

Comparison of conjugated linoleic acid and other fatty acid content of milk fat of mafriwal and jersey cows.

Abstract

Special attention has been given to the milk Fatty Acids (FA) that have a beneficial effect for human health such as mono and poly unsaturated fatty acids in particularly the Conjugated Linoleic Acids (CLA). This study was undertaken to investigate the milk fat contents of CLA variables (CLA and CLA-desaturase index) and other FA composition of Mafriwal and Jersey cows under same feeding system. In addition, the relationship between these two CLA variables with milk production and milk fat percent was determined. All the cows were grazed on pasture and given 5.5 kg of concentrate per head daily. Milk FA composition was determined using gas chromatography after extraction of milk fat using modified Folch's method. The results showed a significant variation ($p < 0.05$) in the FA contents of the two breeds. The cis-9, trans-II CLA and CLA-desaturase index in milk fat of Mafriwal were significantly higher ($p < 0.05$) than that of Jersey cows. Mafriwal cows produced significantly ($p < 0.05$) higher concentrations of C18:0, C18:1cis-9, C18:3 and C20:1 than that of Jersey, while Jersey cows produced significantly ($p < 0.05$) higher concentrations of C12:0 and C14:0 than Mafriwal cows. Additionally, significant positive correlations were observed between CLA variables and milk production. This study indicates that the breed of cows has an effect on CLA and other FA composition of milk fat and Mafriwal cows produced significantly higher percentages of CLA than Jersey cows which would provide better benefits for human health. Furthermore, the milk fat content of CLA and CLA-desaturase index were positively related to the milk production.

Keyword: Breed; Conjugated linoleic acid; Cow milk fat; Desaturase index; FA composition; Milk production.