

EFFECT OF GRAZING TIME ON MILK FATTY ACIDS COMPOSITION IN SUSTAINABLE DAIRY SYSTEMS FROM HUMID AREAS

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1) INTRODUCTION Milk from grazing dairy cows show an **improved fatty acids (FA) profile** with **lower saturated fatty acids (SFA)** and **higher unsaturated fatty acids (UFA)** than milk from silage-fed cows.

2) OBJECTIVE To investigate the effect of different **proportions of grazing** (0, 12 or 24-hr) on **milk FA composition** in dairy cows' diet from sustainable Atlantic dairy systems and its **variation across the grazing season**.

3) MATERIAL AND METHODS Autumn calving Holstein Friesian dairy cows (n=61), supplemented with concentrate containing oilseeds (6.3 kg DM cow⁻¹ day⁻¹), were randomly assigned to one of **three treatments** in spring: **G0** (zero-grazing, n=11), **G12** (grazing 12-hr, n=27) and **G24** (grazing 24-hr, n=23).

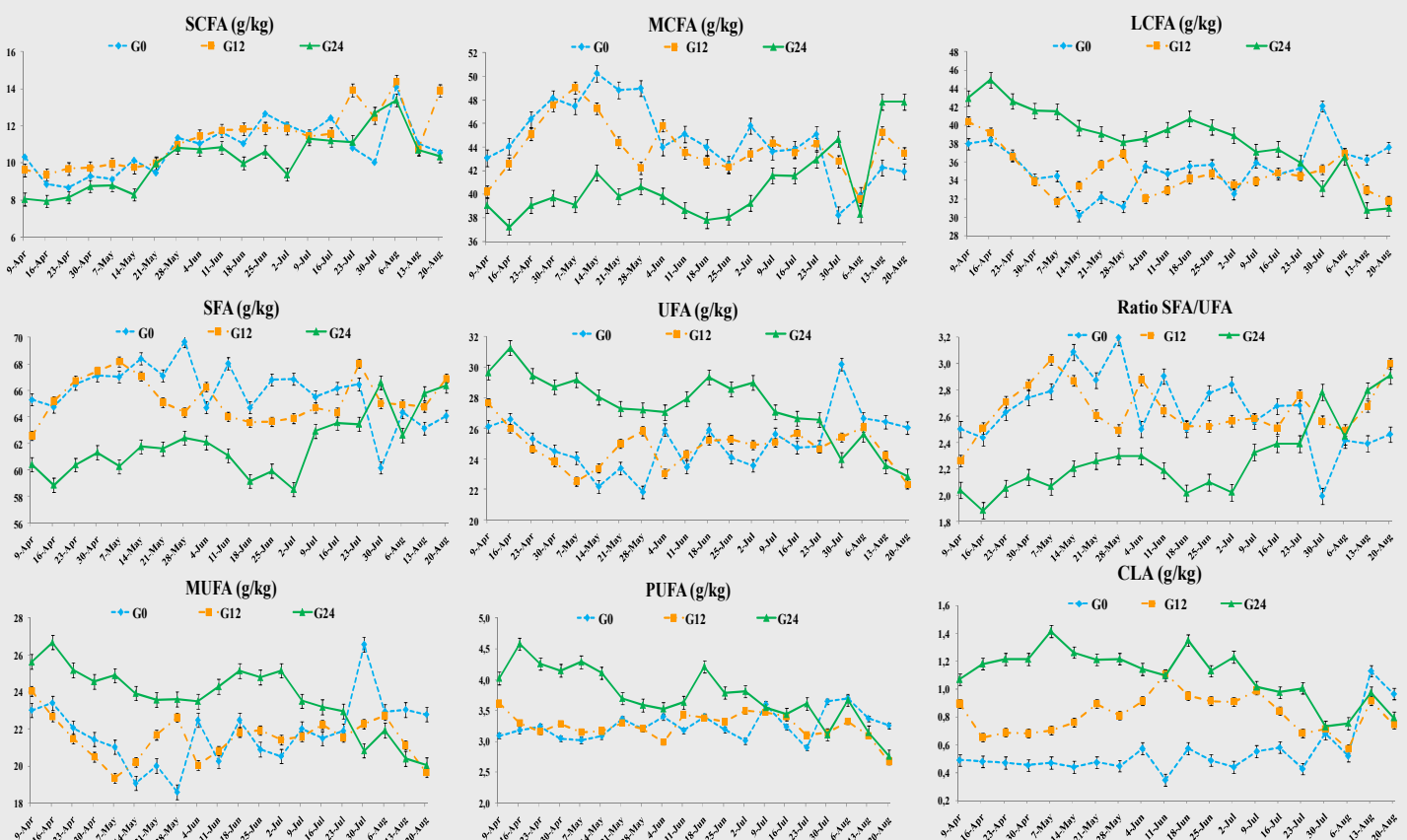
Measurements: Weekly **milk FA profile** was determined by gas chromatography:

- **Short (SCFA)**, **Medium (MCFA)** and **Long chain fatty acids (LCFA)**.
- **Saturated (SFA)** and **Unsaturated fatty acids (UFA)** and **Ratio SFA/UFA**.
- **Monounsaturated (MUFA)** and **Polyunsaturated fatty acids (PUFA)**.
- **Conjugated Linoleic Acid (CLA)**.



4) RESULTS AND DISCUSSION

Mixture silage Grass and Maize Intake : 14.9 - 8.4 - 0 kg DM/cow/day and Grass intake: 0- 10.8- 20.9 kg DM/cow/day of grass, for G0-G12-G24 respectively



5) CONCLUSIONS Cows **grazing swards at 24-hr** showed **lower proportions of SCFA and MCFA** and **higher levels of LCFA**. The lowest amount of **SFA** was found in **G24**, with the lowest **ratio SFA/UFA** and the highest amount of **UFA**. The **MUFA, PUFA** and **CLA content** were **higher in milk from cows grazing grass 24-hr** than in cows fed silage. The **FA profile** showed **some seasonality across the grazing season**. In **spring**, the levels of **CLA** were **three times higher** while in **later summer** these differences were reduced to a half.

6) ACKNOWLEDGEMENTS To INIA for their financial support under the project RTA2005-00204-00-00.