

Pilaiparn Rakkankhien 2014: Comparison on Quality Characteristics of TANAOSREE Chicken Meat with Broiler. Master of Science (Food Safety), Major Field: Food Safety, Department of Animal Science. Thesis Advisor: Assistant Professor Sasitorn Nakthong, Ph.D. 114 pages.

This research aims to study the biological quality (Total Plate Count, Coliform, *Escherichia coli* *Staphylococcus aureus*, *Salmonella* spp. and *Campylobacter* spp.), chemical composition (moisture, protein, fat, cholesterol and collagen), physical quality (pH, color, cooking loss, drip loss, texture, water activity, microstructure of muscle fibers by Scanning electron microscope, SEM) as well as sensory evaluation of TANAOSREE chicken meat compared with broiler. The TANAOSREE chicken were divided by size S M and L which their weight were 0.9-1.2, 1.2-1.5 and 1.5-1.8 kg, respectively and broiler was weight at 1.5-2.0 kg. The result of biological study found that TANAOSREE chicken meat and broiler had no the amount of Total Plate Count, Coliform, *E. coli* and *S. aureus* exceed than chicken meat standard (The Thai Agricultural Standard chicken TAS. 6700-2548). There was no found *Salmonella* spp., except *Campylobacter* spp. The chemical composition found that the amount of collagen had significantly increased with S M L size TANAOSREE chicken meat ($p < 0.05$). When the amount of collagen was compared, meat from L size TANAOSREE chicken had the highest ($p < 0.05$). The physical quality of the meat found that brightness (L^*) value of TANAOSREE chicken breast meat had significantly increased with S M L size ($p < 0.05$). The thigh meat from TANAOSREE chicken meat had significantly increased in terms of brightness (L^*), cooking loss and drip loss with S M L size ($p < 0.05$). The L size TANAOSREE chicken breast meat were compared with broiler had significantly difference ($p < 0.05$) in terms of pH, brightness (L^*), redness (a^*), cooking loss and drip loss and cutting. The breast and thigh meat of TANAOSREE chicken and broiler were cut with size of 0.5x0.5x1 cm and examined transverse and longitudinal structure with Scanning Electron Microscope. The result showed that the muscle fibers structure of bigger size of TANAOSREE chicken breast and thigh meat had more muscle fibers bunches which make muscle fibers were smaller and more resolution texture. When compare breast and thigh meat from L size TANAOSREE chicken with broiler the result showed that the muscle fibers of TANAOSREE were arranged tighter and smaller than those are from broilers, while muscle fibers of broilers were loosely packed arrangement. The study of sensory evaluation found that scores for color, taste, texture, softness and overall satisfaction of TANAOSREE chicken breast meat had lower than broilers ($p < 0.05$). For the score of color, softness, juiciness and overall satisfaction of TANAOSREE chicken breast meat showed lower than broilers ($p < 0.05$).

Student's signature

Thesis Advisor's signature

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