



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

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A poly house is the most demanding kind of greenhouse with a structure made up of galvanized iron structure with covering material of UV stabilized poly film. This structure utilizes the feature of controlled climatic conditions for the proper growth of the plants in different seasons. The size of a poly house varies from small-sized houses to industrial-sized buildings to cater to the additional poly house farming requirements based on the needs and resources, so they can learn about poly-houses and their advantages from this article.

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.

Benefits of Poly-house Farming

Farmers, particularly those who favor 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



Types of Poly-house

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

- Naturally Ventilated Poly-house - These polyhouses do not contain any environment controlling systems. To save plants from bad climate the only available option is to maintain adequate ventilation. This process can save plants from insect pests and pathogens.
- 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?

The word greenhouse can be used interchangeably with the terms glasshouse and hothouse, depending on the building's material and heating system. A greenhouse is a structure that allows people to regulate climatic conditions, such as temperature and humidity. There are many different designs of greenhouses; however, in general these buildings include large areas of transparent material to capture the light and heat of the sun. 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.
- Good distribution of light inside the greenhouse. The greenhouse covers have the ability to change the direction of the sun's rays, thus evenly distributed over the entire surface, benefiting the entire greenhouse and avoiding the sun's rays directly to the plant.
- Energy efficiency. Takes advantage of the environmental conditions, such as optimizing the heat inside the greenhouse.
- Control of microclimate. One of the main advantages of a greenhouse is to control and establish the optimal environment for cultivation. You can adjust the temperature, humidity, lighting, etc.
- Protection against diseases, pests and other vermin. Another advantage of a greenhouse is that it is very difficult to enter as it is a closed space.
- Excellent ventilation. You can ventilate the greenhouse quickly, thanks to their zenithal or side windows.
- Optimum sealing against rain and air.
- Increased production. This is a great advantage of a greenhouse, can intensify production due to weather conditions, can accelerate the growth of the plants and also allows a greater amount of crops on the surface.
- Production off-season. Thanks to the environmental control the greenhouse can produce off-season, therefore we will have a better sale price and a continuous supply of the product.
- Production in regions with adverse weather conditions.
- Ability to grow all the year. You can get more than one crop cycle per year and different species of plants.
- Optimizes the use of other technologies to facilitate the management of climate (heating, humidification, shade screens or saving energy, etc.)

To start Greenhouse farming is required heavy expenditure on infrastructure, equipment, labor, 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, Color 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 Greenhouse site:-

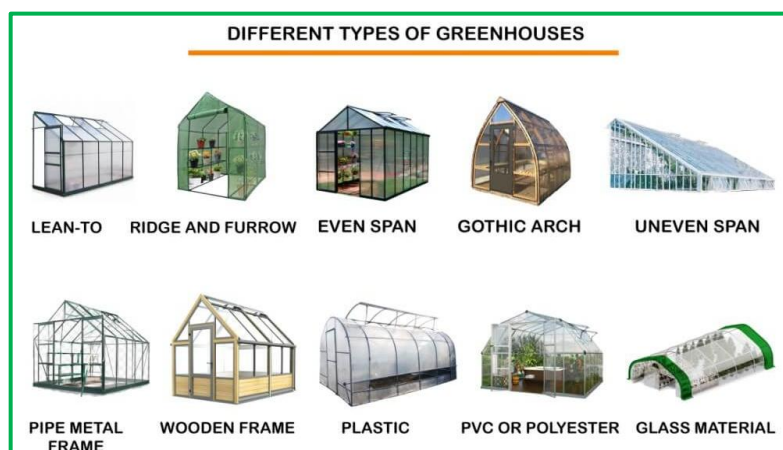
1. Soil PH should be between 5.5 to 6.5 and EC (Volatility) 0.3 to 0.5 mm cm/cm
2. Good water quality is continuously available.
3. The irrigation water samples should be range from PH 5.5 to 7.0 and E.C. 0.1 to 0.3
4. The selected place should be pollution-free.
5. Soil PH should be between 5.5 to 6.5 and EC (Volatility) 0.3 to 0.5 mm cm/cm8. Good water quality is continuously available.
6. There should be excellent communication facilities in place.
7. The drainage of the soil should be excellent.

Poly-house Crops

There are several types of vegetable and fruit crops and ornamental plants which can be grown in poly-house. A list of poly-house agriculture crops is given below:

Vegetable Crops

1. Cucumber.
2. Carrots
3. Tomatoes
4. Eggplants (Brinjal)



5. Green beans
6. Broccoli
7. Spinach etc.

Fruit Crops and Ornamental Plants

1. Raspberries
2. Peaches
3. Citrus fruits
4. Gerbera
5. Rose
6. Jasmine



Additional Uses of Polyhouse Agriculture

- Nursery development – to grow plant seedlings
- Cultivation of ornamental plants
- To develop hybrid seeds

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

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

Conclusion

Polyhouse farming is an economical system to improve crop yield and improve the efficiency of traditional agricultural practices. As we know that outdoor crops are more vulnerable to rapid climate change, pathogens, and insect pests. By polyhouse agriculture, we can control the influence of the changing environment and increasing diseases. 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.