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BIOCHEMICAL CHARACTERISATION OF CAMEL MILK FROM DIFFERENT REGIONS OF PUNJAB-PAKISTAN

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ABSTRACT

The objective of this present study was to explore the attributes of camel milk (Marecha breed) collected from different regions of the Punjab Province, Pakistan during the months of January to April. These were MLP, MCP and MUP meaning milk from lower, cental and upper Punjab. Variations were observed in gross chemical composition, physical attributes and insulin concentration of camel milk, i.e. 3.84±0.09% (MLP3) protein content, 3.13±0.12% (MLP1) fat contents, 4.25±0.17% (MLP2) lactose content, 0.84±0.03% (MLP1) ash content, 47.46 ±1.01 IU (MLP2) insulin content, 6.69±0.09 (MUP4) pH and 0.162±0.03% acidity (MLP5). The SNF values ranged between 8.13±0.16% to 6.64±0.14% among all regions. Total solids were found maximum in (MLP3) 11.21±0.4% and minimum in (MCP1) 9.64±0.5%. Most prevalent minerals were Ca (115mg/100g), Fe (0.46 mg/100g), Zn (0.57 mg/100g), Na (65.32 mg/100g), K (160 mg/100g) and Mg (9.56 mg/100g). In fatty acids profile, oleic acid (18.5±1.40g/100g), Palmitic (10.17±0.60g/100g), stearic (6.22±0.10g/100g) and Palmitoleic (6.13±0.04g/100g) were found in significant amount. Camel milk with best compositional and physicochemical attributes, was further subjected to rheological (rheometer) and thermal characterisation (Differential scanning calorimetry) to predict and optimise conditions for pasteurisation of camel milk.

Key words: AAS, camel milk, DSC, GC-FID, physicochemical characterisation, Punjab, rheological and thermal properties, rheometer