

## Off-Season Cultivation of Vegetables Using Low-Cost Polyhouse for Doubling Farmers Income

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### ABSTRACT

The topography of Arunachal Pradesh is mainly hilly. In this state, the production and productivity of vegetable crops is very low due to diverse climatic constraints like high rainfall during rainy season and the low temperature during winter season (November to February) and poor in soil nutrient content further puts limitations over year round cultivation of vegetables. Protected cultivation through low-cost polyhouse provides the appropriate alternative to modify the effect of the above factors as per the requirement of crops to realize its maximum potential. It is rather used to protect the plants from the adverse climatic conditions such as wind, cold, precipitation, excessive radiation, extreme temperature, insects and diseases. This intervention involves the construction of low-cost polyhouse using locally available bamboo and metallic wire for developing the frame. The 75 per cent shade net is used for covering the sidewalls. The UV stabilized film of 200 $\mu$  (800 gauge) is used for covering the roof. The estimated cost of construction of a 100 m<sup>2</sup> size polyhouse varied between Rs. 20,000 to 25,000. Raised beds of 1 m length and 30 cm height and of convenient length are prepared inside the polyhouse by thoroughly mixing soil: FYM in 2:1 ratio. The beds were disinfected with Formalin (20 ml/l water) and covered with black polythene for 2-3 weeks. The ICAR AP centre, Basar distributed 25 low-cost polyhouses to the local tribal farmers of Basar circle under TSP project. These farmers are now taking year round production of vegetables like tomato, cucumber, chilly, King-chilly etc. For tomato production, the spacing 60 x 60 cm is followed by farmers accommodating nearly 120 plants in polyhouse of size 10m x 6m. After 3 months, the production is average 3-4 kg tomato per plant amounting total 410  $\pm$  15 kg. If it is sold in local market @ Rs. 50/- per kg, the earning is Rs. 20,500/- from single crop. Likewise, 4 crops of tomato are taken in a year earning Rs. 1,10,000/- in a year as there are good rate in market during off-season. After investing Rs. 27,000/- there is a profit of Rs. 83,000/- (C:B : 1: 3.07). For chilly crop, the spacing of 60cm x 60cm is followed by farmers accommodating nearly 120 plants in polyhouse. After 110 days, there is a production of nearly 385  $\pm$  13 kg fresh green chilly. After selling it in local market @ Rs. 90/- per kg, there is an earning of Rs. 33,300/- from a single crop. Likewise, there is an earning Rs. 1,05,000/- in year from 3 crops. After investment of Rs. 27,000/-, there is a profit of Rs. 78,000/- in a year (C:B : 1: 2.88). Thus, the off-season vegetables cultivation using the low-cost polyhouse is one of the solutions that could increase the production as well as productivity of vegetables crops in this region.

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