

Malted Bambara Groundnut, Novel Food and Beverage Ingredient

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Abstract

Bambara groundnut (BGN) is an indigenous grain legume of different colours with the ability to grow in poor soils, nitrogen fixation, and drought tolerance, coupled with enough valuable nutrients like protein (16-19%), carbohydrates (63-65%) and fats (6.5%), which are important features for sustainable crop production. It serves as an important protein source in the poor regions of Africa, especially in a situation whereby poor people cannot afford the costly animal protein. Bambara groundnut is known for its 'hard to mill' phenomenon, one of the major factors limiting its use. The studies and research carried out over the years on BGN have been channelled to identify BGN industrial potentials for processing and utilization of the 'complete food' legume. It has been reported that malting made the BGN seeds brittle, easily breakable, milled into flour, and boosted the flour extraction rate. Malting has also improved BGN bioactive components, including protein, peptides, amino acids, polyunsaturated fatty acids, total polyphenols, and flavonoids. Malting has been shown to reduce tannins, trypsin inhibitors, phytate, lectins, and flatus oligosaccharides of BGN. The functional characteristics of the malted BGN, such as least gelation concentration, viscosity, water, and oil absorption properties, showed quality improvement. The improved protein content of malted BGN could serve as a protein source to combat malnutrition and undernutrition in children and adults. Malted BGN is desirable in the food industry to produce enzyme-rich food ingredients, condiments, and biologically active compounds, with potential applications in functional food, nutraceutical, pharmaceutical, and cosmetic market sectors, consequently improving the livelihoods of the farmers.