Rahbar International

Tuesday, August 26th 2025

Buckwheat Successfully Adapted in Multan as Short-Duration, Nutrient-Rich Crop

Published on August 26, 2025

Document Date: Tue, Aug 26 2025 10:39:37 pm

Category: ,English,Green Pakistan - ,Snippets

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Multan, August 26, 2025 – Researchers at the Department of Agronomy, MNS University of Agriculture, Multan, have successfully adapted buckwheat as a nutrient-dense, short-duration crop suitable for the plains of Punjab, offering a sustainable solution to malnutrition and food insecurity.

Malnutrition remains a global challenge, with over 800 million people undernourished. Heavy reliance on staples like wheat, rice, and maize limits access to essential nutrients. Buckwheat (Fagopyrum esculentum), a gluten-free pseudocereal rich in protein, fiber, iron, zinc, and antioxidants, offers a promising alternative. It matures within 70–80 days, thrives in low-fertility soils, and requires minimal inputs, making it ideal for regions facing resource constraints.

The research introduced 148 exotic genotypes sourced from USDA under Multan's agroecological conditions. Two genotypes – Silverhull 24 and Japanese B+0 IR-13 – showed exceptional adaptability, maturing within 67–71 days and yielding up to 1.27 t ha^{-1} when sown between November and February. The crop also produced significant green fodder yields (12.39 t ha^{-1}) and improved soil fertility when used as green manure, increasing available phosphorus by 65% in alkaline soils.

Nutritional analyses revealed impressive results: buckwheat grains contained 1.1 times more iron

than wheat and 5.7 times more than rice, alongside higher protein (13.7–15.8%) and calcium levels compared to alfalfa hay. These traits make it a valuable option for combating nutrient deficiencies and gluten intolerance.

Researchers also optimized seed storage using hermetic bags, which maintained viability and vigor under ambient conditions, offering a cost-effective solution for small farmers.

"Buckwheat has proven to be a fast-growing, multipurpose crop adaptable to Punjab's plains," said lead researcher Mahmood Alam Khan, PhD Scholar. "It can contribute to sustainable agriculture and improved nutrition, especially in rural communities."

The study recommends further investment in awareness campaigns, seed availability, and processing infrastructure to promote buckwheat as a viable alternative crop in Pakistan's farming systems.

As climate change and population growth intensify global food security challenges, resilient crops like buckwheat could play a pivotal role in ensuring sustainable and nutritious diets for future generations.