

GENETIC STUDIES ON SHEEP PERFORMANCE

By

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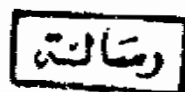
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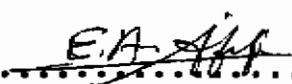
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ABSTRACT

This study included data on 520 Ossimi and 629 Rahmani ewes, raised on experimental stations belonging to the Ministry of Agriculture during the period 1970 - 1988.

The objectives of this study were to estimate non-genetic factors affecting, heritability and genetic and phenotypic correlations of life-time lamb and wool production traits and mature weight using Harvey's Mixed Model Least-Squares and Maximum Likelihood Computer Program (LSML 87).

Estimates of least squares means of total number of lambs born (TLB), total number of lambs weaned (TLW), total kilograms born (TKB), total kilograms weaned (TKW), total kilograms of fleece weight (TFWT) and mature weight (MWT)

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were 4.23, 3.73, 12.83, 46.98, 5.86 and 50.8 respectively, in Ossimi ewes and 4.47, 3.74, 13.81, 48.09, 6.55 and 53.3 respectively in Rahmani ewes.

The differences between block-locations were highly significant in all studied traits in both Ossimi and Rahmani ewes. Age of dam and type of birth had non significant effects on all studied traits in Ossimi and Rahmani ewes, while season of lambing significantly affected all studied traits in Ossimi ewes except TKW and MWT and non significantly affected all studied traits in Rahmani ewes.

The effect of weaning weight on all the studied traits in each of Ossimi and Rahmani ewes was not significant, while the effect of yearling weight was significant on all studied traits in Ossimi ewes except TFWT, MWT and non significant on all studied traits in Rahmani ewes.

The estimates of heritability of the TLB, TLW, TKB, TKW, TFWT and MWT were .013, .031, .031, .004, .234 and .121, respectively, in Ossimi ewes and .131, .154, .121, .142, negative and .268, respectively, in Rahmani ewes. The genetic correlations between these previous traits ranged from -3.104 to 1.3 in Ossimi and from -.102 to 1.1 in Rahmani, while the phenotypic correlations ranged from -.231 to .97 in Ossimi and from -.029 to .96 in Rahmani.

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LIST OF ABBREVIATIONS

| | |
|----------|---|
| AGM | Age at maturity |
| BWT | Birth weight |
| b_{yx} | Regression of y on x |
| E | Exotic |
| E.R | $\frac{1}{2}$ Exotic . $\frac{1}{2}$ Rahmani |
| F | Finnish Landrace |
| F.O | $\frac{1}{2}$ Finn . $\frac{1}{2}$ Ossimi |
| F.R | $\frac{1}{2}$ Finn . $\frac{1}{2}$ Rahmani |
| FO.O | $\frac{1}{4}$ Finn . $\frac{3}{4}$ Ossimi |
| FR.R | $\frac{1}{4}$ Finn . $\frac{3}{4}$ Rahmani |
| FWT | Greasy fleece weight |
| KGB | Kilograms born |
| KGW | Kilograms weaned |
| LB | Number of lambs born |
| LW | Number of lambs weaned |
| MWT | Mature weight |
| O | Ossimi |
| R | Rahmani |
| R | Romanov |
| R.R | $\frac{1}{2}$ Romanov . $\frac{1}{2}$ Rahmani |
| r_{yx} | Correlation between y and x |
| S | Suffolk |
| S.O | $\frac{1}{2}$ Suffolk . $\frac{1}{2}$ Ossimi |
| TFWT | Total grease fleece weight |
| TKB | Total kilograms born |
| TKW | Total kilograms weaned |
| TLB | Total number of lambs born |