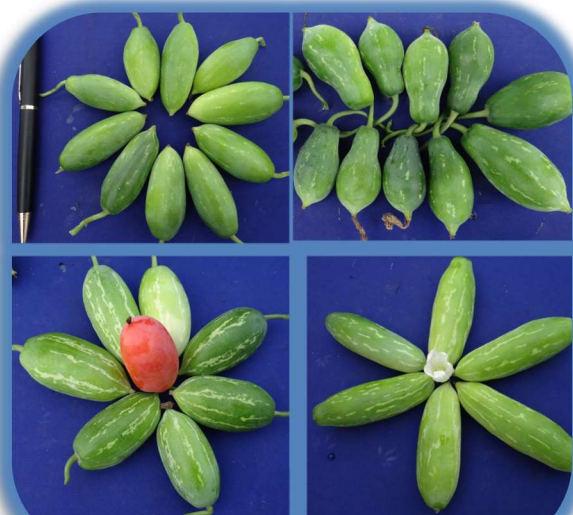


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## Production technology of Ivy gourd (Thar Sadabahar and Thar Dipti)



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The underappreciated perennial, fast-growing, dioecious vegetable, ivy gourd, *Coccinia grandis* (L.) Voigt. [Syn. *C. indica* Wight and Arn., *C. cordifolia* (L.) Cogn.], is a member of the Cucurbitaceae family. It grows well in both semi-arid and humid environments. The 30 species that make up the *Coccinia* genus are restricted to tropical Africa, except *Coccinia grandis*, which can be found in the wild in Saudi Arabia, Yemen, and India as well as from Senegal to Somalia and Tanzania. *Coccinia grandis* is native to India. Apart from Orissa, Jharkhand, Chhattisgarh, MP, Gujarat, MH, and AP, where a rich gene pool is available in natural forests as well as in backyard gardens because of its wider adaptability to adverse climatic conditions. The crop plays an important role in the local diet of rural and peri-urban areas mainly in tribal arid, semi-arid and humid regions of India. The fruit can be pickled, boiled, stir-fried, or prepared in a variety of ways. It is usually used for culinary purposes while it is fresh and soft. Ivy gourds are rich in iron, calcium, zinc, and antioxidants. They are also a wonderful source of vitamins. It has the potential to be a valuable vegetable in the hot arid and semi-arid conditions to diversify cropping system in peri-urban and urban agriculture, and to improve diet and health.

**Thar Sadabahar** is developed through clonal selection and multiplied by vegetative propagation. The vine grows up to 3.76 m with penta-lobed leaves. It has high yield potential (26.86 t/ha) with an average fruit weight (29.3g) under the dryland semi-arid conditions. Its fruit has identical appearance in form of attractive dark green colour with discontinuous strips, round oblong shape without neck. The fruits are rich in vitamin C (49.2 mg/100 g). Its fruiting behavior is round the year.

**Thar Dipti** is a distinct variety of ivy gourd having an attractive dark green colour, stripe less fruit

appearance and trilobe leaf shape. The fruits are small-medium in size and have pointed styler end. Its vine produces 1497 fruits in a season. The average fruit weight, length of fruit and total yield were recorded 14.2 g, 4.7 cm and 24.4kg per plant, respectively under hot semi-arid conditions. This genotype was found tolerant to powdery mildew and fruit fly under field conditions. The edible fruits are rich in vitamin C (51.4 mg/100 g).



Experiment block of ivy gourd at CHES, Godhra

### Production technology

#### Soil and Climate

Ivy gourd survives best in well-drained sandy loam soil. It thrives best in warm, humid climates. In southern region, it continues to produce fruits throughout the year but the peak seasons of fruiting are summer and rainy seasons. In the northern plains, the plants hibernate during the winter.

#### Propagation and planting

Ivy gourd is propagated by 12-15 cm long and 0.5-1.5 cm thick stem cuttings with three to four nodes are placed upright or at a slight angle to promote the development of side shoots. About 2500 stem cuttings at the spacing of 2x2m and 800 stem cuttings at the spacing of 3.5x3.5m are required for planting one hectare. These cuttings are raised in nursery beds or polythene bags and transplanted in field after 25-30 days. When

planting is done during a dry spell, should apply enough water and continue watering regularly.

Propagation by seed is little practiced because of the dioecious nature of ivy gourd giving 50% non-productive male plants. A ratio of 1 male to 10 female plants is considered adequate for pollination.

The ideal time for planting is in June-July or mid of February to March. Plants are perennial in nature. However, replanting is advised after every four to five years. The vines are trailed on 1.25–1.5 meter tall bamboo pandals or bower systems, which improves productivity by more efficiently utilizing sunshine. In home gardens they may be trained over fences or roofs. The wide spacing provides easy access for weeding, pest control and harvesting. Two weeding should be done during July-August and February followed by hoeing and earthing-up. During the summer, water pipes or drip irrigation systems are used to irrigate it at intervals of ten to fifteen days. Over watering may be avoided.



**Morphological variability in fruits among promising germplasm at CHES, Godhra**

**Nutrient management:** About 6-8 tonnes of well decomposed FYM is applied during basin preparation and planting. The nutrient requirements are 80-100 Kg N, 50-60Kg P, 40-50 kg K per hectare. The full dose of phosphorus, potassium and half of nitrogen should be applied at the time of

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planting in the basin. The remaining half quantity of nitrogen should be split in two equal parts and applied in plant basins at two times during February- March and July-August. Annual applications of fertilizer and manures are made prior to the onset of fruiting.

**Harvesting and Yield:** The green fruits for vegetable purposes are harvested from the plant, when the fruits attain the marketable stage. Harvesting or picking of green fruits continues over



**Growth and development behaviour of Thar Sadabahar**

a considerably long period because the plant produces flowers and fruits continuously under arid and semi-arid conditions. For higher marketable yield, tender fruits should be harvested at 3-4 days interval and graded for better market price. Healthy plants produce an average yield of 250-300 q/ha per year.

### Plant protection

Ivy gourds are infested with many insects, pest and diseases. The main pest of is fruit fly, the adult flies make a sting on young immature fruit and

lay the eggs. White coloured maggots start developing inside the fruit. Hence placing bait to



**Thar Dipti vine laden with fruits ready for harvesting**

attract the adult flies is advisable to control them. It may be managed by collection and destruction of infected fruits, use of lure traps, spraying of Spinosad or imidacloprid 1.0ml/liter water. Powdery mildew is a major disease affecting crops particularly during cloudy weather. Its symptoms first appear on older leaves lower surface in the form of white fluffy circular spots and further leaves become brown and shriveled. It could be controlled by pruning of the vines during cloudy weather or by spraying of the Carbendazim fungicide @ 1.5 ml/liter water.

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