

## Utkarsh

### Details of appropriate Green House Technology for Indian Region

**Introduction:** High-Tech agriculture, as we understand today, consists of cultivating high value crops in more or less controlled conditions. In technologically advanced countries, use is made of green house in which some of the major climatic factors are controlled, and a system, in which plants are provided with balanced nutrition and adequate water, is given. Several business houses and Indian farmers have installed this system recently.

#### Features of Modern Conventional Green House:

- Such green houses are generally supported by steel structures and cladding of UV stabilized plastic film
- The green house is provided with heating and cooling system or in more sophisticated manner with a thermostatic control, which is manually operated
- Crops are grown on raised beds of soil with proper pH and porosity or some other medium like coconut peat, sand, rice husk, etc
- Water is supplied by means of drip irrigation systems which often serve as carrier of inorganic nutrients soluble in water

#### Economic Aspect of Conventional Green Houses:

- Depending on the level of sophistication, the cost of green houses may vary from Rs. 10 million to Rs. 20 million per hectare
- The interest on capital is about 18% and the depreciation is 20%
- The interest in capital and depreciation, cost of fertilizers, pesticides, seeds, watering energy, labour, packing, transporting, watch and ward, marketing and management overheads add up to annual expenses ranging between Rs. 5 million to Rs. 10 Million per hectare

**Study on needs according to Indian Climate:** The studies show that the green houses in India were constructed according to European design. The green house in Europe is a hot house used to grow crops in winter. In India, under high intensity sunlight, such green houses got so much heated that artificial cooling had to be practiced. The fact is that at least in Indian peninsular region, most of the crops could be grown without artificial cooling or heating throughout the year. Hence, the primary purpose in this region is those of cross winds and CO<sub>2</sub> content in atmosphere around the crops. Thus, what one needs under peninsular region is a structure that would prevent dissipation of CO<sub>2</sub> produced by plants during night and which would also serve as a windbreak. However, other methods of construction of raised beds, drip irrigation needs to be still tackled too.

**Aim/Problem:** High-Tech agriculture practiced in technologically advanced countries is exorbitantly costly. Need is to urgently develop a cheaper technique more suited for Indian conditions by means of locally available materials to its maximum. [Like bamboo, bricks, sand, etc].