

TECHNIQUES AND APPLICATIONS OF PLANT BREEDING

With reference to this college Letter No 260 Dtd, 20.01.2023 and Letter No. 522 Dtd. 09/02.2023, a value-added course has been designed by the Department of Botany, B. J. B. Autonomous College, Bhubaneswar and shall be conducted as per the guidelines provided.

C.K. Patel
IQAC
25/02/23

Expected Outcome of the Course:

On completion of the course students will be able to:

1. Learn the procedure of hybridisation
2. Learn about developing different varieties by cross pollination
3. Learn how to improve the Hybrid vigour
4. Learn about the role in Mutation Breeding

Title of Value-added Course:

TECHNIQUES AND APPLICATIONS OF PLANT BREEDING

Unit-I: Plant Breeding

Introduction and Objectives, Self Pollination and Cross Pollination

Unit-II: Methods of Crop Improvement

Plant Introduction and acclimatization, Types of Selection methods for self and cross pollinated plants

Unit-III: Hybridisation

Hybridisation Procedure (Selection of Parents, Selfing of Parents) and Hybridisation Techniques (Emasculation, Bagging, Tagging). Hybridisation Methods of self pollinated crops (Pedigree method, Bulk method, back cross method) and Types of cross in cross pollinated crops (Single cross, three way cross, double cross, top cross), Advantages and limitations of Hybridisation

Unit-IV a) Inbreeding and Heterosis (Hybrid Vigour):

Phenotypic Consequences of inbreeding depression, Genetic Basis of inbreeding, Inbreeding for crop Improvement, Heterosis Types, Effects, Causes, Application and genetic basis of heterosis

b) Crop Improvement:

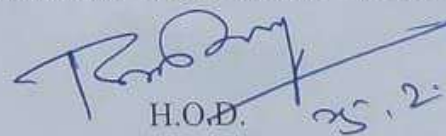
Mutation Breeding, Role of Polyploidy in plant breeding, Importance of breeding on modern agriculture, Role of Biotechnology in crop improvement

PRACTICALS

1. Study of Plant breeders Kit and its component
2. General Procedure of Selfing and crossing techniques in plant
3. Study of reproductive morphology, floral biology and crossing techniques in cereals (Rice), Pulse (Green gram), Oil seed(groundnut)

There will be approximately 25 hours of theoretical instruction and 5 hours of practical / Hands on activity.

No-436
25-2-23


H.O.D. 25.2.2023

Department of Botany
B.J.B. Autonomous College, Bhubaneswar