Fatty acid profile of *Longuissimus dorsi* muscle in lambs fed with different levels of concentrate and tropical forages

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Feeding strategies in livestock production can influence the fatty acid profile of meat. Therefore, animal nutrition can play a role on human health worldwide. The goal of this study was to evaluate the profile of fatty acids of *longuissimus dorsi* muscle of lambs. We used 36 male, intact crossbred lambs fattened in different tropical pastures and different levels of concentrate. A completely randomized experimental design was adopted (2x3) and lambs were arranged according to two forage types (*Brachiaria Brizantha* cv. Marandu and *Panicum Maximum* cv. Aruana) and three levels of concentrate (0%, 1.5% and 3% of body weight). After slaughter, and a 24 hour period in a cooling room (2ºC), all carcasses were sectioned into commercial cuts. The *longuissimus dorsi* muscle was analysed in the Chemestry Lab in the Universidade Estadual do Mato Grosso do Sul – UEMS. A frozen sample of *longuissimus dorsi* muscle was submitted to lyophilisation during 72 hours and crushed in a meat grinder for the purpose of methylation and lipid extraction. After lyophilisation, the composition of fatty acids was obtained using gas chromatography. Results showed that higher levels of concentrate were associated to higher quantities of saturated fatty acids in lambs treated with Marandu grass ($P<0.05$). Thus, there was evidence of interaction between concentrate and forage. Concentrate didn't affect the composition of unsaturated fatty acids but higher levels of concentrate were associated to higher quantities of polyinsaturated fatty acids. Lambs kept in Aruana grass were associated to meat containing higher quantities of unsaturated acids. In addition, lambs treated with Aruana grass and no supplementation (0% concentrate) were associated to the highest levels of monounsaturated fatty acids. The quantity of omega-3 didn't achieve the level which is recommended worldwide. The omega-6/omega3 ratio presented little variation between levels of concentrate. The highest levels of omega-6 were associated to lambs fed with 3% of concentrate and Aruana grass ($P<0.05$). Lambs fed with Marandu grass presented higher values of saturated fatty acids, regardless of the level of concentrate. Aruana grass and no supplementation (0% concentrate) was a treatment associated to the lowest quantity of saturated fatty acids. In terms of human health and nutrition, the best profile of fatty acids was found in *longuissimus dorsi* originated from lambs that didn't receive concentrate and were fed Aruana grass.

Key-words: fat, human health, human nutrition, omega-6, sheep meat, unsaturated fatty acid.

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