

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

RELATIONSHIP BETWEEN MILK C18:1 *TRANS*-10 ISOMER AND MILK FAT DEPRESSION (MFD) IN DAIRY GOATS AND SHEEP

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The C18:1 *trans*-10 fatty acid (FA) is present in the milk fat of ruminants presenting milk fat depression syndrome (MFD) and it is an intermediary of the biohydrogenation of conjugated linoleic acid (CLA) *trans*-10, *cis*-12. The objective of this study was to evaluate the relationship between milk fat content of C18:1 *trans*-10 and the milk fat content in lactating goats and sheep under CLA *trans*-10, *cis*-12 induced MFD. A database from published studies was constructed using 85 observations for goats and 133 for sheep, which received different doses of CLA *trans*-10, *cis*-12. The data were analyzed using the the procedures REG and NLIN of SAS. The linear model resulted in the following regressions: for sheep, % fat = 3.30 - 0.89 * % CLA *trans*-10, *cis*-12; $r^2 = 0.32$ ($P = 0.0001$) and for goats, % fat = 6.61 - 2.66 * % CLA *trans*-10, *cis*-12; $r^2 = 0.55$ ($P = 0.0001$). For the nonlinear model the regression with an exponential decay is $y = a * \exp^{(b*x)} + c$, where "y" is the % fat in milk, "x" is the concentration of C18:1 *trans*-10 in milk, "a" is the scale, "b" is the fractional rate of exponential decline and "c" is the constant lower asymptote. The regressions obtained were, respectively, for ewes and goats: $y = 5.59 * \exp^{(-0.77*x)} + 1.42$ and $y = 2.19 * \exp^{(-0.91*x)} + 1.46$. The rate of decline in fat content is higher in goats (18%) but it is observed that the lower fat content is similar between goats and sheep (1.42 vs. 1.46 in sheep and goats, respectively).

Keywords: Fatty acids, biohydrogenation, CLA, lipid, ruminants

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