

Desirable Fatty Acids in Meat of Cattle Fed Different Levels of Lipid-Based Diets

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Abstract : Introduction: Research has stimulated animal production studies on solutions to decrease the level of saturated fatty acids and increase unsaturated in foods of animal origin. The objective of this study was to determine the effect of the dietary inclusion of lipid-based diets on the fatty acid profiles from finishing cattle. Materials and Methods: The study was carried out in the Chapéu de Couro Farm in Aguaí/SP, Brazil. A group of 39 uncastrated Nellore cattle. Mean age of the animals was 36 months, and initial mean live weight was 494.1 ± 10.1 . Animals were randomly assigned to one of three treatments, based on dry matter: feed with control diet 2.50% cottonseed, feed with 11.50% cottonseed, and feed with 3.13% cottonseed added of 1.77% protected lipid. Forage:concentrate ratio was 50:50 on a dry matter basis. Sugar cane chopped was used as forage. After 63 days mean final live weight was $577.01 \text{ kg} \pm 11.34$. After slaughter, carcasses were identified and divided into two halves that were kept in a cold chamber for 24 hours at 2°C . Then, part of the M. longissimus thoracis of each animal was removed between the 12th and 13th rib of the left half carcass. The samples steaks were 2.5 cm thick and were identified and stored frozen in a freezer at -18°C . The analysis of methyl esters of fatty acids was carried out in a gas chromatograph. Desirable fatty acids (FADes) were determined by the sum of unsaturated fatty acids and stearic acid (C18:0). Results and Discussion: No differences ($P>0.05$) between the diets for the proportion of FADes in the meat of the animals in this study, according to the lipid sources used. The inclusion of protected fat or cottonseed in the diet did not change the proportion of FADes in the meat. The proportion mean of FADes in meat in the present study were: as pentadecanoic acid (C15:1 = 0.29%), palmitoleic acid (C16:1 = 4.26%), heptadecanoic acid (C17:1 = 0.07%), oleic acid (C18:1n9c = 37.32%), γ -linolenic acid (0.94%) and α -linolenic acid (1.04%), elaidic acid (C18:1n9t = 0.50%), eicosatrienoic acid (C20:3n3 = 0.03%), eicosapentaenoic acid (C20:5n3 = 0.04%), erucic acid (C22:1n9 = 0.89%), docosadienoic acid (C22:2 = 0.04%) and stearic acid (C18:0 = 21.53%). Conclusions: The add the cottonseed or protected lipid in diet is not affected fatty acids profiles the desirable fatty acids in meat. Acknowledgements: IFGoiano, FAPEG and CNPq (Brazil).

Keywords : beef quality, cottonseed, protected fat, unsaturated fatty acids

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