

MAJOR PRACTICE IN SWINE PRODUCTION

MARK DOM M. ESTERON


An Undergraduate Major Practice Report Submitted to the Faculty of the Department of
Animal Science, College of Agriculture, Central Luzon State University,
Science City of Muñoz, Nueva Ecija, Philippines
in Partial Fulfillment of the Requirements
for the Degree of

**BACHELOR OF SCIENCE IN AGRICULTURE
(Animal Science)**

FEBRUARY 2020

ACCEPTANCE SHEET

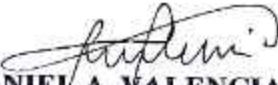
This major practice report entitled "MAJOR PRACTICE IN SWINE PRODUCTION," prepared and submitted by **MARK DOM M. ESTERON**, in partial fulfillment of the requirements for the degree of **BACHELOR OF SCIENCE IN AGRICULTURE (ANIMAL SCIENCE)**, is hereby accepted:


ERNESTO A. MARTIN, Ph.D.
Adviser

1-9-20
Date Signed



CASIMIRO C. LALUGAR Jr., BSA
Project Manager, CAG Native Pig Project

1-10-20
Date Signed


RANIEL A. VALENCIA, BSA
Department Major Practice Coordinator

01/16/20
Date Signed

Accepted as partial fulfillment of the requirements for the degree of **BACHELOR OF SCIENCE IN AGRICULTURE (ANIMAL SCIENCE)**:


RAMON CESAR SALAS, Ph.D.
Chair, Department of Animal Science

01/17/20
Date Signed


JOSEPH R. MENDOZA, M.Sc.
College Major Practice Coordinator

01/17/20
Date Signed


ARIEL G. MACTAL, Ph.D.
Dean, College of Agriculture

Jan 20, 2020
Date Signed

BIBLIOGRAPHICAL SKETCH

The author was born on the 17th day of July 1997 at Bonifacio, Cuyapo, Nueva Ecija. He is the youngest child of Mr. Dominador E. Esteron and Mrs. Juliet M. Esteron. He completed his education at Bonifacio Elementary School in 2011 with high honors during the graduation. In 2015, he graduated from his secondary education at Paitan Sur High School at Paitan Sur, Cuyapo, Nueva Ecija, being 2nd honorable mention.

To become a degree holder and a professional, he enrolled at Central Luzon State University and took up Bachelor of Science in Agriculture major in Animal Science with Swine production as field of specialization.

ACKNOWLEDGEMENT

Through the author's hard work he would like to take this opportunity to express his thanks to all who shared their kind and generous help that make this work possible.

Above all, the author extends highest praise to our Almighty God for giving his life, strength, faith, wisdom and blessings to pursue his studies.

The author wishes to express his heartfelt appreciation and deepest gratitude to the following persons for their valuable help toward the completion of this work.

To Dr. Ernesto A. Martin, former Dean of College of Agriculture and as his valuable mentor in native pig production; Dr. Ramon Cesar S. Salas, Chairperson of the Department of Animal Science; Mr. Raniel A. Valencia, College Major Practice Coordinator; and all the staff of Animal Science for sharing their knowledge and skills. To Mr. Casimiro C. Lalugar Jr., Farm manager who allowed him to conduct his major practice in the College of Agriculture Native Pig Project.

To the caretaker of the farm Mr. John Dela Cruz and to the duck research personnel Mr. Emilio Alcantara, Ate Mac, Tata Maxie and his fellow field practitioner, Ms. Beata Gabrielle S. Francisco for the practical knowledge and assistance during the conduct of his field practice and for the moments they shared together which made his stay in the project worthwhile.

To his beloved parents, Mr. Dominador E. Esteron and Mrs. Juliet M. Esteron, for all their sacrifices and hard works, support, guidance, care, unconditional love and encouragement. To his beloved sister Marites E. Manzano and family for their love and support.

Special thanks to his Agri-Dorm family, Mr. James Espiritu, Miguel Laconico, Mark Kenneth Joy Belo, Marvin Ronquilio, Joel Catbagan, Denzl Lomboy, Gelo Cabie, Gilbert Dela Cruz, Warren Casapao for giving comfort and happiness to his college life.

To others who were not mentioned, their contributions will never be forgotten. They are all part of his success.

TABLE OF CONTENTS

	PAGE
TITLE PAGE	i
ACCEPTANCE SHEET	ii
BIOGRAPHICAL SKETCH	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	vi
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF APPENDIX TABLES	xi
LIST OF APPENDIX RECORD	xii
LIST OF APPENDIX FIGURE	xiii
ABSTRACT	xiv
INTRODUCTION	1
Importance of the Major Practice	1
Objectives of the Major Practice	2
Expected Outputs	2
Time and Place of the Major Practice	3
REVIEW OF RELATED LITERATURE	4
Swine Industry	4
Swine Production	5
Feeding Management	5
Housing Management	6
Piglet Management	8
Health Management	9
Lactation Management	9
Gestation Management	11
Breeding Management	12
Waste Management	13

Record Keeping	14
----------------	----

DESCRIPTION AND SCHEDULE OF ACTIVITIES

Orientation of Major Practice	16
Inputs and Time Required	16
Farm Activities	16
Feeding Management	17
Feeding Management of Gestating Sow	17
Feeding Management of Lactating Sow	18
Feeding Management of Dry Sow	18
Feeding Management of Suckling	18
Feeding Management of Weanling	19
Feeding Management of Boar	19
Selection Criteria for Gilts	19
Body conformation	19
Mammary system	20
Lcg Development	20
External genitalia	20
Health	20
Breeding Management	20
Breeding Management for Gilts and Sow	21
Breeding Management for Boars	21
General Herd Management	22
Management of Gestating Sow	22
Management of Farrowing Sow	22
Management of Lactating Sow	23
Management of Piglets	23
Weaning of Piglets	26
Management of Replacement Gilts	27
Management of Boar	27
General Herd Health Management	27
Disinfection Program	28
Deworming Program	28
Recording System	28

Marketing Strategies	29
OUTPUTS AND DISCUSSION	30
Description of the farm	30
Farm Lay-out	30
Agro-Climatic Description of the Area	30
Technical Analysis of the Enterprise	31
Production Performance	31
Farrowing Rate	32
Piglets Born Alive per Litter	33
Piglet Weaned per Litter	34
Average Birth weight	35
Average Weaning Age	36
Cost and Return Analysis	37
PROBLEMS ENCOUNTERED AND RECOMMENDATIONS	39
LESSONS LEARNED	40
LITERATURE CITED	41
APPENDICES	45

LIST OF TABLES

TABLE		PAGE
1	Agro-clim atic data during the conduct of major practice from June to November 2019	31
2	Production Performance of Native Pig Project compared to the Performance of BT-Black Pig and BT-Kalinga Native Pig	32
3	Cost and return analysis of Native Pig Project of the College of Agriculture from June to November 2019	38

LIST OF FIGURES

FIGURE		PAGE
1	Farrowing rate in Native Pig Project compared to the performance of BT-Black Pig and BT-Kalinga Native Pig	33
2	Average piglets born alive in Native Pig Project compared in the performance of BT-Black Pig and BT-Kalinga Native Pig	34
3	Average piglets weaned per litter in the Native Pig Project compared with the performance of BT-Black Pig and BT-Kalinga Native Pig	35
4	Average birth weight of pigs in the College of Agriculture Native Pig Project compared to the Performance of BT-Black and BT-Kalinga	36
5	Average weaning age of piglet in the College of Agriculture Native Pig Project compared to the Performance of BT-Black Pig and BT-Kalinga Pig	37

LIST OF APPENDIX TABLES

APPENDIX TABLE	PAGE
1 Daily and periodic activities performed during the major practice in College of Agriculture Native Pig Project	46
2 Different activities during gestation period in College of Agriculture Native Pig Project	47
3 Activities from suckling to weaning period in College of Agriculture Native Pig Project	48

LIST OF APPENDIX RECORDS

APPENDIX		PAGE
1	Breeding record of College of Agriculture Native Pig Project	49
2	Farrowing record of College of Agriculture Native Pig Project	50
3	Daily stock inventory record of College of Agriculture Native Pig Project	51

LIST OF APPENDIX FIGURES

FIGURE		PAGE
1	Heat detection of in-heat sow	52
2	Ear notching of piglet at Native Pig Project	53
3	Needle teeth trimming of newly born piglet	54
4	Iron administration to prevent anemia	55
5	Castrating of piglet	56
6	Weighing of weanling	57

ABSTRACT

ESTERON, MARK DOM M., Department of Animal Science, College of Agriculture, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, **February 2020, MAJOR PRACTICE IN SWINE PRODUCTION**

Adviser: ERNESTO A. MARTIN, Ph.D.

The field practice program of the Department of Animal Science, College of Agriculture, Central Luzon State University, Science City of Muñoz, Nueva Ecija is offered to students as an option to the undergraduate major practice. The program aims to expose the students to actual field works and farming conditions.

The major practice was conducted at the College of Agriculture Native Pig Project from June to November 2019. The major practice student was exposed to the different management practices from breeding up to weaning. All farm inputs such as stocks, feeds, veterinary drugs, light water, supplements, housing facilities and equipment were provided by the project.

During the operation, the farm had a litter index of 1.70, average piglet born alive of 4.89 heads with an average birth weight of 0.66 kg and 80% farrowing rate. The project was able to generate a total sales of PhP 90,301.00. Total production expenses incurred was PhP 108,000.00 from feeds and veterinary drugs. Thus, the project incurred a loss of PhP 17,699.00 during the period.

- Jones R. (2007). *Farrowing and Lactation in the Sow and Gilt*. Retrieve from, <http://www.thepigsite.com/articles/1101/farrowing-and-lactation-in-the-sow-and-gilt/> on March 13, 2019.
- King G. (2009). *The importance of Reproductive Performance*. Retrieve, March 26, 2019, from, http://www.aps.uoguelph.ca/~gking/Ag_2350/pigrepro.htm
- Krieg, K. (2015). *Recommended practices for raising pigs from birth to weaning*. Alaska livestock series, lpm- 00845. Page 1- 2 March 13, 2019
- Mokokchung. (2012). *Care and Management of Pregnant Sow*. Retrieve, March 26, 2019, from <http://www.kvkmokokchung.in/index.php/2012-04-03-12-21-17/2012-04-03-12-34-32/leaflets/32-care-management-of-pregnant-sow>
- Michigan State University Extension (MSUE). (2014). *An inside look at pork processing*. Retrieved February 13, 2019, from, <https://www.canr.msu.edu/news/an-inside-look-at-pork-processing>
- National Animal Information Service (NADIS). (2012). *Coccidiosis in Piglets*. Retrieved, February 26, 2019, from, <https://www.nadis.org.uk/disease-a-z/pigs/coccidiosis-in-piglets/>
- National hog farmer. (2019). *10 Steps To Successful Farrowing*. Retrieved February 12, 2019, from https://www.nationalhogfarmer.com/mag/farming_steps_successful-farrowing
- National Center for Biotechnology Information (NCBI). (2018). *Quality and safety of meat products*. Retrieved February 13, 2019, from, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6111319/>
- Neovia Philippines. (2016). *A swine production that is significantly increasing in the philippines*. Retrieved February 06, 2019, from <https://www.ph.neovia-group.com/resources/market-insights/swine-production/>
- Philippine Council for Agriculture, Aquatic and Natural resources (PCCARD). (2007). *Artificial insemination in pigs*. Retrieve, March 26, 2019, from <http://www.pcaarrd.dost.gov.ph/home/momentum/swine/index.php/featured-technologies/124-artificial-insemination-in-pigs>
- Pig Progress. (2015). *Pig health*. Retrieved February 13, 2019, from, <https://www.pigprogress.net/Health/Articles/2015/10/Preventing-five-major-pig-diseases-in-the-breeding-herd-2685176W/?Dossier=31548&widgetid=1>

- Pitcher, P. (2007). *Estrus in Swine*. Retrieve, March 26, 2019, from <http://cal.vet.Upenn.edu/projects/swine/bio/fem/estr/hm.html>
- Pork Information Gateway. (2005). Energy sources for swine diets. Retrieved February 12 2019, from <http://porkgateway.org/resource/energy-sources-for-swine-diets/>
- Pork Information Gateway. (2010). *Protein and Amino Acid Sources for Swine Diets*. Retrieved February 12, 2019, from <http://porkgateway.org/resource/protein-and-amino-acid-sources-for-swine-diets/>
- Philippine Statistic Authority (PSA). (2019). *Swine Situation Report, January - June 2019*. Retrieved, February 06, 2019, from <https://psa.gov.ph/content/swine-situation-report-january-june-2017>
- Queensland Department of Agriculture and Fisheries,(2010). Nutrients and diets. Retrieved from <https://www.daf.qld.gov.au/animal-industries/pigs/feed-nutrition/nutrients-diets/nutrient-needs> on December 12, 2019.
- Santiago, R.C. (2018). *Native Pig Raising*. Retrieved December 12, 2019. From, <https://www.Agriculture.com.ph/2018/10/25/native-pig-raising/>
- Sharma, M.C. (2013). *Record Keeping: Indian Institute of Veterinary Research, Izatnaga-243 122, Barielly, Utter Pradesh, India*. P. 54 April 19, 2019
- Hoff, S. J. (2010). *Environment in swine Housing*. Retrieved, February 26, 2019, from, <https://articles.extension.org/page/s/27450/the-environment-in-swine-housing>
- The Pig Site. (2003). Mastitis. Retrieved, February 27, 2019, from, <https://thepigsite.com/disease-guide/mastitis-inflammation-mammary-glands-udder-infection>
- United State Department of Agriculture (USDA). (2002). *Feed Management of Swine*. Retrieved February 12, 2019, from https://www.aphis.usda.gov/animal_health/nahms/swine/downloads/swine2000/Swine2000_is_feedmgmt.pdf
- Vignola, M. (2012). *Sow feeding management during lactation*. Retrieved May 1, 2019, from, https://www.2-feeding-management-during-lactation-1-feeding-during-previous_5657/

- Whitney, M. (2010). *Lactating Swine Nutrient Recommendations and Feeding Management*. Retrieve, March 26, 2019, from <http://porkgateway.org/resource/lactating-swine-nutrient-recommendations-and-feeding-management/>
- Wolak, F. J. (1996). *Air Quality and Odor Control from Swine Production Facilities*. Retrieved May 1, 2019, from, <https://www.heatstress.info/lostproduction/Wherefarmedanimalsbirdsaremostcomfortable/pigthi.aspx>