

636.5142

B45

2007

SPECIFIC GRAVITY AND HATCHABILITY RATE OF
CHICKEN EGGS (LOHMANN STRAIN)

RESEARCH STUDY

SHEELA MAE BERNARTE
KRISTINE IDA LIWAG

Science High School
CAVITE STATE UNIVERSITY
Indang, Cavite

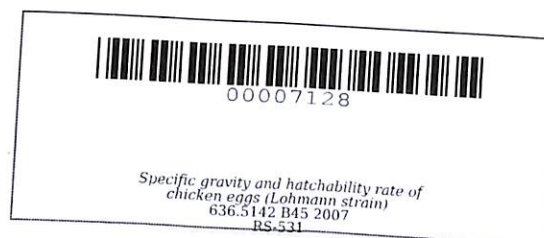
April 2007

5142

✓
**SPECIFIC GRAVITY AND HATCHABILITY RATE
OF CHICKEN EGGS (LOHMANN STRAIN)**

A Research Study
Submitted to the Faculty of the Science High School
College of Education
Cavite State University
Indang, Cavite

In partial fulfillment
of the requirements for graduation



SHEELA MAE BERNARTE
KRISTINE IDA LIWAG
April 2007

ABSTRACT

BERNARTE, SHEELA MAE S. and LIWAG, KRISTINE IDA L. Specific Gravity and Hatchability Rate of Chicken Eggs (Lohmann Strain). Research Study. Science High School College of Education. Cavite State University, Indang, Cavite. April 2007. Adviser: Dr. Alvin William Alvarez.

The study entitled “Specific Gravity of Eggs and Hatchability Rate in Lohmann Strain of Chickens” was conducted to determine the specific gravity and hatchability of eggs and to describe the classifications of hatched eggs. Different sets were prepared which include Set A with a specific gravity of 1.090, Set B with specific gravity of 1.085, Set C with specific gravity of 1.080 and Set D with specific gravity of 1.075.

One thousand eggs were divided into four batches. The first batch was soaked into the first salt solution with specific gravity of 1.090 or Set A. This procedure was repeated to all the remaining solution until it reached the container with lowest specific gravity (1.075). The eggs that floated in different sets were classified and incubated for 21 days. After 21 days, the chicks that hatched from these eggs were counted and segregated per group.

The results showed that among the four sets, Set A with a specific gravity of 1.090 has the highest hatchability rate of 59% and has the highest standard hatched eggs while Set D with a specific gravity of 1.075 has 0% hatchability. Therefore, the study proved that the higher the specific gravity, the higher the hatchability rate of eggs.

TABLE OF CONTENTS

	Page
TITLE PAGE	i
APPROVAL SHEET	ii
BIOGRAPHICAL DATA	iii
AKNOWLEDGMENT	iv
ABSTRACT	ix
TABLE OF CONTENTS	x
LIST OF TABLES	xi
LIST OF APPENDICES	xii
LIST OF APPENDIX FIGURES	xiii
INTRODUCTION	1
Statement of the Problem.....	3
Objectives of the Study	3
Importance of the Study	3
Scope and Limitation of the Study	4
Time and Place of the Study	4
Definition of Common Hatchery Terms	5
REVIEW OF RELATED LITERATURE	6
Poultry Production	6
Hatchability of Eggs	6
Improving Egg Production Profits	7

Eggshell Quality	8
Specific Gravity of Eggs	10
Use of Hydrometer in Determining Specific Gravity	12
Classification of Eggs	13
METHODOLOGY	
Preparation of the Salt Solution	15
Floating the Eggs in the Salt Solution	15
Classification of Eggs	16
Incubation of Eggs	16
Measuring Hatchability.....	17
Gathering and Analysis of Data	17
RESULTS AND DISCUSSION	
Specific Gravity of Eggs	18
Hatchability Rate of Eggs	19
Classification of Hatched Eggs	20
SUMMARY, CONCLUSION AND RECOMMENDATIONS	
Summary	22
Conclusion	23
Recommendations	23
LITERATURE CITED	24
APPENDICES	26
APPENDIX FIGURES	30

LIST OF TABLES

Table		Page
1	Amount of salt in each set	15
2	Specific gravity per set	16
3	Classification of eggs based on the specific gravity	18
4	Hatchability rate of eggs	19
5	Classification of hatched eggs	20

LIST OF APPENDICES

Appendix		Page
A	Selection Criteria for Incubation	27
B	Selection Criteria for Standard Chicks	28
C	Selection Criteria for Rejected Chicks	29

LIST OF APPENDIX FIGURES

Appendix Figure		Page
1	The hatchery where the study was conducted	31
2	The materials used in the study	32
3	Measuring the Specific gravity using Hydrometer	33
4	Floating of eggs in the Salt Solution	34
5	The eggs that floated and sank on the solution	35
6	The eggs that floated in different sets	36
7	The Setter incubator	37
8	Inside the Setter incubator	38
9	The Hatcher incubator	39
10	Inside the Hatcher incubator	40
11	The Standard chicks	41
12	The Rejected chicks	42

**SPECIFIC GRAVITY AND HATCHABILITY RATE
OF CHICKEN EGGS
(LOHMANN STRAIN)^{1/}**

**Kristine Ida Liwag
Sheela Mae Bernarte**

^{1/} A research study submitted to the faculty of Science High School, Cavite State University, Indang, Cavite in partial fulfillment of the requirements for graduation. Prepared under the supervision of Dr. Alvin William Alvarez.

INTRODUCTION

In all parts of the world, the trend towards fast-convenience foods with high quality and safety characteristics is recognized. Nevertheless, political, regulatory, social and most importantly, economics will dictate the direction of poultry growth and geographical shifts over the next decades. In terms of markets demand this means that poultry production is becoming increasingly consumer oriented and also in terms of research, the final product and the quality of these products becomes more important and finally dictates the way of production. The influence of environmental and animal welfare aspects is becoming more important in this respect (Linoer and Johnsson, 1998).

In the 21st century, it is expected that the manner of egg production and the characteristics of the finished product will be strongly affected by the increasing economic pressures for higher profit margins and consumer demands for products which better fit their changing lifestyle. In many developed countries utilization of the egg