

## NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Agriculture - NOC:Basics of Crop Breeding and Plant Biotechnology

Subject Co-ordinator - Prof. Joydeep Banerjee

Co-ordinating Institute - IIT - Kharagpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

- Lecture 1 - Mendelian Genetics
- Lecture 2 - Mendelian Genetics
- Lecture 3 - Mendelian Genetics
- Lecture 4 - Concept of Gene and Experiments on Plant Hybridization
- Lecture 5 - Concept of Gene and Experiments on Plant Hybridization
- Lecture 6 - Pureline Selection
- Lecture 7 - Pedigree Method
- Lecture 8 - Backcross Breeding
- Lecture 9 - Back Cross Method (Recessive Gene Transfer)
- Lecture 10 - Merits and Demerits of Backcross Breeding and Cytoplasm Transfer Through BB
- Lecture 11 - Mass Selection
- Lecture 12 - Modifications of Mass Selection
- Lecture 13 - Recurrent Selection
- Lecture 14 - Reciprocal Recurrent Selection
- Lecture 15 - Heterosis and Inbreeding Depression
- Lecture 16 - Degree of Inbreeding and Genetic Basis of Heterosis and Inbreeding Depression
- Lecture 17 - Genetic Basis of Heterosis and Inbreeding Depression
- Lecture 18 - Population Genetics - Part I
- Lecture 19 - Population Genetics - Part II
- Lecture 20 - Population Genetics - Part III
- Lecture 21 - Polyploidy - Introduction
- Lecture 22 - Autopolyploidy
- Lecture 23 - Features and Limitations of Autopolyploids
- Lecture 24 - Allopolyploidy
- Lecture 25 - Introduction to Reverse Breeding
- Lecture 26 - Applications of Reverse Breeding
- Lecture 27 - Introduction to Markers
- Lecture 28 - RFLP
- Lecture 29 - RAPD

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- Lecture 30 - AFLP
- Lecture 31 - ISSR, SSR, CAPS
- Lecture 32 - Backcross breeding through molecular marker - Part I
- Lecture 33 - Backcross breeding through molecular marker - Part II
- Lecture 34 - Enzymatic tools used in Molecular Biology
- Lecture 35 - Vectors and Plasmids used in Molecular Biology
- Lecture 36 - Types of Vectors used in Plant Transformation and Selectable Marker Gene
- Lecture 37 - Scorable Marker Gene and Plant Tissue Culture
- Lecture 38 - Gene Cloning
- Lecture 39 - Promoters and Preparation of Over expression Construct
- Lecture 40 - Preparation of Gene Silencing Construct
- Lecture 41 - Unidirectional and Bidirectional Promoter, Numerical Question on Promoter Analysis
- Lecture 42 - Application of Plant Tissue Culture - Part I
- Lecture 43 - Application of Plant Tissue Culture - Part II
- Lecture 44 - Haploids and Artificial Seeds
- Lecture 45 - Gene Transfer Methods
- Lecture 46 - Agrobacterium Mediated Transformation in Tobacco and Rice
- Lecture 47 - PCR Screening
- Lecture 48 - Southern and Northern Blot
- Lecture 49 - Western Blot
- Lecture 50 - Microarray and Other Screening Methods
- Lecture 51 - Molecular Analysis of Transgenic Plants - I
- Lecture 52 - Molecular Analysis of Transgenic Plants - II
- Lecture 53 - Double Integration - Part I
- Lecture 54 - Double Integration - Part II
- Lecture 55 - Golden Rice, Bt Cotton, FLAVR SAVR
- Lecture 56 - Characterisation of OsGLP1 Gene from Rice - Part I
- Lecture 57 - Characterization of OsGLP1 Gene from Rice - Part II
- Lecture 58 - Seed Sterilisation and Transformation (Rice and Tobacco)