ESTIMATES OF GENETIC AND PHENOTYPIC PARAMETERS FOR BIRTH WEIGHT, WEANING WEIGHT AND AVERAGE DAILYGAIN IN FRIESIAN CATTLE

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Abstract

Data utilized for this study were records collected on 117 calves sired by 10 bulls, kept at Dujaila Grand Diary Farm/Wasit Governorate, to estimate heritability of birth weight (BW), weaning weight (WW) and average daily gain (ADG) and also to estimate genetic, phenotypic and environmental correlations among these traits .

Heritability estimates calculated from paternal half-sib correlations were 0.55 ± 0.3, 0.34 ± 0.29 and 0.56 ± 0.37 for BW, WW and ADG respectively .

The genetic, phenotypic and environmental correlations between BW and WW were 0.97, 0.77 and 0.72 respectively, and those between BW and ADG were 0.94, o.89 and 0.87 those between WW and ADG were 0.97, 0.07 and 0.07 .

Results of this study indicate that selection for BW should result in genetic improvement in the other traits .

Introduction

Selecion for multiple traits is expected to be most efficient when it is based on a total score or index in which optimum emphasis is given to each traits included in the selection programe Construction of an efficient selection index requires reliable estimates of genetic and phenotypic variances and covariances for traits concerned (1) .

Taneja and Bhat (1971) (2) indicted that rspid and efficient growth in dairy cattle is of economic importance, since it reduces the age of maturity and has a bearing on other production characters. The present study was conducted to estimate the heritability of birth weight, weaning weight and average daily gain and also to estimate genetic, phenotypic and environmental correlations among these traits .

Materials and Methods

The data used in this study were obtained from the Dujaila Grand Dairy Farm/ Wasit Governorate during the 1981-1984 . Atotal of 117 Friesian claves sired by 10 bulls were utilized in this work . Sire had to have at least 10 progenies to be included in this analysis . Data were analyzed using a least-squares technique described by (3).

Heritability estimate (h^2) were calculated from paternal half-sib intra-class correlations as the ratio of four times the sire component of variance to the sum of