

# **Effect of Feeding Fats and Processing on the Lipid Fraction of pre-cooked Chicken Patties**

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The study of the effect of feeding fat sources and production technology on the lipid fraction of raw chicken meat and final pre-cooked patties was carried out. Two groups of male broilers were fed two different isoenergetic diets containing animal fat (cattle tallow and pork fat) and vegetable fat (olive, soybean and sunflower oil), respectively.

The two technologies employed in the production of final products differed each other by the order of application of cooking steps: flash-frying and cooking in steam-convection oven. Total fatty acids, free fatty acids (FFA), diglycerides (DG), peroxides (PV), thiobarbituric acid reactive substances (TBARS) and fatty acid profile in phospholipids (PS) were determined. A vegetable fat integration increased polyunsaturated acids in raw meats ( $\approx 43\%$  vs.  $\approx 25\%$  of total fatty acids in meat from vegetable and animal fat-based diet respectively) even the oil absorption that occurred during cooking masked these differences and led to a similar lipid composition in cutlets. Oxidation was low in meat ( $PV < 1.5$  meq  $O_2$ /kg of fat,  $TBARS < 0.2$  mg MDA/kg) and not affected by dietary fats. A good oxidative status guaranteed a low oxidation development during processing ( $PV < 3.0$  meq  $O_2$ /kg of fat and  $TBARS \leq 1.0$  mg MDA/kg fat in patties). DG were a more effective parameter than FFA to check lipolysis extent considering the migration of FFA from cutlets to oil bulk. Processing slightly affected lipolytic degree and a lower DG amounts was recorded in products obtained from traditional technology with respect patties from innovative technology where flash-frying was postponed to oven cooking (0.6-0.8 g DG vs. 0.8-1.1 g DG/100 g of fat in patties from traditional and innovative technology respectively). An unexpected high percentage of monoenoic acids was found in PS of cutlets ( $\approx 50\%$  vs.  $\approx 30-35\%$  in raw meat).