

GENETIC EVALUATION OF MILK PRODUCTION TRAITS IN AWASSI SHEEP IN JORDAN

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ABSTRACT

A total of 938 lactation records for Awassi ewe were collected over four successive years (2001-2004) from Al-Khanasri research station and analyzed to investigate the influence of some fixed effects on test day milk yield (TDM) and total milk yield (TMY), to estimate heritability and repeatability of each trait. Animals were evaluated genetically by using Single Trait Animal Model to obtain breeding values and real producing abilities. The overall mean of TDM and TMY were 0.796 ± 0.0086 and 133.5 ± 2.3 kg, respectively. Ewe type of birth and birth weight had non-significant effect on TDM and TMY, while litter size, age and parity were found significantly ($P < 0.05$) affected TDM and TMY. TDM and TMY were also affected significantly by year of lactation ($P < 0.0001$) and by ewe weaning weight ($P < 0.001$). The estimated heritability and repeatability were 0.26 ± 0.094 and 0.27 for TMY and 0.27 ± 0.96 and 0.35 for TDM, respectively. The estimated breeding values for 681 ewes and 68 rams ranged between -205.1 and 441.2 kg for TMY and between -1.20 and 2.95 kg for TDM. A highly significant ($P < 0.0001$) spearman's rank correlation was calculated (0.51) between estimated breeding values of milk production traits. The real producing abilities ranged between -123.969 and 216.224 kg for TMY and between -0.525 and 1.386 for TDM. A highly significant ($P < 0.0001$) phenotypic trend was obtained while genetic trend was non-significant. The expected genetic gain (through selection for TMY) per year was estimated to be 10.3 kg/year.

Key words: *Awassi sheep, milk production, genetic parameters, breeding values, genetic and phenotypic trends.*