



# beed<sup>ki</sup>baat

voice of the seed

BYTE #1



## Foreword

In a world grappling with pressing issues of food security, nutrition, sustainability, and livelihoods, the significance of pioneering seed science and technologies cannot be overstated. The intricate interplay of factors like productivity, and the environment necessitates ingenious solutions to propel us towards a more resilient future. Paramount among these challenges and an imperative is the need to amplify agricultural productivity while conserving precious resources.

Enter the realm of quality seeds, seeds with enhanced traits developed by New Plant Breeding Technologies (NPBTs), encompassing genetically modified and gene-edited crops, promising a transformative path to sustainable agricultural growth and bolstered food security. The tapestry of innovative seed technologies, including precision farming systems, the nurturing of crops resilient to heat and water stress, and the enrichment of nutritional content, holds the potential to usher in a new era of responsible resource usage and adaptability to the ever-shifting climate. A ripple effect is witnessed through the heightened productivity of agriculture, allowing for denser seed planting and earlier cultivation cycles, thereby reaping amplified yields. Beyond the mere mechanics, the seed sector emerges as a guardian of farmers' and rural communities' prosperity by endowing them with enhanced seeds that translate to elevated yields and improved profitability. At its core, this symphony of innovative seed science and technologies emerges as an imperative, orchestrating harmonious resolutions to the global complexities enshrouding agriculture and food systems.

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## INDIA



### **Commentary: India's food security is being choked by climate change**

The world's most populous nation is more poorly endowed with farmland, per capita, than Greece or Algeria. That's going to make life harder as a warming planet destabilises the cycles of rain and sun that have kept it fed for millennia. India last week suspended exports of non-basmati varieties of rice...

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[GE Rice Linked with Hunger, Health, and Climate Resilience](#)



[CRISPR Alters Onion for the First Time](#)



[Remodeling Rice Cell Walls Boosts Lodging Resistance, Biomass Saccharification, and Cadmium Resistance](#)



[The era of agritech: Will it make India a farming powerhouse?](#)

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## GLOBAL



# How to make the tomato survive almost without water?

Spanish scientists have found an antidote to combat the effects of drought on plants, but their remedy clashes with EU laws. A team of researchers from the Higher Council for Scientific Research (CSIC) has patented a spray in the United Kingdom that, through genetic editing, allows plants to retain water...

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[Strawberries are often perfectly shaped, humongous and uniform — but the flavor leaves much to be desired.](#)



[Olive oil crisis: could GM crops pose a solution?](#)



[Researchers Breed Poplar with Less Lignin Using CRISPR Gene Editing](#)



[CRISPR Helps Scientists Develop Canker-resistant Citrus Lines in Less Than a Year](#)

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## RESEARCH



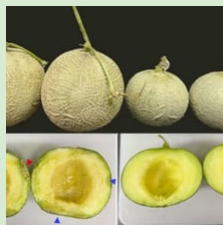
## Hot and Soar: Tomato crisis and the role of innovative seed technologies to address it holistically

India, ranking second in the world, produces over 20 million tonnes (2022) of tomato grown on 8.4 lakh hectares. Average productivity of tomato is around 24.5 tonnes per hectare and since several decades, the Indian government is undertaking several initiatives such as promoting use of high-yielding varieties and hybrids...

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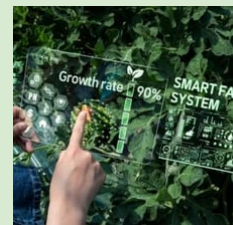
[Melon Transformation](#)



[Researchers Modify Shelf-Life](#)



[Combining AI and CRISPR: Gene-](#)



[Researchers Utilize AI to](#)



Made Easier and  
More Efficient

of Japanese  
Luxury Melon  
Using CRISPR-  
Cas9

edited hardwood  
trees increase  
carbon sink  
potential of deep  
forests

Optimize Plant  
Breeding

## Stay Tuned With



**Disrupting Agriculture with Blockchain Technology and ChatGPT: An Upcoming Revolution**

The transformative power of Blockchain and ChatGPT on agriculture is becoming evident. Blockchain offers transparency and traceability, solving complex supply chain issues. ChatGPT enhances farmers' knowledge and decision-making processes, thus amplifying productivity and sustainability.

Source: agriculturepost

**RNAi BIOPESTICIDE Technology**

- RNAi biopesticide technology marks a significant milestone in agricultural innovation.
- RNA interference is being used to develop targeted agricultural pest control solutions.
- RNAi Biopesticide will not harm non-target organisms.

These will reduce the use of chemical pesticides.

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Source: ISAAA

#thursdaysciencetrivia

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## PRODUCE "MORE WITH LESS"

- Currently, 50% of all land in the world is used to **produce food**.
- We need to produce more from shrinking cultivable land and optimize resource consumption. It simply means we need to produce **"more with less"**.
- Cutting-edge scientific innovations like **new breeding techniques** can help.
- New improved resilient crop varieties can efficiently yield high with a **smaller carbon footprint**.
- Diverse, productive crops can help **sequester carbon** and reduce GHG emissions.

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Source: linkedin

ALLIANCE for  
AGRI INNOVATION

## Unlocking Rice Root Hair Length Regulation

Scientists have discovered the gene responsible for regulation of rice root hair length using gene editing.

Roots are key for water and nutrient absorption and overall crop resilience.

By understanding the mechanism, for root hair length optimization scientists can ensure better absorption of water and minerals, potentially leading to crops that thrive even under unfavorable conditions.

Source: ISAAA

For more information about Federation of Seed Industries of India visit

[www.fsii.in](http://www.fsii.in)



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