NUTRITIONAL QUALITY OF BENGAL GRAM (CICER ARIETINUM) GERMINATED USING MINERAL FORTIFIED SOAK WATER

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Legumes are main source of proteins and other nutrients among vegetarians. Germination improves nutritional quality of grain. The study involved determining nutritional quality of Bengal gram germinated after soaking in mineral fortified water. The mineral salts used for fortification were iron (100/200mg per 100g grain) or zinc (50/100mg per 100g grain). Whole and dehusked grains were analysed for nutritional composition, bioactive components and digestible/bioaccessible constituents. The results indicated that mineral fortification increased the iron and zinc contents of whole legumes, however, the mineral salts were mainly adsorbed on the husk portion as on dehulling there was a significant reduction in mineral content. Using iron and zinc also reduced calcium content significantly in dehulled grains. Dehulling reduced the phytic acid and insoluble fiber. The in vitro digestible protein and starch, and bioaccessible iron, calcium and zinc were higher in dehusked grains. A different trend was observed for bioactive components. Dehusking increased the polyphenol and tannin content in grains, however, there was a reduction in flavonoids. Both the absolute amount and extent of bioaccessible bioactive components, polyphenols, tannins and flavonoids were lower in dehulled grains. Hence, it can be concluded that mineral fortification of soak water can increase the iron and zinc content in germinated grains. Though dehusked grains showed better bioaccessibility of nutrients, for bioactive components, whole grains were superior.