Quantitative and Molecular Genetic Analysis for Some Traits in Highly Selected Jordanian Awassi Sheep for milk Production –*K.I. Z. Jawasreh,* J. Hijazi, A. Z. Khasawneh, F. T. Awawdeh and H. Ababneh . Livestock and Rangeland Research Directorate, (NCARE), Jordan.

Multiple Trait Animal Model (MTDFRML) was used for evaluating the animals. Daily milk production, prolificacy and birth weigh traits were adjusted for some fixed effects (parity, type of birth, ewe type of birth and lambing season).Heritability estimates were 0.06 ± 0.04, 0.22 ± 0.08 and 0.20 ± 0.07, respectively for prolificacy, daily milk and birth weigh. The overall genetic trends were 0.00829 ± 0.00341kg/year and -0.01735 ± 0.0066 kg/year ($P \leq 0.01$) for daily milk and birth weights, respectively. A non significant positive genetic trend was estimated for prolificacy through the selection period. Phenotypic trends were significantly positive for all studied traits**.** The frequencies of AA, AB and BB genotypes of *β-Lactoglobulin* gene were 0.06, 0.40 and 0.533, respectively. The allelic frequencies were 0.267 and 0.733 for A and B alleles, respectively. The tested samples for *Insulin like growth factor binding protein (IGFBP)* gene were homogeneous in all selected ewes.