

## **Effects of the Dietary Supplementation with High-oleic Sunflower Oil and $\alpha$ -tocopherylacetate on the Lipid Composition of Pork Meat**

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The lipid composition of pork meat is fundamental for the eating quality of both cooked meat and dry-fermented products (ham, sausages, salami). The animals are much leaner today than they were in the past. The increased linoleic acid content of pork meat has decreased the fat melting point and has reduced the oxidative stability, negatively affecting the technological properties. High-oleic sunflower oil (hs) (containing about 7% linoleic acid) can be used to increase the dietary energy without increasing the daily intake of linoleic acid. Moreover, the addition of a proper amount of an antioxidant, such as tocopheryl acetate (vit.EAc), may increase the oxidative stability. Four different isocaloric and isolysin diets (control; 3% hs; 250 mg/Kg vit.EAc; 3% hs + 250 mg/Kg vit.EAc) were administered to castrated males and intacted females until slaughtering (160-170 kg). The lipids of the collected loin were characterized: phospholipids (PL) molecular species with high performance liquid chromatography-mass spectrometry (HPLC-tandem MS) and light scattering detection; vit.E and vit.EAc with HPLC; the fatty acid profile of the polar and non-polar lipids with gas-chromatography (GC); triacylglycerols and diacylglycerols with GC. The data dispersion within a diet group was higher for phospholipids and vitamin E, with respect to the fatty acid and neutral lipid composition. After supplementation with hs or hs+vit.EAc, the following effects were noted in pork meat of the corresponding animals: a) the content of oleic acid increased and the content of linoleic acid decreased, both in males and in females; b) the level of unsaturation of the phospholipid molecular species was less affected than triacylglycerols; c) the saturated fatty acids of the neutral lipids decreased; d) the content of free vit.E doubled, whereas vit.EAc showed a minor increase.