



#### PROFITABLE VEGETABLE CROPPING SYSTEMS

Sl.	Vegetable Cropping Sequences	B:C Ratio
1.	Broccoli - Palak - Coriander - Broccoli - Coriander	1 : 5.19
2.	Broccoli - Coriander - Cabbage - Radish - Coriander	1 : 4.44
3.	Cabbage - Palak - Radish - Coriander - Broccoli	1 : 4.05
4.	Coriander - Radish - Coriander - Radish - Coriander - Radish	1 : 4.03
5.	Cabbage - Broccoli - Local Rayo Sag - Coriander	1 : 3.28
6.	Local Rayo Sag - Broccoli - Cabbage - Local Rayo Sag	1 : 2.89

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## Offseason Vegetable Production under Low Cost Plastic Rain Shelters



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**Vegetables** are an important source of food and nutrition and provide regular cash income. However, a prolonged wet season and high rainfall intensities causes several biotic and abiotic stress conditions under open field cultivation and have a serious negative effect on vegetable yield and quality. There is a great demand of vegetables all year round. Prices are highest at the start and end of the season. Offseason cultivation of vegetables like broccoli, cabbage, root crops and leafy vegetables can be successfully undertaken under low cost plastic tunnels/rain shelters at the mid and higher hill conditions.

#### ADVANTAGES

- Vegetables can be produced year round regardless of the season to get better return.
- Used for raising healthy and early nursery.
- Protection to high value crops from rain, wind, frost, pests and diseases.
- Enhances nutrients uptake and increases photosynthetic activities of plants.
- Provides crop diversification opportunities and supports production of high quality and clean products.
- Makes cultivation of vegetables possible in areas where it can't grow in open conditions viz., high altitudes.

#### PLASTIC RAIN SHELTERS

Plastic rain shelters or open tunnels are greenhouse-like structures, covering the plants along the row. These tunnels are about 1.0 m high and 1.5 m wide at the base and are erected with bamboo sticks or wooden poles of about 1 inch diameter. A transparent plastic sheet is placed on the bamboo structure to allow sunlight during the day passes through the plastic sheet, and is absorbed by the soil. This raises the temperature to desired levels. The plastic sheet serves two purposes: first it traps heat and reduces water loss and second it protects plants from adverse climatic conditions.



#### COST OF CONSTRUCTION (per 100m<sup>2</sup>)

Sl.	Particulars	Quantity	Rate	Amount
1.	Bamboo	28 no's	Rs. 150/Bamboo	Rs. 4,200
2.	Plastic (120 GSM)	9 kg	Rs. 145/kg	Rs. 1,305
3.	Binding wire	2.5 kg	Rs. 100/kg	Rs. 250
4.	Miscellaneous			Rs. 2,000
	<b>Grand Total</b>			<b>Rs. 7,755</b>

Note : Construction cost per plastic rain shelters of size 15×1.5 m = Rs. 1745.00

#### FIELD PREPARATION

The land should be prepared to a fine tilth and well rotten FYM should be applied @ 1.5-2.0 kg/m<sup>2</sup> or vermicompost @ 0.5-1.0 kg/m<sup>2</sup> along with neem cake @ 200 g/m<sup>2</sup> at the time of final land preparation. If soil is acidic in nature, it is advisable to apply dolomite/lime @ 200 g/m<sup>2</sup>. Lime should be applied at least 7-10 days before planting. The soil should be mixed well with manures and brought to a fine tilth before transplanting. About 4-5 inch raised bed should be prepared.



#### IMPORTANT POINTS TO BE CONSIDERED

- Prior to start of off-season vegetable farming in tunnels, the farmer must have practical knowledge about vegetable farming.
- Soil and water quality should be tested before starting the farming.
- Self-pollinated plant should be grown.
- Recommended seed should be used.
- Farmer must have the updated market information to earn high profit.

#### CROP AND RECOMMENDED VARIETIES

Sl.	Vegetable Crops	Varieties
1.	Cabbage	Rare Ball, Magic Ball, BC-76
2.	Cauliflower	Suhasini, Sumedha
3.	Broccoli	TSX-0788, Aishwarya, Everest
4.	Coriander	Super Midori, Khushboo, Saurabh
5.	Fenugreek	Local
6.	Palak	All Green, Pusa Jyoti
7.	Rayo Sag	Pusa Sag-1, Local
8.	Garlic	Local
9.	Carrot	Nantes
10.	Radish	Pusa Chetki (Summer), Indam Shwetha (Winter)
11.	Lettuce	Green Roman, Green Lot, Lolo Rossa, Red Lot
12.	Beetroot	Ruby Queen, Detroit Dark Red
13.	Green Pakchoi	Shuko
14.	Pea	TSX-10

#### INTERCULTURE AND IRRIGATION

Normally two to three hoeing and weeding are required to keep the crop weed free. Vegetables require sufficient moisture in the soil for uniform and continuous growth. Hence, frequent irrigation at 10-15 days interval is given depending on weather conditions. The dry conditions adversely affect the quality and yield of vegetables.