

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

PERCENTAGE CONCENTRATION OF FATTY ACIDS IN THE MILK OF COWS FED WITH ANNATTO SEED AND LINSEED OIL.

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Supplementation of seed or oilseeds to dairy cows increases the percentage of polyunsaturated fatty acids of milk. On this study, the objective was to evaluate the effect of the addition of the annatto seed diets with or without of linseed oil in the concentration percentage of the fatty milk of Holstein cows. The experiment took place in the Experimental Farm of Iguatemi-PR where were used four Holstein cows, housed in tie-stall system, with average live weight of 566 ± 64 kg and 120 ± 43 days of lactation, distributed in a 4x4 Latin square, in factorial scheme 2x2. Statistical analysis of the data was performed using the MIXED procedure of Statistical Analysis System (SAS, v.9.4), for the effect of the interaction between the linseed oil and annatto seed was applied the test of least significant difference (LSD) Fisher, to the dismemberment of the interaction, was considered the significance level of $P \leq 0.05$ and $P \leq 0.10$ trend. It was observed an effect of interaction between the annatto seed and linseed oil on short-chain fatty acids (SCFA) ($P < 0.05$), the addition of annatto seed increased the concentrations of the SFCA in the absence of a flaxseed oil. There was a tendency of interaction ($P < 0.10$) between the annatto seed and flax seed oil on FA omega-6. Flaxseed oil supplementation increased the FA Omega 6 in the absence of annatto, however, when the annatto seed was provided there was a reduction in this FA. Diets with flaxseed oil decreased medium chain fatty acids (MCFA) ($P < 0.05$) and increased the long chain fatty acids (LCFA) ($P < 0.05$). In addition, flaxseed oil supplementation showed a tendency to reduce the saturated fatty acids (SFA) ($P = 0.08$) and monounsaturated fatty acids (MUFA) ($P = 0.08$) and increase the polyunsaturated fatty acids (PUFA) ($P = 0.06$). There was also an increase in omega-3 ($P > 0.05$) and a reduction in the omega3/6 ratio ($P > 0.05$) with lipid supplementation. The reduction in the concentration of MCFA can be explained by the incomplete biohydrogenation of PUFA and formation of FA cis-9, trans-11-CLA and trans-10, cis-12-CLA, responsible for inhibition of the production of MCFA. The increase of LCFA is explained by the composition of linseed oil, rich in C18:3 n-3 that can be added to milk fat, thereby increasing LCFA in milk. However, flaxseed oil supplementation increases the concentration percentage of MCFA and LCFA and also increases the omega6/3.

Keywords: benefits, polyunsaturated fatty acids, supplementation

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