Effect of caponization on muscle, liver and adipose tissue fatty acid composition, lipid peroxidation, and cholesterol in breast muscle of Cobb 500 broilers

ABSTRACT

Capon is the surgical removal of testes from roosters which promotes the accumulation of intramuscular fat and affects fatty acid composition of poultry meat. We report effect of caponization on muscle, liver and adipose tissue fatty acid composition, lipid peroxidation and cholesterol content in breast muscle of broilers. Groups of 30 male 1-d old commercial Cobb 500 broilers were caponized at 21 days of age. Controls were 30 intact birds. Each treatment group consisted of 6 replicates (cages) with 5 birds in each cage. Broilers were fed commercial feed and slaughtered at 40 days. Major fatty acids in breast muscle and adipose tissue were oleic (C18:1, n-9), palmitic (C16:0) and linoleic (C18:2, n-6) and stearic (C18:0). Caponization did not affect fatty acid composition of muscle, liver or adipose tissues or lipid peroxidation of meat. However, we did find lower ($P < 0.018$) cholesterol (0.66 ± 0.02mg/ml) in breast muscle from caponized birds (n=9) compared with 9 intact controls (0.77 ± 0.04mg/ml). Our findings suggest that caponization does not affect free fatty acid composition or lipid peroxidation but may reduce cholesterol in tissues of broilers.

Keyword: Broiler chickens; Caponization; Fatty acid composition; Cholesterol; Raw