

PHYSIOLOGICAL AND REPRODUCTIVE
RESPONSES TO HEAT STRESS
AMELIORATION IN OSSIMI EWES UNDER
HOT SUMMER CONDITIONS IN EGYPT

By

Ahmed Hussein Abd El-Ftah Ahmed

2010



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TO HEAT STRESS AMELIORATION IN OSSIMI EWES
UNDER HOT SUMMER CONDITIONS IN EGYPT**

By

Ahmed Hussein Abd El-Ftah Ahmed

A Thesis Submitted in partial Fulfillment

Of

the Requirements for the degree of

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In

Agriculture Science

(Animal physiology)

Department of Animal Production

Faculty of Agriculture, Fayoum

FAYOUM UNIVERSITY

2010



SUPERVISION COMMITTEE

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ABSTRACT

This study was carried out using Twenty five ewes, 2-4 years old, which have been divided into 5 groups, four treatments, and the last one assigned as control (cool water, Cr, Se and Vit C supplementation). Ambient temperature and Relative humidity were recorded and Temperature- Humidity- index (THI) was calculated. Rectal temperature (R.T), Skin temperatures (S.T), Respiration rate (R.R) and Pulse rate (P.R) was measured. Blood samples were weekly collected from a jugular vein of fasting ewes. Blood serum kept under – 20 °C.

Total protein (g/dl), albumin g/dl, Globulin, Albumin / globulin ratio (A/G) and serum cholesterol were done in blood samples. Live enzymes and thyroid hormones level were assayed. Blood pictures (hematology) were determined to estimate red blood cells (RBCs), white blood cells (WBCs), platelet count, mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), mean corpuscular hemoglobin concentration (MCHC), differential count and the hematocrit percentage. Total body fluids (TBF) was determined by using Antipyrine. The results of this study show that the decrease of RT due to applying the methods of drinking cool water, chromium, Se and Vit C supplementation were – 1.33 % , -2.1 % , -1.80% and – 1.85% respectively. Respiration rate in sheep which received cold water, chromium, selenium and Vit C were significantly lower than sheep in control group. Pulse rate was significantly increased from the first week to the end of experiments. Skin temperature increased significantly in the afternoon throughout the study.

Blood serum total protein (T.P), Albumin (Alb) and globulin (glu) were increased significantly. Liver Enzyme was not affected significantly by any methods of amelioration of heat stress under study. Blood serum cholesterol concentration mg/dl was increased significantly. Applying methods of amelioration heat stress causing