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**Clinical, biochemical and immunological studies
on the effect of some trace elements in sheep
in upper Egypt**

Abstract

The aim of this study is planned to determine the effect of some trace elements on the immune response of she in upper Egypt. Soil samples were collected from Kena and Sohag for determination of Copper, Zinc, Iron and Selenium concentrations in summer and winter. study on 200 pregnant and non pregnant ewes fed on pastures in some of these areas were applied on their sera for determination of the mentioned trace elements as well as immunoglobulins. on other study was applied on 24 growing lamb infested with Eimeria. Intricata. Copper glycenate, Zinc sulfate, Ferric hydroxide and sodium selenite solutions were injected in sheep vaccinated with sheep pox vaccine and trace elements levels was determined in addition to immunoglobulins levels to study the effect of each element on the immune response with vaccine injection.

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list of a baravitation

EDTA = ethy lene diamine tetra acetic acid

Dtpa = diethylenetriamine penta acetic acid .

NH_4OH = ammonium hydroxide

K_2SO_4 = potassium sulphate

CaCO_3 = calcium carbonate

NH_4OAc = ammonum acetate

Na_2EDTA = disoium EDTA

$(\text{NH}_4)_2\text{CO}_3$ = ammonium carbonate

Zn_3 = Zinc carbonate

$\text{Zn}_4(\text{OH})$ = Zinc hydroxide

Fe_2O_3 = Ferric oxide

Gshpx = Glutathion Peroxidase enzyme

SeO_3^{-2} = selenium

Pb=Lead

Zn=Zinc

Cu=Copper

Fe=Iron

Se=Selenium