

Package of Practice

Dragon Fruit Cultivation



ADVANCING
NORTH EAST

An Initiative of North Eastern Council (NEC)

Implemented by North Eastern Development Finance Corporation Limited (NEDFi)

Dragon Fruit
Selenicereus undatus
Cactaceae



Dragon fruit is an emerging super crop. Dragon fruit is considered to be one of the tropical super foods due to its nutrient richness. It is rich in various nutrients and low in calories and help in the control of chronic illnesses, improves the health of alimentary canal and boosting the body's immunity. It is also rich in various vitamins, minerals and dietary fibres.

Climate and Soil: Dragon fruit has potential to grow in various agro-climatic conditions of tropical and subtropical region. Dragon fruit plant prefers a dry tropical climate with an average temperature of 20-29°C, but can withstand temperatures of 38-40°C and as low as 0°C for short periods. The rainfall requirement of dragon fruit is 1145- 2540 mm/year. Dragon fruit plants prefer sandy loam with high organic matter and grow well in soil having good drainage. A soil pH 5.5-6.5 is optimum for growth.

Varieties: Red Pithaya, Pitaya Roja, Pitaya Amarilla, Yellow pitahaya, Alice, American beauty, Bloody mary, Cosmic Charlie, Costarican sunset, Dark star, David bowie, Delight

Propagation: Dragon fruit plants can easily multiply through stem cutting.

Planting: Generally, 20-25cm long stem cuttings are used for planting during July-August. Dragon fruit cultivation prefers full sunlight open area is very suitable for planting. Single post vertical height of pole 1.5 m to 2 m at which point they are allowed to branch and hang down. The Dragon fruit may be planted near the poles to enable them to climb easily. Number of plants per pole may be 2 to 4 plants depending on the climatic condition.

Spacing: Generally in single post system planting is done at 3m x 3m distance in dragon fruit.

Manures and Fertilizers: Application of FYM @15-20kg/plant/year and a fertilizer dose of N 450g: P2O5 350g: K2O 300g/plant/year perform best result for dragon fruit yield and quality.

After care: Regularly prune the plants to obtain an open and manageable umbrella shape canopy which will induce new shoots for the next cropping season. The well grown vine may produce 30 to 50 branches in one year and may be more than 100 branches in-four years.

Weed Management: Weeding should be done regularly. Weed control is an important operation in dragon fruit cultivation and the use of weed mat efficiently reduced the weeds growth and also aids in soil moisture conservation.

Water Management: Dragon fruit root system is shallow and distributed in 15 to 30 cm depth. Hence irrigation should be insured to provide sufficient water during dry season. Drip irrigation found beneficial for better yield and growth. Approximately 2-4 litres of water weekly twice per plant is sufficient during the summer/dry days.



Harvesting and Yield:

The plant start yielding after 12-15 months from the date of planting. The plants yield the fruits in the months between June to September, and harvest could be done three to four times in a month, The fruit weight ranged between 300-800g, and the average yield from the single post is realized about 30 to 35 kgs from the three years old planting. On an average, dragon fruit yield is 8-10 tonnes/ha/year.

Post Harvest Management: Dragon fruits are graded by size and colour. Dragon fruits can be stored for 4 weeks at 6-10°C and 85-90% relative humidity.

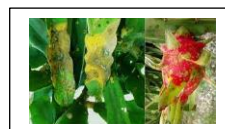
Plant Protection Measures:

Diseases:

Anthracnose: Pre-harvest spraying of Mancozeb 2g/lit or Carbendazim 1g/lit or Thiophanate methyl 1g/lit or Chlorothalonil 2 g/lit, 3 times at 15 days interval will control anthracnose



Brown Spot: Field sanitation (collection and disposal of fallen diseased fruits, leaves and vines). Pruning vines to reduce density and thereby reducing humidity within the crop. Timely sprays with copper based fungicides.



Soft rot: Control includes pruning out dying stems and spraying with copper sulfate —Whitewashing before onset of the problem Timely sprays with copper based fungicides. Copper oxy chloride (at 0.2%) can be used for managing this disease.



Fruit rot: Maintain a weed free plan>ng and remove and discard diseased plants (i.e. stems, fruits, and flowers) promptly when symptoms occur.



Pest:

Aphids: Prune to avoid dense canopy, do not intercrop with alternate hosts, enhance natural enemies by incorporating natural habitats of agro-forestry and flowers strips around field. Spray Lambda-Cyhalothrin, Cypermethrin, Amidacloprid Acetamipride, etc. are recommended, at the rate of 1m/1 litre of water.



Thrips : Destroy all plant residues and volunteer plants during field preparation by turning them under while ploughing, apply mulch to reduce pupation. Spray insecticides like Deltamethrin at the rate of 1ml/1litre of water.

Mealybug: Spray acephate 75 SP @ 1 g/l OR quinalphos 25 EC 2 ml/l or chlorpyrifos 25 EC 2ml/l or profenophos 50 EC @ 2 ml or thiodicarb 75 WP 2gm/l



Cost and Returns of Dragon fruit: (Rs./ha.)

(approx. Amount in Rs.)

Particulars	Cost & Returns
Land Preparation & development	45000
Cost of planting material	30000
Manures & fertilizer cost	25000

Model Project Profile

Plant Protection cost	20000
Cost of Drip Irrigation system	25000
Cost of Labour wages (intercultural operations)	20000
Cost of Farm machinery heiring charges and agril equipment	5000
Rental cost of land	20000
Cost of Harvesting	10000
Cost of Marketing	12000
Miscellaneous cost	5000
Total cost of cultivation	217000
Average Yield	8tonnes/ha
Average selling price of Dragon fruit	Rs.80/ kg
Average Total Income / Return	640000
Net Income	423000
