

# Polymorphism of Milk Proteins using SDS PAGE and 2- Dimentional Gel Electrophoresis in Jamnapari Goats

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**Abstract**—Goat's milk has been an enriched source of amino acids and proteins. Due to post translational modifications such as glycosylation, phosphorylation, casein proteins shows variants which are being studied in this study. This study is entitled to exemplify the proteome of goat milk of 160 Indian goat breeds Jamnapari and to find the variants using SDS- PAGE and 2 dimensional gel electrophoresis. SDS PAGE and 2-D Gel electrophoresis has been a refined technique to evaluate the polymorphism in milk proteins. The electrophoretic pattern of goat milk samples showed the presence of four major casein variants, i.e., CSN1S1, CSN1S2, CSN2, CSN3 and two whey proteins, viz.,  $\beta$ -lactoglobulin and  $\alpha$ -lactalbumin. These major proteins exhibits variants i.e. CSN1S1\*A (0.92), CSN1S1\*B(0.1), CSN1S2\*A was not found and CSN1S2\*B(0.95). No polymorphism was observed at CSN2, CSN3 and  $\alpha$ - lactalbumin locus in our study. However, frequency of  $\beta$ -LGA and  $\beta$ -LGB was 1 and 0.12 respectively these studies also implied that variant A was present where as B showed the frequency 0.12 The analysis of milk proteome in 2 D Gel Electrophoresis, showed major proteins bands of CSN1S1, CSN1S2, CSN2, CSN3,  $\alpha$ -LA,  $\beta$ -LG and various complicated spots with the presence of low abundance proteins and post translational modifications products.