

Lipid profile, oxidative stability of fat and alpha-tocopherol concentration on meat of pigs fed dehydrated or ensiled grape pomace and omega-3 enriched diets.

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The grape pomace obtained from the winery industry, is a product rich in phenolic compounds, which arouses the interest for its use as an antioxidant. The objective of this study was to evaluate the inclusion of grape pomace in swine diets enriched with ω -3 fatty acids on the lipid profile of fat, α -tocopherol concentration in meat and oxidative stability of fat. Eighteen gilts (94.06 ± 1.83 kg) and 18 barrows (91.59 ± 1.60 kg) from the MS-115 x F1 genotype were allotted in a randomized complete block design with six replications of each sex per treatment. Treatments consisted of a control diet based on corn and soybean meal and two diets containing dried (DGP) or ensiled grape pomace (EGP) in inclusion levels of 7.5 (0-21 days) and 15 % (22 to 42 days). All diets contained 1.5% of canola oil and 1.5% of flax oil. The feed intake was controlled and adjusted weekly. After 42 days of experimental period the animals were slaughtered and 24 hours after slaughter pork and loin samples were collected. Pork from these animals was used to produce mini-hamburgers in the proportion of 78.37% loin, 19.67% backfat and 1.96% salt, for evaluation of lipid oxidation by analysis of thiobarbituric reactive substances (TBARS) at 0 and 3 days of cooling. Data were submitted to analysis of variance considering the effects of treatment, sex and the interaction treatment vs. sex, except for TBARS which was tested only for the effect of treatment. There was no effect ($P > 0.05$) of treatment on the ω -6: ω -3 ratio, α -tocopherol content and TBARS on days 0 and 3. The sum of saturated fatty acids (SFA, based on total fatty acids) was greater in treatments control and EGP (control: 35.16 ± 0.43^a ; DGP: 33.03 ± 0.46^b and EGP: $34.78 \pm 0.40^a\%$). The inclusion of DGP or EGP in the diet increased ($P < 0.05$) the proportion of ω -3 fatty acids (control: 3.530 ± 0.103^b ; DGP: 4.043 ± 0.108^a and EGP: $3.875 \pm 0.135^a\%$) and the sum of the polyunsaturated acids fatty (PUFA) and reduced ($P < 0.05$) the proportion of monounsaturated fatty acids (MUFA). The ω -6 content was greater ($P < 0.05$) in the treatment with DGP. Gilts had greater ($P < 0.05$) proportion of PUFA and ω -6, while barrows had greater ($P < 0.05$) proportion of SFA. The effect of grape pomace on the fatty acid profile, although significant, was small in magnitude. It was not proven an antioxidant effect of grape pomace on pork products when supplied to the pigs through the diet.

Keywords: fatty acids, grape pomace, pigs, oxidation.