STUDIES ON GROWTH AND MILK PRODUCTION IN EGYPTIAN BUFFALOES

BY

TAREK ABD EL-AZIZ SOLEMAN FOODA

(B. Sc. in Agriculture, Faculty of Agriculture, Ain Shams University, 1986)

A thesis submitted in partial fulfillment
of
the requirements for the degree of

MASTER OF SCIENCE
in
Agriculture
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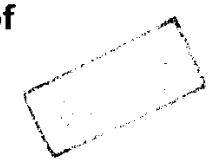

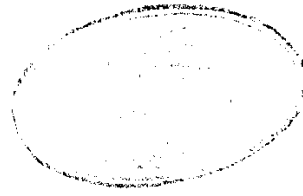

Department of Animal Production
Faculty of Agriculture
Ain Shams University

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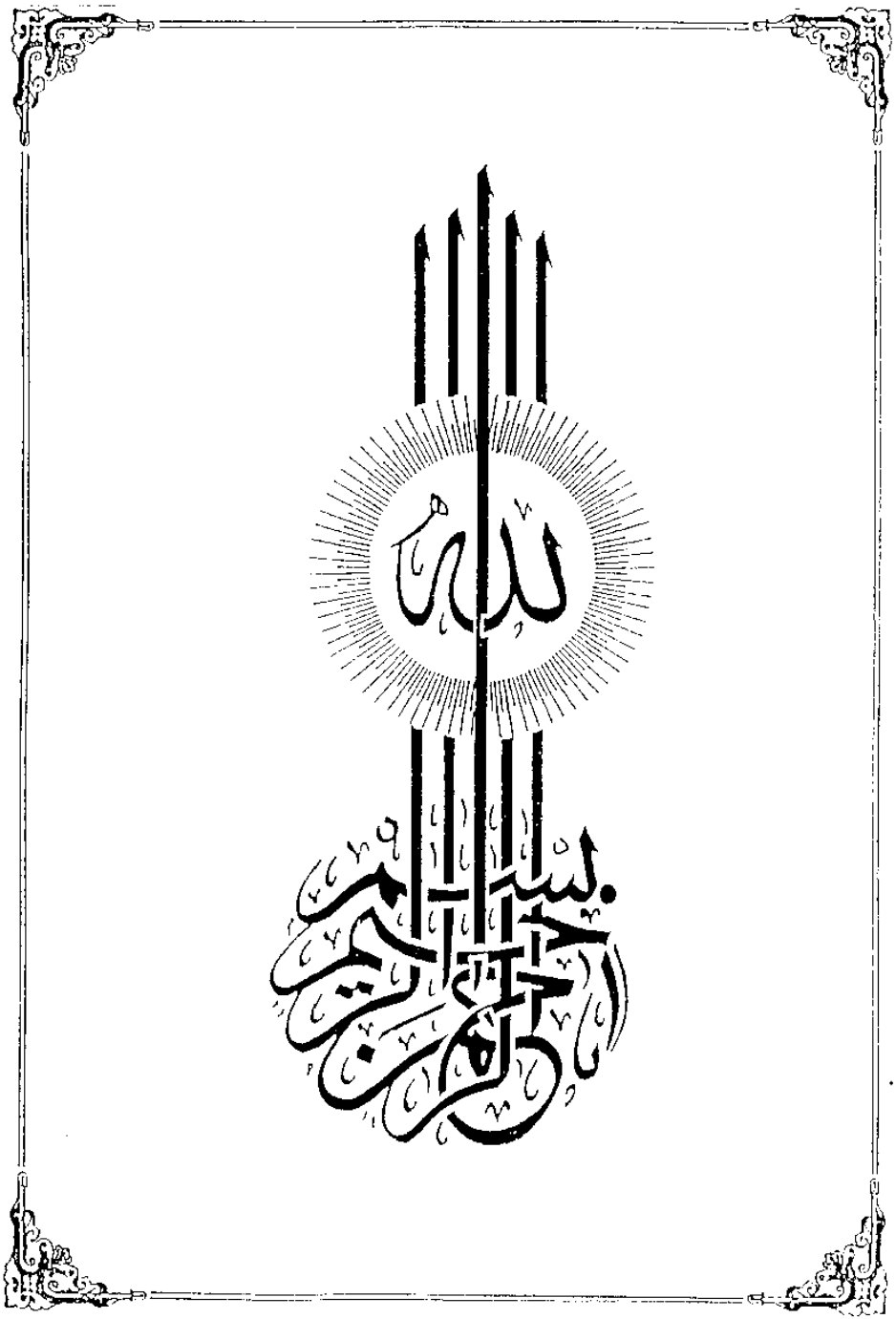

APPROVAL SHEET

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ABSTRACT

TAREK ABD EL-AZIZ SOLEMAN FOODA, STUDIES ON GROWTH AND MILK PRODUCTION IN EGYPTIAN BUFFALOES. Unpublished Master of Science in Animal Breeding, University of Ain Shams, 1995 .

The data were collected at the Buffalo Experimental Stations belonging to the Animal Production Research Institute, Ministry of Agriculture, Egypt.

The animal used were 55 females and 59 males (1 to 18 months of age) and 114 mature buffalo cows.

The objective of this study was to characterize the Egyptian buffaloes in terms of live body weight and dimensions and carcass weight and compositional traits and to describe statistical relationships of practical importance to buffalo enterprises, including predictive equations of body weight and dimensions based on age or an independent body dimension, predictive equations of milk yield and % milk fat based on body weight or body dimensions, growth functions and milk - beef and beff - beef correlations.

The lactating herd used in the growth study has been described in terms of productive traits (total milk yield; 305-day milk yield; lactation period; dry period) and reproductive traits (days open; calving interval).

The most important results were as follows :

- The estimates of parameters of the Brody's function describing the weight-age relationship in females were as follows : Asymptotic weight (A)= 772 kg; Maturing rate (K)= 0.021 kg; Integration constant (B)= 788 kg.

- The Hyxley's function describing the development of body dimensions of growing animals related to body weight gave the following ascending gradient of maturity : height at hips, height at withers, body length, shank circumference, width at shoulder, herat circumference, body depth, width at hips, flank circumference and abdominal circumference.

- The simple linear regression equations showed the possibility of relying on heart circumference or abdominal circumference singly to predict body weight with a maximum error of 20 kg.

- A considerable error was involved in predicting milk yield and % milk fat using body weight or body dimensions.

- The Huxley's function describing the development of carcass weight and the offals relative to empty body weight gave the following ascending gradient of maturity : weight of vesceral offals, hot carcass and non-vesceral offals, whereas relative to carcass weight gave the following gradient : percentage of muscle : bone, weight of total bone in carcass and total muscle in carcass.

- Phenotypic correlation coefficients indicated that the weight and area measurements of individual muscles were more associated with the total side muscle weight than with the length or width measurements.

- Phenotypic correlation coefficients indicated that the live body weight and dimensions were negatively correlated with dressing percentage, fat percentage and bone percentage, but positively correlated with muscle percentage. Flank circumference had the highest correlation with muscle % whereas body length had the lowest correlation.

KEY WORDS : Buffalo, live body weight and dimensions, carcass attributes, growth functions, predictive equations, Milk-beef and beef - beef correlations.

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