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Class : 12th Biology
Chapter- 9 : Strategies for Enhancement in Food Production

Strategies for Enhancement in Food Production

Animal husbandry

- **Farm and farm animals**
  - Poultry farm Management
  - Dairy farm Management
- **Fisheries**
  - Freshwater fishes- Catla, Rohu, common carp etc.
  - Marine fishes - Hilsa, Sardines, Mackerel, etc
- **Bee Keeping**
  - Practice of bee-keeping for honey and beeswax.
  - Apis indica is most common species used.
- **Animal Breeding**
  - **Inbreeding**
    - Mating of more closely related individuals with in the same breed for 4-6 generations.
    - Continued inbreeding leads to inbreeding depression
  - **Out-breeding**
    - Out-Crossing
    - Cross-breeding
    - Inter-specific hybridization
  - **Controlled breeding techniques**
    - Artificial insemination
    - MOET

Tissue culture

- **Meristem culture**
  - This method is used to recover healthy plants from diseased plant.
  - Meristem (apical and axillary) is the only virus free part of a virus infected plant.
  - E.g. Banana, sugarcane, potato etc
- **Somatic hybridization**
  - Process of fusion of protoplast of different varieties on a suitable nutrient medium in vitro to develop somatic hybrid.
  - E.g. Pomato = tomato + potato protoplasts

Single Cell protein

- Spirulina is used for SCP, so as to provide alternate source of nutrition.
- It is rich in protein, minerals, fats, carbohydrate and vitamins

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Plant Breeding

- **Reasons**
  - **Biofortification**
    - **Example**
      - Hybrid maize
      - Wheat variety: Atlas 66
      - Iron fortified rice
    - **Objectives**
      - To improve Protein content and quality.
      - To improve Oil content and quality.
      - To improve Vitamin content.
      - To improve Micronutrient and mineral content.
  - **For Developing resistance to pest**
  - **For disease resistance varieties**
    - Conventional Breeding technique
    - Mutation Breeding
- **Steps**
  - Collection of genetic variability
  - Evaluation of germplasm and selection of parents
  - Cross hybridisation among the selected parents
  - Selection of superior hybrids
  - Testing, release and commercialization of new cultivars.

Crop	Variety	Insect Pests
Brassica (rapeseed mustard)	*Pusa Gaurav*	*Aphids*
Flat bean	*Pusa Sem 2, Pusa Sem 3*	*Jassids, aphids and fruit borer*
Okra (Bhindi)	*Pusa Sawani Pusa A-4*	*Shoot and Fruit borer*

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