(How) is forage intake related to phytanic acid content in cow milk? - A review
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Introduction

• Dutch retailers changed their policy and replaced their private label dairy products with pasture-based milk from April 2011 onward. Farmers who graze get a premium.

• Such ‘Weidemelk’ and organic dairy is retailed at a higher price, which could lead to fraud.

• Phytanic acid (PA) is a branched-chain fatty acid, produced by bacteria from enzymatic degradation of chlorophyll in the rumen. PA content in milk depends on phytol from feed.

→ Is milk PA content related to green feed intake? Can it serve as a marker for grass-fed cows?

Materials and Methods

• Various studies on PA in cow milk were reviewed and results compared to answer this question

Results and Discussion

• Clover silage increased PA over grass silage (1)

• Grass silage increased PA over TMR in D (4)

• Fresh grass increased PA in D and CH (5, 6)

• But relation between % fresh grass in diet and PA was negative in DK (2) and absent in NL (3, Fig 2).

→ Total PA is no good marker for milk or dairy products from organic, pastured or grass-fed cows.

Fig. 1. Minimum and maximum PA contents in cow milk fat, reported in 6 studies across Europe (ref. 1-6)

Fig. 2. PA vs grass intake with: No Grass; Grass Indoor; Pasture day/night; Organic; BioDynamic (3)

References

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