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Section: E 1st



Agonomy

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150

PART I

AGRICULTURE

Chapter 1

INTRODUCTION TO AGRICULTURE

✓ DEFINITION OF AGRICULTURE

The word 'Agriculture' is derived from two Latin words; 'ager' and 'cultura'. Ager means field and cultura means cultivation.

Agriculture can be defined as an art, science or an industry which makes use of soil for the production of plants, rearing of animals and birds which are directly or indirectly useful for human beings.

✓ IMPORTANCE OF AGRICULTURE

Agriculture has a great importance in our over-populated world. Without giving due importance to agriculture it is impossible to feed the people of the world, and man cannot live without food. The importance of agriculture is briefly discussed below:

1. Provision of Basic Necessities of Life

Three basic necessities of mankind are food, cloth and shelter. Agriculture is the only field which provides us with all the three basic necessities, as described below:

a) Food

We know that all the food stuffs, used to eat & keeping us alive, are the products of agriculture. They may be in different forms such as milk, meat, seeds, roots, shoots, flowers and fruits.

Agriculture: It is an art, Science and Industry which does principals and practices of raising of crops and rearing of animals to provide basic necessities of life is Foods, clothes, shelter and Feed to the farming community to uplift their socio-economic condition.

b) Cloth

Clothes of all major kinds are made from agricultural products as cotton, wool, jute and natural silk.

c) Shelter

Wood and leaves have been sheltering mankind from ages. Even now, wood is the basic material used in our houses. Hay is used for making "Katcha" houses and huts etc.

2. Raw Material for Local Industries

Agriculture provides raw material for local industries such as textile, sugar, paper, oil and jute mills. Other industries that can be cited in this connection are cigarette, leather, flour mills, rice and fruit industries etc.

3. Employment

Agriculture provides employment to a large number of people. It has been estimated that about 80% of our population is engaged in agriculture.

4. Foreign Exchange Earnings

The major products which earn foreign exchange are cotton, rice, raw wool yarn, hides and skins. The important by-products which earn foreign exchange are footwear, leather goods, sports goods, and carpets which consume most of the raw materials obtained from agriculture.

5. Cleaning of Environment

Agriculture plays an important role in cleaning our atmosphere as plants take in carbon dioxide and give out oxygen for our use. Thus it helps us to get rid off unhealthy carbon dioxide gas.

✓ DIFFERENT BRANCHES OF AGRICULTURE

Agriculture can be divided into the following four branches:

1. Agronomy. 2. Animal Husbandry.
3. Forestry. 4. Horticulture.

1. Agronomy

Agronomy is the branch of agriculture that deals with the principles and practices of ^{field} crop production and soil management. The word is derived from the Greek 'agros', meaning 'field', and 'nomos' meaning 'to manage'.

It is the application of the plant, soil and management and related sciences to the improvement, production, and use of field crops. Often it is divided into crops agronomy and soils agronomy, and in some institutions these divisions are organized into separate departments.

2. Animal Husbandry

Animal Husbandry includes the rearing of animals and birds. They may be either for sale or for the sale of their products. Animal husbandry has the following sub-branches:-

- i) **Stock Rearing:** It is the rearing of cattle and horses etc., for draft and meat purposes.
- ii) **Dairy Farming:** It deals with the rearing of ^{milk} milch animals such as cows and buffaloes etc. *for the production of milk*
- iii) **Poultry Farming:** It deals with the rearing of birds for their eggs and meat such as cocks, hens, ducks, turkeys etc.

3. Forestry

Forestry deals with the growing of forest trees. Forestry plays an important role in the development of a country as wood is used for many purposes. Its most important uses are for making houses, furniture, and as a fuel. Almost all the wood used by us comes from forests which are grown and looked after by the forest department.

4. Horticulture

Horticulture is the raising and looking after of fruit gardens, flowers and vegetables. It has the following sub-branches:

- i) **Pomology:** *→ from Pome + fruit* It deals with the growing of fruit plant.
- ii) **Olericulture:** It deals with the growing of vegetables.
- iii) **Floriculture:** It deals with the growing of flower plants.
- iv) **Land Scape Horticulture:** It deals with the growing of ornamental plants.

Some of the minor branches of agriculture are as under:

- i) **Fish Culture:** It deals with the production and maintenance of fish for human consumption.

ii) **Apiculture:** It deals with the keeping and looking after of honey bees for honey production.

iii) **Lac Culture:** It deals with the rearing of lac insect for the production of lac.

iv) **Seri Culture:** It deals with the rearing of silk worm for the production of silk.

AGRONOMY AND SCIENCES ALLIED TO AGRONOMY

Agronomy

Agronomy is the branch of agriculture that deals with the principles and practices of crop production and soil management. The word is derived from the Greek 'agros', meaning 'field', and 'nomos' meaning 'to manage'. Thus agronomy is the branch of agriculture that deals with the principles and practices of crop production and field management.

By the words, field management, we generally mean the levelling of soil, ploughing, removing of harmful vegetation, digging of water channels and their cleaning. It also includes looking after the fertility of the soil.

Sciences Allied to Agronomy

Agronomy is dependent on the fundamental sciences of botany, plant physiology, bio-chemistry, genetics, ecology, plant pathology, entomology, geology, meteorology, agricultural economics and agricultural chemistry. A brief description of these sciences is given below:-

1. Botany

It is a branch of science which deals with the study of plant kingdom.

2. Plant Physiology

It is the branch of botany which deals with the functioning of plant parts.

3. Bio-chemistry

It is a science which deals with the chemistry of living things.

4. Genetics

It is the science which deals with heredity and its variations.

Ecology

It is the study of the relations of organisms to their environment.

Plant Pathology

It is the study of plant diseases.

Entomology

It is the science which deals with the study of insects and their behaviour.

Geology

It is the science which deals with the study of earth.

Meteorology

It is the science of atmosphere.

Agricultural Economics

It may be defined as a science in which the principles and methods of economics are applied to the special conditions of the agricultural industry. In short agricultural economics is a scientific study of the business side of farming.

Agricultural Chemistry

It is the study of chemical phenomena occurring in the soil.

Different Branches of Agriculture:

- 1) Agronomy
- 2) Plant breeding and genetics.
- 3) Soil and environmental sciences.
- 4) Plant Pathology
 - Bacteriology
 - Mycology
 - Virology
- 5) Agriculture Economics and marketing.
- 6) Forestry
 - i) Agro-forestry.
 - ii) Silviculture.
- 7) Agriculture Extension
- 8) Applied Statistics.
- 9) Horticulture.
 - i) Pomology
 - ii) Olericulture.
 - iii) Floriculture
 - iv) Landscape horticulture.
- 10) Entomology.
 - i) Apiculture.
 - ii) Lac Culture.
 - iii) Sericulture
- 11) Animal Husbandry.
 - i) Stock rearing.
 - ii) Dairy Farming.
 - iii) Poultry Farming.
- 12) Pisciculture or Aquaculture

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seed science and Techn
weed science and allelo
Fodder and forage scien
crop physiology
crop ecology
Tillage science
Conservation agronomy
organic farming
Farm management and
maintenance