

Off Season Vegetable Cultivation in Poly-House – A Possible Approach to Doubling Farmers Income

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Introduction

Particularly for small farmers, the cultivation of off-season vegetable nurseries under a protected structure has become a productive business. In order to grow early crops in safe conditions or open field conditions, the key goal of growing nursery plants in protected systems is to achieve higher benefit and disease-free seedlings in the off-season. The low cost Poly-house is cost-effective for small and marginal farmers who are unable to afford high-tech poly housing costs. During winter the temperature inside the Poly-house is 6-10°C higher than outside. During the winter season (December to February), the cold waves do not reach the Poly-house within and the inside atmosphere is conducive for rapid seed germination and seedling growth. Often times, during the main season, farmers grow a decent volume of cucumber, capsicum and tomatoes, which inevitably contributes to supply surplus and price declines. In the other hand, in open conditions, it is difficult to cultivate high-value vegetables such as tomato, capsicum, cucumber, gherkin, etc. due to weather extremes during winter. Poly-house technology has therefore been developed for the off-season production of vegetable nurseries and for the growing of high-value vegetables.

In northern India tomato, capsicum, cucurbits, French bean, amaranth, etc which are extremely difficult to cultivate in open field conditions during the winter season, but different types of covered systems have been built to continuously grow certain high-value crops by providing protection from excessive cold. This is known as Poly-house technology which gives the plants favorable environmental conditions. Instead, it is used to protect plants from unfavorable environmental conditions like wind, cold, rainfall, excessive sunlight, high temperatures, insects, and diseases. Creating an optimal micro environment around the plants

is therefore of critical importance. This is possible by the erection of a Poly-house/glass house, where the environmental conditions are changed in such a way that any plant can be grown anytime at any time by having adequate environmental conditions. Protected cultivation in high cost vegetable crops can be developed as a small scale industry in major vegetable producing areas of our country by progressive farmers particularly in peri-urban areas.

Type of Poly-House

Based on environment controlled system Poly-houses are 2 types-

1. **Naturally ventilated Poly-house-** There is no environmental protection system for this sort of Poly-house for adequate ventilation and fogger system to save the crop from bad weather conditions and natural pests and diseases.
2. **Environment 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.

Cost to Set a Poly-House

For setting a poly-house it costs approximately Rs. 750 to 1000 per square meter. The range will defer because of some factor like place, size, shape, material, structure etc. As a supporting material we can use bamboo, wood, metal pipes etc. The metal pipes and other steel have long lasting durability as compared to other materials. While setting and maintaining a Poly-house is expensive, if we use it in a proper way, we can get the benefit on a large scale. By granting 25 to 50 percent of subsidy to set up a Poly-house, the government promotes Poly-house farming.

Government Subsidies on Poly-House

- The Government agricultural departments provide subsidy up to 50%-60% of the project cost of the Poly-house. The subsidy percentage varies with the state to state.
- The National Horticulture Board (NHB) is an Indian Government Organization that provides % subsidy at a project expense of a nominal ceiling of 112 lakhs per farmer/recipient.
- Consequently, Gujarat Agro Industries Corporation (GAIC) provides an additional subsidy of 6 percent to a maximum ceiling of 4 lakhs on bank loan interest.

- The National Horticulture Mission (NHM), which is a government mission program that offers an overall ceiling subsidy of 50% of the project expense of 36 lakhs. In addition, every state has its own State Horticulture Mission (SHM) scheme, where the 50 percent provided by NHM can be provided with a top-up subsidy of 15 percent-25% or more depending on state government policy.
- Farmer/ Entrepreneur can avail any one of these subsidies under one beneficiary name, whichever is suitable to him or her.

Benefits of Poly-House Farming

Poly-house is very advantageous for those small and marginal farmers those actually need to grow economically. Some benefits are :

1. Farmers can grow their crop throughout the year; they will not have to wait for any particular season.
2. All types of high value vegetables are possible to grow under Poly-house condition.
3. Short duration crops gives more benefits which is easily grow under Poly-house condition.
4. Less attack or insect and pest in Poly-house.
5. Plant grows under the controlled temperature so there are less chances of crop damage or loss.
6. There is good drainage and aeration.
7. Quality of crop is much higher in Poly-house.
8. External climate will not have any effect on crop growth.
9. It also increases yield up to 5 to 10 times.

Conclusion

Overall it has been estimated that the yield of crops under the Poly-house farming can be achieved at a higher level. Price of off season produce is much better than on season. Nowadays all types of vegetables are demanding in hotels and restaurants so farmers can contact directly to those hotels and restaurants and get more benefits. It is about 4 to 8 times more as compared to open field. So that famers must think for setting up a Poly-house rather than growing in open field to increase their income. We can expect large scale of profit in short period of time from poly-house .Small and marginal farmer can do poly house farming because government provide 25 to 50 percentage of subsidy foe setting up a Poly-house.