



## **INTERMEDIATE**

# **Biology : Strategies Of Enhancement Of Food Production**

*Hand Notes For JEE Mains, Advance, NEET UG, Class 11 & 12 etc...*

## **Hand Notes**

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# Strategies for enhancement of food production

## Plant breeding

Manipulation of plant species to create new & better varieties which are better suited for cultivation

Give better yield

Resistant against plants & pathogen

Conventional plant breeding started 9000-11000 yrs back

Major characters which are incorporated in the crop-

- Better yield

- Improved quality

- Tolerant to adverse environmental conditions  
salinity, drought, high or low temp

- Resistance to Pathogens - Viruses

Bacteria

Fungi

- Resistant to Pest attack - Insects, Nematodes

HOW-468 - (WHEAT)

12 yrs to make this variety



## Classical Plant Breeding

Main steps - 5

1. **Genepool** - Genepool - sum total of all alleles of collection all genes present in a crop & its related species

Root of plant breeding

Genepool consists of

1. all improved varieties - as more in cultivated
2. all present day cultivated improved varieties
3. Local varieties
4. Wild varieties - have gene pool - Resistant genes
5. Pure lines  $\rightarrow$  True Breeds  $\rightarrow$  Homozygous lines
6. Related species

Genepool collection

$\rightarrow$  Procuring whole range of genetic variability of a crop  
2. **Selection of Genepool** is the backbone of plant breeding

within country

other country

International

I C

E C

B board

Indigenous

Exotic collection

Plant Genetic Resources

## Genepool Collection Centres

1. **ICRISAT** - International Crop Research Institute (Hyderabad) for semi-arid - Tropical plants

chick-pea, Pigeon pea, Pearl millet

2. **CPR I** - Centre of Potato Research Institute (Srinagar) Potato

3. **CIRRI** - Central Rice Research Institute (Cuttack) Rice