



Protected cultivation for peri-urban areas: An investment for 21st century

Sachin Tyagi¹, A.H. Nanher², Subodh Kumar Nishad¹, Brajesh Nandan¹, Vikash Kumar¹, Kanchan Bhamini¹ and Shamim Akhtar Shamim³

¹Department of Horticulture (Fruit and Fruit Technology), Bihar Agricultural University, Sabour, BHAGALPUR (BIHAR) INDIA (Email: sachinhort90@gmail.com)

²Department of Agronomy, Bihar Agricultural University, Sabour, BHAGALPUR (BIHAR) INDIA

³Department of Agronomy, Assam Agricultural University, JORHAT (ASSAM) INDIA

Peri-urban areas means areas which located near the city or urban and this technology is most suited in peri-urban areas, because urban areas has high demand of horticultural product with

optimum market value. So, continuous supply and transport is easy from peri-urban areas to urban areas. Protected cultivation is a potential approach to increase the horticultural production.

The production of horticultural crops under protected conditions involves protection mainly from adverse environmental conditions at different production stages. Protected conditions can be from conventional devices too computerizing environment controlled greenhouse.

The protected crop production were in use several centuries ago in northern Europe and structures of stone and glass were being used in early 17th century. The commercial cultivation of cut flowers and ornamental plants in glasshouse commenced in 18th century. In India, greenhouse were first introduced in 1960's for only research purpose but commercial cultivation of green house started in 1988. Protected cultivation is advanced

Protected cultivation is advanced technology of 21st century and provides congenial environment to grow off season fruits, vegetables and flowers. The several types of protected structures are made according to their environmental situation where we establish the protected cultivation. It has been developed first in China. It is most suitable business for marginal farmers and unemployed youths. Protected cultivation of horticultural crops produces better quality, higher productivity, virus free cultivation and good market price to the growers ultimately increasing the economic status of the farmers. Peri-urban areas means areas which located near the city or urban and this technology is most suited in peri-urban, because urban areas has high demand of horticultural product with optimum market value. So, continuous supply and transport is easy from peri-urban areas to urban areas. The increasing demand of growing population can be fulfilled by this technology.



technology of 21st century and provides congenial environment to grow off season fruits, vegetables and flowers. The several types of protected structures are made according to their environmental situation where we establish the protected cultivation. It is most suitable business for marginal farmers and unemployed youths. The protected cultivation has requirement of minimum water and less labour compare to open field cultivation. It increases the income per unit area. Protected cultivation of horticultural crops produces better quality, higher productivity, virus free cultivation and good market price to the growers ultimately increasing the economic status of the farmers.

Emerging challenges for protected cultivation in India : The protected cultivation in India is facing a lot of constraints like the loss of productive soils through urban intrusion, loss of low-cost labour, maintenance of temperature, humidity, light management, fertigation, irrigation system, lack of proper knowledge of harvesting, continuous electricity and water supply, unavailability of

market demand varieties, low risk taking availability, lack of motivation, lack of suitable price policy and lack of created facilities. These challenges effect the progress of protected cultivation in India.

Basic need have protected cultivation: Under protected cultivation the basic need is mulching, continuous electricity and water supply, soil less culture and use of insect proof net houses because it creates micro climate for quality production. Generally, we use various techniques for protected cultivation such as plastic low tunnel, naturally ventilated greenhouses, horticultural production under climate and semi-climate controlled greenhouses which are most useful and popular for profitable cultivation of horticultural crops. Transplant production of protected crops for early harvest are required basic need of peat pellets, peat blocks, peat pots or cellular trays. It also required skill labour and staff.

How success can protected cultivation: Major research activities on low cost protected cultivation should be launched by ICAR and SAUs. The protected cultivation in India can be improve by using demonstration, training, awareness, survey, workshop, seminar any other extension program. So promote protected cultivation technologies to disseminate technical specs on protected cultivation, there is a need to organize national level technology specific seminars, workshops demonstrations, training, awareness and other extension programme. The Literatures, Agri-events, radio/TV programme, staff HRD programme also promotes. Hence, specific databases and web links providing useful knowledge related to protected would need to be put in public domain via internet. Therefore, by ICAR, KVK, SAUs, Department of Horticulture/Agriculture should conduct vocational training, skill development programme, demonstration in peri-urban areas for farmers and youth.

Opportunities:

Productivity improvement : Under protected cultivation of horticultural crop by way of quality germplasm, planting material and water use efficiency and use of technologies increased the production per unit area.

Production of quality material : The green houses technology most use ful for the production of healthy and disease free planting material. It is a basic need of horticultural production.

Aeroponics seed production : Plants are grown in troughs, tubes or other type of chambers and roots are

hung in air sprayed with nutrient mist. So, it easily absorb nutrients and oxygen. This techniques has less chance of root diseases.

Increased availability for processing : This technology maintain the continuous supply and quality of produce through offseason and controlled cultivation. This product has high demand for industrial utilization.

High economic income : Protected cultivation of horticultural crops produces better quality which have high market price to the growers ultimately increasing the economic income and status of the farmers.

Create employment generation : Protected cultivation is a good option for unemployed youth in horticulture.

Increased exports of horticultural crops : This technology produce the product superior in quality which has good export value.

Green industry : The profitable use of nursery, greenhouse and landscape for businesses is refers as green industry. This industry is most useful for urban areas which has good and high demand of ornamental plants, flower plants,

bonsai etc. for decoration purpose. So, uses of green industry for cultivation of ornamental material in peri – urban areas is a profitable business.

Conclusion : Protected cultivation is beneficial for producing quality produce for export and demand country. The protected cultivation in India can be improve by using

demonstration, training, awareness, survey, workshop, seminar and another extension programme. The increasing demand of growing population can be fulfilled by this technology.

References:

- Anonymous (2013). Strategic Plan 2013-2019. Department of Horticulture, Virginia Tech Invert the future.
- Mishra, G.P., Singh, N., Kumar, H. and Singh, S.B. (2010).** Protected cultivation for food and nutritional security at Ladakh Defence. *Sci. J.*, **61**(2) : 219-225.
- Nair, Reena and Barche, Swati (2014).** Protected cultivation of vegetables – present status and future prospects in India. *Indian J. Appl. Res.*, **6** (4): 245-247.
- Sharma, Vinay and Alam, Afroz (2013).** Current trends and emerging challenges in Horticulture. *J. Hort.*, **1**:1.
- Sirohi, P.S. and Bahera, T.K. (2000).** Protected cultivation and seed production in vegetables. *Indian Hort.*, **45**: 23-25.

Received : 04.02.2015

Revised : 28.04.2015

Accepted : 13.05.2015