

## Protected Farming

**Vivek Thakur**

B.Sc. (Hons.) Agriculture Lovely Professional University

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### **Introduction:**

The protected cultivation aims to modify the micro climate of the plants by selective control of atmosphere for the protection of the crops from organic phenomenon and abiotic stress for healthy and safe crop production, notably all around the year together with the off season. Greenhouses allow qualitative and quantitative production of ornamental crops of high value particularly throughout the off season for getting better prices which is not attainable through open field cultivation. This is mostly useful in cold areas with chill factors and large amounts of snowfall.

Different types of protected structures are adopted for off-season and around the year cultivation of flowers and ornamental / decorative crops. Mostly used protected structures are - low tunnels, walk- in tunnels, green houses, net houses and mist chambers. These structures vary in different attributes like shape, height, size and design.

Protected Cultivation technology is a very new technology for our country. The total area which is covered under protected cultivation in our country is approx thirty thousand hectares. There has been very good development in this area in the last five years. The leading states of India in the area of protected cultivation are Maharashtra, Karnataka, Himachal Pradesh, and North-eastern states, Uttarakhand, Tamil Nadu and Punjab. The major crops that are grown in the protected cultivation are tomato, capsicum, cucumber, melons, rose, gerbera etc. Nursery grown in protected cultivation is becoming a very popular venture for income and employment generation.

Farmers are utilizing low and medium cost greenhouses for raising potted plants and seedlings in the nursery. In the Northern Gangetic plains like Punjab, Haryana and Uttar Pradesh, this technology is being used by farmers to raise healthy seedlings of high yielding crop varieties in such a way that they can be transplanted early in the fields during the onset of the spring season so as to capture the early markets and thus get higher returns. In the North Eastern states, especially in Assam, efforts are being made to raise vegetable crops in

the greenhouse-cum-Rain Shelter like Structures during the long south west monsoon periods. The results that are obtained in this regard from the concerned agricultural universities are encouraging.

### **Benefits of Protected Cultivation:**

Different benefits that can be derived from the protected cultivation are as follows:

- Environment control allows raising of plants anywhere in the world at any time of the year i.e.crops could be grown under the inclement climatic conditions when it would not be possible to grow crops under the open field conditions.
- The crop yields are at maximum level per unit area, per unit volume and per unit input basis.
- The control of the microcosm allows the production of higher quality products which are resistant from insect attack, pathogens and even chemical residue.
- High value and high quality crops can be grown for export markets.
- Income from the small and marginal land holdings that are being maintained by the farmer can be increased by producing crops that are meant for the export markets.
- It can be used to generate self employment for the educated rural youth in the farming sector.
- Research that has been done at various locations by the SAUs, PFDCs, ICAR institutions, DRDO and other organizations have confirmed that there is a large scope of utilizing the protected cultivation technology for growing many vegetables, flowers and fruit crops in different parts of the country. The studies conducted by DRDO have proved that even in high altitude areas of Leh and arctic deserts, green house cultivation can assure a fresh supply of vegetables.

### **Conclusion**

The protected cultivation of high value crops is becoming irreplaceable both from an economic and environmental point of view. It offers different advantages to grow high value crops with an improved quality even under unfavourable and marginal environments. However, because of high training needs of the greenhouse cultivators and some poor quality produce with pesticide residues has become a matter of great concern. These issues can easily be addressed by integrating different production and protection practices including location-specific designing and construction of the polyhouses for effective input use. Creating



awareness among the greenhouse cultivators for judicious use of pesticides for safe production can be instrumental in providing quality products without polluting the environment.

