



## **KARAKTERISTIK FISIK, ULTRASTRUKTUR DAN KOMPOSISI KIMIA DAGING BEBERAPA BANGSA BABI**

### **INTISARI**

Penelitian ini bertujuan untuk mengetahui karakteristik fisik, ultrastruktur dan komposisi kimia daging dari beberapa bangsa babi. Materi yang digunakan dalam penelitian ini adalah 9 ekor babi (3 ekor Bangsa Yorksire, 3 ekor Bangsa Landrace dan 3 Ekor Bangsa Duroc) dengan umur 7 - 8 bulan, bobot badan 90 – 100 kg dan dipelihara sebelumnya selama 2 bulan pada suatu peternakan babi di Kabupaten Malang dengan pemberian pakan yang sama. Pematangan dilakukan di RPH Kotamadya Malang. Daging yang diuji diambil dari bagian *Longissimus dorsi*, kemudian dipanaskan dengan suhu 50 °C, 75 °C, 100 °C dan tanpa pemanasan (mentah). Penelitian menggunakan Rancangan Acak Lengkap pola tersarang 2 faktor dengan ulangan sebanyak 3 kali. Faktor yang digunakan adalah bangsa babi dan derajat suhu pemanasan tersarang pada bangsa babi. Perlakuan yang menunjukkan perbedaan diuji dengan Uji Jarak Berganda Duncan (UJBD). Bangsa babi tidak memberikan perbedaan kualitas pada pH, WHC, susut masak, Aw, lemak, protein dan abu daging. Perbedaan kualitas ( $P < 0.01$ ) terdapat pada keempukan, kekenyalan daya putus dan kadar air daging. Perlakuan tingkat pemanasan memberikan perbedaan kualitas ( $P < 0.01$ ) pada pH, keempukan, kekenyalan, daya putus, WHC, susut masak, Aw, lemak, protein, kadar air dan abu daging. Susut masak, kadar air, lemak dan abu mengalami penurunan dengan meningkatnya pemanasan. pH daging pada suhu 50 °C mengalami penurunan dibandingkan dengan daging mentah dan mengalami kenaikan pada pemanasan yang lebih tinggi. Proporsi protein meningkat dengan meningkatnya tingkat pemanasan. Keempukan, kekenyalan, daya putus dan WHC daging mengalami penurunan kualitas hingga pada tingkat pemanasan 75 °C dan meningkat kembali pada suhu 100 °C. Duroc cenderung memiliki keempukan, kekenyalan dan daya putus yang lebih tinggi dibanding Yorkshire dan Landrace. Duroc memiliki komposisi asam lemak C16 yang lebih tinggi dibanding Yorkshire dan Landrace, serta Landrace memiliki komposisi asam lemak C14 dan C18 yang lebih tinggi dibanding Duroc dan Yorkshire. Kristal lemak pada babi memberikan karakteristik tersendiri dengan memiliki pola seperti kipas dengan panjang serabut kristal  $\pm 112 \mu\text{m} - 265 \mu\text{m}$  dan pengujian PRE-1 menggunakan Primer P20 memberikan spesifikan bahwa DNA tersebut hanya terdapat pada babi dan tidak terdapat pada ternak sapi, kambing dan ayam.

Kata kunci : Bangsa babi, daging, pemanasan, kualitas fisik, komposisi kimia



## **PHYSICAL CHARACTERISTICS, ULTRASTRUCTURE, AND CHEMICAL COMPOSITION MEAT OF VARIOUS PIG BREED**

### **ABSTRACT**

This study was conducted to investigate physical characteristics, ultrastructure, and chemical composition meat of various pig breed. The materials used in this study were nine pigs (three Yorkshire, three Landrace, and three Duroc), and they were about 7 – 8 months old, weighing 90 – 100 kg and treated with the same feed for two months in a pig farm sited in Malang Regency. They were slaughtered at abattoir of Malang Municipality. The meat examined, was *Longissimus dorsi* muscle. They were heated of 50 °C, 75 °C, 100 °C. This study applied a Completely Randomized Design with a 2-factor nesting pattern using cooking repetition for three times. The factors were pig breed and the cooking temperature degrees. The treatment indicating differences were examined by using Duncan Multiple Range Test (DMRT). The differences of pig breeds did not provide differences on quality for pH, WHC, cooking loss, Aw, fat, protein, and meat ash. Within quality differences ( $P < 0.01$ ), there would be tenderness, elasticity, shear force, and meat water content. Cooking gave quality differences ( $P < 0.01$ ) on pH, tenderness, elasticity, shear force, WHC, cooking loss, Aw, fat, protein, water content, and meat ash. Cooking loss, water content, fat, and ash decreased with the increase of cooking treatment temperature. Meat pH on the temperature of 50 °C decreased in comparison with raw meat and it would increase with the enhancement in cooking treatment. Protein proportion might increase as the cooking treatment was enhanced. Tenderness, elasticity, shear force, and WHC of the meat decreased at 75 °C and they could get enhancement as the temperature achieving 100 °C. Duroc tended to have more tenderness, elasticity, and higher shear force rates in comparison with Yorkshire and Landrace. Duroc had C16 fatty acid composition, which was higher than that of Yorkshire and Landrace. Landrace had C14 and C18 fatty acid composition, which were higher than those of Duroc and Yorkshire. Fat crystals in pig meat gave certain characteristics within the patterns like a fan. The length of the crystal achieved about  $\pm 112 \mu\text{m} - 265 \mu\text{m}$ . Their PRE-1 examined by using primary P20 providing specification for the DNA were found only in pigs and it would never be found in cattle, goats, or chickens.

Key words: Pig breed, Cooking, Physical quality, Ultrastructure, Chemical composition.