



شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ





شبكة المعلومات الجامعية



شبكة المعلومات الجامعية

التوثيق الالكتروني والميكرو فيلم

جامعة عين شمس

التوثيق الالكتروني والميكرو فيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون أية تغيرات



يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %



شبكة المعلومات الجامعية



بعض الوثائق الأصلية تالفة



شبكة المعلومات الجامعية



بالرسالة صفحات
لم ترد بالأصل

LIFETIME PRODUCTIVE TRAITS OF HOLSTEIN FRIESIAN CATTLE RAISED IN EGYPT

BY

SAFAA SALAH SANAD IBRAHIM

B.Sc. Agric . (Animal production 1995) , Zagazig University
(Banha Branch)



Thesis

Submitted in partial fulfillment of the requirements

for

MASTER OF SCIENCE

in

Agricultural Science

Animal Production(Animal Breeding)

From

Department of Animal Production

Faculty of Agriculture at Moshtohor

Zagazig University , Banha Branch

B

2002

952-

vii

—

—

**LIFETIME PRODUCTIVE TRAITS OF HOLSTEIN
FRIESIAN CATTLE RAISED IN EGYPT**

By

SAFAA SALAH SANAD IBRAHIM

**B.Sc. Agric . (Animal production 1995) , Zagazig University ,
(Banha Branch)**

Approved by :

• Dr Mohamed M. Shaban Mabrouk ----- M.M.S. Mabrouk
Professor of Animal Breeding (Dairy cattle) , El-Azhar University

• Dr Mohamed K. Ibrahim ----- Mohamed Khairy Ibrahim
Professor of Animal Breeding , Zagazig University , Banha Branch

• Dr Ezzat A. Afifi ----- E.A. Afifi
Professor of Animal Breeding , Zagazig University , Banha Branch

• Dr Mohamed F. Abdel-Glil ----- M.F. Abdel-Glil
Professor of dairy cattle breeding, Animal production Research , Institute

Date 26 / 3 / 2002

LIFETIME PRODUCTIVE TRAITS OF HOLSTEIN FRIESIAN CATTLE RAISED IN EGYPT

By

SAFAA SALAH SANAD IBRAHIM

B.Sc. Agric . (Animal production 1995) , Zagazig University ,
(Banha Branch)

Under the supervision of

Dr . EZZAT ATA AFIFI

Professor of Animal Breeding ,Faculty of Agriculture at Moshtohor,
Zagazig University , Banha Branch , Egypt .

Dr . Mohamed Farrag Abdel-Glil

Professor of Dairy Cattle Breeding , Animal Production Research
Institute .Agricultural Resarch Center, Minstry of Agriculture, Egypt .

10

2.

;

John J. ...
... ..
... ..

CONTENTS

	Page Number
1 . INTRODUCTION	1
2 . REVIEW OF LITERATURE	3
2.1 Non-Genetic Aspects	3
2.1.1 Age at First Calving	3
2.1.1.1 Means and variation	3
2.1.1.2 Year of birth effect	7
2.1.1.3 Season of birth effect	7
2.1.2 Longevity Traits	9
2.1.2.1 Means and variation	11
2.1.2.2 Year of birth effect	13
2.1.2.3 Season of birth effect	13
2.1.2.4 Age at first calving effect	14
2.1.2.5 First lactation milk yield effect	16
2.1.3 Lifetime Milk Production Traits	18
2.1.3.1 Means and variation	19
2.1.3.2 Year of birth effect	20
2.1.3.3 Age at first calving effect	21
2.1.3.4 First lactation milk yield effect	22
2.2 Genetic Aspects	25
2.2.1 Sire effect	25
2.2.2 Heritability estimates	25
2.2.3 Phenotypic and genetic correlations	30
3 . MATERIAL AND METHODS	37
3.1 Location and Period	37
3.2 Animals and Breeding Plan	37
3.3 Housing , Feeding and Management	37
3.4 Data and Statistical Analyses	39
3.5 Estimation of Genetic Parameters	45
4 . RESULTS AND DISCUSSION	48
4.1 Non – Genetic Aspects	48
4.1.1 Age at First Calving	48
4.1.1.1 Means and variation	48
4.1.1.2 Year of birth effect	49
4.1.1.3 Season of birth effect	50
4.1.1.4 Year of birth x Season of birth interaction effect	52

4.1.2 Longevity Traits	53
4.1.2.1 Means and variation	53
4.1.2.2 Year of birth effect	55
4.1.2.3 Season of birth effect	55
4.1.2.4 Year of birth x Season of birth interaction effect	58
4.1.2.5 Age at first calving effect	58
4.1.2.6 First lactation milk yield effect	60
4.1.3 Lifetime Milk Production Traits	63
4.1.3.1 Means and variation	63
4.1.3.2 Year of birth effect	66
4.1.3.3 Season of birth effect	67
4.1.3.4 Year of birth x Season of birth interaction effect	69
4.1.3.5 Age at first calving effect	73
4.1.3.6 First lactation milk yield effect	74
4.2 Genetic Aspects	77
4.2.1 Sire effect	77
4.2.2 Sire component of variance	77
4.2.3 Sire heritability estimates	81
4.2.4 Phenotypic and genetic correlation coefficients	83
5 . CONCLUSIONS	91
6 . SUMMARY	93
7 . REFERENCES	97
8 . APPENDICES	122
9 . ARABIC SUMMARY	

ACKNOWLEDGEMENTS

I do really wish to express my sincere appreciation and greatest gratitude to the distinguished senior supervisor **Dr . Ezzat A . Afifi** , professor of Animal Breeding , Faculty of Agriculture at Moshtohor for suggesting the problem, planing for the study, designing the statistical analysis, kind close supervision , keen guidance , continuous help , valuable support, constructing criticism , encouragement , the effort he spent to broaden my scientific knowledge, critical reading and revising the manuscript of this thesis .

Greatful acknowledgement and cincere thanks are to be directed to the supervisor **Dr . Mohamed F . Abdel-Glil** , professor of Dairy Cattle Breeding , Animal Production Research Institute at Dokki for his continuous support , kind help , careful supervision through the period of this work .

My deepest thanks and acknowledgements are extended to **Dr . Mahmoud A . Salem** , researcher of Dairy Cattle Breeding for his help in obtaining the data of the study and providing the computer facilities , his kind comments and good advice .

My special thanks to the staff members my colleagues and employees in the Animal Production Department , Fac . of Agric . at Moshtohor , and to the staff of Animal Extertion Department , Anim . Prod . Research Institute especially **Mr . Sayed A . Morsey , Dr Ahmed A . Afify and Dr Tarek A . Draz** for their support I am also indebted to every one offered help during this work .

My cardial thanks and deep gratitude to my husband **Mr . Abdel-
Wahab B . Borham** , Engineer of power for his -patiance ,
encouragement , lovely care and creating good atmosphere during the
time I spent as a M . Sc . student .

Safaa S . S . Ibrahim