

Branches of Agriculture

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Agriculture is divided into the following four branches.

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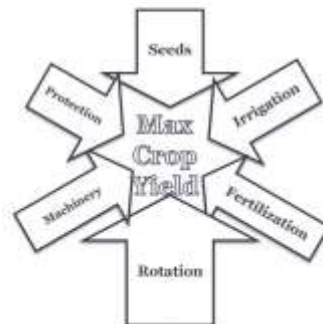
1. Agronomy

The word agronomy is derived from two Greek words “Agros” and “nomos” Agros mean field and nomos mean to manage.

Thus Agronomy is that branch of Agriculture which deals with the principles and practices of crop production and soil management.

It is a branch of agriculture science that deals with methods that provide favorable environment to the crop for higher productivity.

Field Crop Management



Crop production: is a branch of agriculture that deals with growing crops for use as food and fiber. OR

Crop Production is the art and science of the genetic improvement of crops to produce new varieties with increased productivity and quality. The advanced genetic and molecular techniques have resulted in new varieties of crop plants, medicinal plants and ornamentals.

Principles of crop production

Principle means a scientific law that explains natural action and agronomic principles are the ways and means for the better management of soil, plants and environment for economically maximum returns per unit area.

The fundamental principles of crop production are listed below:

1. Planning, programming and executing measures for maximum utilization of land, labor, capital, sunshine, rain-water, temperature, humidity, transport and marketing facilities.
2. Proper time of sowing
3. Improved cultural practices;
4. Good seed of approved and new varieties; Choice of crop varieties adaptable to the particular agro-climate, land situation, soil fertility, season and method of cultivation and befitting (suitable) to the cropping systems.
5. Timely application of proper and balanced nutrients to the crop or crops in sequence and improvement of soil fertility and productivity.
6. Irrigation application at proper time; Proper water management with respect to crop, soil and environment through conservation and utilization of soil moisture as well as water that is available in excess.
7. Adequate plant protection measure; Adoption of adequate, need-based, timely and proper plant protection measures against weed's insect-pests, pathogens, as well as climatic hazards
8. Post-harvest Management; Adoption of suitable post-harvest technologies.

Practices

It is a way of carrying out particular farm operations.

Fields management

By the word field management, we generally mean the leveling of soil, ploughing, removal of harmful vegetation, digging of water channel and their cleaning. It also includes looking after the fertility of soil. Often Agronomy is divided into crops agronomy and soil agronomy and in some institutions these divisions are organized into separate department.

Horticulture

Horticulture is that branch of agriculture which deals with raising and production of fruits, flowers and vegetables. It has the following sub branches.

1. **Pomology:** It deals with the growing of fruit plants.
2. **Olericulture:** It deals with the growing of vegetables.
3. **Floriculture:** It deals with the growing of flowers plants.

4. **Landscape Horticulture:** It deals with the growing of ornamental plants. make (an area of ground, land, mountain, desert) making more attractive by altering the existing design, adding ornamental features, and planting trees and shrubs, grasses and flowering plants.



Forestry

Forestry deals with the growing of plants or trees and pasture for grazing of animals. Forestry play an important role in the development of a country as wood is used for man purposes. It's important uses are making of furniture, windows, doors of houses and as a fuel

Animal Husbandry

It is branch of agriculture which deals with rearing of animals and birds. Animal husbandry has the following sub branches.

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

Some of the minor branches of agriculture are as under.

- i. **Pisciculture/ Fish Culture:** The breeding, rearing, and transplantation of fish by artificial means is called pisciculture, in other words, fish farming. It is the principal form of aquaculture, while other methods may fall under mariculture.

It involves raising fish commercially in tanks or enclosures, usually for food. It deals with the production and maintenance of fish for human consumption.

- ii. **Apiculture:** It deals with the keeping and looking after the honeybees for honey production.



- iii. **Lac Culture:** It deals with the rearing of lac insect for the production of lac. Lac culture is the scientific management of lac insects to obtain a high amount of quality lac. This involves selection and maintenance of host plants, inoculation of host plants with healthy lac insects, collection and processing of lac and protection against enemies. Lac is the resinous secretion of lac insects. Lac is the resinous secretion of a number of species of lac insects, of which the most commonly cultivated, is **Kerria lacca**. Cultivation begins when a farmer gets a stick that contains eggs ready to hatch and ties it to the tree to be infested.



lac insect

- Lac insect is a minute crawling scale insect which inserts its suctorial proboscis into plant tissue, sucks juices, grows and secretes resinous lac from the body.
- Its own body ultimately gets covered with lac in the so called 'CELL'.
- Lac is secreted by insects for protection from predators.



- iv. **Sericulture:** It deals with the rearing of silkworm for the production of natural silk. Sericulture, or silk farming, is the cultivation of silkworms to produce silk. Although there are several commercial species of silkworms, *Bombyx mori* is the most widely used and intensively studied silkworm.





Science allied to Agricultural Sciences

Agronomy is dependent on the following fundamental sciences i.e, botany, plant physiology, biochemistry, genetics, ecology, plant pathology, entomology, geology, meteorology, agricultural economics, agricultural chemistry, weed science, Agricultural biotechnology, statistics and crop modeling A brief disruption of these sciences is given below.

i. Botany

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

ii. Plant Physiology

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

iii. Biochemistry

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

iv. Genetics

It is a science which deals with the heredity and its variation,

v. Ecology

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

vi. Plant Pathology

It is the study of plant diseases.

vii. Entomology

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

viii. Geology

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

ix. Meteorology

It is the science of atmosphere.

x. Agricultural Economics

It is the science in which 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.

xi. Agricultural Chemistry

It is the study of chemical phenomena occurring in soil.

xii. Weed Science

It is the study of vegetation management in agriculture, aquatics, horticulture, essentially anywhere plants need to be managed. It involves the study of all the tools available for this purpose such as cropping systems, herbicides, management techniques.

xiii. Agricultural biotechnology.

an area of agricultural science involving the use of scientific tools and techniques, including genetic engineering, molecular markers and tissue culture (the technique of cultivating living tissue in a prepared medium outside the body), to modify living organisms: plants, animals, and microorganisms.

xiv. Statistics

It is the discipline that concerns the collection, organization, displaying, analysis, interpretation and presentation of data. Statistics in agriculture is used to ascertain the volume of crop that needs to be produced, based on the output and demand of the previous year.

xv. Crop Modeling

A Crop Simulation Model describes the processes of crop growth and development as a function of weather conditions, soil conditions, and crop management.