

SIRE BREED EFFECTS ON PRE-WEANING GROWTH AND REPRODUCTIVE PERFORMANCE OF LAMBS AT ALIYAH RIZQ FARM

RAFA ANINDYA



**DEPARTMENT OF ANIMAL PRODUCTION AND TECHNOLOGY
FACULTY OF ANIMAL SCIENCE
IPB UNIVERSITY
BOGOR
2026**



@Hak cipta milik IPB 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 University.
2. Dilarang mengumumkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin IPB University.



STATEMENT OF UNDERGRADUATE THESIS AND SOURCES OF INFORMATION AND COPYRIGHT HANDLING

I hereby declare that a undergraduate thesis entitled “Sire Breed Effects on Pre-weaning Growth and Reproductive Performance of Lambs at Aliyah Rizq Farm” is true of my work directed by advisory committee and has not been submitted in any form to any college. Sources of information derived or cited from published or unpublished papers of other authors have been mentioned in the text and included in the References at the end of this undergraduate thesis.

I hereby transfer the copyright from my paper to IPB University.

Bogor, July 2026

Rafa Anindya
D1401221068

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



@Hak cipta milik IPB 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 University.
2. Dilarang mengumumkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin IPB University.

ABSTRACT

RAFA ANINDYA. Sire Breed Effects on Lamb Pre-weaning Growth and Reproductive Performance at Aliyah Rizq Farm. Supervised by MUHAMAD BAIHAQI and ASEP GUNAWAN.

Sire breed is a key factor influencing productivity in sheep production systems. This study compared lamb pre-weaning growth and ewe reproductive performance across five sire breeds at Aliyah Rizq Farm. A total of 439 lamb records were used for analysis. Variables observed included birth weight, corrected weaning weight (CWW), average daily gain (ADG), litter size, lambing interval, pre-weaning mortality, sex ratio, and ewe productivity index (EPI). The data were analyzed using General Linear Model followed by Tukey's HSD test and Kruskal-Wallis test. Sire breed significantly affected ($P < 0.05$) birth weight, CWW, ADG, litter size, and EPI. Whitehead Dorper produced lambs with the highest growth performance, recording CWW of 16.13 ± 4.37 kg and ADG values of 142.6 ± 44.7 g day⁻¹. Barbados Blackbelly recorded the highest litter size (1.18 ± 0.39) and EPI (16.697 ± 5.989). These findings indicate that sire breed influences pre-weaning growth performance, litter size, and EPI under intensive management conditions.

Keywords: average daily gain, litter size, pre-weaning growth, sheep, sire breed

ABSTRAK

RAFA ANINDYA. Pengaruh Bangsa Pejantan terhadap Performa Pertumbuhan Pra-sapih dan Performa Reproduksi Domba di Aliyah Rizq Farm. Dibimbing oleh MUHAMAD BAIHAQI dan ASEP GUNAWAN.

Bangsa pejantan merupakan faktor penting yang memengaruhi produktivitas dalam sistem produksi domba. Penelitian ini membandingkan pertumbuhan pra-sapih anak domba dan performa reproduksi induk pada lima bangsa pejantan berbeda di Aliyah Rizq Farm. Sebanyak 439 catatan anak domba digunakan untuk analisis. Peubah yang diamati meliputi bobot lahir, bobot sapih terkoreksi (BST), pertambahan bobot badan harian (PBBH), jumlah anak sekelahiran, selang beranak, mortalitas pra-sapih, rasio jenis kelamin, dan indeks produktivitas induk (IPI). Data dianalisis menggunakan General Linear Model yang dilanjutkan dengan uji Tukey's HSD dan uji Kruskal-Wallis. Bangsa pejantan berpengaruh nyata ($P < 0.05$) terhadap bobot lahir, BST, PBBH, jumlah anak sekelahiran, dan IPI. Whitehead Dorper menghasilkan anak domba dengan performa pertumbuhan tertinggi, dengan CWW sebesar 16.13 ± 4.37 kg dan nilai PBBH sebesar 142.6 ± 44.7 g hari⁻¹. Barbados Blackbelly mencatatkan jumlah anak sekelahiran (1.18 ± 0.39) dan IPI (16.697 ± 5.989) tertinggi. Temuan ini menunjukkan bahwa bangsa pejantan memengaruhi performa pertumbuhan pra-sapih, jumlah anak sekelahiran, dan IPI pada kondisi manajemen intensif.

Kata kunci: pertumbuhan bobot badan harian, litter size, pertumbuhan pra-sapih, bangsa pejantan



@Hak cipta milik IPB University

IPB University



IPB University
— Bogor Indonesia —

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

© IPB Copyright, Owned by The Year 2026
All Right Reserved

*It is forbidden to cite partly or all of this work without mentioning the source.
Citation are for educational, research, scientific writing, reporting, criticism, or
review of a subject; and the citation is not detrimental to the interests of IPB*

*It is prohibited to announce and reproduce partly or all of this work in any
form without permission from IPB*

SIRE BREED EFFECTS ON PRE-WEANING GROWTH AND REPRODUCTIVE PERFORMANCE OF LAMBS AT ALIYAH RIZQ FARM

RAFA ANINDYA

Undergraduate Thesis
as one of the requirements to obtain a degree
Bachelor Degree
Department of Animal Production and Technology

**DEPARTMENT OF ANIMAL PRODUCTION AND TECHNOLOGY
FACULTY OF ANIMAL SCIENCE
IPB UNIVERSITY
BOGOR
2026**



@Hak cipta milik IPB 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 University.
2. Dilarang mengumumkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin IPB University.

Examiner for Undergraduate Thesis Final Examination:

1. Edit Lesa Aditia, S.Pt., M.Sc.
2. Dr. Windi Al Zahra, S.pt., M.Si.



Title : Sire Breed Effects on Lamb Pre-weaning Growth and Reproductive Performance at Aliyah Rizq Farm
Name : Rafa Anindya
NIM : D1401221068

Approved by

Supervisor:
Dr. Muhamad Baihaqi, S.Pt., M.Sc.

Co-Supervisor:
Prof. Dr. agr. Asep Gunawan, S.Pt., M.Sc.

Known by

Head of Department ITPP:
Dr. Muhamad Baihaqi, S.Pt., M.Sc.
NIP 19800129 200501 1 005

Exam Date:
July 1, 2026



PREFACE

Thank God, The Creator of the universe who has poured out His blessings and grace, so much ease in the life of the author to be able to finish writing this undergraduate thesis. I would like to thank the almighty and greetings to Prophet Muhammad SAW. This undergraduate thesis is prepared as one of the requirements to obtain a degree Bachelor of Science. Through this undergraduate thesis, the author would like to give to describe the research that was conducted from January to April 2026 at Aliyah Rizq Farm, Johor, Malaysia entitled “Sire Breed Effects on Lamb Pre-weaning Growth and Reproductive Performance at Aliyah Rizq Farm”. The author delivers his gratitude to Dr. Muhamad Baihaqi, S.Pt., M.Sc. as the main supervisor and Prof. Dr. agr. Asep Gunawan, S. Pt., M.Sc. as the co-supervisor for their guidance, direction, criticism, and suggestions in preparing this undergraduate thesis. Acknowledgments of the author also convey to all parties who have helped to make this undergraduate thesis.

The author also would like to thank the family, Aris Prianto and Rita Masniah for their prayers, support, and encouragement for the success and convenience of the author. The author also expresses his gratitude to his beloved friends and colleagues who have always provided encouragement, support, and a place to share the joys and sorrows during the study and preparation of this undergraduate thesis. The author hopes this paper can be useful for researcher and all parties for the sake of scientific

Bogor, July 2026

Rafa Anindya



TABLE OF CONTENTS

LIST OF TABLES	x
LIST OF FIGURES	x
APPENDIX	x
I INTRODUCTION	1
1.1 Background	1
1.2 Problem Statement	2
1.3 Study Objective	2
1.4 Study Benefit	2
1.5 Study Scope	2
II METHODS	3
2.1 Time and Location	3
2.2 Materials	3
2.3 Procedure	3
2.4 Variables	5
2.5 Data Analysis	6
III RESULT AND DISCUSSION	8
3.1 Pre-weaning Growth Performance	8
3.2 Reproductive Performance of Ewes	9
3.3 Supporting Parameters	10
IV CONCLUSION AND SUGGESTION	13
4.1 Conclusion	13
4.2 Suggestion	13
REFERENCES	14
APPENDIX	18
BIOGRAPHY	22



LIST OF TABLES

1	Sample distribution by sire breed according to type of analysis	4
2	Average and differences in birth weight, weaning weight, and ADG between breeds	8
3	Distribution of lamb litter size by breed	9
4	Descriptive statistics of lambing interval	10
5	Descriptive analysis of lamb mortality and sex by breed	11
6	Distribution of lamb ewe productivity index by breed	12

LIST OF FIGURES`

1	Location of Aliyah Rizq Farm as the study site (A) regional overview (B) satellite view of the farm location (Source: Google earth)	3
2	Documentation of sire breed diversity at Aliyah Rizq Farm (A) Barbados Blackbelly (B) Merino (C) Santa Ines (D) Whitehead Dorper (E) Blackhead Dorper	5

APPENDIX

1	Documentation of Daily Farm Operations and Data Collection	19
2	The results of statistical calculations for pre weaning growth	19
3	The results of statistical calculations for supporting parameters	21