



Learning Objectives



At the end of this lesson the students will be able to :

- ◆ Define and discuss the steps and methods involved in plant breeding.
- ◆ Know the crop varieties produced by crop improvement.
- ◆ Understand animal breeding and its implications.
- ◆ Point out the differences between inbreeding and outbreeding.
- ◆ Know what is hybrid vigour and its importance.
- ◆ Identify the steps involved in genetic engineering.
- ◆ Understand the practical applications of DNA fingerprinting.
- ◆ Gain knowledge on gene therapy.
- ◆ Know the importance of stem cell technology.

Introduction

India's population is likely to reach 1.7 billion by 2050. Current rate of India's food production will be able to meet only 59% of the country's food demand at that time. How can India feed 1.7 billion people by 2050? This can be made possible by 'Plant breeding' and 'Animal husbandry'.

Plant breeding is the art of developing economically important plants with superior quality.

Animal husbandry involves the breeding of animals. It aims at improving the genotypes of animals to make them more useful to the welfare of mankind. This emphasizes domestication and propagation of animals, under controlled conditions to enhance food production and food quality.

Another breakthrough was the emergence of biotechnology as an entity of modern biology,

which paved way to develop advanced healthcare products, diagnostic kits and food production to improve the quality of human life.

20.1 Modern Agricultural Practices and Crop Improvement

Modern agricultural practices are activities carried out to improve cultivation of plants. It includes preparation of soil, sowing, application of manures and fertilizers, proper irrigation, protection from weeds and pests harvesting, threshing and storage.

The aim of crop improvement is to develop improved crop varieties possessing higher yield, better quality, resistance to diseases and shorter duration.

20.2 Green Revolution

Green Revolution is the process of increasing food production through high

