

The SIQUALTECA project: poultry meat quality during further processing

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ABSTRACT

A study was conducted in order to evaluate the quality characteristics of: - raw meat (breast and legs) obtained from broiler chickens fed on two different diets containing animal fat (AF) or vegetable oil (VO) as lipid source; - further processed meat products (breaded patties) obtained by using ground meat from AF or VO and processed using two different processing lines (Conventional vs. Innovative Technology). Conventional Technology (CT) is a multiphase process where the meat patties are first formed, coated with a starch-protein batter, breaded, flash-fried. The cooking process is completed in a convection oven. With Innovative Technology (IT) the meat patties are formed, dusted with a starch-protein powder, cooked in a steam oven, coated with a starch-protein batter, breaded, and subsequently flash-fried. The IT mainly differs in the inversion of cooking/frying phases and the use of a steam oven instead of a convection oven. As regard to raw meat, the results indicate that the dietary use of VO determined a lower water holding capacity (measured by cooking loss) and higher lipid susceptibility to oxidation of the meat with respect to the AF diet. Moreover, it was found that observed differences in the quality characteristics between broiler breast and legs meat suggesting that the breast and legs ratio during meat batter preparation can strongly affect the final characteristics of processed products. Concerning further processed meat products, it was observed that: - the differences in chemical characteristics of initial, intermediate and final products increase according to whether the products are raw (e.g. raw patties) or cooked (e.g. fully cooked breaded patties); - final products of CT and IT did not show significant differences in terms of texture properties evaluated by texture profile analysis and Warner-Bratzler. As expected, flash-frying was the key step in order to determine texture characteristics of fully cooked breaded patties for both processing lines.