DIET-INDUCED MILK FAT DEPRESSION IN DAIRY COWS - A REVIEW

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Diet-induced milk fat depression (MFD) is a metabolic syndrome. Main symptom is the reduction of fat content in milk. It causes a negative effect on metabolism, production and farm profitability. Due to diet-induced MFD, 50% reduction in milk fat content can be observed. Thus, the two objectives of this study were to discuss the causes of diet-induced MFD and identify the remedies for the causes. The main causes of diet-induced MFD are, higher level of fat and carbohydrate contents and low level of fibre content in the dairy feed ration. Diet-induced MFD can be prevented by, (i) increasing the fermentability of diet, (ii) using low levels of dietary polyunsaturated fatty acids (PUFA), (iii) using rumen modifiers such as 2-hydroxy-4-(methyl-thio) butanoate (HMTBa), (iv) increasing the fibre level in the diet, and (v) selecting more efficient dietary fibre sources such as physically effective neutral detergent fiber (peNDF) in dairy rations. Dietary fat content should be maintained around 5% in the ration to control diet-induced MFD in dairy cows. By maintaining a daily carbohydrate content of 17.7% - 24.6%, 30 - 33% of peNDF and use of recommended forage particle size (3.1 mm) in coarse rations are also essential to avoid diet-induced MFD. Studies have shown that, daily supplement of 750 mg of a mixture of essential plant oils, feeding of the correct stage mature forages and managing yeasts/mould content in fermented feeds like silage are also effective in controlling diet-induced MFD. Further, supplement of the required daily energy content through ration avoids disturbances in metabolism. Thus, this review provides information on how to manage and reduce the risk of diet-induced MFD in dairy cattle.

Keywords: Dietary fibre sources, Fat content in milk, Feeding plant oils, Forage particle size