COMPOSITION AND FATTY ACIDS PROFILE OF BOVINE MILK AFTER SUPPLEMENTATION WITH BARLEY AND COTTONSEED

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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.

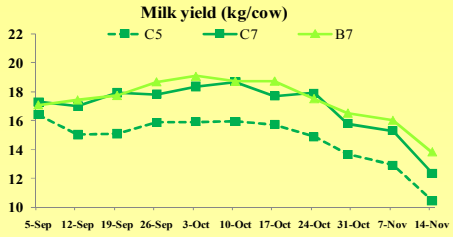
Measurements:

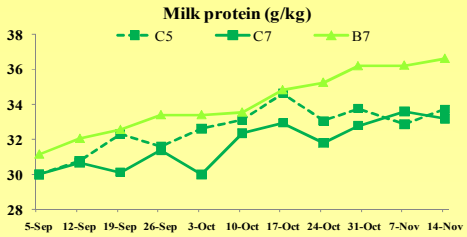
Daily **milk yield** and weekly **milk protein** and **milk fat** were registered.

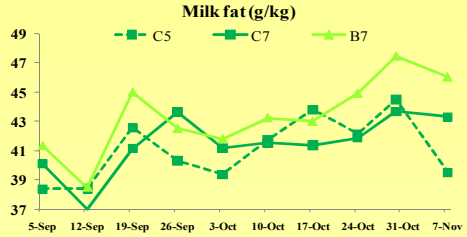
Weekly **milk FA profile** was determined by gas chromatography:

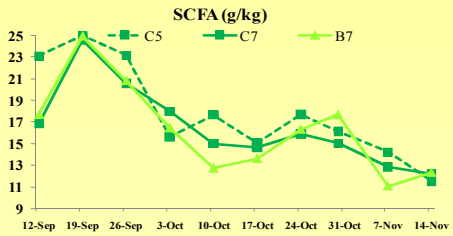
- **Short** (SCFA), **Medium** (MCFA) and **Long chain fatty acids** (LCFA).
- **Monounsaturated** (MUFA) and **Polyunsaturated fatty acids** (PUFA).

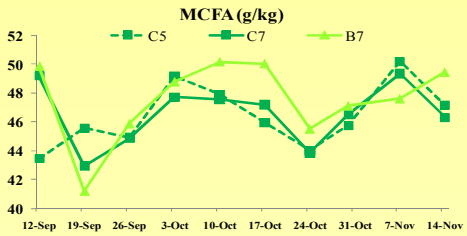
D) Results and Discussion

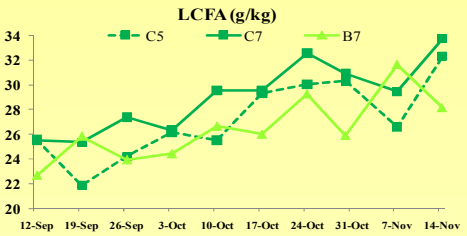


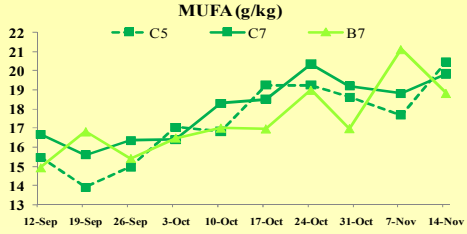


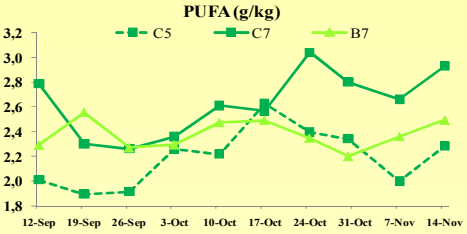


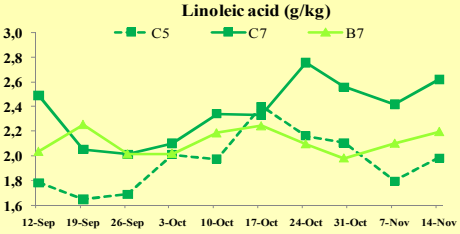












E) Conclusions

- 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 fat.

F) Acknowledgements

To INIA by their financially supported under the project RTA2005-00204-00-00.