FACTORS AFFECTING FATTY-ACID PROFILE OF LACTIC LIPIDS IN THE WATER BUFFALO. A REVIEW

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Abstract

The aim of this review was to study how lactic fatty acids (FA) are affected by different factors in the different pathways in the buffalo – a species differing from cattle with its response to feeding strategies, metabolism and specific functional composition of milk. It underlines the role of management to manipulate enzymatic desaturation and bacterial synthesis and that of ripening and pasteurization in dairy technology. The review presents some proofs of effect of season on FAs, but it should be correctly discriminated from the effect of lactation stage, showing improved unsaturation in advanced lactation. Farming system has major impact, and it can include feeding strategies (rumen-inert fats, seeds, bioactive compounds, etc.) to affect rumen biohydrogenation, but it is implied that the doze is important. In fact, the best control over bubaline lactic FAs is via natural grazing, improving omega ratio, conjugated linolenic (CLA) and trans-vaccenic acid (TVA). This is not only because of plants' composition of soluble sugars, vitamins, polyphenols and proteins, but mostly because of the stimulated bacterial synthesis and Δ9-desaturase activity, responsible for the de novo synthesis. The results about the transformations in the beneficial fatty acids in the yoghurt production are controversial explaining the predominantly negative impact mostly with pasteurization. Cheese processing generally alters the individual isomers but not the groups of beneficial fatty acids (CLA) as a whole chiefly due to ripening and pasteurization (only if the temperature is high), but not due to renneting.

Key words: Bubalus bubalis, milk, fatty acids, grazing, supplementation

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