**5. DISCUSSION**

Haematological values of *Brucella abrotus* antibody positive cows showed variable degrees of discrimination. In brief, lowered values of Hb and MCHC were recorded compared to reference values. However, MCV, neutrophi, monocyte and eosinophil counts were found higher than the standard values. The values of PCV, ESR, TEC, TLC, lymphocytes, basophils and MCH were remain within the ranges of reference values though any of the values were not found statistically significant.

The hemoglobin value of the present study was found lower than the reference value and was in consistent with the findings of Dorgan, 2010 and Gurkan *et al.,* 2003 who worked on cattle and old women correspondingly. On the other hand, Cannella *et al.,* 2012; Kuperman *et al.,* 2010; El-Boshy *et al.,* 2009; Sauret and Natalia, 2002 and Al-Eissa *et al.,* 1991 recorded slightly higher and Tiller *et al.,* 2010; Abdollahi *et al.,* 2010 and Erbay *et al.,* 2009 showed moderately higher values than the present study. Conversely, Lynch *et al.,* 1968 recorded a little lower Hb value in human with enteric fever. Intra-cellular position of the *Brucella* spp. might cause reduction of Hb percentage though the result is not significant. The distinct variations in Hb values might be due to poor sample size and variations in the test equipments and species diversification.

The hematocrit value of the current study was merged within the range of standard value and was in the line with the findings of El-Boshy *et al.,* 2009; Diaz *et al.,* 2000 and Al-Eissa *et al.,* 1991. Whereas, Arp *et al.,* 2011; Reham and Muna, 2010 and Crossby *et al.,* 1984 found a bit higher and Gungor *et al.,* 2002 and Kirk and George, 1970 found markedly elevated values. Though, Dogan, 2010; Dim *et al.,* 2009 and Lynch *et al.,* 1068 recorded in some extent lesser than the present value. The standard PCV value might be indicated that it was not affected by brucellosis sero-positivity.

ESR value of the present study was found lower than the findings of Erbay *et al.,* 2009 and Ayaslioglu *et al.,* 2005 who worked on human brucellosis. The TEC value was approved by Abdollahi *et al.,* 2010 though Forbes *et al.,* 1996 recorded a little lower in both male and female moose and El-Boshy *et al.,* 2009 found in some extent higher than this study in camel. Variation within a narrow range might not be associated with bovine brucellosis.

Increased TLC value was found close to the values recorded by Ayaslioglu *et al.,* 2005 and Gurkan *et al.,* 2003. While, Kuperman *et al.,* 2010 and Gungor *et al.,* 2002 showed quietly smaller values. Host defense mechanism activates in all types of infection and in bacterial infection infiltration of white blood cells increased which might be the reason behind increased WBC count (Radostitis *et al.,* 2000).

Percentages of neutrophil, monocyte and eosinophil were found at upper range of reference values in current study. The lymphocyte, monocyte and eosinophil percentages was found near to the findings of Forbes *et al.,* 1996 who worked on moose infected with brucellosis. Additionally, neutrophil and basophil values were found in consistent with the findings of Dim *et al.,* 2009 and El-Boshy *et al.,* 2009 subsequently. However, lowered lymphocyte values were recorded by Erbay *et al.,* 2009 and Crossby *et al.,* 1984. In addition, poorer and richer monocyte percentages were found by El-Boshy *et al.,* 2009 and Tiller *et al.,* 2010 correspondingly. Moreover, higher and lower neutrophil percentages were recorded by Forbes *et al.,* 1996 and Ayaslioglu *et al.,* 2005 consequently. Furthermore, lowered eosinophil and higher basophil values were showed by Erbay *et al.,* 2009 and Forbes *et al.,* 1996 accordingly. The higher neutrophil and monocyte values remain always higher in non-specific bacterial infection (Radostitis *et al.,* 2000). Mixed infection with different parasitic diseases especially helminthic disorders might be responsible for increased eosinophil percentages in this study.

The increased MCV value was found in parallel with the value recorded by Forbes *et al.,* 1996. Nevertheless, higher values of MCH and MCHC than the present study also found by the same author. Smaller and greater MCV values than the current study were recorded by El-Boshy *et al.,* 2009 and Gurkan *et al.,* 2003 subsequently. The reduced MCHC % might be indicated that a variable degree of normocytic normochromic to normocytic hypochromic anaemia is evidently associated with brucellosis.