



University of Zabol
Graduate school
Faculty of Veterinary

**The Thesis Submitted for the Degree of M.Sc.
(In the field of Veterinary Medicine)**

**Study of some trace elements in the blood
serum of sheeps Sistan with Theileriosis
and anaplasmosis diseases**

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Abstract

Theileriosis and anaplasmosis both important and dangerous diseases in tropical and subtropical regions are in great economic losses each year in different areas, especially in southeastern Iran to impose the livestock industry. Theileriosis disease caused by protozoan *Theileria* and anaplasmosis are obligate intracellular organisms that infect the red blood cells of mammals, particularly ruminants. Trace elements essential for enzyme systems involved in many metabolic processes are animals. Lack of or increase in any of these elements can cause disruption in the metabolic process. Infectious or parasitic disease trace elements often represent changes in the interactions (verb Vanflat) is complex. So to determine the concentration of iron, zinc, copper and manganese in the blood serum of sheep infected with Theileriosis and anaplasmosis blood samples from the jugular vein 35 sheep infected with *Theileria*, 35 sheep infected with anaplasmosis and 35 healthy sheep (two male and female) were used. After separation of the serum from blood samples of protein digestion (perchloric acid, nitric acid) was performed by AAS devices were tested to measure the amounts of iron, zinc, copper and manganese can be measured. Results were calculated Sigmatat 3.5 software for statistical analysis of test T (T- test) were used. ($P > 0.05$)

In this study the iron was increased in the groups infected with theileriosis and anaplasmosis. The Cu and Zn were decreased in patient groups and Manganese unchanged, but none of trace elements were not informed statistically significant. Result of the study showed clinical symptoms of acute and sub-acute disease anaplasmosis and theileriosis not be the result of decreased immune system there by reducing studied trace elements in this area.

Keywords: *Theileria*, *Anaplasma*, trace elements, blood serum