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Milk ketone bodies assessment in a local italian cow breed (Modenese) vs. Holstein and characterization of its physiological, reproductive and productive performances.

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Abstract

Several autochthonous cattle breeds characterized by a small territorial diffusion are farmed in Northern Italy. The technical data show that these animals have a good reproductive performance (Communod et al 2010; Communod et al 2011), disease resistance and resilience. The objective of this study was to characterize some productive, reproductive and metabolic parameters (ketone bodies) in the Italian autochthonous cattle breed Modenese, comparing them with those of Holstein and their crossbred (F1=Modenese x Holstein; F2=Modenese x F1) breed in the same farm in order to understand if there is a different metabolic picture that can influence the reproductive performances. Milk samples have been collected at different times of lactation (20th, 40th, 90th day in milk) and analyzed by gas chromatography-mass spectrometry to obtain the ketone bodies concentration. The reproductive (Open Days Period and number of Services Per Pregnancy) and productive (percentage and kg of protein between the 40th and 90th DIM) data have been recovered by the consultation of the farm registers and the APA (Provincial breeder association) data. On days open, number of services per pregnancy, % of proteins in milk, and kg of proteins in milk; a Spearman correlation analysis was applied. In all time points, the Modenese breed showed a significant ($p<0,05$) lower ketone bodies concentration. The F1, F2 and Modenese showed also better reproductive performances when compared to Holstein, with 80-105 days of days open in average. In conclusion, the better resilience against the negative energy balance and his adverse effects of Modenese cattle could be one of the phenomena underlying their better reproductive efficiency.

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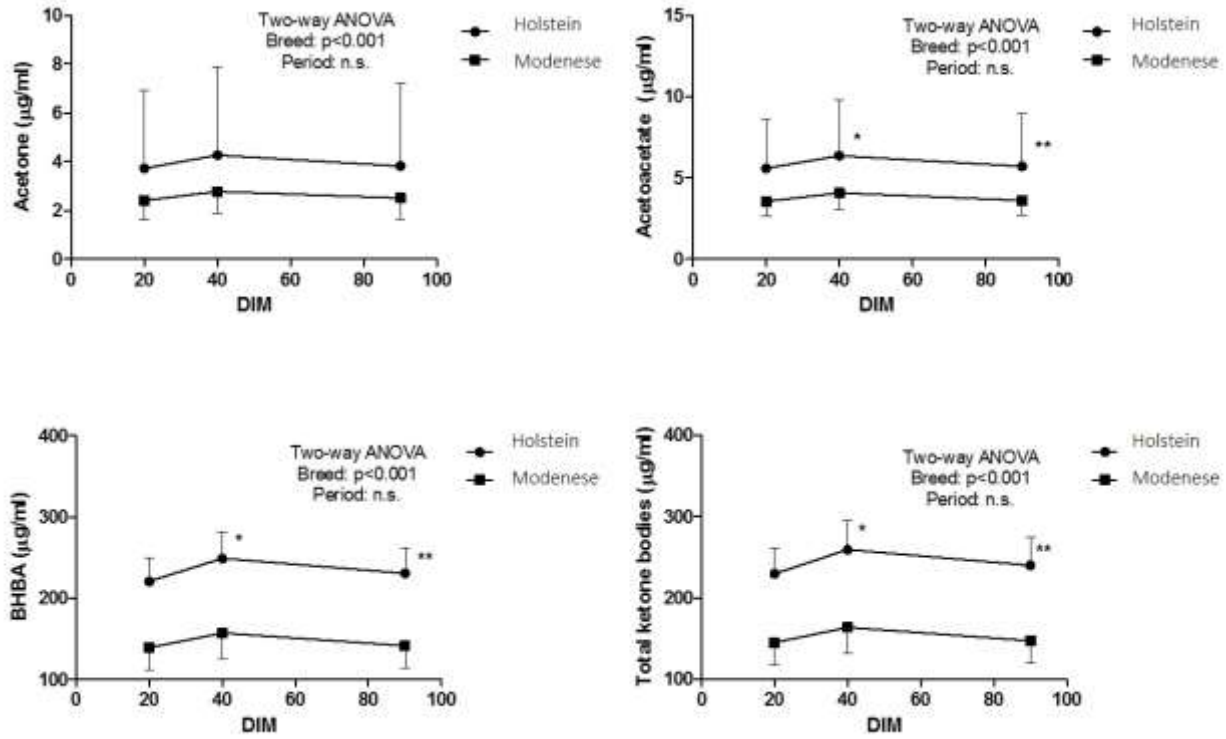

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Communod R., Faustini M, Chiesa L.M., Torre M.L., Lazzati M. and Daniele Vigo (2011). Milk biodiversity: future perspectives of milk and dairy products from autochthonous dairy cows reared in northern Italy. Chapter Proposal Review Book title: Food Production (ISBN 979-953-307-284-4). DOI: 10.5772/32759.Edited by Anna Aladjadjiyan, ISBN 978-953-307-887-8, Hard cover, 270 pages, Publisher: InTech, Published: January 20, 2012 under CC BY 3.0 license, in subject Agricultural and Biological Sciences