

Kashmir's Traditional Rice

Prelims: Current events of national and international importance | Agriculture

Why in News?

Recently, a study conducted by researchers at SKUAST-Kashmir revealed that traditional rice landraces of the Kashmir Valley trace their primary genetic roots to temperate japonica rice from Northeast Asia.

Key Genomic Findings

Parameter	Traditional Kashmir Landraces	Modern Introduced Varieties
Primary Lineage	Temperate <i>Japonica</i>	Subtropical <i>Indica</i>
Geographic Origin	Northeast Asia (East Asia/Trans-Himalayan routes)	Indo-Gangetic & Peninsular India
Adaptive Phenotype	High cold tolerance during early germination and reproductive stages in alpine high-altitude climates ($>1,500\text{ m} > 1,500\text{ m}$ MSL).	Thermal adaptation to warm, low-altitude plains.
Notable Cultivars	<i>Mushq Budji</i> (aromatic landrace), <i>Kamad, Zag</i> (red rice).	Modern high-yielding varieties (HYVs).

Archaeobotanical Significance

- **Mapping Trans-Himalayan Trade & Migration**
 - Traditional theories posited that rice spread exclusively northward from the Gangetic plains into the Himalayan valleys.
 - The presence of strong temperate *japonica* genetic signatures suggests that ancient agricultural exchange occurred directly across trans-Himalayan corridors.
 - It connects East Asia/Northeast Asia to the high-altitude Northwest Himalayas.
- **Corroborating Neolithic Archaeology**
 - This genetic inference aligns with archaeological findings from Neolithic sites in the Kashmir Valley such as **Burzahom** and **Gufkral**.
 - It pointing to a complex prehistoric exchange networks extending toward Central and East Asia.

GENOMIC ORIGINS OF KASHMIR'S RICE GERMPLASM



COMPREHENSIVE DATASET

First full genomic mapping of Kashmir landraces.



DUAL LINEAGES DISCOVERED

Temperate Japonica vs. Tropical Indica.



TRADITIONAL LANDRACES (ANCIENT)



Genetic Affinity
Temperate Japonica



Origin
Northeast Asia (East Asia)



Migration Route
Trans-Himalayan highland exchange channels



Key Trait
Extreme Cold Tolerance



Key Example
Mushq Budji, Kamad



MODERN CULTIVARS (INTRODUCED)



Genetic Affinity
Tropical Indica



Origin
Subtropical Mainland India



Key Trait
High yield under warm plains conditions



Example
Standard high-yielding semi-dwarf varieties



Reference

[The Hindu | Kashmir's traditional rice](#)



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