

The Effect of Olive Leaf Supplementation on the Growth Performances, Oxidative Stability and Quality of Pork Meat

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Nutritional treatments can be used to manipulate the stability of meat by means of changes in the fatty acid profile or tocopherol content of the muscles. Some international agencies related with human health have considered the benefits of dietary long chain n-3 PUFAs, establishing a n-6/n-3 PUFAS ratio of less than 4 to improve the health status of humans. For this reason, many efforts have been made to increase by diet manipulation the n-3 fatty acid composition in animal meat such as pigs. The main problem of increasing n-3 fatty acids in pig meat arise from a higher susceptibility to lipid oxidation. Therefore, the lipid oxidation has been limited by the use of tocopheryl acetate.

Olive leaves are agricultural residues from beating of olive trees for fruit removal and represents around 10% of the total weight of fruit arriving to mills. Considered as an industrial by-product, fresh olive leaf contains up to 1-3% of polyphenols. The *in vitro*, *in vivo* and *ex vivo* activity of these phenols have been tested by numerous groups of investigators and several biological activities have been demonstrated and some of these activities maybe caused by a sparing effect on α -tocopherol.

30 animals were randomly assigned to 3 experimental diets: leaves were given as powder mixed with a conventional diet at levels of 0%, 5% and 10%. Pigs fed diets with olive leaves at 5 and 10% level had lower daily weight gain and daily feed intake than pigs fed conventional diet but it was not observed differences between groups fed with the different quantities of leaves. Additionally, pigs fed diets with leaves tended to have lower feed:gain ratio and showed a decrease on the overall backfat. However, chops from pigs fed leaf diets had higher oxidative stability than chops from pigs fed conventional diet. Since the fatty acid composition was not different between groups, differences in oxidative stability could only be explained by the significant higher α -tocopherol concentration found in intramuscular fat and backfat of those pigs fed with olive leaves containing diet.