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# Unlocking Opportunity with Dragon Fruit-Cultivation & Benefits

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## Abstract:
Dragon fruit is an exotic fruit witnessing a surge in demand because of its nutritional and therapeutic properties. This paper reviews its cultivation requirements, varieties, economic potential, and future prospects in India, with special reference to practices observed at Deccan Exotics, Telangana.

*Keywords* — **Dragon fruit, Hylocereus, exotic fruit, cultivation, agronomy, India**

## I. INTRODUCTION

Dragon fruit is an exotic fruit, witnessing a surge in demand because of its nutritional and therapeutic properties. Deccan Exotics, a leading hub" in Sangareddy, Telangana, is a specialized dragon fruit farm and research center that conducts workshops and training modules for dragon fruit innovation and outreach. Despite not having an agricultural background, anyone can pursue this farming, as it involves front-loaded investment.

## II. AGRONOMIC REQUIREMENTS AND CULTIVATION PRACTICES

For commencement, the prerequisites are a sloping terrain with a soil pH range of 5.5 to 6.5 and sandy texture. Implementing the ring pole method is considered optimal compared to the trellis method, as it can accommodate 450–500 poles (i.e., 1,500–2,000 plants per acre). The crop adapts proficiently from tropical to subtropical zones, ideally requiring 20–30°C.Vegetative cuttings are preferred over seeds and are sown on ridges or raised beds to avert water logging, which is a major concern in dragon fruit cultivation. Manure is incorporated into the bed and then mulched with paddy straw for multifarious benefits. Fertilizer is applied 2–3 times per year as required, mainly including FYM, neem cake, and bone meal. As the cover necessitates minimal water, drip irrigation is dependable for supplying moisture directly to the root zone.

Prominent varieties include Siam Red, Israeli Gold, Vietnam White, and Red Jiana. Dragon fruit can also be intercropped with okra, chili, turmeric and ginger while avoiding deep-rooted crops.

## III. ECONOMIC VIABILITY

The initial capital outlay is around ₹5–6 lakhs per acre, and the crop can generate an annual revenue of ₹10–15 lakhs. From an initial yield of 5–6 quintals, production gradually escalates to 6–8 tonnes within a few years, and the crop continues to yield for up to 25 years, as shown in fig. 1. Government subsidies are also extended to new farmers.

Fig. 1- Harvesting of yield

  

## IV. FLOWERING, FRUITING AND POST-HARVEST MANAGEMENT

As in fig.2, Once mature, the plant typically starts producing flowers 30–50 days after a flush of new shoots during the growing season. Flowering generally commences from May–June in India. Self-compatible varieties are advised to mitigate the need for hand pollination.

The fruit can endure 7–10 days at room temperature and 20–25 days in refrigeration, with negligible post-harvest losses.

Fig. 2-blooming of new flowers

## V. BIOTIC STRESS

Main diseases: Neoscytalidium dimidiatum (stem rot), Colletotrichum spp. (anthracnose).Recent studies show Trichoderma biofungicides reduce stem rot incidence by 60–70%.

## VI. VALUE ADDITION

Dragon fruit peel contains betalains (natural red pigment) → used in food coloring, cosmetics and even pharmaceuticals.

Seeds (tiny black ones) are high in omega-3 fatty acids → can be extracted for health supplements.

## VII. CONCLUSION

In conclusion, one dragon fruit is comparable to four kiwis in terms of antioxidants and fiber. Thus, with low input and risk, dragon fruit cultivation ensures substantial profitability.

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