Cost involved in Polyhouse construction

The cost involved in Polyhouse construction depends on the type of polyhouse

1)Low cost polyhouse without exhaust fan systems and cooling pads- Rs 400 to Rs 500/sq.m

2)Medium cost polyhouse with cooling pads and exhaust fan systems-Rs 900 to Rs 1200/sq.m

3)High cost polyhouse with a fully automatic control system-Rs 2500 to Rs 4000/sq.m.

Planning and designing of low cost polyhouse

1)A greenhouse should be designed to withstand the load of the covering material, other structural components, wind velocity, intensity of rain, hanging-weights included in the polyhouse etc.

2)Adequate quantity of sunlight for crop production is required. The structure should require minimum energy to maintain the desired crop microclimate

3)Local climate conditions and locally available materials must be taken into account to arrive at the most appropriate greenhouse design. Therefore, the structure is location specific and crop specific

Orientation

Orientation of the polyhouse could be in any direction when they are in single spans. Multi span greenhouses/polyhouses should be oriented in north-south

direction only, to avoid continuous shading of certain portions of polyhouse by its structural members.

Technical specifications for polyhouse

***1)Size*:** Size can vary depending upon the necessity. Normally the length of the polyhouse is 25-30 feet and 4-5feet.The direction of polyhouse is always east to west so that maximum sunshine is available

***2) Design*:** Naturally ventilated galvanised tubular structure

***3) Central height*:** A central height of 6m with top ventilation should be provided to manage the temperature

***4) Foundation*:** The footing of foundation should rest on undisturbed soil at a depth of about 0.5m and a diameter of 0.4m below the ground surface. Foundations have to be provided to all the poles

***5) Ventilation*:** Very good ventilation is important for the production of quality vegetables throughout the year. The area of ventilation openings should be more than 20% related to floor area of the polyhouse. The air exchange rate should be 50-60 times the polyhouse volume per hour. The plastic film is fixed at the gutter and rolled up on a pipe.It is very important to fix the film exactly on the horizontal pipe at the beginning so that pipe remains horizontal during operation. The horizontal pipe with the film has to fit tightly and must not move away from the construction by wind forces

***6) Structural frame*:** G.I.pipes angle iron should have different load bearing capacities and should remain sound. The structure should withstand a wind velocity of 100 to 110 km/hr. All G.I.pipes should be ISI marked hard dip galvanized 2.0mm thick.

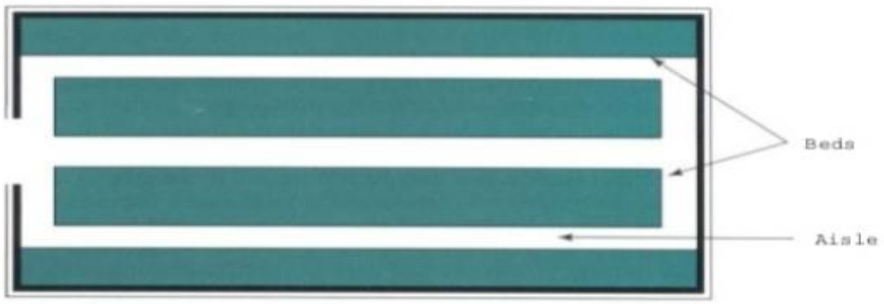
***7) Cladding material*:** Layered UV stabilized polyethylene film with a thickness of 800 gauge and 200 microns

***8) Shade net*:** Plastic woven net with 50% shade percentage. The shade net has to be supported with GI wire of 2mm thickness and the net should be foldable to one side

***9) Insect net*:** Plastic net (60 mesh) will be provided under the curtains (permanently fixed)

***10)Irrigation system*:** Micro irrigation systems like drip has to be installed from reputed firms as per specifications.

Establishment of Low Cost Polyhouse



Longitudinal layout of polyhouse beds