

Investigation of Total Phenolic Contents in Unfermented and Fermented Moringa Leaves Powder (*Moringa oleifera* Lam.)

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Abstract

The present study was performed to utilize the hidden potential of moringa leaves. The dried leaves of moringa were fermented by water kefir for 96 h at 25 °C - 30 °C. In this study, water kefir grains were used as starter culture which contains various beneficial bacteria and yeasts that protect against harmful bacteria. Firstly, the preliminary phytochemical tests of unfermented and fermented moringa leaves were carried out which gave positive for alkaloids, flavonoids, glycosides, phenolic compounds, reducing sugars, carbohydrates, saponins, lipophenols, polyphenols and α -amino acids, respectively. Some physicochemical properties such as pH (6.8 to 4.4), acidity content (0.59 %), sugar content (3.15 %) and alcohol content (5 %) were detected in fermented moringa beverage. Moreover, moisture content (7.8 %, 9.6 %), ash content (6.49 %, 5.80 %) and proteins content (20.41 %, 24.30 %) were observed in unfermented and fermented moringa leaves samples, respectively. Meanwhile, these samples were checked for qualitative test of phenols. It responds positive for acidic property test, color with FeCl_3 test and Ellagic acid test, respectively. Finally, the total phenolic contents (TPC) were measured by Folin-Ciocalteu assay using UV spectrophotometer at 765 nm and gallic acid used as standard. The total content of phenolic in unfermented and fermented moringa leaves powder were 136.6 ± 0.80 mg and 232.6 ± 10.22 mg gallic acid equivalent (GAE) per 100 g DW, respectively.

Keywords: Moringa, fermentation, water kefir grains, total phenols

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