For Farmers... For the Nation... For Food Security

ADRITHA

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Saffron Cultivation on Home Rooftop

A Success Story with AI!



- James Kappani from Thrissur, Kerala, served in the Saudi Arabian military for 20 years. After returning to India in 2022, he tried a vegetable export business, but due to limited local supply, he had to source from Mumbai and Tamil Nadu and later dropped the idea.
- During a visit to Pampore in Jammu & Kashmir the same year, he saw vast fields covered with purple flowers. He learned that they were saffron flowers, and the red stigmas from these flowers are collected to make the world's most expensive spice.

First Failure... Then Success with AI

He first bought 1 kg of saffron corms from Kashmir, but the initial attempt failed due to lack of knowledge. After research, he understood the key growing conditions — low temperature, humidity and light. In 2025, he set up a 150 sq. ft. controlled cultivation room on his rooftop in Thrissur with a chiller, grow lights, humidifiers and dehumidifiers.



AI for Temperature & Humidity Control

With the help of his sons, he developed an AI-based automated system to regulate temperature, humidity and light. He uses aeroponics method, which delivers water and nutrients to plant roots as a fine mist, enabling efficient cultivation.



First Harvest: 400 Grams of Saffron

He purchased 150 kg of saffron corms from Pampore at ₹2,500 – ₹3,000 per kg and planted them in 180 vertical trays. The first harvest yielded 400 grams of saffron, which he sold under his own brand at ₹650 per gram. He has started another cycle in 2026 and expects a harvest of around 500 grams.



From Rooftop to Rich Returns

- Controlled environment farming
- AI-based monitoring
- Aeroponics method
- High-value crop
- Family support

A NEW PATH FOR URBAN FARMING

> "With technology and determination, high-value crops can be grown even on a home rooftop."
>
> – James Kappani



Zero-Energy Cooling Chamber

Keeps Vegetables & Fruits Fresh Naturally



- Scientists at the DDS-Krishi Vigyan Kendra (KVK) in Zaheerabad, Sangareddy district, have developed a "Zero-Energy Cooling Chamber" to help farmers.
- It can be built easily using bricks, sand and water.
- Keeps vegetables and fruits fresh for longer periods without electricity.
- Recognized by the Indian Council of Agricultural Research (ICAR) and demonstrated as a working model.

Fresh Produce Without Electricity

The zero-energy cooling chamber is a cost-effective, eco-friendly "desi fridge" that helps farmers, especially in rural areas, to store vegetables and fruits in a natural and sustainable way.



Custard Apple Prices Cross ₹300 per kg



Sharp Fall in Yield

- Weather changes and the El Niño effect have severely impacted custard apple cultivation this year. Poor and irregular rains, along with high heat, led to the drying and dropping of flowers, resulting in a major reduction in yield.

Thousands of Acres Affected

- Normally, 150–200 metric tonnes arrive daily at Hyderabad's Gaddi Annaram and Mazan Jahi markets from Telangana districts (Mahabubnagar, Adilabad, Khammam, Medak, Warangal, Nizamabad, Nalgonda) and also from Maharashtra, Karnataka and Madhya Pradesh.

Prices Out of Reach for People

- This year, the yield has dropped by 60–70%. Instead of the usual 150 metric tonnes per day, only about 80 metric tonnes are now arriving. Prices have surged, with small fruits selling at ₹50 for three, and ₹200 – ₹300 per kg. Consumers say the quality is also not up to the mark despite the high prices.