hossam maghraby

شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

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شبكة المعلومات الجامعية

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

hossam maghraby

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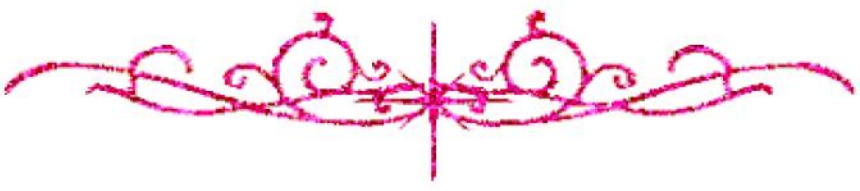

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شبكة المعلومات الجامعية

بالرسالة صفحات لم ترد بالأصل

ESTIMATION OF GENETIC AND PHENOTYPIC PARAMETERS OF MILK PRODUCTION TRAITS IN EGYPTIAN BUFFALOES USING TEST-DAY MODEL

By

Heba Ahmed Mohamed Mostafa
B.Sc. Agric. Sci. (Animal Production), Fac. Agric., Cairo Univ., 2002

THESIS
Submitted in Partial Fulfillment of the
Requirements for the Degree of

MASTER OF SCIENCE

In

Agricultural Sciences
(Animal Production)

Department of Animal Production
Faculty of Agriculture
Cairo University
EGYPT

2011

APPROVAL SHEET

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M.Sc. Thesis
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Date: 30/3/2011

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Title of Thesis: Estimation of Genetic and Phenotypic Parameters of Milk Production Traits in Egyptian Buffaloes Using Test-day Model
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Department: Animal Production
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Approval: 30 / 3 /2011

ABSTRACT

A total number of 3007 test-day milk records for 401 Egyptian buffaloes, daughters of 54 bulls covered the period from 1991 to 2002 were used in this study. Data were collected from Mahllet Mousa and El-Nattaf El-Kadeem farms in Kafr El-Sheikh. The two farms belong to Animal Production Research Institute, Ministry of Agriculture and Land Reclamation, Egypt. Genetic parameters and breeding values were estimated for :(1) total milk yield, (2)test-day milk yield, (3) monthly milk yield, and (4) cumulative milk yield. Statistical analyses were performed using SAS (2002), PLS (XLSTAT, 2010) analysis and DFREML (Meyer, 1998).

Averages of total milk yield (TMY), test-day and monthly milk was 1429kg, 7.3kg and 215kg, respectively.

Heritability estimates of individual test-day records ranged from 0.02 to 0.12, the heritability estimates of monthly and cumulative monthly milk yield ranged from 0.04 to 0.17 and from 0.01 to 0.20, respectively, and heritability estimates for total milk yield was 0.28.

Correlations between test-day (TD) measurements and total milk yield in the middle lactation (TD3, TD4) were higher than at the beginning and the end of lactation for milk yield.

The regression of TMY on year of calving showed a positive trend (+67 kg per year of calving). Also, genetic trend was positive (+12.55kg per year of birth). In conclusion, although the trend in the estimated breeding values was positive, it still did not lead to adequate change required in the average milk production due, probably, to inadequate feeding and/or impaired management of the herds.

The results obtained suggest that test-day model could be used in genetic evaluation of Egyptian buffalo. Also, from Variable Importance for Projection (VIP) plot we note that accurately predict total milk yield from second to fifth test-day can be effective.

Keywords: Heritability, genetic and phenotypic trend, test-day, total milk yield, Egyptian buffalo, Correlations.

ACKNOWLEDGEMENT

I wish to express my deepest appreciation and most honest gratitude to ***Dr. Rabie Ragab Sadek*** *Professor of Animal husbandry, Faculty of Agriculture, Cairo University for his proper selection of the subject, valuable suggestion, kind supervision and infinite support.*

Any words fails to express my grateful and deep indebtedness to ***Dr. Samy Abou-Bakr*** *Professor of Animal Breeding, Faculty of Agriculture, Cairo University, for kind help, fruitful advice, encouragement, constructive and generous provision of all facilities for the production of this work. Without this material support this work would have been aborted.*

My appreciation also goes out to Dr. ***Mahasen Mohamed Moawad*** *Researcher Professor of Animal Breeding, Animal Production Research Institute, for generous help, sincere guidance and supervision of this work.*

My deepest thanks to ***Dr. Mohamed Abd El-Aziz Mohamed*** *Associate Professor of Animal husbandry, Faculty of Agriculture, Cairo University, and* ***Dr. Sameh Abd El-fattah Abd El-salam,*** *lecturer of Animal Breeding, Faculty of Agriculture, Cairo University, for his kind assistance in the statistical analysis.*

All deep and special thanks for my beloved parents and my husband for all what they have done for me.