

Plant Genomics

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Selection of barley genotypes for nutritional composition vis-à-vis malting trait for improvement

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Barley (*Hordeum vulgare vulgare L.*) is an important cereal grain of semiarid regions globally due to its nutritional value. The present investigation was carried out to evaluate the nutrient composition and effect of processing on four new barley genotypes viz. BH- 942, BH- 952, BH-933 and BH-946. The results revealed that BH-94 had higher crude fiber (4.25%) and crude protein (12.39%) content. The total soluble sugars, reducing sugars, non-reducing sugars, starch and dietary fiber content of barley genotypes ranged from 3.29 to 3.48, 0.55 to 0.62, 2.67 to 2.91, 57.27 to 58.57, 12.45 to 13.48 per cent, respectively. The availability of minerals and in-vitro digestibilities were also higher in barley genotype BH-942, but had lower antinutrients. Malting not only increased the protein and crude fiber content, but also sugars, minerals and in-vitro digestibilities for protein and starch, with the highest increase in BH-942 and BH-946, whereas it reduced the crude fat, ash, starch and antinutrients content in all genotypes. Genetic variability among four barley genotypes can be enhanced through recombination to enhance accumulation of essential minerals; synthesis of precursors of vitamins; modified quantities and qualities of starch, proteins and fats in improving human health and nutrition through efficient phenotypic screens and genotypic markers. QTLs and genes for above stated traits have been identified and mapped on various barley chromosomes for incorporation into breeding programs using molecular marker based selection for further improvement and development of new barley varieties combing useful traits for the benefit of farmers, processors and human health.

Biography

Alka Vasan has completed her PhD in Foods and Nutrition from CCS Haryana Agricultural University, Hisar, India with her research focus on study of processing of barley (*Hordeum vulgareL.*) genotypes and its effect on Barley's nutritional composition. Having worked with researchers of such high repute, she is now set to work towards development of innovation in value addition of the crop and her experiences learnt during her research have made her get her work published both nationally and internationally. Her publications include eleven papers, four book chapters and a couple of paper & poster presentations in India and abroad.

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