Abstract: This study was carried out on 15 dromedary camels (Camelus dromedarius) reared in natural grazing in the area of Nile East, Khartoum State, to investigate the effect of number of lactation (parity number; three parities), lactation stage (1-8 and 9-18 month of lactation) and season of sampling (winter or summer) on camel milk composition. The overall means of milk constituents (and their standard deviations) were 10.98% (±0.72) for total solids, 0.82% (±0.04) for ash, 3.82% (±0.315) for lactose, 3.01% (±0.086) for fat, 3.19% (±0.164) for protein, 0.78g/l (±0.027) for sodium, 1.48g/l (±0.014) for phosphorus and 1.56g/l (10.024) for calcium. The value of total solids recorded in the third parity was high (11.97%), increased significantly (P<0.05) during lactation stage of 9-18 month and was significant (13--0.05) in winter compared with the summer. Ash content was increased significantly (P<0.05) from 0.75% to 0.89% during lactation stage of 9-18 month. In contrast, ash was not affected by parity number or season. Moreover, lactose content was increased significantly (P<0.05) in the third parity to be 4.24% but it was not affected by lactation stage or season. Sodium content was affected by parity number and lactation stage but not affected by season. Fat, protein, phosphorus and calcium contents were not affected by parity.