**Title:** Epidemiologic study of toxoplasmosis in beef cattle slaughtered in the cities of Zahedan and Zabol using PCR method.

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**Introduction**

*Toxoplasma gondii* is a protozoan parasite that is spread around the world. Cat is the definitive host of *Toxoplasma gondii* and all warm-blooded animals, including humans are intermediate hosts. Definitive host in the early stages of infection excretes several millions of resistant oocysts. Humans can be infected either by eating food and water containing infected oocyst or by eating meat containing bradyzoites and tachyzoites. Beef plays a special role in epidemiology of toxoplasmosis. Because in some cases beef is consumed as grilled and undercooked, so it is important in the transmission of *Toxoplasma* to human. Because the lack of apparent complications on contaminated carcasses, detect of toxoplasmosis in the slaughterhouse during visual inspection is not possible. In the recent years, a large number of imported cattle are slaughtered in Sistan and Baluchestan Province and there isn't any information about prevalence of *Toxoplasma* in these animals. Therefore, this study was conducted to determine the prevalence of *Toxoplasma* among imported and indigenous cattle in the Sistan region.

**Methods**

In this study 100 cattle carcasses in two abattoirs of Zabol (50 carcasses) and Zahedan (50 carcasses) were sampled. In any abattoir half of the sample (25 cases) were indigenous cattle and the others (25 cases) were imported cattle from Pakistan. Additional data of each cattle, including sex, breed, age, indigenous or imported, location of slaughter, management practices and feeding system were obtained through observations and interviews. Three samples from each carcass, including the tongue, heart and triceps muscle were taken. The samples were minced by sterile scalpel and the mixture was poured into a sterile Eppendorf tube. Containing of each Eppendorf was used following the manufacturer’s instructions of a commercial DNA extraction kit (MBST, Iran). The primers TOX4 and TOX5 were selected for PCR assay. The reaction conditions in PCR were as follows: one initial denaturation cycle for 7 min at 94 ºC, 40 cycles of denaturation at 94 ºC for 45 seconds, annealing at 55 ºC for 45 seconds, and extension at 72 ºC for 45 seconds. The procedure was completed by a final cycle extension for 7 min. The PCR products were analyzed on 2 % agarose gel. Association between infection with *Toxoplasma gondii* (the dependent variable) and independent variables was investigated using Chi-square test and Fisher exact test.

**Results**

Among total samples, from 50 samples of indigenous cattle, 3 (6 %) and from 50 samples of imported cattle, 13 (26 %) were shown to be positive by PCR method. The Pearson's Chi squared test showed that the observed difference between indigenous cattle and imported cattle is statistically signiﬁcant. Also traditional livestock and pasture feeding significantly increase the risk of occurrence of toxoplasmosis. But effect of location of slaughter, breed, sex and age on prevalence of *T. gondii* are not statistically significant.