

Influence of Germination on Compositional Changes of Carbohydrate and Physicochemical Properties of Flours from Proso Millet (*Panicummiliaceum*) and Foxtail Millet (*Setariaitalica*) Available in Sri Lanka

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Germination is an inexpensive and effective technique that can increase the nutritional quality and change the physicochemical properties of the cereal flour. The aim of this study was to evaluate the changes in carbohydrate composition and physicochemical properties upon germination of proso millet and foxtail millet which are being underutilized in Sri Lanka. The millet grains were germinated and standard analytical methods were followed to determine their total starch, amylose and amylopectin, dietary fiber, water holding capacity (WHC), oil holding capacity (OHC), swelling power and water solubility. Related to the results, due to germination, starch, amylose and amylopectin contents were significantly ($p<0.05$) decreased in both millet flours and dietary fiber content was significantly ($p<0.05$) increased as 8.70 to 19.01% in proso millet and 14.18 to 32.93% in foxtail millet. WHC significantly ($p<0.05$) increased due to germination in both species and it ranged from 2.77 to 3.88 g/g and 3.25 to 5.87 g/g in proso millet and foxtail millet, respectively. A similar significant ($p<0.05$) increase in OHC was also observed in germinated flours. Swelling power and water solubility which reflect the hydration capacity of flours were significantly decreased in studied two millet flour samples after germination. These findings encourage the application of germination in developing nutritionally rich proso millet and foxtail millet flours with altered physicochemical parameters to incorporate in functional food formulations.

Keywords: Germination, Millet, *Panicum miliaceum*, Physicochemical properties, *Setaria italica*

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