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Millets and Millet Technology

 Springer

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Processing-Mediated Changes in the Antinutritional, Phenolic, and Antioxidant Contents of Millet

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M. I. Bhat, Rajeev Kapila, and Suman Kapila

Abstract

Millet grains are the treasure trove of essential micronutrients, resistant starch, and gluten-free proteins making them ideal food for people suffering from hidden hunger, chronic health disorders such as diabetes, obesity, and celiac allergy. Further, the presence of rich quantities of various antioxidant compounds vitamin E, proteins and peptides, carotenoids, flavonoids, and others across various varieties of millets enhance their utility as functional food. However, millets also contain certain phenolic substances such as phytates, tannins along with some protease inhibitors that can severely hamper the availability of these nutrients by acting as anti-nutritional factors. Fortunately, the presence of such anti-nutritional compounds can be reduced by some conventional and modern processing methods that make them more edible with better nutritional and sensory properties. For instance, fermentation mediated by microorganisms including yeasts, lactic, and acetic acid bacteria can modulate the anti-nutritional factors along with enrichment in health-promoting compounds that increase their demand from the nutrition point of view. Therefore, this chapter is aimed to highlight the various intentional and nonintentional food processing techniques that could modulate the nutritional aspects of millets with a special focus on antioxidant compounds, anti-nutritional factors as well as phenolic substances in millet-based food products.

Keywords

Anti-nutritional factors · Antioxidants · Fermentation · Millets · Processing methods

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