

## Impact of brucellosis disease on interleukin 12 concentration and blood parameters in the Awassi sheep of Iraq

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**Corresponding author:****Inam Nayyef A****ABSTRACT:**

This research was conducted to study the effect of some factors such as the percentage incidence of brucellosis, level of interleukin 12 (IL-12) and blood parameters for Awassi sheep. Overall mean rate of incidence was 0.42% and concentration of IL-12 to 0.23 ng/ml. Higher percentage incidence was found to be 0.52% and increasing of IL-12 to 0.25 ng/ml for animals with ages 3-5 years. More infections occurred in winter (0.59%) with decreasing IL-12 to 0.22 ng/ml and females susceptible to infection with higher percentage reached to 0.44%. On the other side, increasing of IL-12 for twin infants to 0.35 ng/ml witness less infections (0.27%) compared with those of single infants which received 0.46%. Age and season have a significant effect ( $P>0.05$ ) on the occurrence of disease which is not affected by sex and birth type. Levels from IL-12 was influenced significantly ( $P>0.05$ ) by birth type and were not affected by age, season and sex. Comparisons of blood parameters and concentrations for infection and non-infection cases were investigated, thereby, levels of IL-12, globulin, albumin/globulin raised to 0.45 ng/ml, 3.44 g/dl and 2.00 while concentration of albumin, total protein declined to 3.77 g/dl and 6.80 g/dl respectively for the infected animals. Correlation coefficient between infection and each of IL-12, age, birth type, albumin, globulin total protein were negative and significant ( $P>0.05$ ) while positive and significant between infection and both of sex and albumin/globulin and positive ( $P>0.01$ ) between IL-12 and birth type (0.45) and with globulin reached to 0.34 was negative ( $P>0.01$ ) with albumin/globulin received to -0.28 and negative ( $p>0.05$ ) and with albumin was -0.23 and positive and insignificant with total protein 0.19. Also insignificantly negative with sex which reached to -0.08. Estimation of heritability for brucellosis, IL-12 and total protein were 0.33, 0.21 and 0.15 respectively, while repeatability for brucellosis was 0.64.

**Keywords:**

Brucellosis, Interleukin 12, Blood proteins, Awassi sheep