



# **STUDY ON NUTRITIONAL STATUS OF COW AROUND PERIPARTURIENT PERIOD OF CROSS BREED IN COMMERCIAL DAIRY FARM**

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**Session: July –December/2013**

**A thesis submitted in the partial fulfillment of the requirements for the degree  
of Master of Science in Biochemistry**

**Department of Physiology, Biochemistry and Pharmacology**

**Faculty of Veterinary Medicine**

**Chittagong Veterinary and Animal Sciences University**

**Chittagong-4225, Bangladesh**

**December 2014**

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**This is to certify that we have examined the above Master's thesis and have found that is complete and satisfactory in all respects, and that all revisions required by the thesis examination committee have been made**

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**DECEMBER 2014**

I dedicate

this small piece of work

to my beloved parents, brothers and sisters.

## ACKNOWLEDGEMENTS

All the praises and earnest sense of gratefulness belongs to the Almighty ALLAH, the Merciful, the Omnipotent and the Beneficent but the supreme Ruler of the Universe Who enabled me to complete my research work and thesis successfully for the degree of Master of Science (MS) in Biochemistry.

Cordial cooperation, friendly collaboration, fruitful advice and guidance were received from many persons throughout the experiment. The author is immensely grateful to all of them and regrets for inability to mention every one by name.

The author sincerely desire to express his deepest sense of gratitude to his teacher and research supervisor DR. S. K. M. Azizul Islam, Associate Professor, Department of Physiology, Biochemistry and Pharmacology (DPBP), Chittagong Veterinary and Animal Sciences University (CVASU), Khulshi, Chittagong for his guidance and affectionate feelings during the entire period of research work and preparation of this thesis.

The author deems it a proud privilege to acknowledge his gratefulness, heartfelt gratitude and best regards to his venerable research co-supervisor Dr. Mohammad Rashedul Alam, Professor, DPBP, CVASU, Khulshi, Chittagong for his continuous inspiration, valuable suggestions and instructions and preparation of this thesis.

The author finds his great pleasure to express heartiest appreciation and profound regards to DR. Abdul Ali Bidduth, Paharika Dairy Farm, for helping in sample collection by collaborative efforts.

The author feels much gratification to express his thanks to his friend DR. Amir Hossan Shaikat, Assistant Professor, DPBP, CVASU for providing of suggestions, instructions and information are related to the thesis.

The author taking the privilege to thank DR. Mohammed Ashif Imtiaz Shawn, MS fellow, Pharmacology for helping in serum sample analysis.

The author also thanks CASR for sanction of grants to complete the research work successfully.

This work would not been successful without support and guidance from Prof. DR. A. K. M. Saifuddin, Head, DPBP, CVASU.

The author would like to thank MR. MD. Rafiqul Islam, Technical Officer, DPBP, CVASU, Khulshi, Chittagong, for his active cooperation and kind help.

Last but not the least the author expresses his deepest sense of gratitude, cordial respect of feelings to his respected parents, beloved brother and sister for spontaneous blessings, continuous encouragement and dedicated efforts to the author.

**Author**  
**December, 2014**

## CONTENTS

<b>Title</b>	<b>Page</b>
<b>AUTHORIZATION.....</b>	ii
<b>ACKNOWLEDGEMENTS.....</b>	v
<b>CONTENTS.....</b>	vi-ix
<b>LIST OF FIGURES.....</b>	x
<b>LIST OF TABLES.....</b>	xi
<b>LIST OF ABBREVIATIONS.....</b>	xii-xiii
<b>ABSTRACT.....</b>	xiv
<b>Chapter I INTRODUCTION.....</b>	<b>1-2</b>
<b>Chapter II REVIEW OF LITERATURE.....</b>	<b>3-10</b>
2.1 The periparturient period	4-5
2.2 Metabolic diseases of the dairy cow	5-7
2.3 Serum biochemical elements	7-10
2.3.1 Carbohydrate	7
2.3.1.1 Glucose	7
2.3.2 Protein	8-9
2.3.3 Lipid	9
2.3.4 Minerals	10
<b>Chapter III MATERIALS AND METHODS .....</b>	<b>11-29</b>
3.1 Study area	11
3.2 Study period	11
3.3 Description of study area	11
3.4 Selection of cow	11
3.5 Grouping of cow	12
3.6 Collection of blood sample and separation of serum	12

3.7	Preservation of serum sample	12
3.8	Biochemical assay of serum sample	12-22
3.8.1	Carbohydrate assay	13-14
3.8.1.1	Glucose assay	13
3.8.1.1.1	Assay principle	13
3.8.1.1.2	Materials and reagents	13
3.8.1.1.3	Procedure	14
3.8.2	Protein assay	14-16
3.8.2.1	Total protein assay	14
3.8.2.1.1	Assay principle	14
3.8.2.1.2	Materials and reagents	14
3.8.2.1.3	Procedure	15
3.8.2.2	Albumin assay	15
3.8.2.2.1	Assay principle	15
3.8.2.2.2	Materials and reagents	15
3.8.2.2.3	Procedure	15-16
3.8.3	Lipid profile	16-19
3.8.3.1	Cholesterol assay	16-17
3.8.3.1.1	Assay principle	16
3.8.3.1.2	Materials and reagents	16-17
3.8.3.1.3	Procedure	17
3.8.3.2	Triglyceride	17
3.8.3.2.1	Assay principle	17
3.8.3.2.2	Materials and reagents	18
3.8.3.2.3	Procedure	18
3.8.3.3	LDL assay	18-19

	3.8.3.3.1	Assay principle	18
	3.8.3.3.2	Materials and reagents	18
	3.8.3.3.3	Procedure	19
	3.8.3.4	HDL assay	19-20
	3.8.3.4.1	Assay principle	19
	3.8.3.4.2	Materials and reagents	19
	3.8.3.4.3	Procedure	19-20
3.8.4		Mineral assay	20
	3.8.4.1	Calcium (Ca) assay	20-21
	3.8.4.1.1	Assay principle	20
	3.8.4.1.2	Materials and reagents	20
	3.8.4.1.3	Procedure	20-21
	3.8.4.2	Magnesium (Mg) assay	21-22
	3.8.4.2.1	Assay principle	21
	3.8.4.2.2	Materials and reagents	21
	3.8.4.2.3	Procedure	21-22
	3.8.4.3	Phosphorus (P) assay	22
	3.8.4.3.1	Assay principle	22
	3.8.4.3.2	Materials and reagents	22
	3.8.4.3.3	Procedure	22
3.9		Statistical analysis	23
<b>Chapter-IV</b>	<b>RESULTS.....</b>		<b>24-28</b>
4.1		Carbohydrate and protein level in dairy cattle before and after parturition	24
4.2		Lipid profile in dairy cattle before and after parturition	25
4.3		Mineral profile in dairy cattle before and after parturition	26



4.4	Overall comparative nutritional assessment in serum level between two stages of dairy cattle after parturition	27-28
<b>Chapter-V</b>	<b>DISCUSSION.....</b>	<b>29-32</b>
5.1	Carbohydrate	29
	5.1.1 Glucose	29
5.2	Protein	29-30
	5.2.1 Total Protein	29
	5.2.2 Albumin	30
5.3	Lipid profile	30
	5.3.1 Cholesterol and Triglycerides	30-31
	5.3.3 LDL and HDL	31
5.4	Minerals profile	31-32
	5.4.1 Calcium, Magnesium and Phosphorus	31-32
<b>Chapter-VI</b>	<b>CONCLUSION.....</b>	<b>33</b>
<b>Chapter-VII</b>	<b>LIMITATIONS.....</b>	<b>34</b>
<b>Chapter-VIII</b>	<b>RECOMMENDATIONS.....</b>	<b>35</b>
<b>Chapter-IX</b>	<b>REFERENCES.....</b>	<b>36-44</b>
	<b>APPENDICES.....</b>	<b>45-50</b>
	<b>BRIEF BIOGRAPHY.....</b>	<b>51</b>

## LIST OF FIGURES

<b>Serial No.</b>	<b>Title</b>	<b>Page</b>
Figure 1	Interrelationships between nutrition and disease in the periparturient dairy cow.....	6
Figure 2	Map of Fatikchari .....	47
Figure 3	Activities performed during the study .....	48

## LIST OF TABLES

<b>Serial No.</b>	<b>Title</b>	<b>Page</b>
Table 1	Comparative assessment of carbohydrate and protein level in three different physiological conditions of studied dairy cow	24
Table 2	Comparative assessment of lipid profile level in three different physiological conditions of studied dairy cow.....	25
Table 3	Comparative assessment of minerals profile level in three different physiological conditions in studied dairy cow.....	26
Table 4	Overall comparative nutritional assessment in serum biochemical level between two stages of dairy cattle after parturition.....	28
Table 5	Serum biochemical level of cows before parturition.....	44
Table 6	Serum biochemical level of cows within 7 days after parturition.....	45
Table 7	Serum biochemical level of cows 2 months after parturition...	46

## LIST OF ABBREVIATIONS

Alb	Albumin
a.m.	Ante meridian
ANOVA	Analysis of variance
Ca	Calcium
CI	Confidence interval
CVASU	Chittagong Veterinary and Animal Sciences University
DMI	Dry Matter Intake
DPBP	Department of Physiology, Biochemistry and Pharmacology
DLS	District Livestock Service
dl	Deci liter
gm	Gram
HF	Holstein-Friesian
HDL	High-density lipoprotein
i/v	Intra venous
MS	Master of Science
L	Liter
L-C	LDL cholesterol
LDL	Low density lipoprotein
Mg	Magnesium

mg	Mili gram
NEFA	Non Esterified Fatty Acid
NRC	National Research Council
P	Phosphorus
p.m.	Post meridian
Rpm	Rotation per minute
Tg	Triglyceride
TP	Total protein
VLDL	Very low density lipoprotein
μl	Micro liter
°C	Degree centigrade
%	Percentage

## **Study on Nutritional Status of Cow around Periparturient Period of Cross Breed in Commercial Dairy Farm**

### **Abstract**

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The present study was carried out to investigate the nutritional status of cow around periparturient period. For this, a six month long study was conducted in Paharika Farm Limited, Fatikchari, Chittagong. A questionnaire survey was used to know the actual number of cattle which will deliver within one month of start of this study. Blood samples were collected aseptically from Jugular vein of these cows (n=24) and tagged properly. These cows were monitored for three months and blood samples were taken again within seven days after parturition and two month after parturition from tagged cattle. After clotting, obtained serum samples were further centrifuged to get clean serum and stored in eppendorf tube giving unique identification number and preserved in  $-20^{\circ}\text{C}$  until analysis. Serum samples were analyzed in Research laboratory of Department of Physiology, Biochemistry and Pharmacology, Chittagong Veterinary and Animal Sciences University for carbohydrate and protein (Glucose and Total protein, Albumin), lipid profile (Triglycerides, Cholesterol, High Density Lipoprotein (HDL) and Low Density Lipoprotein (LDL)), mineral profile (Calcium, Magnesium and Phosphorus) using automated biochemical analyzer (Humalizer®-3000, Germany). We found no significant variation in Glucose and Total protein level though Albumin level differed significantly ( $p < 0.001$ ) in three different stages of periparturient period. Significant increase ( $p < 0.01$ ) of all the parameters of lipid profile was found in cattle after two months of parturition and significant lower level of these lipid profile in cattle before one month of parturition. The result also represented significant variations in the estimated mineral (Ca, Mg, P) level in the three different stages of periparturient period. This study suggests further intensive study to validate this finding of different biochemical parameters.

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**Key words:** Cow, nutritional status, Periparturient, serum biochemistry