCAAP) Programme of
the Ministry of External Affairs*

*Training Programme on
Applications of Biotechnology and its Regulation
December 8-26, 2014*

Organized by



*The Energy and Resources Institute
Habitat Place, Lodhi Road
New Delhi – 110 003, India*

Programme Schedule

Venue: Narmada Hall, FTRC (Fermentation Technology Research Centre) Building, TERI Gram, Gual Pahari

| Monday, 8 December 2014 | |
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| 9.30 – 10.00 | Registration |
| 10.00 – 10.05 | Welcome Address |
| 10.05 – 10.15 | Inaugural Address (Dr. Alok Adholeya, Director, TERI) |
| 10.15 – 10.45 | TERI Multimedia Presentation |
| 10.45 – 11.00 | Overview of the ITEC Program (Mr. Anandajit Goswami, Fellow, TERI & Program Co-ordinator) |
| 11.00 – 11.20 | Introduction of participants |
| 11.20 – 11.30 | Overview of the Course (Dr. Dheeban Chakravarthi Kannan, Fellow, TERI & Course Co-ordinator) |
| 11.30– 11.45 | General Program Instructions and Q&A |
| 11.45 – 12.00 | Tea break |
| 12.00 – 1.20 | General overview: Plant Biotechnology (Dr P M Reddy, Senior Fellow, TERI) |
| 1.20 – 2.00 | Lunch break |
| 2.00 –3.20 | Overview of micropropagation technology (Dr Sanjay Saxena, Senior Fellow, TERI) |
| 3.20 - 3.40 | Tea break |
| 3.40 - 5.00 | Methods of <i>in vitro</i> regeneration (Dr Sanjay Saxena, Senior Fellow, TERI) |
| Tuesday, 9 December 2014 | |
| 10.00 – 11.20 | Visit to Micropropagation Technology Park (Mr Anoop Sharma, Research Associate & Dr. Sanjay Saxena, TERI) |
| 11.20 – 11.40 | Tea Break |
| 11.40 – 1.00 | Experiments related to culture initiation & shoot multiplication (Mr Anoop Sharma, Research Associate, TERI) |
| 1.00 – 2.00 | Lunch |
| 2.00 – 5.00 | Experiments related to rooting and acclimatization (Mr Anoop Sharma, Research Associate, TERI) |
| Wednesday, 10 December 2014 | |
| 10:00 – 11:20 | Biotechnology for rural development (Dr Neetika W Chhabra, Fellow, TERI) |
| 11.20 – 11.40 | Tea Break |

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| 11.40 – 1.00 | Secondary metabolites from algae (Dr Neetika W Chhabra, Fellow, TERI) |
| 1.00 – 2.00 | Lunch |
| 2.00 – 3.20 | Applications of plant tissue culture (Dr. Nidhi P Chanana, Fellow, TERI) |
| 3.20 – 3.40 | Tea |
| 3.40 – 5.00 | |
| Thursday, 11 December 2014 | |
| 10.00 – 11.20 | Genetic engineering of crops (Dr Swatishmita Dhar, Fellow, TERI) |
| 11.20-11.40 | Tea Break |
| 11.40 – 1.00 | Regulatory considerations in modern biotechnology (Dr P M Reddy, Senior Fellow, TERI) |
| 1.00-2.00 | Lunch |
| 2.00-3.30 | Tour of TERI Gram Green Campus |
| 3.30 – 3.50 | Tea |
| 3.40 – 5.00 | |
| Friday, 12 December, 2014 | |
| 10.00 – 11.20 | Mycorrhizal biofertilizer for sustainable agriculture (Dr Reena Singh, Fellow, TERI) |
| 11.20 – 11.40 | Tea Break |
| 11.40 – 1.00 | Biopesticide production, applications and limitations (Dr Nutan Kaushik, Senior Fellow, TERI) |
| 1.00-2.00 | Lunch |
| 2.00-3.20 | Biopesticides and regulatory issues (Dr Nutan Kaushik, Senior Fellow, TERI) |
| 3.20 – 3.40 | Tea Break |
| 3.40 – 5.00 | Visit to Bollcure production facility and demonstration plots (Dr Nutan Kaushik, Senior Fellow, TERI) |
| Saturday, 13 December 2014 | |
| Visit to Delhi | |
| Sunday, 14 December 2014 | |
| Agra Trip | |
| Monday, 15 December 2014 | |
| 10.00 – 11.20 | Important traits for transgenic production (Dr Nidhi P Chanana, Fellow, TERI) |
| 11.20 – 11.40 | Tea Break |

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| 11.40 – 1.00 | Crops presently being attempted for transgenic production (Dr Nidhi P Chanana, Fellow, TERI) |
| 1.00-2.00 | Lunch |
| 2.00 - 3.20 | Role of mycorrhiza in bioremediation (phytoremediation) (Dr Manab Das, Fellow, TERI) |
| 3.20 – 3.40 | Tea |
| 3.40 – 5.00 | |
| Tuesday, 16 December, 2014 | |
| 10.15 – 10.30 | Film on TERI University |
| 10.30 – 10.40 | Welcome Remarks by Mr Sandeep Arora |
| 10.40 – 11.00 | Tea Break |
| 11.00 – 12.00 | Molecular Markers and DNA Fingerprinting for Documentation of Plant Genetic Resources (Dr Anandita Singh, HoD and Assistant Professor, TERI University) |
| 12.00 – 1.00 | Developments in Patent Law and Biotechnology (Mr M V Shiju, Lecturer, TERI University) |
| 1.00 – 1.45 | Lunch |
| 1.45 – 2.45 | Microbial Biotechnology Dr Ramakrishnan Sitaraman, Assistant Professor, TERI University) |
| 2.45 – 3.00 pm | Tea Break |
| 3.00 – 4.00 pm | Bioinformatics (Dr Pallavi Somvanshi, Assistant Professor, TERI University) |
| 4.00 – 5.00 pm | Tour to University Campus |
| Wednesday, 17 December 2014 | |
| 10.00 – 11.20 | Treating pesticide contaminated sites (Dr Priyangshu M Sarma, Fellow, TERI) |
| 11.20 – 11.40 | Tea Break |
| 11.40 – 1.00 | Bioremediation and reclamation of sites contaminated with petroleum hydrocarbons: A case study (Dr Priyangshu M Sarma, Fellow, TERI) |
| 1.00 – 2.00 | Lunch Break |
| 2.00 – 3.20 | Marker assisted breeding: Strengths and limitations (Dr Shashi Bhushan Tripathi, Fellow, TERI) |
| 3.20 – 3.40 | Tea Break |
| 3.40 – 5.00 | Clonal fidelity testing of tissue cultured plants (Dr. Shashi Bhushan Tripathi, Fellow, TERI) |
| Thursday, 18 December 2014 | |
| 10.00-11.20 | Biofuels: Present status of technology and future potential (Dr Dheeban Chakravarthi Kannan, Fellow, TERI) |

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| 11.20 - 11.40 | Tea Break |
| 11.40 – 1.00 | Algal Biofuels (Dr Dheeban Chakravarthi Kannan, Fellow, TERI) |
| 1.00 –2.00 | Lunch |
| 2.00 – 3.00 | Application of genomics to understand bio-control agents for safe and sustainable agriculture (Dr. Pushplata Singh, Research Associate, TERI) |
| 3.00 – 3.20 | Tea Break |
| 3.20 – 4.40 | Visit to Algal Bioreactor (Dr Dheeban Chakravarthi Kannan, Fellow, TERI) |
| Friday-Monday, 19-22 December 2014 | |
| 19-22 Dec: Study tour to Pantnagar, Uttarakhand and surrounding areas (G B Pant University of Agriculture and Technology, Pantnagar, Uttarakhand, Jim Corbett National Park and Nainital, Uttarakhand) | |
| Tuesday, 23 December 2014 | |
| 10.00 – 11.00 | Use of Nanotechnology for Resolving Challenges in Agricultural and Biomedical Issues (Dr Subhash Chandra Yadav, Fellow, TERI) |
| 11.00 – 11.15 | Tea |
| 11.15 – 12.00 | Therapeutic Potential Improvement of Natural Antioxidants Through Nanotechnological Intervention (Dr Subhash Chandra Yadav, Fellow, TERI) |
| 12.00 – 1.00 | Visit to Bioreactor Facility (Mr C Paul Jeyaseelan, Fellow, TERI) |
| 1.00 – 2.00 | Lunch |
| 2.00 – 3.00 | Microbial fermentation for production of value added chemicals/ bio-molecules and biofuels from renewable resources (Dr. Gunjan Mukherjee, Associate Fellow, TERI) |
| 3.00 – 3.20 | Tea Break |
| 3.20 – 4.40 | Visit to Nanobiotechnology Lab (Mr Chandrakant Tripathi & Dr Subhash Chandra Yadav, TERI) |
| Wednesday, 24 December 2014 | |
| 10.00 – 11.20 | Biotechnology and Adaptive Crop Biology (Dr Swatishmita Dhar, Fellow, TERI) |
| 11.20 - 11.40 | Tea Break |
| 11.40 – 1.00 | Functional Genomic Approach for Adaptive Crop Biology (Dr Swatishmita Dhar, Fellow, TERI) |
| 1.00 – 2.00 | Lunch |
| 2.30 – 5.00 | Visit cum Demonstration at Biotechnology Labs, TERI, India Habitat Center, New Delhi (Dr S B Tripathi & Mr M S Negi) |

Thursday, 25 December 2014 – Christmas Holiday

Friday, 26 December 2014

10.40 - 11.00

Tea

11.00 – 1.00

Discussions on biotechnological research in respective countries of the participants
(Dr P M Reddy, Senior Fellow, TERI)

1.00 – 2.00

Lunch

2.00 – 3.00

Closing Session