

Green House and Poly House Technology: Raising Trend in Commercial Agriculture

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Introduction

In India, poly-house farming is steadily gaining prominence. Poly-house farming can be very profitable for a farmer. However, many people are unaware about polyhouses or greenhouses, so they can learn about poly-houses and their advantages from this article.

What is a poly-house?

A poly-house, also known as a greenhouse, is a building or device consisting of transparent materials such as glass or polyethylene in which plants grow and evolve under controlled environmental conditions.

The size of the structure will range from small shacks to large structures, depending on the need. Over everything, a greenhouse is a glass structure whose interiors warm up when exposed to sunlight and the structure prevents greenhouse gas from escaping.

How Greenhouse is differ from Poly-house Farming

Poly-house is a kind of greenhouse or, to put it another way, a smaller version of a greenhouse with a polyethylene cover. Poly-house farming is a common greenhouse technology in developing countries like India because of its low construction costs and ease of maintenance. Another greenhouse invention that uses wood as a cover is the lath building. Poly house is cheaper as compared to greenhouse but the later is more long-lasting than poly-house.

Crops grown in Poly-house

- Fruits that can be grown are Papaya, Strawberry etc.
- Vegetables that can be grown include Cabbage, Bitter Gourd, Capsicum, Radish, Cauliflower, Chili, Coriander, Onion, Spinach, Tomato etc.
- Flowers like Carnation, Gerbera, Marigold, Orchid, and Rose can also be easily grown.

Benefits of Poly-house Farming

Farmers, particularly those who favour organic farming, would benefit greatly from poly-houses. Listed below are a number of the advantages of a poly-house:

- Plants are grown under controlled temperature thus there is less chances of crop loss or damage.
- We can grow crops throughout the year and will not have to wait for any particular season.
- There are less pests and insects in a poly-house.
- External climate will not have any impact of the growth of crops.
- Quality of produce is obviously higher in poly-house.
- Good drainage and aeration.
- Propagation of Ornamental Crops can also be done effortlessly in a poly-house.
- Poly House gives the right environmental facilities to your plants in any season.
- It also increases yield for about 5 to 10 times.
- Less cropping period
- Fertilizer application is easier and is controlled automatically with the help of drip irrigation.

Types of Poly-house

Based on environmental control system, poly-house are of two types:

- Naturally Ventilated Poly-house - This type of poly-house or greenhouse does not have any environmental control system except for sufficient ventilation and fogger system to save the crops from bad weather conditions and natural pests and diseases.
- Environmental Controlled Poly-house - They are constructed primarily to extend the growing period of crops or to increase the off-season yield by controlling the light, temperature, humidity, etc.

What is Greenhouse?

A Greenhouse is a framed structure covered with a transparent material and large enough to grow crops under partial or full controlled environmental conditions to get optimum growth and productivity.

Greenhouse Technology is the technique of providing favorable environment condition to the plants. Of all agricultural production activities, the greenhouse industry is worldwide the



fastest growing sector. The greenhouse is goldmines that offer the most profitable business opportunities.

The use of the greenhouse is mainly for the production of seasonal and non- seasonal crops, for the production of high-quality flower, vegetable and the preparation of nursery prepared by tissue culture. Greenhouses offer many advantages:

Advantages of Greenhouse:

- The yield may be 10-12 times higher than that of outdoor cultivation depending upon the type of greenhouse, type of crop, environmental control facilities.
- Reliability of crop increases under greenhouse cultivation.
- Ideally suited for vegetables and flower crops.
- Year round production of floricultural crops.
- Off-season production of vegetable and fruit crops.
- Disease-free and genetically superior transplants can be produced continuously.
- Efficient utilization of chemicals, pesticides to control pest and diseases.
- Water requirement of crops very limited and easy to control.

To start Greenhouse farming is required heavy expenditure on infrastructure, equipment, labour, a raw material also greenhouse farmer must have technical, economical & marketing knowledge, hence you must finish a training program.

In India, there is various government organization provide, Greenhouse farming (poly-house Farming) training.

Types of Greenhouse:

There are different types of greenhouses available based on construction, shape, material, and ventilation. Each greenhouse has own advantage. Different types of the greenhouse are designed to according to match specific needs. Generally, in India saw tooth Natural ventilated greenhouse is used for cut flower, vegetable production purpose.

A) Greenhouse type based on Shape

1. Saw tooth type Greenhouse
2. Ridge and furrow type greenhouse
3. Uneven span type greenhouse
4. Even span type of greenhouse.

5. Quonset greenhouse.
6. Interlocking ridges greenhouse.
7. Ground to ground greenhouse

B) Greenhouse type based on construction

1. Wooden framed structures – It is a low-cost greenhouse for Vegetable Production.
2. Pipe framed structures

C) Greenhouse type based on covering materials

1. Glass greenhouse
2. plastic greenhouse

D) Greenhouse type based on ventilation**Natural Vent Greenhouse –**

This type of greenhouse is based on natural ventilation and depending on the crops the temperature, humidity, and carbon dioxide gas can be maintained as per the requirement. In this Greenhouse, shade nets are used to prevent insect and bacterial access also for control inside temperature. This type of greenhouse used for the production of cut flower like Gerbera, Dutch rose, , Lily & Vegetable like Tomato, Colour capsicum, Cucumber, Exotic vegetables.

Climate control Greenhouse (Fan & Pad Poly-houses) –

In such a greenhouse, temperature and humidity are controlled by using micro-irrigation techniques. In this type of greenhouse, the internal environment is fully managed. This type of greenhouse mostly uses for Hi-tech Nursery. Consideration For the selection of Green house site:-

1. Soil PH Should be between 5.5 to 6.5 and EC (Volatility) 0.3 to 0.5 mm cm/cm
2. Good water quality is continuously available.
3. The irrigation water samples should be range from PH 5.5 to 7.0 and E.C. 0.1 to 0.3
4. The selected place should be pollution-free.
5. There should be roads for transportation and shipping of goods in the market.
6. The place should be large enough for the upcoming expansion.
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9. The irrigation water samples should be range from PH 5.5 to 7.0 and E.C. 0.1 to 0.3
10. The selected place should be pollution-free.
11. There should be roads for transportation and shipping of goods in the market.
12. The place should be large enough for the upcoming expansion.
13. Workers should be available easily.
14. There should be excellent communication facilities in place.
15. The drainage of the soil should be excellent.

Crops Suitable for Greenhouse Farming

- Because of higher investment cost for establishment of green house hence though we have to choose crops having high commercial value.
- Floriculture crop like all cut flower & vegetable is mostly grown in the greenhouse.

Profitable crops to grow in a greenhouse?

The profitability of greenhouse crop depends upon the various factors such as market, climatic condition, labour, raw material availability.



Apply For Bank Loan

The initial investment in greenhouse farming is enormous. To start Greenhouse farming cost come approximately is 40 Lac- 60 Lac (greenhouse cost per acre)Many banks are interested in providing Horticulture loans to farmers. To get a loan for the greenhouse, you have to Create Greenhouse farming project report with the help of the chartered accountant or any agency and present to the bank for loan officer also this project report is useful for an apply subsidy for the greenhouse.

Steps for creating a project report

1. Introduction about Greenhouse farmer
2. The need for Greenhouse project
3. Technical analysis
4. Economical analysis

List of documents required in the bank

1. Detailed Project Report
2. 8 “A” land Report
3. 7/12 of land Report
4. Estimate of poly-house
5. Blueprint of poly-house
6. Estimate of plants
7. Estimate of Irrigation
8. Soil and water analysis report
9. Buyer’s letter

Bank provide Loan with 12% – 14% interest, for the 5-7 year period and mostly many bank offer EMI (equated monthly instalment) option quarterly or every six months.

Apply for Greenhouse Subsidy

Our Indian government is promoting greenhouse farming they offered a subsidy for greenhouse farming through the horticulture department. The government gives subsidy from 50%-60% to the project cost of the greenhouse. Subsidy percentage varies with the state to state. For subsidy-related information read guideline NHM & NHB website or contact the nearest government agriculture office they guide you. Before applying the subsidy following document required

1. Detailed Project Report
2. Certified Copy of record of rights over the piece of project-land (7/12 of land)
3. loan sanctioned letter issued by the bank with complete terms & condition

Advantages of green-house:

- The yield may be 10-12 times higher than that of outdoor cultivation depending upon the type of greenhouse, type of crop, environmental control facilities
- Reliability of crop increases under greenhouse cultivation
- Ideally suited for vegetables and flower crops
- Year round production of floricultural crops
- Off-season production of vegetable and fruit crops
- Disease-free and genetically superior transplants can be produced continuously
- Efficient utilisation of chemicals, pesticides to control pest and diseases
- Water requirement of crops very limited and easy to control
- Maintenance of stock plants, cultivating grafted plant-lets and micro propagated plant-lets
- Hardening of tissue cultured plants
- Production of quality produce free of blemishes
- Most useful in monitoring and controlling the instability of various ecological system
- Modern techniques of Hydroponic (Soil less culture), Aeroponics and Nutrient film techniques are possible only under greenhouse cultivation.

Conclusion

When opposed to open-field farming, it is estimated that yields in poly-house or greenhouse farming can be improved by 4-8 times. As a consequence, rather than living in open fields, farmers should consider constructing a poly-house. Owing to a lack of financial security, many farmers are now switching to other occupations. Farmers face a huge threat as a result of climate change. In India, conventional farming is used by more than 95% of farmers. We must follow new farming methods such as greenhouse farming (poly-house farming) and hydroponic farming if we want to make more money from agriculture. In India, we import many fruits, vegetables, and flower from other countries and pay them very good money. If we grow this flower vegetable & fruit in our country with the help of modern



techniques, we can earn an outstanding amount of money, so I say this modern technique like greenhouse farming will improve the living standard of our Indian farmer.

