

## Enhancing dairy milk CLA by tailoring rumen dynamics through dietary manipulations

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Conjugated linoleic acid (CLA) has been recognized to impart health benefits to human beings by supporting or manipulating health protecting mechanisms. Bovine milk is considered an important source of this valuable fatty acid; however, its synthesis by the dairy cow is influenced by multiple factors, among which dairy feed is one of them. Fabricating dietary nutrients to feed the dairy animal aimed to enhance its CLA has offered a tool to be used to synchronize the dietary, ruminal and cellular nutrient interaction and utilization to achieve higher CLA in milk. This article will underline how dietary feed ingredients can alter rumen dynamics and milk biosynthesis to attain a higher CLA in dairy milk fatty acid profile. Studies indicate changes in milk CLA might be attributed to the diversity of fat sources and varying concentration of forage and concentrate. However, role of nutrients which

are degraded and / or undegraded in rumen can't be neglected. Feeding type of fat which doesn't break in rumen and certain amino acids which break and don't break in rumen are important tools to design milk fatty acid profile with higher CLA. Dietary fat may influence the bio hydrogenation phenomena in the rumen which has direct impact on milk fatty acid profile. Feeding type of protein which is not degraded in the rumen have been reported to enhance the milk CLA, however, this impact of dietary protein may be affected by composition and quantity of amino acids which don't break in the rumen. Biosynthesis of milk need precursors or nutrients which dairy Animal gets form blood which reflects the existence of an isotonic equilibrium between blood and milk. This abstract review and underline the dietary interventions aimed to synchronize dietary nutrients to tailor rumen dynamics towards synthesis of nutrients or their precursors for higher milk CLA and this nutritional avenue still awaits to be capitalized for better human nutrition.

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