Editorial

In this covenant of functional foods, there is a continued interest in provision of fiber enriched foods to increase dietary fiber (DF) intake and reducing the risk of suffering distinct diseases. The health benefits of DF in the diet have already been well described which formed the basis of DF’s dietary recommendations around the world. Whole-grain flour (WGF), fruits and vegetables are the basic sources of DF and many functional ingredients. Currently, the physicochemical properties of DF are providing clues to understand their potential physiological role in human body and it is very interesting area to investigate the effect of superfine grinding on functional activity of food fibers [1-5].

Nowadays, superfine grinding technology has been employed with food materials to produce powders with outstanding properties such as fluidity, dispersion, adsorption, high solubility and chemical reactivity. The biomaterial processing industries are using this technology to improve the applicability of DF powder in cooking and nutritional profile of products by particle size reduction of DF [4, 6, 8]. Compared with other samples grounded with traditional mechanical methods, superfine powder bears good physical characteristics like lowering the interfacial tension and effect on steric hindrance [7, 9]. Recently, the superfine grinding technology has been used in production of oat powder, Qingke bran DF, whole-wheat flour, ginger powder, wheat bran DF, bitter melon powder and wine grape pomace DF, as well as also applied in biotechnology [2,3,4,7,8,9].

Numerous studies have confirmed that the soluble DF, total phenolic content (TPC), ferric reducing antioxidant power and DPPH were increased after superfine grinding. The decrease in particle sizes increases the surface area of particle and releases the bioactive moieties from biomaterial. But, it is still need to be explore, that how the superfine girding improves the functional and antioxidant properties of DF [3,11,12].

The role of superfine grinding is very well known; mechanical force could lead to changes in chemical composition, for instance the ratio and structure of fiber and starch alongside improved protein solubility. The superfine grinding of biomaterials increases the surface/volume ratio of the substrate as well as the breakage of cell wall of materials leads to increase in accessibility and dietetic constitutes. So, it is concluded that the properties of the materials and the production technology helps to determine the economic value of final products. The quality of ultra-fine powders not only depends on their chemical composition, but also on superfine grinding methods and their physical properties as well [13].

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References


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