

JOB ROLE – FLORICULTURIST (PROTECTED CULTIVATION)

Sector – Agriculture

(Qualification Pack Code: AGR/Q0702)



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UNIT 2: TYPES OF PROTECTED STRUCTURES AND THEIR COMPONENTS

Session 2 & 3: Classification of Greenhouse and Their Components

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Session Objectives

The student will be able to

- Explain classification of greenhouse
- Describe components of greenhouses
- Describe greenhouse Accessories

Introduction

Greenhouses can be classified according to the material used in their construction, the shape of their structure and the climate control methods adopted. Their classification is sometimes done on the basis of the cost of fabrication per unit area.

A greenhouse is constructed with different material and their components. The major components used in greenhouse construction are cladding material, gutter, foundation pipe, structural members, micro irrigation system and fertigation system.

Classification of Greenhouses

Greenhouse can be classified according to cost, shape, materials, climate control etc.

A. According to Cost:

- Low cost greenhouse - Rs. 450-620/ m²
- Medium cost greenhouse - Rs. 900-1000/m²
- High cost greenhouse - Rs. 1500-2500/m²



Low cost greenhouse



Medium cost greenhouse



High cost greenhouse

Classification of Greenhouses

B. According to Shape:

- Gothic roof type greenhouse
- Slant roof type greenhouse
- Saw tooth roof type greenhouse
- Flat roof type greenhouse

A. Gothic roof type greenhouse



B. Slant roof type greenhouse



C. Saw tooth roof type greenhouse



D. Flat roof type greenhouse



Classification of Greenhouses

C. According to Cladding Material:

- Transparent glass
- Fibre glass or polycarbonate
- Polyethylene film

Classification of Greenhouses

D. According to Mechanism

- Naturally ventilated greenhouse
- Forced ventilated greenhouse

Component of Greenhouse

Cladding Material

- Materials that is used to cover the protected structure is called cladding material and it could be polythene film polythene film
- Polythene films are generally UV stabilized and are in 3-5 layers, having 200 micron thickness., with about 80 per cent diffusivity.

Component of Greenhouse

Gutter

- Used for collecting rainwater from the roof of the greenhouse/polyhouse
- Minimum slope of gutter is require about 1 per cent
- Orientation of gutter is in North-South direction and in multi-span greenhouse it may be change according to the wind direction
- Generally made of galvanized iron sheet of 2mm thickness

Component of Greenhouse

Foundation Pipe

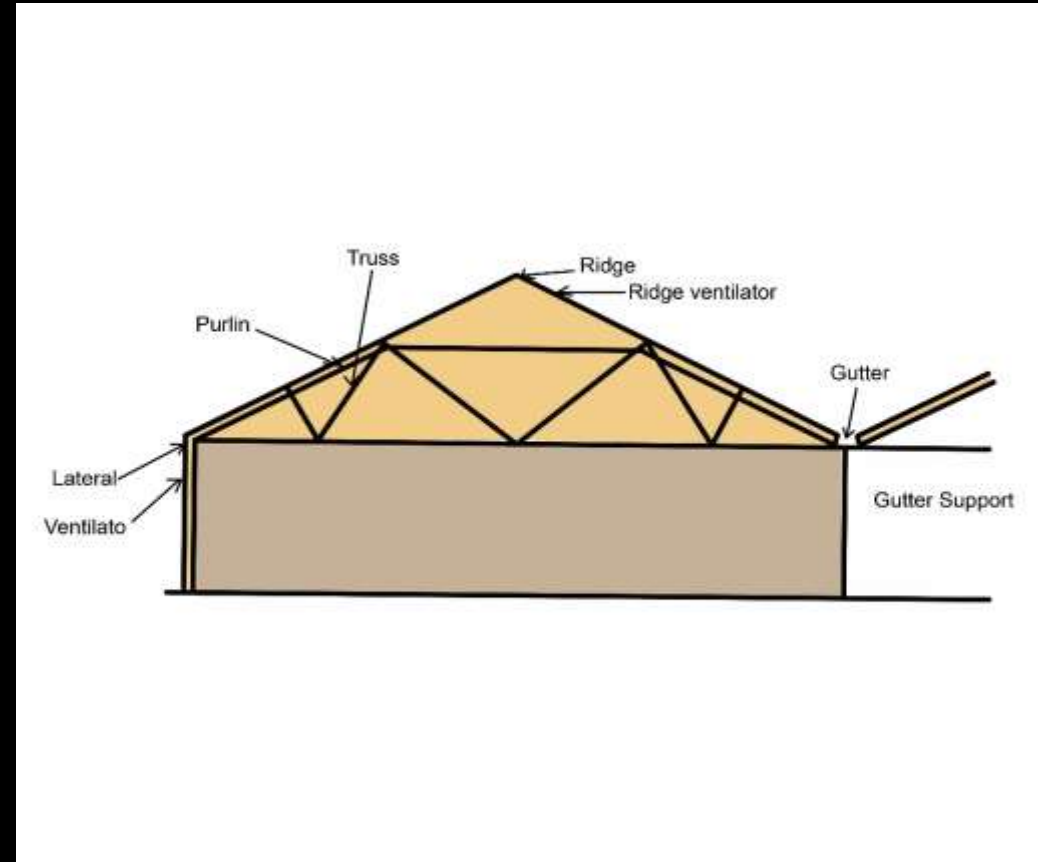
- Its connects the structure and ground

Component of Greenhouse

Structural Members

Purlin- Member that connect cladding material

Truss- Helps in supporting the weight of the greenhouse roof



- **Ridge**- Highest horizontal section on top of the roof
- **Ridge ventilator**- Helps in the ventilation of ridge **Curtain rods**
- All the structural members are made of hot dipped galvanized iron of different diameter.

Greenhouse Accessories

- Exhaust fan and cooling system- It helps in cooling of greenhouses
- Spraying system- Used for spraying chemical to control insect-pest and diseases
- Sensor and control system- Used for controlling the climatic parameters

- **Micro irrigation system-** Irrigation is done by drippers, sprinklers, foggers and by other emitters
- **Fertigation system-** Application of fertilisers through the irrigation water

These accessories/devices helps in maintaining need based microclimate and nutrients those are required to the crop under greenhouse conditions.

Summary

In this session you have learnt about the different types of classification of greenhouse and components of greenhouses

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