A) Introduction

Feeding 18-carbon unsaturated lipid supplements, including whole or processed oilseeds rich in long chain polyunsaturated fatty acids (PUFA) such as linoleic (cottonseed) or linolenic (linseed) acid, which can undergo a certain degree of rumen biohydrogenation, helps to increase the conjugated linoleic acid (CLA) content in milk.

B) Objective

To study the effect of supplementation with cottonseed compared to barley at two levels of concentrate on milk composition and fatty acids (FA) profile of cows in an indoor feeding regime during autumn.

C) Material and Methods

Spring calving Holstein-Friesian dairy cows (n=36) were randomly assigned to one of three treatments (n=13) during 70 days in autumn, using an indoor feeding regime:

- two supplemented with oilseeds, cottonseed (C), at two levels: C5 and C7, with 5 and 7 kg DM/cow/day.
- one supplemented with cereal grains, barley (B7) at 7 kg DM/cow/day.

Measurements:

Daily milk yield and weekly milk protein and milk fat were registered. Weekly milk FA profile was determined by gas chromatography:

- Short (SCFA), Medium (MCFA) and Long chain fatty acids (LCFA).
- Monounsaturated (MUFA) and Polyunsaturated fatty acids (PUFA).

D) Results and Discussion

E) Conclusions

- Using cottonseeds for feeding dairy cows showed a tendency to decrease the MCFA and increase the LCFA.
- PUFA and linoleic acid were significantly higher in the cottonseed than in the barley supplemented treatment, for the same level of concentrate (7 kg DM/cow/day), with a tendency to increase also the CLA content in milk.

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