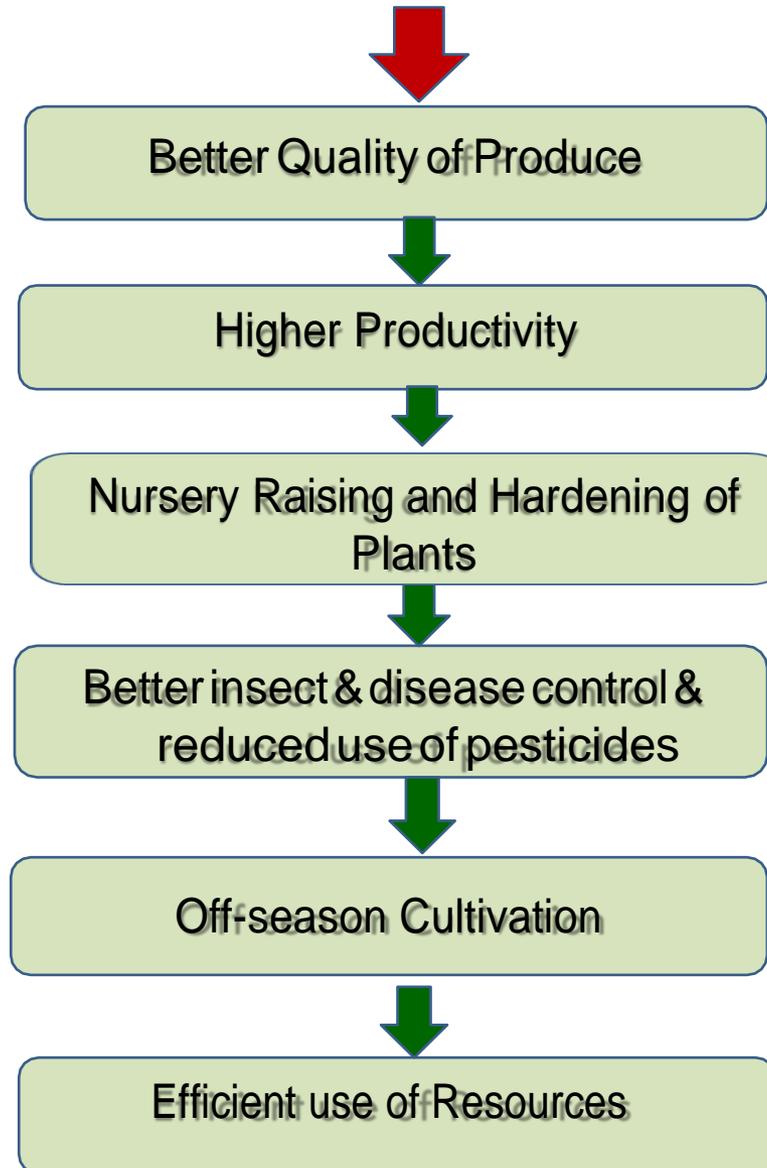


Why Protected Cultivation...



Govt. Initiatives on Protected Cultivation

- Drip Irrigation System
- Sprinkler Irrigation System

- ***Protected Cultivation***

- Greenhouse
- Plastic Tunnel
- Shadenet House
- Walk in Tunnels
- Plant Protection Nets

- ***Surface Cover Cultivation***

- Plastic Mulching
- Soil Solarisation

- ***Water Resource Management***

- Farm Pond & Reservoir lined with Plastic Films

- ***Vermi Bed - Organic Farming***



**Protected Cultivation Offers
Next Generation Agriculture ...**

Protected Cultivation – Greenhouse & Shadenet House

Greenhouse is framed structures covered with UV stabilized plastic films in which crops are grown under partially or controlled environment conditions.

Type of Structures

A. Naturally Ventilated – Tubular, Wooden & Bamboo

B. Fad & Pad System

Shadenet house are considered as one of the major technologies to provide development of healthy grafts/ seedlings & hardening for various horticultural crops irrespective of climatic conditions.

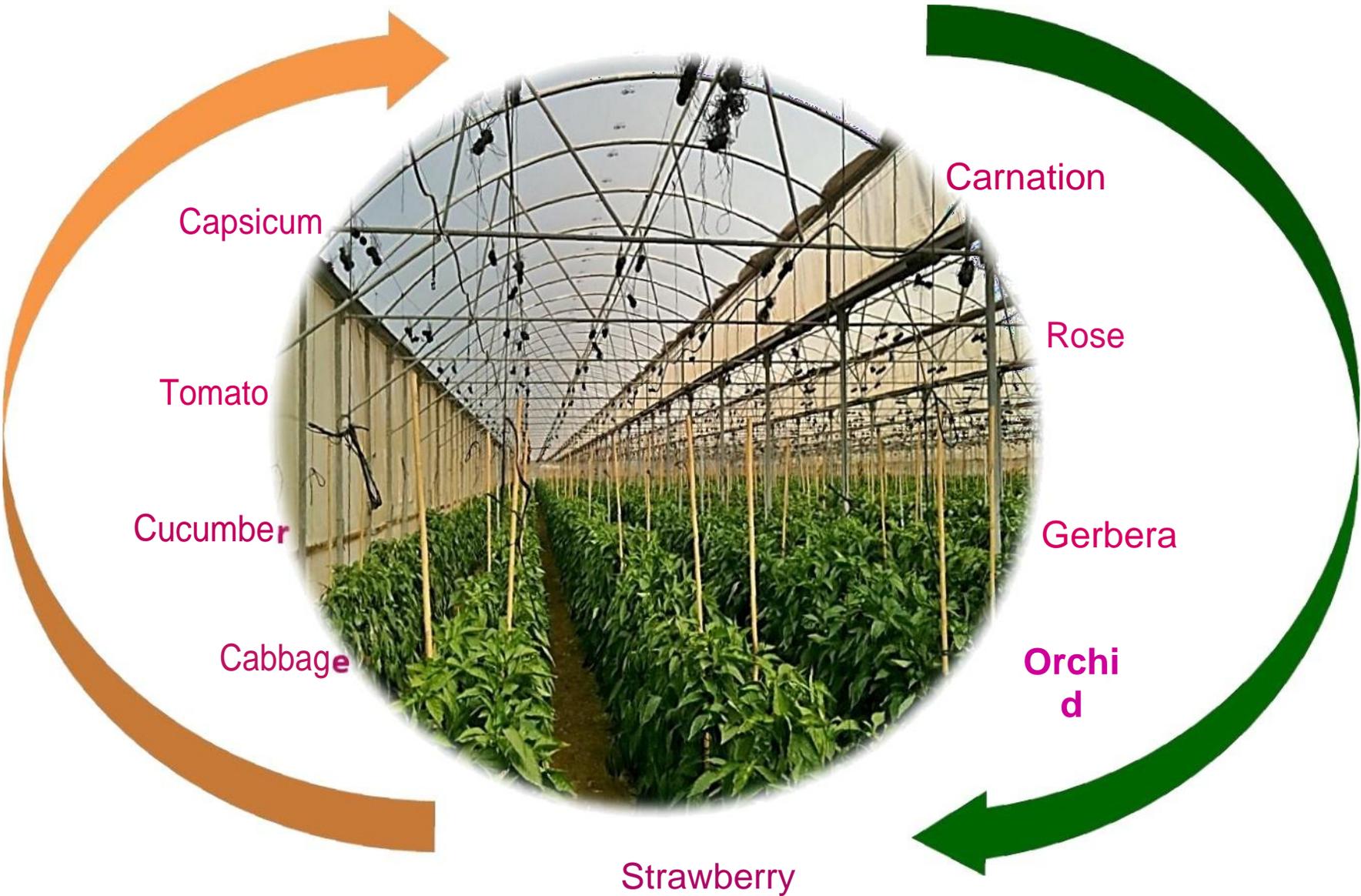


Advantages

- Moderates temperature & humidity.
- Plant propagation is effective.
- Helps to improve quality and quantity of produce.
- Reduces infestation of disease / pests.
- Savings in water & fertilizer requirements as compared to open field cultivation.
- Reduces gestation period of the crop.



Crops covered under Greenhouse



Crops under Shadenet House

Ridge gourd



BoUle gourd



Cucumber



Gerbera



Anthurium



Chilli



Okra



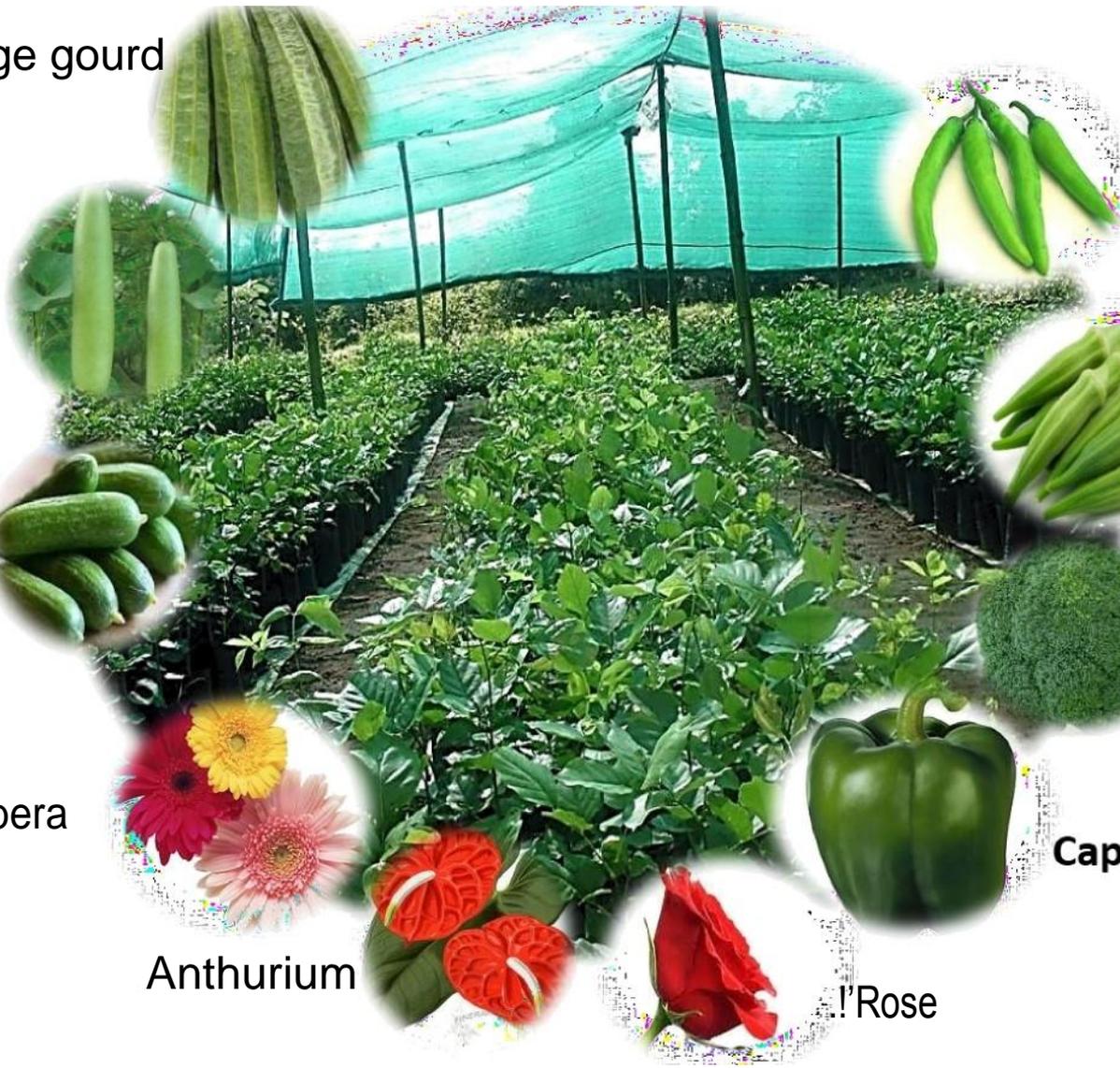
Broccoli



Capsicum

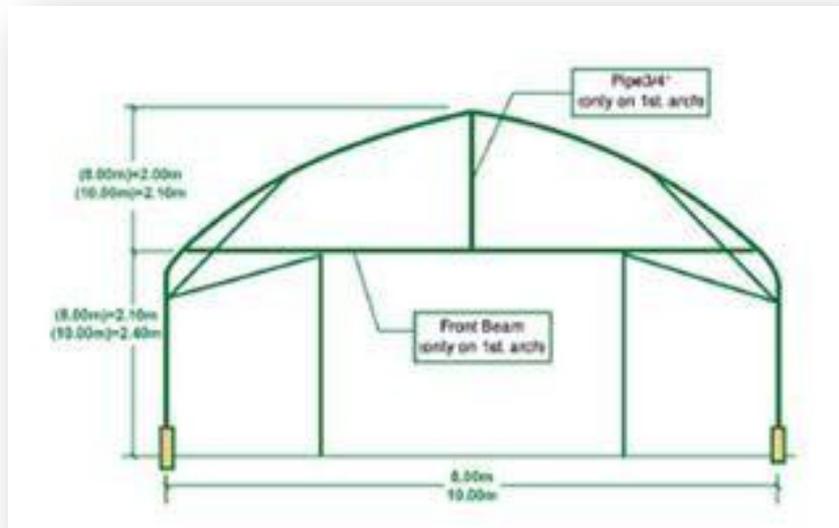


Rose



Walk in Tunnels

- Walk-in tunnels structure is covers with UV film, suitable for all types of crops; flowers and vegetables.
- Designed to withstand wind up to 120km/hr, and trellising loads up to 25 kg/m².
- Structure gable configuration can be 8 or 10 meters wide.
- Height reaches 4.10m (2" pipe) for 8m, and 4.50m (3" pipe) for 10m.
- Option for vertical curtains (2m long) on tunnels side walls.
- 2 or 3 meter height.



Plastic Tunnels

These are miniature structures producing greenhouse like effect. Facilitates the entrapment of carbon dioxide thereby enhancing the photosynthetic activity. It protects plants from harsh climatic conditions such as rain, wind, hail snow etc. These are mainly used for raising nursery.



Advantages

- Protects from hostile climate.
- Helps in early seed germination.
- Round the year cultivation is possible.
- Healthy saplings can be raised.



Plastic Mulching – Insitu Moisture Conservation

Plastic Mulching is covering the soil around the plant with plastic film to conserve the soil moisture that prevents weed growth and regulate soil temperature. Presently there different colour plastic films used as mulches such as black, silver-black, red, yellow, while-black etc.



Advantages

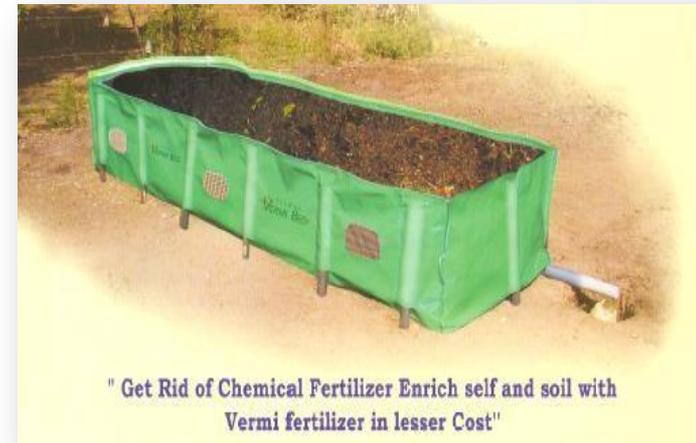
- Prevents weed growth and acts as barrier to soil pathogens.
- Accelerates uptake of micro nutrients from the soil by the active root zone.
- Conserves soil moisture thereby reduces the irrigation water requirement of the crop.
- Enhances quality of the produce with cleaner crop.



Vermi Bed – Organic Farming

The product is chemically treated, UV stabilised and completely stitch-less having ability to withstand extra environmental stress.

- ✓ Dimension of the bed 12' x 4' x 2' (L x W x H) & Mass 340 gms /sqm (minimum), having fourteen support pockets (40mm X 120mm) for inserting pegs to keep the bed erect.
- ✓ Three net windows on both sides for ventilation purpose to maintain required humidity to enhanced life span of the earthworms. An reinforced bottom outlets in corner is used for draining vermiwash with drain cover.
- ✓ Requires less space, can be installed anywhere (allows shifting of structure) with proper ventilation.
- ✓ Bed produces annually 100 liters of Vermiwash.
- ✓ Indian Standard (BIS) formulated in 2010.



BIS Standards - Protected Cultivation

S. No	Applications	Component Description	IS Code
1	Mulching	Surface covered cultivation - plastics mulching - code of practice	IS 15177:2002
2	Greenhouse	Plastic film for Greenhouses - specifications	IS 15827:2009
		Recommendations for Layout, Design and Construction of Greenhouse Structures.	IS 14462 : 1997
		Recommendations for Heating, Ventilating and cooling of Greenhouses	IS 14485 : 1998
		Steel Tubes for Structural Purposes	IS 1161 : 1998
3	Agro Shadenets	Shadenets for Agriculture & Horticulture Purpose	IS 16008:2012
4	Protection Nets	Plant protection nets	IS 10106:part 1: section 6:1992
5	Vermi-Bed	Agro Textiles- High Density Polyethylene (HDPE) Woven Beds For Vermi-culture-Specification	IS 15907:2010

Research & Extension on Protected Cultivation

