



**PHYSICO-CHEMICAL PROPERTIES OF FINGER MILLET (*ELEUSINE CORACANA*)
AND BARLEY BEERS**

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ABSTRACT

This study was carried out to compare the physico-chemical characteristics of finger millet and barley beers. *Finger millet (var. kabre)* was soaked for 12 h, germinated for 48 h at 28 ± 1 °C and kilned at 50 ± 2 °C for 24 h. Beers were prepared from millet and barley malts and their chemical, physical and sensory characteristics were compared. Total reducing sugar (as maltose), dextrin, and total acidity (as lactic acid) were 0.51, 1.69 and 0.24; and 0.82, 0.89 and 0.23% (m/v) in millet and barley beers respectively. Water-soluble protein (as bovine serum albumin), FAN (as glycine) and total phenolics (as gallic acid) were 224.3, 3.1 and 43.1; and 299.9, 9.4 and 59.2 mg% (m/v) in millet and barley beers respectively. Barley beer had higher antioxidant activity (33.17%) than millet beer (18.09%). Extract, real extract, apparent extract, original extract and real degree of fermentation between millet and barley beers did not differ ($p > 0.05$). Sodium, potassium, and phosphorous contents were higher while iron, manganese, and zinc were lower in barley beer than in millet beer. Millet and barley beers had similar alcohol contents ($5.38 \pm 0.26\%$, v/v). Fusel oil and methanol in millet and barley beers were 809.41 and 213.75, and 228.85 and 249.71 g/100 L alc respectively. Total ester, aldehydes, and VDK contents were higher in barley beer than that of millet beer. Turbidity (FTU), viscosity (cP) and color (EBC units) in millet and barley beers were 119.67, 1.39 and 7.17; and 16.33, 1.30 and 10.22 respectively. Taste, smell, and flavor of millet and barley beers were similar; while millet beer had better body but poor color compared to barley beer. Physical, chemical, and sensory properties of millet beer were comparable to barley beer.

Keywords: Millet and Barley Beers, Dextrin, Phenolics, Antioxidant Activity, Minerals, VDK, Alcohols, Sensory Properties