

Researchers from IIT Roorkee have developed Kodo Millet-Based Functional Edible Cups for Sustainable Packaging

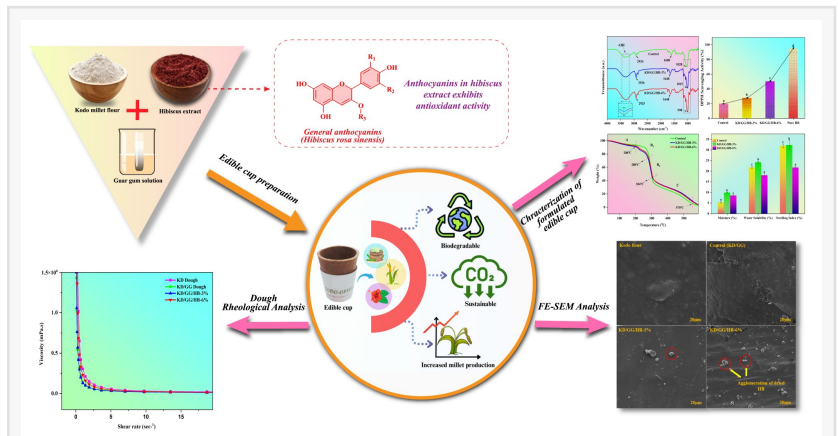
Researchers from IIT Roorkee have developed Kodo millet-based edible cups enhanced with guar gum and hibiscus powder to improve strength and biodegradability.

ROORKEE, UTTARAKHAND, INDIA, March 3, 2025 /EINPresswire.com/ -- Researchers from the Indian Institute of Technology (IIT) Roorkee have made a significant breakthrough in [sustainable](#) packaging by developing Kodo millet-based edible cups. This innovation utilizes guar gum and hibiscus powder to improve the structural integrity and functionality of the cups, offering a promising eco-friendly alternative to conventional plastic packaging.

This research, led by Prof. Kirtiraj K. Gaikwad and Bhushan P. Meshram, was recently published in the prestigious journal ACS Food Science & Technology. The study emphasizes using *Paspalum scrobiculatum* (Kodo millet), a drought-resistant and underutilized grain, to create durable, biodegradable cups that reduce plastic waste and promote environmental sustainability.

Key Highlights of the Research:

Eco-Friendly Materials: The edible cups incorporate natural polymers like guar gum and hibiscus



extract to enhance mechanical strength and biodegradability.

Sustainable Innovation: This project supports the circular economy by reducing plastic consumption and offering a compostable solution for food packaging.

Enhanced Functionality: The combination of natural additives increases the cups' resistance to moisture and improves their overall durability.

“Our goal is to provide a practical, sustainable alternative to single-use plastic packaging while utilizing underutilized crops like Kodo millet,” said Prof. Gaikwad, the lead researcher. “These edible cups are not just environmentally friendly—they are also safe for consumption and biodegradable, minimizing long-term environmental harm.”

The research has already received significant attention. Since its publication, the article has garnered 257 views and achieved an Altmetric score of 13, reflecting the growing interest in sustainable packaging solutions.

The full research article is available at: <https://pubs.acs.org/doi/10.1021/acsfoodscitech.4c00985>

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