

**Designing and Budgeting of a Walk-in Polytunnel to Raise Ornamental Crops in
Ampara District**

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Abstract

Protected agriculture has become one of the fastest growing sectors around the world in producing seasonal and non-seasonal high quality crops. Commonly different types of low-cost protected structures including walk-in tunnels and low tunnels are practiced allowing year-round cultivation of different crops. Major advantage in constructing a walk-in tunnel is workers can easily walk into it and take care of the crops as mentioned in the name itself. Especially dry zone farmers in Sri Lanka find ornamental plant production is difficult (due to unfavorable climatic conditions) and expensive. Hence, they hesitate to practice ornamental crop cultivation. Therefore, in the present study, we suggest designing and budgeting a low-cost walk-in tunnel suitable for ornamental crop production in Ampara district, Sri Lanka. It is a temporary structure made by wooden logs and bamboo sticks and covered with different thickness of polythene materials. A farmer can build this walk-in tunnel for the cost of Rs. 1200-1500 per m² area using a normal framed structure. To minimize walk-in tunnel installation rates, a low-cost protected environment with an area of 50 m² (10 m x 5 m x 3.5 m) was built using locally available pinewood coated with burnt engine oil as structural material and bamboo as framework. The poly grip assembly can be made with wooden strips and nails and the drip system can be installed for around Rs. 15,000. For a naturally ventilated walk in tunnel, gutter construction costs roughly Rs. 600 per m² (including the labor cost). Since the construction of this walk-in tunnel utilizes locally available low cost materials, the cost of construction of the tunnel is 45% lower than a regular tunnel.

Keywords: *Ornamental crops, pinewood, protected agriculture, walk-in tunnel*

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