



Hi-Tech Production Technology of Dragon Fruit

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Dragon fruit (*Hylocereus undatus*) belong to family cactaceae. *Hylocereus* is one of the important genus of this family producing edible fruits. The plants of dragon fruit resembles with others cactus with angular fleshy, thorny stem. The plants are perennials and may survive for more than 20 years. The stem is green in colour, weak and require support for growth. The Dragon fruit is originated in Tropical and Subtropical Mexico in South America. The fruits are medium but large oblong shape fruits has distinguished red colour with large scales. Fruits set 30-40 days after pollination. Dragon fruit is non climatic fruits and some of the fruits remain pinkish red at maturity.

Botanical name - *Hylocereus undatus* L.

Family - Cactaceae

Chromosome no- 22,44

Origin:- Mexico-South America

Edaphological Factor

Temperature Range	20-30 ⁰ C
Rainfall	100-150 cm
Light Intensity	2200 ft. candle
Sunshine	Needs Full Sun
Relative Humidity	70%
Latitude	31 ⁰ N and 41 ⁰ S
Altitude	1200-1500 m
Wind Velocity	21-26 km/h is sufficient

Soil

Dragon fruit plants can tolerate any type of soil, however they grow well in soil having good drainage. Dragon fruit plant prefer light acidic soil with pH ranging from 5.5 to 6.5. Sandy soils with organic matters also provides good condition for plant growth.

Varieties

Three types of Dragon fruit species. The first species has Red colour fruit coat with white colour flesh, the second species has Red colour fruit coat with red colour flesh and third species has yellow colour fruit coat with white colour flesh. The species with red colour fruit coat with white colour flesh are most popular.

Propagation

Dragon fruit is multiplied through seed or vegetative methods. Dragon fruit can easily multiply through stem cutting. Generally 20-25cm long stem cuttings are used for planting. The cutting should be prepared one two days prior to planting and the latex oozing out of cut is allowed to dry. The cutting should be taken from elite mother plants during fruiting season.

The entire stem segment or 20-30 cm long cuttings are used. The base cut of the cutting should be slanted. The cutting should be treated with fungicides to prevent diseases. These cuttings are in planted in 12 x 30 cm size polyethylene bags filled with 1:1:2 ratio of soil, farmyard manure and sand bags The bags are kept at a shady place for rooting. Excess moisture should be avoided for prevention of rotting of cutting. The cutting roots profusely and become ready for planting with 5-6 months.



Planting

The planting distance depends on the size, slope of field and type of trellis used. Generally in single post system planting is done at 3x3 m distance. The pair row system plating may done at 6x2-2x6x 1 m distance. Optimum planting distance provides adequate air circulation and reduce chances of occurrence of diseases. For planting, Pit of 60 x 60 x 60 cm are dug. These pits are filled by top soil, farmyard manure or compost with 100 g of super phosphate. To improve the drainage, add small brick pieces and some amount of sand to bottom of the pit. Generally planting should be done in rainy season i.e. June and July for better establishment. If irrigation is available planting may be done in other season also. The best time of planting is late afternoon or early evening.

Trellis

Dragon fruit is a climbing cactus with weak and segmented stem. It requires a vertical pole support to grow for optimum growth and fruiting. It has a life span of 15-20 years and weight of one plant may be goes up to 100 kg. Therefore the selection of support material and type of trellis used is important. Generally wooden logs, cement poles and metal frameworks are used for support. In kitchen garden, it may plant with a tree. But commercial orchards need well designed trellis system. The trellis may be made in two ways i.e. single pole type and continuous standing type.

Manure & Fertilizers

Generally 1 to 2 old plants should be given 10 to 15 kg of farm yard manure, 200 g nitrogen, 50 g phosphorus and 50 g of potash. This should be divided in three equal doses and applied in 3 times in a year. The plant of 3 and more year is should be given 20 kg farm yard manure, 500 g Nitrogen , 750 phosphorus and 300 g of potassium. These should be applied in four equal splits doses after harvesting and during growth, before flowering and after fruit set every year. Dragon fruit can be grown organically without applying chemical fertilizers and pesticide. The farm yard manure and poultry manure may be used for supplementing nutrients. These organic fruits have more demands in the market.

Training

The Dragon fruit plants are fast growing vines and produce more thick dense of branches in initial stage The lateral buds and branches should prune to grow towards stands. Once vines reach up to the top of the stands the branches are allowed to grow. The removal of tip of stem induces lateral branching. The well grown vine may produce 30 to 50 branches in 1 year and may be more than 100 branches in 4 year. These branches should be trimmed to better aeration, easy cultural operation and prevention of disease & pest.

Pruning and Trimming

Once are plants are big. These should be pruned by removal of dried branch and diseases branches. This helps in maintaining growth and vigour of plants. There should be 50 main branches with 1 or 2 single branches after harvesting. The cut portion should be treated as fungicide.

Irrigation

The root system of dragon fruit 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. Irrigation by flooding is not recommended as it wastes water and increases work of weeding.

Weed management

Weed management is important for the growth in initial stages. The creeping and climbing type weed should be removed at the frequent period of interval as these entangle with the vines and affect the growth and yield.

Flowering, Fruiting and yield

The flower big in size, bright attractive in colour with sweet fragrance. The flower open in the evening and remain open during night up to pollination. The petal closes completely after sun rises. The flower production generally take place during April-August. It is cross pollinated and flowers open in the night. To increase the pollination, hand pollination can be done. Generally, honey bees, little honeybees and dragon flies are the pollinators for the dragon fruits. Fruits will be matured 30 -50 days after flowering. Fruiting period will continue up to 3-4 months. Harvesting may be done three-four times with in this period. Outer cover of immature is in bright green colour. It will become red in colour with ripening. Proper time of harvesting is after four days of colour changing. Dragon fruit normally fruits after 18-24 months after plantation. The fruit weight ranges from 300-800 g and each plant produces 40 to 100 fruits per year. One plant normally yields 15 to 25 kg of fruits. The farm gate price rate is range between Rs. 125 to 200 per kg.

Plant protection

Dragon fruit is affected by comparatively lesser amount of pests and diseases. The pests like mealy bugs and termite have been found damaging the dragon fruit. As far as the disease is concerned the watery stem rot caused by *Xanthomonas* is caused damaged to vines in heavy rainy areas. Proper drainage, wider spacing, adequate air circulation and proper sunlight light to help in minimizing the disease.(Source:- Prakash Tripathi IIHR underutilized fruits of tropical region).

References

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