



Dragon Fruit – “The Wondrous Fruit” – for the 21st century

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ABSTRACT

Hylocereus undatus (White-fleshed Pitahaya) is a species of Cactaceae and is the most cultivated species in the genus. It is used both as an ornamental climber and as a fruit crop - the Pitahaya or Dragon fruit. The native origin of the species has never been resolved. It is native to Central Americas but now grown all over the world specially in the tropical countries. It is a Fast Growing climbing plant which requires a vertical pole support to grow on and then a ring to fall like an umbrella. It has a life span of 15-20 years, hence proper selection of poles & rings is important. Special RCC poles are casted to ensure a strong & lasting support. Normally four plants per pole are planted to give maximum yield. Proper Pole to Pole and Row to Row spacing is maintained for free movement during harvesting and maintenance work. Basic nutrients & fertilizers are periodically applied as per the soil & water properties of each individual plantation. Metal framing is to be avoided as it may cause sun/heat burn to the plants. Normally North-South rows are preferred in tropical climates where summer temperatures rise above 40 degrees. Excess sun heat may cause sunburn but remedial steps are easily available locally. Not much disease effect this Plant, common problems like root rot, sunburn, bird attacks etc can be taken care of easily.

Dragon fruit were introduced in Chintapalli in year 2013 with an area of 2 acres on experiential basis to study the suitability of dragon fruit in Chintapalli area for commercial cultivation. Due to excess rainfall during Hud Hud Cyclone in October 12, 2014 plants are effected. The results envisaged that dragon fruit can be successfully cultivated in tribal areas of vishakapatnam dist with the best quality fruits with very big size of more than 400 gms even up to 500 gms by weight. Where as the imported fruits of around 300 gms per fruit only. Shape is oval rich in sugars as per organo liptic evaluation. The fruits are having good taste, sweet, crispy, reach in anti oxidants and liked by the many Indians. This article is made to attract the corporate for investment in tribal area which can improve the lively hood means for tribal people by providing employment. By this activity the country can save the valuable foreign exchange spent for importing (about 90- 95%) and also promote exports to Europe and American countries. The academic bearing of this cactus is about 15 to 20 years and this can be manipulated by providing better growing conditions and also nutritional support.

KEYWORDS : Commercial cultivation, nutritional support, monsoon, climatic conditions, propagation,

Introduction

Dragon Fruit – Pithaya, The ‘Wondrous Fruit’ of The 21st Century is Set to Ring in a Revolution in the Indian Horticulture Scenario. It is a Boon to The Farmers And Consumers. Originally From The Central Americas It Is Successfully Grown Commercially In Thailand, Malaysia, Vietnam, Sri Lanka, Bangladesh And Now Knocking At Our Door In India.

Dragon fruit is also known as:

Pitaya, Dragon Fruit, Red Pitahaya, Night blooming Cereus, Strawberry Pear, Belle of the Night, conderella plant. Chintapalli (Telugu: చింతపల్లి) is a village and Mandal in Visakhapatnam district in the Indian state of Andhra Pradesh. It has an average elevation of 839 meters (2755 feet).

Maximum temperature: ranges between 20 to 30 degree centigrade. The minimum temperature 3 – 18 degree centigrade.

Climate: The maximum rainfall received in the month of July, August, September. Pre-monsoon rains comes during the month of march. Cool dry weather prevails to October to the end of February.

Soils: Red soils, Sandy soils mixed with black soil and well drained soils. The soil should be rich in organic matter. The commercial cultivation can be taken up by taking the advantage of climate under open conditions.



Training :

Dragon fruits in its native habitat is an epiphytic plant climbs on the trees. For commercial cultivation in tropics the plant can be trained to cement/concrete poles and tied with coier fibre rope. About 700 poles are required, each pole of 6.5 feet length. About number of rooted cuttings of dragon fruit may be planted with each pole and these plants are trained with single stem on the concrete pole. Each plant produce roots at each phyllode.

Propagation :

These plants can be propagated through seeds and vegetative by cuttings. The seed propagation is not preferred due to variability in seedlings and took long time 4-5 years to come into flowering and fruiting. The vegetative propagated plants produce flowers within three years hence the commercial varieties are propagated by vegetative means.

Nutritional management:

The plants are provided with well decomposed FYM/Compost / Vermicompost / neem cake – 10 – 15kg per pole. Plants responds very

well to the water soluble at very low concentration.

Moisture management:

The plants are succulent requires moist condition at the root system, but not the wet condition. Drip irrigation system can save lot of water during summer months.

Flowering:

It is an nocturnal plant. Flowers during night and pollination completes on the same night. Bud formation takes place at aeroles from bud formation to flower opening requires 20 days. The buds formed on the same day are used to mature/ripen on the same day. From flower opening to fruit ripening requires about 40-45 days.

Fruit maturity index:

Change of fruit colour from green to pink colour. The fruit matures only on the mother plant.

Yield of fruits:

The fruits are produced in 4-5 phases depending on the day length and light intensity from march to October at Chintapalli conditions. A healthy plant may produce more than 200 fruits at the age of third year.

Dragon fruit normally fruits after 18-24 months after plantation. It is a vegetative fruit plant which normally fruits during or after monsoons. It fruits in 3 to 4 waves during one season. Each Pole fruits approx 40 to 100 fruits per wave. Each fruit weighs about 300 to 1000 grams. One pole normally yields approx 15 to 25 kg of fruits. (Yield of 60/80kgs per pole have been reported in India) These fruits are sold in the market at Rs.300 to 400 per kg, but the general Farm rate is approx between Rs. 125 to 200 per kg.

India is a tropical country with moderate climate all round the year. Dragon fruit adapts well to tropical climates. Minor adjustments for extreme Indian climates can overcome all obstacles as far as climatic conditions are concerned.

Dragon Fruit Constitutional Contents

The typical nutritional values per 100 g of raw pitaya (of which 55 g are edible) are as follows:

- Water 80-90 g
- Ascorbic acid (Vitamin C) 4–25 mg
- Ash 0.4-0.7 g
- Calcium 6–10 mg
- Calories: 35-50
- Carbohydrates 9-14 g
- Carotene (Vitamin A) traces
- Fat 0.1-0.6 g
- Fiber 0.3-0.9 g
- Iron 0.3-0.7 mg
- Niacin (Vitamin B3) 0.2-0.45 mg
- Phosphorus 16 – 36 mg
- Protein 0.15-0.5 g
- Thiamine (Vitamin B1) traces
- Riboflavin (Vitamin B2) traces

Health Benefits From Dragon Fruit.

- Dragon fruit promotes healing of wounds and cuts.
- Dragon fruit improves appetite.
- Dragon fruit improves eye sight
- Dragon fruit can aid in weight reduction
- Dragon fruit improves memory.
- Dragon fruit may be used as an ingredient in functional food and nutraceutical products for the overweight individuals and diabetic prevention management. Meanwhile, the prebiotic effect of dragon fruit should be tested in clinical studies with both the raw and extracted flesh for comparison.

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