



SNS COLLEGE OF TECHNOLOGY

**An Autonomous Institution
Coimbatore – 35**

Accredited by NBA – AICTE and Accredited by NACC – UGC with 'A+ Grade
Approved by AICTE , New Delhi and Affiliated to Anna University , Chennai.

DEPARTMENT OF AGRICULTURE ENGINEERING

19AGB205 – CROP PRODUCTION TECHNOLOGY

II – YEAR IV SEMESTER

UNIT 1 – -PRINCIPLES OF AGRONOMY

TOPIC 1 – Definition of agriculture and agronomy - Factors affecting crop growth



Agriculture

The term Agriculture is derived from two Latin words **ager** or **agri** meaning **soil** and **cultura** meaning **cultivation**. Agriculture is an applied science which encompasses all aspects of crop production including horticulture, livestock rearing, fisheries, forestry, etc.

Agriculture is defined as an art, science and business of producing crops and livestock for economic purposes.

AGRICULTURE is defined in the Agriculture act (1947), as including ‘horticulture, fruit growing, seed growing, dairy farming and livestock breeding and keeping, the use of land as grazing land, meadow land, osier land, market gardens and nursery grounds, and the use of land for woodlands where that use ancillary to the farming of land for Agricultural purposes”.



SCOPE AND IMPORTANCE OF AGRICULTURE IN INDIA AND TAMILNADU

- With a 16% contribution to the gross domestic product (GDP), agriculture still provides livelihood support to about two-thirds of country's population.
- The sector provides employment to 58% of country's work force and is the single largest private sector occupation.
- Agriculture accounts for about 15% of the total export earnings and provides raw material to a large number of Industries (textiles, silk, sugar, rice, flour mills, milk products).
- Rural areas are the biggest markets for low-priced and middle-priced consumer goods, including consumer durables and rural domestic savings are an important source of resource mobilization.
- The agriculture sector acts as a wall in maintaining food security and in the process, national security as well.
- The allied sectors like horticulture, animal husbandry, dairy and fisheries, have an important role in improving the overall economic conditions and health and nutrition of the rural masses.
- To maintain the ecological balance, there is need for sustainable and balanced development of agriculture and allied sectors.



REVOLUTIONS IN AGRICULTURE

- Through white revolution, milk production quadrupled from 17 million tonnes at independence to 108.5 million tonnes.
- Through blue revolution, fish production rose from 0.75 million tonnes to nearly 7.6 million tonnes during the last five decades.
- Through yellow revolution oil seed production increased 5 times (from 5 million tonnes to 25 million tonnes) since independence.
- Similarly, the egg production increased from 2 billion at independence to 28 billion, sugarcane production from 57 million tonnes to 282 million tonnes, cotton production from 3 million bales to 32 million bales which shows our sign of progress.
- India is the largest producer of fruits in the world. India is the second largest producer of milk and vegetable.



BRANCHES OF AGRICULTURE

1. Agronomy
2. Horticulture
3. Forestry
4. Animal husbandry
5. Fishery science
6. Agricultural Engineering and
7. Home science



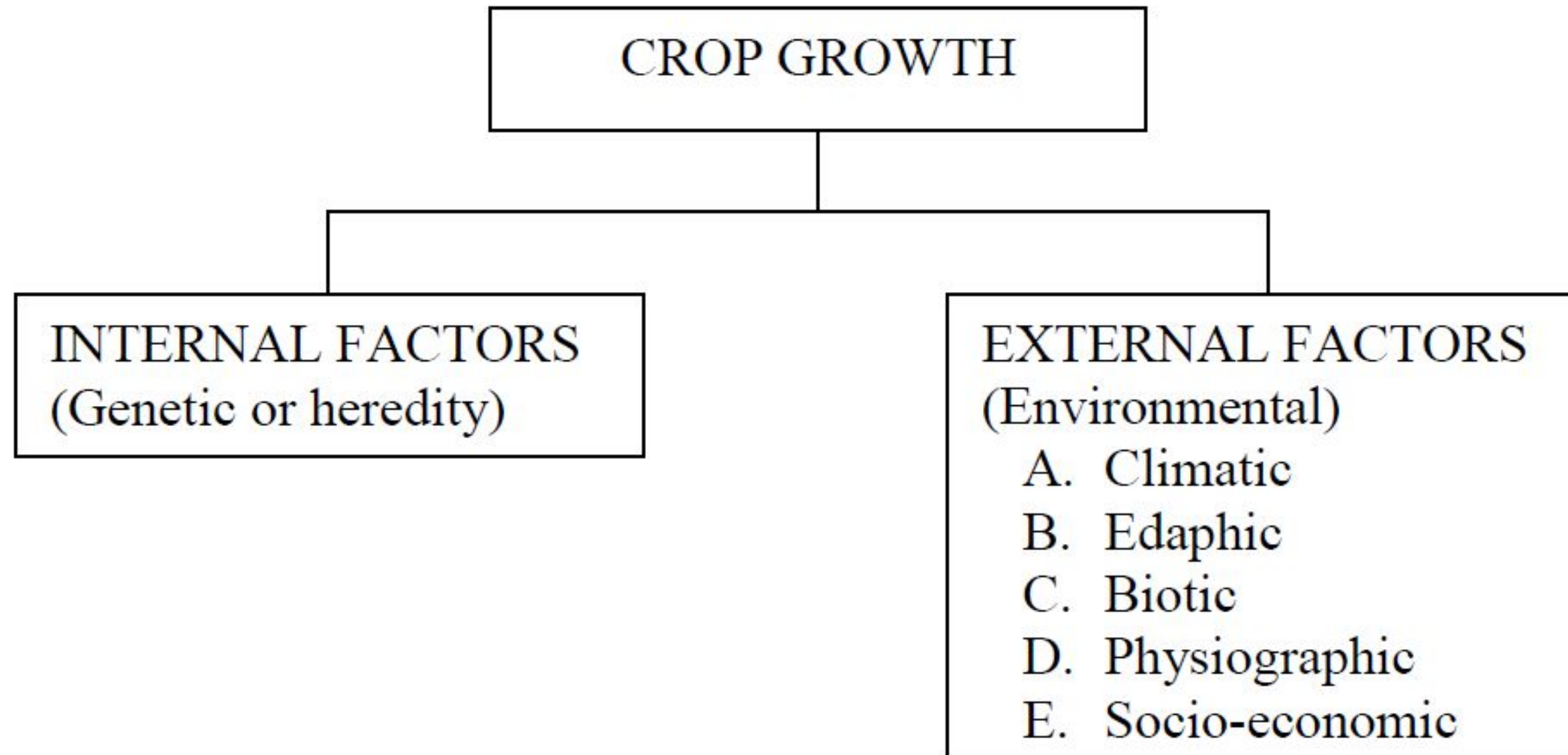
Agronomy

Deals with the production of various crops which includes food crops, fodder crops, fiber crops, sugar, oilseeds, etc. The aim is to have better food production and how to control the diseases.

Agronomy is derived from a Greek word '**agros**' meaning 'field' and '**nomos**' meaning 'management'. Principles of agronomy deal with scientific facts in relations to environment in which crop are produced.



Factors affecting crop production





I. Internal factors

Genetic factors

The increase in crop yields and other desirable characters are related to Genetic make up of plants.

- High yielding ability
- Early maturity
- Resistance to lodging
- Drought flood and salinity tolerance
- Tolerance to insect pests and diseases
- Chemical composition of grains (oil content, protein content)
- Quality of grains (fineness, coarseness)
- Quality of straw (sweetness, juiciness)

The above characters are less influenced by environmental factors since they are governed by genetic make-up of crop.



2. External factors

- A. Climatic
- B. Edaphic
- C. Biotic
- D. Phsiographic
- E. Socio-economic



A. CLIMATIC FACTORS

Nearly 50 % of yield is attributed to the influence of climatic factors. The following are the atmospheric weather variables which influences the crop production.

1. Precipitation
2. Temperature
3. Atmospheric humidity
4. Solar radiation
5. Wind velocity
6. Atmospheric gases



B. EDAPHIC FACTORS (soil)

Plants grown in land completely depend on soil on which they grow.

The soil factors that affect crop growth are

1. Soil moisture
2. Soil air
3. Soil temperature
4. Soil mineral matter
5. Soil organic matter
6. Soil organisms
7. Soil reactions



THANK YOU