

SERUM BLOOD COMPONENTS DURING PRE-OESTRUS, OESTRUS AND PREGNANCY PHASES IN EGYPTIAN SUFFOLK EWES AS AFFECTED BY HEAT STRESS, UNDER THE CONDITIONS OF EGYPT

I.F.M. Marai¹, A.A. El- Darawany¹, E.I. Abou-Fandoud² and M.A.M. Abdel- Hafez²

¹Department of Animal Production, Faculty of Agriculture, Zagazig University, Zagazig, Egypt

²Department of Sheep and Goat, Institute of Animal Production Research, Ministry of Agriculture, Dokki, Egypt.

SUMMARY

It was aimed to investigate blood components of Egyptian Suffolk ewes during pre-oestrus, oestrus and at 21st and 90th days of pregnancy and at beginning of the last week of pregnancy. The effects of sub-tropical Egyptian heat stressful conditions on such components, as well as, on conception and lambing rates, were also studied. The ewes were raised in a 3 lambings/ 2 years system, during December - February (as winter season), May - July (as summer season) and August - October (as autumn season). The calculated Temperature-Humidity Index (THI) values were 14.5 in winter, 25.6 in summer and 24.7 in autumn, indicating absence of heat stress during winter and exposure to very severe heat stress during summer and autumn, under the sub-tropical conditions of Egypt.

The study of the different phases of reproduction showed that serum level of each of total protein, albumin, glucose, ALP, LDH, SGOT, creatinine, inorganic phosphorous and progesterone, differed significantly. Level of each of glucose, alkaline phosphatase, lactate dehydrogenase, SGOT, inorganic phosphorus and progesterone hormone increased significantly, throughout the stages of pre-oestrus, oestrus and at 21st and 90th days of pregnancy, then declined significantly at beginning of the last week of pregnancy. The higher values were recorded at 90 days of pregnancy. Total protein and albumin were lower significantly at beginning of the last week of pregnancy than in the other stages, while creatinine was higher significantly in oestrus and at the beginning of the last week of pregnancy period than in the other periods.

Study of the effects of sub-tropical Egyptian heat stressful conditions on blood components showed that progesterone hormone level in urine (efficacious) in ewes at day 21 of pregnancy was higher significantly ($P<0.05$) in summer than in winter and autumn seasons. Conception rate was higher significantly ($P<0.05$) in ewes mated in winter and autumn than in those mated in summer breeding season. The average values of the relative deviations (regardless of the minus or plus signs) in the studied traits as a function to the sub-tropical environment, were found to be 40.81, 41.07 and 186.19%, during pre-oestrus, oestrus and at day 21 of pregnancy, respectively.

Keywords: *Blood components, pre-oestrus, oestrus and pregnancy phases, conception and lambing rates, heat stress.*