EVALUASI *YIELD GRADE*, KUALITAS KARKAS DAN FISIKOKIMIA, MIKROSTRUKTUR, DAN PROFIL ASAM LEMAK DAGING DOMBA PERSILANGAN GARUT DORPER YANG DIBERI PAKAN BUNGKIL BIJI PALA (*Myristica fragrans*)

INTISARI

Gilang Perdana Isnaini
23/530742/PPT/01332

Penelitian ini bertujuan untuk mengevaluasi *yield grade*, kualitas karkas dan fisikokimia, mikrostruktur, dan profil asam lemak daging domba persilangan garut dorper yang diberi pakan bungkil biji pala (*Myristica fragrans*). Terdapat 16 ekor domba persilangan Garut Dorper F1 jantan dengan bobot badan sekitar 24 kg dengan kisaran umur 9 bulan yang digunakan dalam penelitian. Domba tersebut dibagi berdasarkan rerata bobot badan ke dalam empat kelompok perlakuan dengan masing-masing perlakuan terdapat empat ekor domba. Pakan yang digunakan adalah rumput gajah, bungkil pala, bungkil kedelai, dan *wheat pollard*. Perlakuan terdiri atas level penambahan pakan bungkil biji pala 0% sebagai kontrol, 10, 20, dan 30% dengan ulangan empat kali. Sebanyak 16 domba dengan kisaran umur 11 bulan disembelih dan diambil sampel otot *Longissimus dorsi* (LD) dan *Biceps femoris* (BF). Parameter yang diamati diantaranya yaitu evaluasi *yield grade* (*yield grade* dan *Boneless Closely Trimmed Retail Cuts*/BCTRC); kualitas karkas (persentase karkas, persentase potongan komersial karkas, dan *meat bone ratio*); kualitas kimia (kadar air, protein, lemak, abu, dan *Thiobarbituric Acid Reactive Substances*/TBARS); kualitas fisik (warna, pH, daya ikat air, susut masak, dan tekstur); mikrostruktur; serta profil asam lemak. Hasil data evaluasi *yield grade* dan kualitas karkas yang diperoleh dianalisis ragam *analysis of variance* (ANOVA) pola searah, dan data kualitas fisikokimia, mikrostruktur, dan profil asam lemak daging yang diperoleh dianalisis dengan rancangan acak kelompok lengkap (RCBD) 4 × 2. Perbedaan yang signifikan di antara rerata dilanjut dengan uji *Duncan's New Multiple Range Test* (DMRT). Hasil penelitian menunjukkan bahwa penambahan pakan bungkil biji pala dengan level 10% secara signifikan ($P<0,05$) menurunkan TBARS menjadi 0,34±0,06 mg MDA/kg, diameter serabut otot menjadi 18,25±1,11 μm, luas serabut otot menjadi 286,64±64,15 μm^2, dan asam lemak jenuh (SFA) menjadi 41,06±5,15% dibandingkan kontrol; serta meningkatkan *lightness* menjadi 43,48±3,68, asam lemak tidak jenuh (UFA) menjadi 58,94±5,15%, dan rasio UFA/SFA menjadi 1,47±0,30 dibandingkan kontrol. Sebagai kesimpulan, pemanfaatan bungkil biji pala sebanyak 10% sebagai pakan domba persilangan Garut Dorper menunjukkan sebagai potensi pakan alternatif dilihat dari evaluasi *yield grade*, kualitas karkas, dan kualitas fisikokimia yang tidak berpengaruh negatif; mampu menurunkan TBARS, ukuran serabut otot, dan asam lemak jenuh (SFA) pada daging; dan mampu meningkatkan *lightness*, asam lemak tidak jenuh (UFA), dan rasio UFA/SFA pada daging; serta kualitas otot LD relatif lebih baik daripada otot BF.

Kata kunci : Asam Lemak, Bungkil Biji Pala, Daging Domba Persilangan Garut Dorper, Kualitas Karkas, Kualitas Fisikokimia, *Yield Grade.*

EVALUATION OF YIELD GRADE, CARCASS AND PHYSICOCHEMICAL QUALITIES, MICROSTRUCTURE, AND FATTY ACID PROFILE OF DORPER CROSSED GARUT LAMB MEAT FED WITH NUTMEG SEED MEAL (*Myristica fragrans*)

ABSTRACT

Gilang Perdana Isnaini
23/530742/PPT/01332

This study aimed to evaluate the yield grade, carcass and physicochemical qualities, microstructure, and fatty acid profile of Dorper crossed Garut lamb meat fed with nutmeg seed meal (*Myristica fragrans*). Total of 16 male F1 Dorper crossed Garut lambs with an body weight of ±24 kg and approximately 9 months of age were used in the experiment. The lambs were grouped based on average body weight into four treatment groups, each consisting of four animals. The feed provided consisted of napier grass, nutmeg seed meal, soybean meal, and wheat pollard. The treatments included four levels of nutmeg seed meal supplementation 0% (control), 10%, 20%, and 30%, each with four replications. At around 11 months of age, the 16 lambs were slaughtered, and samples of the *Longissimus dorsi* (LD) and *Biceps femoris* (BF) muscles were collected. The observed parameters included yield grade evaluation (yield grade and Boneless Closely Trimmed Retail Cuts/BCTRC); carcass quality (carcass percentage, commercial cut percentage, and meat-to-bone ratio); chemical quality (moisture, protein, fat, ash, and Thiobarbituric Acid Reactive Substances/TBARS); physical quality (color, pH, water holding capacity, cooking loss, and texture); microstructure; and fatty acid profile. The data on yield grade and carcass quality were analyzed using one-way analysis of variance (ANOVA), while data on physicochemical quality, microstructure, and fatty acid profiles were analyzed using a 4 × 2 factorial randomized complete block design (RCBD). Significant differences among means were further tested using Duncan's New Multiple Range Test (DMRT). The results showed that supplementation of 10% nutmeg seed meal in the diet significantly ($P>0.05$) reduced TBARS to 0.34±0,06 mg MDA/kg, muscle fibril diameter to 18.25±1,11 µm, muscle fibril area to 286.64±64,15 μm^2, and saturated fatty acids (SFA) to 41.06±5,15% compared to the control; while increasing lightness to 43.48±3,68, unsaturated fatty acids (UFA) to 58.94±5,15%, and the UFA/SFA ratio to 1.47±0,30 compared to the control. In conclusion, the supplementation of 10% nutmeg seed meal as feed for Dorper crossed Garut lamb shows potential as an alternative feed, as evaluated from yield grade, carcass quality, and physicochemical qualities, with no negative effects observed. It effectively reduced TBARS, muscle fibril size, and SFA content in the meat; increased lightness, UFA content, and the UFA/SFA ratio; and the quality of the longissimus dorsi (LD) muscle was relatively better than that of the biceps femoris (BF) muscle.

Keywords : Carcass Quality, Dorper Crossed Garut lambs Meat, Fatty Acids, Nutmeg Seed Meal, Physicochemical Quality, Yield Grade.