

ISOLATION AND PURIFICATION OF PROTEINS FROM COW AND BUFFALO MILK

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Abstract

Isolation and purification of proteins from cow and buffalo milk was studied and compared. Concentrations of proteins and filter cake resistances were investigated. Studies revealed that a maximum protein concentration of 1487.375 $\mu\text{g/ml}$ in 1000 kDa membrane ultra filtrated buffalo milk was obtained than compared to 1109.875 $\mu\text{g/ml}$ of 1000 kDa membrane ultra filtrated cow milk sample. From the size exclusion chromatography, it was observed that two types of protein fractions were common in both cow and buffalo milk samples. The Sodium Dodecyl Sulphate- Poly Acrylamide Gel Electrophoresis (SDS-PAGE) profile showed that the molecular weight of the band is 18 kDa. It was determined that beta-lactoglobulin (whey protein) was present in both cow and buffalo milk. Filter cake resistance of cow milk and buffalo milk were found to be 1.12×10^7 m/kg and 0.99×10^7 m/kg.

Keywords: milk, ultra filtration, dialysis, SDS-PAGE and beta-lactoglobulin.