

Special Seminar

To invite researcher from National Agri-Food Biotechnology Institute, India. We will hold a special seminar on wheat flour color.

Date and Time: June 24, 2024, 9:30-10:00

Place: International training room at ALRC



Anthocyanin rich colored wheat: From Japan to India Dr. Monika Garg

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The rising concern of malnutrition has led to the development of biofortified colored wheat, specifically anthocyanin-biofortified black wheat, which has garnered significant attention, particularly in India. These locally adapted blue, purple, and black wheat lines exhibit elevated levels of anthocyanins and zinc, making them not only nutritionally superior but also possessing potent antioxidant and anti-inflammatory properties.

In vivo studies have demonstrated the effectiveness of dietary black wheat in mitigating obesity and its associated comorbidities induced by a high-fat diet. Furthermore, our research showcases the antimicrobial activity of black wheat anthocyanin extract against human pathogens, along with positive prebiotic-like effects on the gut microbiota in mice. Notably, significant findings have emerged from our investigation on the effects of black wheat intervention in a high-fat diet/Streptozotocin (HFD/STZ) induced Type 2 diabetes mellitus (T2DM) rodent model. Black wheat intervention not only reduced glucose levels but also improved lipid profiles, enhanced antioxidant status, and attenuated inflammation in T2DM, suggesting its potential as a therapeutic intervention for managing T2DM complications.

It is worth highlighting that black wheat exhibits enhanced nutrient stress tolerance under iron and phosphate deficiency. Contrary to the belief of anthocyanin degradation during cooking, our research demonstrates that value-added products such as vermicelli, chapattis, cookies, and cakes made from black wheat retain superior nutraceutical and antioxidant profiles compared to their white wheat counterparts. Moreover, black wheat chapattis exhibit lower cooking-associated amino acid losses compared to their white counterparts, emphasizing the importance of the food matrix in quality evaluation.

In conclusion, black wheat biofortification holds immense promise as a public health intervention, offering a range of health benefits, including obesity mitigation, T2DM management, antimicrobial properties, and nutrient stress tolerance.

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