



Compact Research Module for Orbital Plant Studies (CROPS)

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[Indian Space Research Organisation \(ISRO\)](#) has successfully germinated **Lobia (black-eyed pea) seeds** in space as part of its **Compact Research Module for Orbital Plant Studies (CROPS)**.

- **CROPS Module:** CROPS is an **experimental module** developed by [ISRO](#) to **study plant growth in space** under **microgravity**.
 - It functions as a **mini greenhouse** with **controlled air, temperature, simulated sunlight (LEDs)**, and an **Earth-operated water delivery system**.
- **Methods Involved:**
 - **Hydroponics:** Plants grow using nutrient-rich water instead of soil.
 - **Aeroponics:** No soil, plants grow in air with misted nutrients, reducing water and fertilizer usage.
 - **Soil-like Medium:** ISRO used **porous clay** with slow-release fertilizer for controlled nutrient delivery.
- **Ideal Space Plants:** Ideal space plants include **leafy vegetables** (lettuce, spinach, kale), **beans and peas** (for protein and nitrogen fixation), and crops like **radishes, carrots, wheat, rice, tomatoes, and strawberries**.
- **Significance:** It provides a **sustainable food source for long-term space missions**.
 - Plants **recycle carbon dioxide, improve air quality**, and help create a **closed-loop life support system**.

Read More: [India's Space Power Revolution](#)

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