



BARWALE FOUNDATION

Announcement of Biotechnology Training Courses for 2009-10 at Barwale Knowledge and Study Centre, Jalna, Maharashtra, India

Course Code	Course Title	Duration per Course (Days)	Scheduled Dates	Modules	Duration of Module (Days)	Fee Structure (INR)
Basic Courses for Beginners						
101	DNA extraction	2	13-18 July 2009	M1	6	2000/-
102	Total RNA extraction	2				
103	Protein extraction	2				
104	Electrophoresis (AGE, PAGE, SDS-PAGE)	2	8-18 Sept. 2009	M2	11	5000/-
105	PCR based genotyping (RAPD, SSR, AFLP)	4				
106	Data Recording and Analysis (Diversity)	1				
107	Bioinformatics for beginners	4				
108	Basics in genetics, plant breeding & seed testing	5	6-10 Oct. 2009	M3	5	3000/-
Advanced Courses						
201	Molecular marker technology (Tools and Techniques), MAS for biotic and abiotic stresses, QTL mapping	5	10-14 Nov. 2009	M4	5	8000/-
202	Bioinformatics	3	15-19 Dec. 2009	M5	5	3000/-
203	Crop Informatics	2				
204	Statistical analysis	3	5-7 Jan. 2010	M6	3	5000/-
Professional Courses						
301	Principles of seed production and Processing	2	9-14 Feb. 2010	M7	6	4000/-
302	Seed quality testing and enhancement	2				
303	Seed regulatory mechanisms in India	2				
Outreach Courses						
900*	Basics of seed quality and production	1	9-10 March 2010	M8	1	500/-
901*	Transgenic crops	1			1	500/-

* indicates that the course is bilingual (English and Hindi)

For further details please contact
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| BIOTECHNOLOGY COURSES FOR 2009-10 |

With a vision and mission to disseminate biotechnology techniques to the scientific (students, teachers, researchers) and farming community, the Barwale Foundation has designed courses ranging from basic to advanced and outreach courses for the benefit of the people.

The training programs will be conducted at the Barwale Knowledge and Study Centre, Jalna, Maharashtra, India. Resource persons are scientists well versed with these techniques and have already or are developing products using these biotechnology tools.

Courses have been specially designed for students, teaching community and entrepreneurs in the seed industry, to improve their skills and act as career enhancement courses, where they can keep abreast with the latest in the field of science, technology and quality seed production.

Educating the farming community and teaching them the latest techniques to enhance crop productivity has been given prime importance and special courses are being offered both in English and in Hindi for them. Courses will be translated to other regional languages, should there be a need for that.

The participants are encouraged to choose from the list and enroll for the modules of their interest.

| BASIC COURSES |

Module 1: DNA is the base material for any molecular biology experiment. The module is designed such that the participants get hands-on training on the different methods of DNA, RNA and protein extraction across crops. Troubleshooting will also be given due importance so that once the participants put these techniques to practice in their work places they are able to overcome the difficulties or errors.

Module 2: In this module the different electrophoresis techniques are explained. Setting up of PCRs using different markers like RAPD, SSR, STS and AFLP will be taught in detail. The PCR amplified products will be run on gels and the participants will be taught how to record, analyze and interpret the data so as to get meaningful results. An introductory course on the uses of bioinformatics will also be taught.

Module 3: This module, which is theoretical, and is specifically designed for those who have had no formal training in Genetics and Plant Breeding at college level. Basic issues related to genetics and plant breeding as it relates to molecular markers and the genetics of DNA bands will be discussed. Conventional genetics and plant breeding will be compared to molecular genetics and Marker Assisted Breeding.

| ADVANCED COURSES |

Module 4: Deals with advanced molecular marker technology with special emphasis to Marker-assisted selection for biotic stress (special emphasis will be given to diseases and pests) and abiotic stresses. Mapping and identification of QTLs using different software tools will be discussed.

Module 5: In this module, issues related to bioinformatics will be discussed with hands-on practicals of each chapter. Detailed discussion on DNA and other macromolecules will be the highlight of the course. All aspects of related to genealogy, ontology, gene search, sequence homology, different types of BLAST, design of primers, pseudo-molecules, mega BLAST etc. will be covered.

Module 6: Analysis and interpretation of any data is a prerequisite to draw valid conclusions. This module deals with the different designs used for experiments, the analysis and interpretation of the results using different softwares.

| PROFESSIONAL COURSES |

Module 7: This course is specifically designed for the seed industry. In this course, the participants are taught the principles of seed production and processing to get good quality and pure seeds. There is a special section on seed regulatory mechanisms in India dealing with Seed Acts, Seed control order, Protection of plant varieties and farmers' rights, the Intellectual Proprietary Rights (IPR) and similar legal issues

| OUTREACH COURSES |

Module 8: This course is exclusively designed for farmers and extension workers. The farmers are taught the basics of seed quality and production. Extension workers from various institutions who wish to update their knowledge on the latest developments in the area of biotechnology, safety of transgenics, products of marker-assisted selection, IPR and seed regulation issues would benefit from the basic course delivered by experts in the area of research.