



Hak Cipta Diindungi Undang-Undang



© Hak cipta milik IPB (Institut Pertanian Bogor) in the Perspective of Food Security, Policy, Genetic Resources, and Climate Change

2014 November 10-14, Yogyakarta, INDONESIA

The 16th AAAP Congress



Bogor Agricultural University



Sustainable Livestock Production in the Perspective of Food Security, Policy, Genetic Resources, and Climate Change

Proceedings Full Papers

10-14 November 2014, Yogyakarta, INDONESIA



The 16th AAAP Congress



Ministry of Agriculture



Indonesian Society of Animal Production



Gadjah Mada University

1. Dilarang mengutip sebagian atau seluruh karya tulis ini tanpa mencantumkan dan menyebutkan sumber:
 - a. Pengutipan hanya untuk kepentingan pendidikan, penelitian, penulisan karya ilmiah, penyusunan laporan, penulisan kritik atau tinjauan suatu masalah.
 - b. Pengutipan tidak merugikan kepentingan yang wajar IPB.
2. Dilarang mengumumkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin IPB.

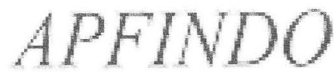
Hak Cipta Dilindungi Undang-Undang

1. Dilarang mengutip sebagian atau seluruh karya tulis ini tanpa mencantumkan dan menyebutkan sumber:
 - a. Pengutipan hanya untuk kepentingan pendidikan, penelitian, penulisan karya ilmiah, penyusunan laporan, penulisan kritik atau tinjauan suatu masalah.
 - b. Pengutipan tidak merugikan kepentingan yang wajar IPB.
2. Dilarang mengumumkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin IPB.

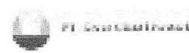
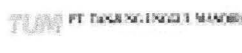
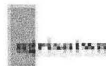
Gold Sponsor:



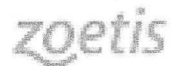
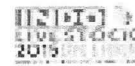
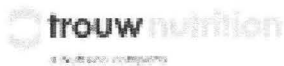
Silver Sponsor:



Bronze Sponsor:



Supporting Sponsor:





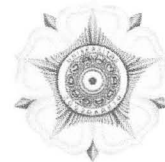
SUSTAINABLE LIVESTOCK PRODUCTION IN THE PRESPECTIVE OF FOOD SECURITY, POLICY, GENETIC RESOURCES, AND CLIMATE CHANGE

PROCEEDINGS FULL PAPERS

Editors:

Subandriyo
Kusmartono
Krishna Agung Santosa
Edi Kurnianto
Agung Purnomoadi
Akhmad Sodiq
Komang G. Wiryawan
Siti Darodjah
Ismeth Inounu
Darmono
Atien Priyanti
Peter Wynn
Jian Lin Han
Jih Tay-Hsu
Zulkifli Idrus

The 16th AAAP Congress



© Hak cipta milik IPB (Institut Pertanian Bogor)

Bogor Agricultural University

Hak Cipta Dilindungi Undang-Undang

1. Dilarang mengutip sebagian atau seluruh karya tulis ini tanpa mencantumkan dan menyebutkan sumber:
 - a. Pengutipan hanya untuk kepentingan pendidikan, penelitian, penulisan karya ilmiah, penyusunan laporan, penulisan kritik atau tinjauan suatu masalah.
 - b. Pengutipan tidak merugikan kepentingan yang wajar IPB.
2. Dilarang mengumumkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin IPB.



Hak Cipta Dilindungi Undang-Undang

Cataloguing-in-Publication Data

The 16th Asian-Australasian Associations of Animal Production Societies
Proceedings Full Papers
Sustainable Livestock Production in the Perspective of
Food Security, Policy, Genetic Resources, and Climate Change
10-14 November 2014, Yogyakarta, Indonesia / editors Subandriyo *et al*;
2825 p: ill. 21 x 29,7 cm
Organized by Indonesian Society of Animal Sciences
In Collaboration with Ministry of Agriculture
Faculty of Animal Sciences Universitas Gadjah Mada
ISBN 978-602-8475-87-7

- | | | |
|----------------------|------------------|-------------------|
| 1. Livestock | 2. Food Security | 3. Policy |
| 4. Genetic Resources | | 5. Climate Change |
| I. Title | II. Subandriyo | |

Bogor Agricultural University

1. Dilarang mengutip sebagian atau seluruh karya tulis ini tanpa mencantumkan dan menyebutkan sumber:
 - a. Pengutipan hanya untuk kepentingan pendidikan, penelitian, penulisan karya ilmiah, penyusunan laporan, penulisan kritik atau tinjauan suatu masalah.
 - b. Pengutipan tidak merugikan kepentingan yang wajar IPB.
2. Dilarang mengumumkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin IPB.

CONTENTS

GENERAL PRESENTATION

Code	Title	Page
Genetic and Reproduction		
Large Ruminants		
A 15 ID	Effects of Estrous Synchronization of Bali Cattle Using PGF2 α <i>Indira P N, Ismaya and Kustono</i>	1
A 34 IN	Prediction of 305 Days Lactation Milk Yield from Fortnightly Test Milk Yields in Hill Cattle under Field Conditions <i>R K Pundir</i>	5
A 42 ID	Development of Technology Production of Frozen of Swamp Buffalo (<i>Bubalus bubalis</i>) in the Kampar Regency <i>Yendraliza, C. Arman and J. Handoko</i>	9
A 116 ID	Analysis of Reproductive Efficiency in Peranakan Ongole (PO)- and its Crosses with Limousin (LIMPO) Cattle in East Java, Indonesia <i>S. Suyadi and H. Nugroho</i>	13
A 135 ID	Performance Test and Genetic Potency of Bali Cattle Using Animal Recording Software <i>Luqman Hakim and V.M. Ani Nurgiartiningasih</i>	17
A 141 ID	Application of Genetic Marker Technology for Predicting Twinning Trait in Ongole Cattle <i>Endang Tri Margawati, Indriawati and Muhamad Ridwan</i>	21
A 201 ID	Membrane Status, Acrosome and Sperm Quality of Ongole Cross Bred Bull after Sexing Using Percoll Density-Gradient Centrifugation and Albumin Separation <i>Trinil Susilawati, Sri Rahayu, Herni Sudarwati, Eko Nugroho, Setiabudi Udrayana and Lieyo Wahyudi</i>	25
A 246 ID	Phylogenetic Analysis of Simeulue Buffalo Breed of Indonesian through Mitochondrial D-loop Region <i>Eka Meutia Sari, M. Yunus and Mohd. Agus Nashri Abdullah</i>	29
A 339 JP	Genetic Polymorphisms and Their Association with Growth and Carcass Traits in Japanese Black Steers <i>F.N. Jomane, T. Ishida, K. Morimoto, T. Tokunaga and H. Harada</i>	33
A 413 ID	The Effect of Straw Position in Nitrogen Vapour During Equilibration on Post-Thawing Motility and Membrane Integrity Following Quick Freezing in Maduran Cattle Sperm <i>H. Ratnani, MN. Ihsan, G. Ciptadi and S. Suyadi</i>	37



1. Dilarang mengutip sebagian atau seluruh karya tulis ini tanpa mencantumkan dan menyebutkan sumber:
 a. Pengutipan hanya untuk kepentingan pendidikan, penelitian, penulisan karya ilmiah, penyusunan laporan, penulisan kritik atau tinjauan suatu masalah.
 b. Pengutipan tidak merugikan kepentingan yang wajar IPB.
2. Dilarang memunculkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin IPB.

Code	Title	Page
B 316 LK	Status of Milk Production and Economic Profile of Dairy Farmers in Ratnapura District in the Intermediate Zone of Sri Lanka <i>Athapathu, RAUJ Marapana and Thakshala Seresinhe</i>	300
B 335 ID	Feed Formulation Based on by-Products: Kinetic Study of Food Industry by-Product on Lactic Acid Fermentation <i>Dimas Hand Vidya Paradhpta, Zaenal Bachruddin and Lies Mira Yusiati</i>	304
B 354 ID	The Effect of Protected Vegetable Oils on <i>in Vitro</i> Fermentation Characteristics and Nutrient Digestibility of Bali Cattle Rumen Fluid <i>Ali Bain, D.A. Astuti, S. Suharti, C. Arman and K.G. Wiryawan</i>	308
B 365 ID	Blood Protein and Blood Urea of Lactating Dairy Due to Feeding of Total Mixed Ration Based on Ammoniated Corn Straw <i>B. Pertiwi, B.W.H.E. Prasetyono and A. Muktiani</i>	312
B 398 ID	Studies of Leucaena Based Feeding on the Growth Path of Bali Cattle and Its Adoption in East Nusa Tenggara <i>Jacob Nulik</i>	316
B 444 ID	Effects of Protected Unsaturated Fatty Acids Addition on <i>In Vitro</i> Digestibility and Rumen Microbes <i>S. Suharti, N. Hidayah and K.G. Wiryawan</i>	320
B 478 TI	Effect of <i>Terminalia Chebula</i> Retz. Meal on <i>in Vitro</i> Gas Production and Ruminant Degradability <i>N. Anantasook, P. Gunun and M. Wanapat</i>	324
B 485 ID	Seasonal Feeding Practice Impact on Lactating Cow Performances Kept in Bogor Lowland Small Enterprise Dairy Farming <i>Despal, J. Malyadi, Y. Destianingsih, A. Lestari, H. Hartono and L. Abdullah</i>	327
B 490 KH	Rumen Manipulation by Kabok Seed Oil and <i>Flemingia</i> Leaf Meal using an <i>in Vitro</i> Gas Production System <i>S. Kang, M. Wanapat, K. Phesatcha, T. Norrapoke, S. Foiklang, T. Ampapon and B. Phesatcha</i>	331
B 557 ID	Supplementation of Bali Cows (<i>Bos javanicus</i>) Fed a Rice Straw Basal Diet <i>Dahlanuddin, S.R. McLennan, S.P. Quigley and D. P. Poppi</i>	335
B 595 ID	The Effectivity Formaldehyde Dillution as Protein Protector on Gaseous Production of High Protein Feedstuffs <i>Kustantinah Nanung Danar Dono, Zuprizal, E. Indarto, Bramaji Wisnu and A. Iskandar</i>	339

Hak cipta milik IPB (Institut Pertanian Bogor)

Bogor Agricultural University

1. Dilarang mengutip sebagian atau seluruh karya tulis ini tanpa mencantumkan dan menyebutkan sumber:
a. Pengutipan hanya untuk kepentingan pendidikan, penelitian, penulisan karya ilmiah, penyusunan laporan, penulisan kritik atau tinjauan suatu masalah.
b. Pengutipan tidak merugikan kepentingan yang wajar IPB.

2. Dilarang memungut dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin IPB.

Code	Title	Page
B 1111 ID	Supplementation of Pufa Protected in Cattle Feed Based on Rumen Fermentation and Nutrient Digestibility Products by <i>in Vitro</i> <i>Riyanto, J, E. Baliarti, T. Hartatik, D.T. Widayati and L. M. Yusiati</i>	425
B 1120 IR	The Effect of Growth Stage and Cutting Time on Chemical Composition <i>in Vitro</i> Digestibility and Fermentative Gas Production of Alfalfa Forage <i>Reza Valizadeh, Mahdi Mahmmodi Abyanea and Reza Gangavi</i>	429
B 1132 A	Nutritive Value of Mulato II Hybrid (<i>Brachiaria</i> spp) for Cattle: Effect of Cutting Interval on Chemical Composition and <i>in Situ</i> Rumen Degradability <i>Seng M, Mob S, Nolan JV and Savage DB</i>	433
Small Ruminant		
B 69 ID	New Grasses (<i>Brachiaria mulato</i> and <i>Paspalum atratum</i>) to Increase Growth Performances of Kacang Goats Raised by Smallholder Farmers <i>Marsetyo</i>	437
B 117 ID	Energy Balance and Blood Metabolites Status of Local Sheep Based on <i>Indigofera sp</i> and Sproutbean Ration <i>DA Astuti, S Rahayu, KB Satoto, R Priyanto, L Khotijah, T Suryati and M Baihaqi</i>	441
B 133 ID	Bio-Process of Palm Kernel Cake as Source of Protein to Improve Sheep Productivity <i>Budi Haryanto, Dwi Yulistiani, Wisri Puastuti and Sri Nastiti Jarmani</i>	445
B 166 ID	Nutritive Value of Mangrove Browse Plants from <i>Hibiscus tiliaceus</i> , <i>Morinda citrifolia</i> , and <i>Acrostichum speciosum</i> <i>Dian Agustina, Andi Murlina Tasse, Nur Santy Asminaya and Nurlaha</i>	449
B 243 TR	Performance and Blood Parameters of Male Hair Goat Kids Fed Diets Containing Oil <i>Ugur Serbest, Ayhan Ceyhan, Mahmut Cinar, Cangir Uyarlar and Murat Gorgulu</i>	453
B 245 ID	Effect of Dietary Protein Consumption on the Colustrum Production in Dairy Goat <i>Tuhu Sulisty, Sudjatmogo and Joelal Achmadi</i>	457
B 340 TH	Performance and Blood Metabolites of Fattening Goats Fed Crude Glycerin in the Diet <i>P. Chanjula, P. Pakdeechanuan and S. Wattanasit</i>	461
✓ B 360 ID	Reproductive Performances of Garut Sheep Fed Rations Containing Sunflower Oil as a Source of Linoleic Acid <i>L. Khotijah, K.G. Wiryawan, M.A. Setiadi and D.A. Astuti</i>	465

Hak cipta milik IPB (Institut Pertanian Bogor)

Bogor Agricultural University

Code	Title	Page
Small Ruminant		
E 479 ID	Productivity of Peranakan Etawah Goats Raised in the Post Sand Mining Land of Cimalaka Sub-District of Sumedang, West Java <i>Fuah, A. M., M. Yamin, P. Dewi M. H. K. S, M. Baihaqi and R. Priyanto</i>	2306
E 484 ID	Carcass and Meat Yield of Local Lambs Fed Rations Containing Different Proportions of Grass, Legume Trees and Concentrate <i>Priyanto, R., K.G. Wiryawan and W.B. Sumira</i>	2310
E 585 ID	The Meat Quality Traits of Thai Crossbred Sheep <i>K. Tuntivisoottikul, P. Jangwanitlert and L. Piasai</i>	2314
E 591 ID	The Utilization of Fermentation Complete Feed on the Carcass and Chemical Quality Meat of Bligon Goat <i>Nono Ngadiyono, I Gede Suparta Budisatria dan Achmad Sadeli</i>	2318
E 667 ID	Carcass Characteristics of Shorn Javanese Fat-Tailed Sheep Fed By Soybean Tofu Waste <i>M. Baihaqi, R. Basuki and D. Diapari</i>	2322
E 1041 ID	Assessment of Introduction of Meat Black-Goat as Reproduction Breeder in Peng-Hu from Taiwan <i>T. T. Chen and M. T. Leu</i>	2326
Agribusiness, Trade, Marketing, Livestock Extension, Community Development, Policies on Food Security		
Large Ruminant		
F 385 ID	Income Over Feed Cost in Beef Cattle Raisers Using Locally Available Feed Resources <i>Sri Nastiti Jarmani</i>	2328
F 513 ID	Local Wisdom of Price Transaction of Cattle Trade at Slaughterhouse in Yogyakarta, Indonesia <i>Sudi Nurtini, Endang Baliarti and Defi Chusnul Chotimah</i>	2331
F 574 ID	The Analysis of the Existence Antiparasitic Treatment on Parasitiasis Calves Breeding in Central Java <i>Purwaningsih, T. A. Kusumastuti and B. Sumiarto</i>	2335
H 498 ID	Benefits of Sharing Capital Pattern (<i>Pola Gaduhan</i>) for Maintaining the Beef Cattle Population in the Villages in Indonesia <i>Sumanto and IGM Budiarsana</i>	2339
Small Ruminant		
F 396 ID	Rearing Dairy Goats for Reducing Malnutrition and Increasing Farmers' Income: a Case Study in Kerta Village, North Lombok, Indonesia <i>Rusdianto, A. Rai Somaning Asih and Soekardono</i>	2343

Hak Cipta Dilindungi Undang-Undang

Hak cipta milik IPB (Institut Pertanian Bogor)

Bogor Agricultural University

1. Dilarang mengutip sebagian atau seluruh karya tulis ini tanpa mencantumkan dan menyebutkan sumber:
a. Pengutipan hanya untuk kepentingan pendidikan, penelitian, penulisan karya ilmiah, penyusunan laporan, penulisan kritik atau tinjauan suatu masalah.
b. Pengutipan tidak merugikan kepentingan yang wajar IPB.

2. Dilarang mengumunkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin IPB.

Carcass and Meat Yield of Local Lambs Fed Rations Containing Different Proportions of Grass, Legume Trees and Concentrate

Priyanto, R., K.G. Wiryawan and W.B. Sumira

Faculty of Animal Science, Bogor Agricultural University, Bogor, Indonesia

Corresponding email: rd.priyanto@gmail.com

ABSTRACT

Local lambs are usually raised semi-intensively on forage based diet. The aim of this study was to compare carcass and meat yield of local lambs given rations containing different proportions of grass (*Brachiaria humidicola*), legume mixture (*Leucaena leucocephala* and *Gliricidia sepium*) and concentrate during a four months experimental period. Twenty males of six month old thin-tailed lambs with live weight range of 11 – 16.6 kg were used in this study. They were allotted to five different ration treatments; those were lambs kept in cage and given 90% grass and 10% concentrate (R1), 70% grass and 30% legume mixture (R2), grazing lambs on *Brachiaria humidicola* pasture (R3), grazing lambs with 30% mixture supplementation (R4) and grazing lambs with 10% concentrate supplementation (R5). The observed parameters included slaughter weight, carcass weight and percentage, loin eye area, kidney-pectic and heart fat weight, carcass component weight and percentage, and meat weight distribution within wholesale cut. The results showed that there were significant ($P<0.05$) between treatment differences in slaughter and carcass weights, and therefore carcass composition. The grazing lambs with 30% mixture supplementation (R4) yielded more meat within wholesale cuts as they had heavier slaughter and carcass weights and carcass muscle. In conclusion, the local lambs grazing on *Brachiaria humidicola* pasture with 30% legume mixture supplementation gave the best result in terms of slaughter weight, carcass weight and meat yield within wholesale cuts.

Key Words: Lamb, Grass, Legume, Concentrate, Yield

INTRODUCTION

The population of local lambs in Indonesia is recorded at 13.4 billion heads and mainly concentrated in Java Island (93.4%) with 61.5% being kept in West Java, 18.1% in Central Java and 8.1% in East Java. Lamb meat production recorded in 2012 was 44.4 thousand ton, representing 5 % of total red meat production (DGLAH, 2013). Local lambs generally have low productivity as they are kept intensively or extensively on forage based diet (Duldjaman, 2004; Sodiq, 2010). This study was aimed to compare carcass and meat yield of local lamb given ration containing different proportions of grass (*Brachiaria humidicola*), legume mixture (*Leucaena leucocephala* and *Gliricidia sepium*) and concentrate.

MATERIALS AND METHODS

Animals and Rearing Procedures: Twenty males of six month old thin-tailed lambs with initial live weight ranging from 11 – 16.6 kg were used in this study. They were allotted to five different feeding treatments; those were lambs raised in cage and given 90% grass and 10% concentrate (R1), 70% grass and 30% legume mixture (R2), grazing lambs on *Brachiaria humidicola* pasture (R3), grazing lambs with 30% mixture supplementation (R4) and grazing lambs with 10% concentrate supplementation (R5). The animals were kept for four months in a farm at Jonggol Animal Research and Teaching Unit (JASTRU) Bogor Agricultural University, West Java.

Slaughtering Procedures and Measurements: The animals were fasted but access to water for 16 hours prior to slaughter in order to obtain slaughtered weight. Slaughtering process was carried out according to standard halal method at a slaughter house plant owned by Small

1. Dilarang mengutip sebagian atau seluruh karya tulis ini tanpa mencantumkan dan menyebutkan sumber.
 2. Dilarang mengumunkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin IPB.

Ruminant Laboratory, Animal Production and Technology Department, Bogor Agricultural University. Carcass dressing was conducted according to Baihaqi and Herman (2012). Following dressing, hot carcass was weighed and then chilled at 4^o C for 24 hours. The chilled carcass was weighed and divided into two sides along vertebral column. Carcass dissection was carried out on the left side. The left side was broken down into seven wholesale cuts, namely shoulder, breast, shank, rack, loin, flank and leg (BSN, 2008). Each wholesale cut was further broken down into meat, waste fat and bone and these products were then anatomically dissected into muscle, fat and bone.

Statistical Analyses: The observed parameters included slaughter weight, carcass weight and percentage, loin eye area at the 12th rib, kidney-pelvic and heart fat weight, carcass component weight and percentage, and meat weight distribution within wholesale cut. The effects of feeding treatments on the observed parameters were analyzed using analysis of covariance with initial live weight used as co-variable (Kaps and Lamberson, 2004).

RESULTS

The effect of feeding treatments on slaughtered weight and carcass characteristics were presented in Table 1. Slaughter and carcass weights, and loin eye area of the twelfth rib were significantly (p<0.05) influenced by feeding treatments. The grazing lambs on *Brachiaria humidicola* pasture with 30% legume mixture supplementation (*Leucaena leucocephala* and *Gliricidia sepium*) produced significantly higher (p<0.05) slaughter and carcass weights, and loin eye area of the twelfth rib than those raised in cage and given 90% grass and 10% concentrate or 70% grass and 30% legume mixture. However, the feeding treatments did not have a marked effect on the quantity of kidney, pelvic and heart fats and carcass percentage.

Table 1. Slaughter weight and carcass characteristics[§] of thin-tailed lamb raised on different feeding treatments

Carcass Characteristic	Feeding Treatment ($\bar{x} \pm SE$)				
	R1	R2	R3	R4	R5
Slaughter weight (kg)	16.012±0.947 ^b	15.870±0.933 ^b	17.490±1.081 ^{ab}	19.969±0.935 ^a	17.707±1.091 ^{ab}
Carcass weight (kg)	5.471±0.418 ^b	5.411±0.412 ^b	6.441±0.477 ^{ab}	7.779±0.412 ^a	6.666±0.481 ^{ab}
Carcass percentage (%)	34.73±2.09	34.20±2.06	36.97±2.38	38.94±2.06	37.55±2.41
LEA12 (cm ²)	4.53±0.91 ^b	5.50±0.89 ^{ab}	5.39±1.04 ^{ab}	7.92±0.90 ^a	6.13±1.05 ^{ab}
KPHF weight (g)	169.5±19.8	157.3±19.5	136.9±22.6	168.0±19.6	153.1±22.8

[§] adjusted to the overall mean of initial liveweight of 14.211 kg; LEA12: loin eye area of the 12th rib; KPHF kidney, pelvic and heart fats; R1: lambs raised in cage and given 90% grass and 10% concentrate; R2: lambs raised in cage and given 70% grass and 30% legume mixture; R3: grazing lamb on *Brachiaria humidicola* pasture; R4: grazing lamb on *Brachiaria humidicola* pasture with 30% legume mixture supplementation; R5: grazing lamb on *Brachiaria humidicola* pasture with 10% concentrate supplementation; Values with different superscripts of the same raw differ significantly (p<0.05)

Lamb carcass components consist of mainly muscle, fat and bone. As shown in Table 2, on a weight basis significant (p<0.05) between feeding treatment differences occurred in carcass muscle and bone but not in carcass fat. The grazing lambs on *Brachiaria humidicola* pasture with 30% legume mixture supplementation produced carcass with significantly (p<0.05) more carcass muscle and bone than those kept in the cages given 90% grass and 10% concentrate or 70% grass and 30% legume mixture, and grazing lambs without supplementation. On a percentage basis, the grazing lambs on *Brachiaria humidicola* pasture with 30% legume mixture supplementation had significantly (p<0.05) higher muscle content than those raised in the cages given 90% grass and 10% concentrate or 70% grass and 30% legume mixture. Meanwhile, the lambs kept in the cages and given 70% grass and 30% legume mixture had significantly (p<0.05) higher carcass fat content than the grazing lambs with or without concentrate supplementation (Table 2).

Table 2. Weight and percentage of carcass component[§] of thin-tailed lamb raised on different feeding treatments

Carcass Component	Feeding Treatment ($\bar{x} \pm SE$)				
	R1	R2	R3	R4	R5
Weight (g)					
Muscle	1583.53±129.54 ^{bc}	1438.82±127.72 ^c	1763.65±147.89 ^{bc}	2305.52±127.86 ^a	1975.35±149.33 ^{ab}
Fat	225.99±37.36	285.18±36.84	233.44±42.66	318.67±36.88	243.69±43.07
Bone	805.22±56.35 ^{bc}	706.08±55.55 ^c	834.95±64.33 ^{bc}	1029.35±55.62 ^a	911.23±64.95 ^{ab}
Percentage (%)					
Muscle	58.28±1.27 ^b	58.79±1.25 ^b	61.46±1.45 ^{ab}	62.83±1.25 ^a	62.39±1.46 ^{ab}
Fat	8.25±1.05 ^b	11.60±1.04 ^a	8.08±1.20 ^b	8.50±1.04 ^{ab}	7.33±1.21 ^b
Bone	29.63±1.39	28.83±1.37	29.53±1.59	28.16±1.38	29.87±1.61

[§] adjusted to the overall mean of initial liveweight of 14.211 kg; R1: lambs raised in cage and given 90% grass and 10% concentrate; R2: lambs raised in cage and given 70% grass and 30% legume mixture; R3: grazing lamb on *Brachiaria humidicola* pasture; R4: grazing lamb on *Brachiaria humidicola* pasture with 30% legume mixture supplementation; R5: grazing lamb on *Brachiaria humidicola* pasture with 10% concentrate supplementation; Values with different superscripts at the same raw differ significantly ($p < 0.05$)

The influence of feeding treatments on meat weight distribution within wholesale cut is summarized in Table 3. Significant between feeding treatment differences in meat weight occurred in all wholesale cuts.

Table 3. Meat weight (gram) within wholesale cut[§] from carcass of thin-tailed lamb raised on different feeding treatments

Wholesale cut	Feeding Treatment ($\bar{x} \pm SE$)				
	R1	R2	R3	R4	R5
Shoulder	404.38±38.28 ^b	362.97±37.75 ^b	464.24±43.71 ^{ab}	558.38±37.79 ^a	538.01±44.13 ^a
Breast	123.06±16.42 ^b	101.19±16.18 ^b	139.54±18.74 ^{ab}	177.44±16.20 ^a	143.07±18.92 ^{ab}
Shank	143.53±14.21 ^b	143.44±14.01 ^b	168.41±16.23 ^b	241.87±14.03 ^a	162.28±16.38 ^b
Rack	100.87±16.75 ^{ab}	78.62±16.51 ^b	105.72±19.12 ^{ab}	143.37±16.53 ^a	138.27±19.31 ^a
Loin	115.40±13.39 ^b	100.53±13.20 ^b	131.36±15.28 ^{ab}	171.10±13.21 ^a	142.81±15.43 ^{ab}
Flank	85.68±11.09 ^b	86.59±10.93 ^b	99.02±12.66 ^{ab}	129.86±10.94 ^a	104.88±12.78 ^{ab}
Leg	610.62±47.45 ^{bc}	565.48±46.78 ^c	655.36±54.17 ^{bc}	883.49±46.84 ^a	746.05±54.70 ^{ab}

[§] adjusted to the overall mean of initial liveweight of 14.211 kg; R1: lambs raised in cage and given 90% grass and 10% concentrate; R2: lambs raised in cage and given 70% grass and 30% legume mixture ; R3: grazing lamb on *Brachiaria humidicola* pasture; R4: grazing lamb on *Brachiaria humidicola* pasture with 30% legume mixture supplementation; R5: grazing lamb on *Brachiaria humidicola* pasture with 10% concentrate supplementation; Values with different superscripts at the same raw differ significantly ($p < 0.05$)

In most cases, the grazing lambs on *Brachiaria humidicola* pasture with 30% legume mixture supplementation yielded significantly ($P < 0.05$) more meat within wholesale cuts compared to those raised in the cages given 90% grass and 10% concentrate or 70% grass and 30% legume mixture.

DISCUSSION

The local lambs at JASTRU farm have long been naturally adapted to dry and hot climate under grazing management and their performance could decrease in the dry season. Under this condition, feed supplementation could improve the productivity of the grazing lambs (Carrasco et al., 2009). They reported that grazing lambs supplemented with concentrate *ad libitum* obviously increased growth rates, slaughter weight and carcass weight and fatness. In this study, the grazing lamb with 30% legume mixture supplementation gave the best result in term of slaughter and carcass weights compared to those kept in the cages either given 90% grass and 10% concentrate or given 70% grass and 30% legume mixture. Consequently, the heavier carcass of the grazing lambs with legume mixture supplementation resulted in heavier carcass muscle and bone. Ramírez-Retamal et al.(2013) reported that at similar carcass

1. Dilarang mengutip sebagian atau seluruh karya tulis ini tanpa mencantumkan dan menyebutkan sumber:
a. Pengutipan hanya untuk kepentingan pendidikan, penelitian, penulisan karya ilmiah, penyusunan laporan, penulisan kritik atau tinjauan suatu masalah.
b. Pengutipan tidak merugikan kepentingan yang wajar IPB.
2. Dilarang memurnikan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin IPB.

© Hak Cipta Dilindungi Undang-Undang
 Himpunan Perikanan Bogor (Himpun Perikanan Bogor)
 Bogor Agricultural University