

Harvesting

The harvesting time mostly falls between July-November which comes in 6-8 flushes. During initial fruit development period, the outer skin of immature fruit looks bright green in colour and gradually turns red as the ripening progress. An additional advantage of the crop is that depending upon the market demand, there is a scope for adjusting the harvesting time. For local market, fruit can be harvested three to four days after the skin colour changes from green to red/pink colour, while for far markets/export purpose it can be harvested a day after colour change.

Yield

Fruiting from first year onward while, the potential average yield of 10-12 t/ha is expected from third year onwards.

Storage

The experiment on shelf life studies of dragon fruit was conducted at ICAR-NIASM, Baramati. It was observed from the initial storage study that the keeping quality of this fruit is good and it can be stored upto 5-7 days at ambient room temperature, 10-12 days and 20-21 days in cold storage at temperature of 18°C and 8°C, respectively.

Economics

Dragon fruit is a money-spinning business with an initial investment of Rs 6.0-7.5 lakhs per ha. As the crop doesn't require intensive management/ intercultural operations and also fetching retail price of Rs.150-250 per kg in the nearby city markets farmers are generating income of Rs 3-4 lakhs per year per hect. during second and third year and Rs. 6-7 lakhs from 4th year onwards. This will not only bring large unutilized area of degraded lands of Deccan region under use but also improve the socio-economical status of farmers.



Planting pattern



Trellis



Flowering



Unripe Fruit



Ripened Fruit



Drooping



Bagging



Fruit

Fruit cut view

Crop establish and development stages of Dragon Fruit at ICAR NIASM

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SAKALP

Dragon Fruit

**Future Crop for degraded and
water-scarce areas**



हर कदम, हर डगर
किसानों का हमसाथर
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Introduction

Horticulture contributes 28 per cent of country's agricultural GDP and surpassed the cereal production since 2012-13. Urban consumers are nutritionally aware and willing to try natural products for their ever increasing ailments, of course diabetes, cardio-vascular and other stress related diseases. Need to shift from the traditional orchards and diversify the fruit basket which meet the therapist demand of consumers & also suited to drought prone & degraded lands. Dragon fruit is lucrative plant with amazing health benefitting but has so far failed to draw much attention of growers in India.

Types of Dragon fruit :

Botanically, dragon fruit is available in three variants viz., Red skin with white pulp (*Hylocereus undatus*), Red skin with red pulp (*Hylocereus polyrhizus*) and Yellow skin with white pulp (*Hylocereus megalanthus*)

Importance :

Dragon fruit contains 70-80 % pulp which is the only edible part. It has multiple therapist uses as it prevents diabetes, colon cancer, and neutralizes toxic substances such as heavy metals, reduce cholesterol and high blood pressure. It is rich in vitamin C, antioxidants, fibres, phosphorus and calcium. It has high mineral content with TSS of 15-18° brix. It can be processed to range of industrial products such as juice, jam, syrup, ice cream, yogurt, jelly, preserve, candy and pastries. The red and pink pulp of dragon fruit is used for extraction of natural colours.

Used as fruit salad and flower buds of dragon fruit are used to make soups.

Climate

Tropical climate is good for dragon fruit. The optimum temperature required is about 20-30 °C. Dragon fruit has its origin from areas with sufficient rainfall (South and Central America).

An average rainfall of 500-1500 mm is favourable for healthy plant growth.

However, plantations can be taken up with assured irrigation facility in dryland areas. Excessive rain may cause the flowers to drop and sometimes stem and fruit rots if drainage is not properly addressed.

Cultural Practices

Dragon fruit is propagated mostly by vegetative means by using cuttings. The entire stem segment of 15-30 cm mature cutting should be used to get better plants. To prevent diseases especially the rots, cutting are to be treated with fungicides and cured in a cool, dry area for 5-7 days before planting. The rooted cuttings are ready to transplant in the main field within 30-40 days in the nursery. The recommended spacing of 4.0m x 3.0m provides adequate air circulation and lowers the chances for occurrence of diseases where as in low fertile dryland areas denser plant population is recommended (3.0m x 3.0m spacing) to compensate the yield reduction per unit area

Training and Pruning

As the dragon fruit is a climbing cacti and epiphytic, the vine needs concrete, wooden posts or wall columns for support (Fig. 1). Immature stem must be tied to that column for aerial roots to develop and bound to the column. Lateral shoots are restricted and only 2-3 main stems allowed to grow. The column selected must have long durability and strength to carry 100 kg load, hence concrete or hard timber posts are recommended. For this mostly the cement pole/post with 2 m height is used and it is buried 40 cm in the ground. Steel wires or iron frames should not be used as it could cut and damage the vines. The supporting post should be erected prior to the planting to make it firm enable the vine to climb. Four plants should be planted around each post. Planting is usually done during rainy season followed by

making proper ridges of 50 cm height to give support to the plants. As the vines grow, the chances of lodging and fall to the ground increases. Thus, tying the vines and regular trimming of the lateral branches is an essential operation to avoid this problem. In structural pruning, only the outer leader vine is to be allowed to grow till the vine reaches the top of trellies, afterward free branching is allowed. Number of branches need to be brought down to 30-50 by trimming the unwanted branches which is termed as production training. After harvest, around 50 main branches with one or two secondary branches on main branch to be retained removing the tertiary and quarterly branches with cut ends treated with fungicide

Nutrient Management

10-15 kg FYM and 100 g SSP/ plant is required at the time of planting. During the first two years, 300 g urea and 200 g P and K is applied to each plant per year. Mature plants should be given 540 g N, 720 g P and 300 g K per plant per year. This quantity is divided into at least four equal splits with three months interval

Water management Irrigation is applied whenever there is a long dry spell. However, in general, the crop is subjected to dry period in the pre-bloom period to produce more flowers. Drip irrigation system is used to maintain soil moisture. The irrigation requirement is 1500-2000 litre / plant. / year.

Flowering and Fruiting

Dragon fruit flower bloom at night and it is off white in colour. Their fragrant helps to pest attraction. In semi arid zone, flowering will initiate at May-June. Due to beauty of the flower, these flowers also named as Queen of night, Moon flower and Nopal woman. Fruits will be matured 30 -35 days after flowering. Flowering and fruiting will occur simultaneously.