

EFFECT OF PYROSOL SPRAYS WITH AND WITHOUT TAURINE ON GROWTH AND SOME PHYSIOLOGICAL BODY FUNCTIONS OF RABBITS REARED UNDER DIFFERENT CLIMATIC CONDITIONS

HABEEB A. A. M, MONA N. SHAROUD & FATMA E. I. TEAMA

Department of Biological Applications, Nuclear Research Center, Atomic Energy Authority at Inshas, Cairo, Egypt

ABSTRACT

Eighty New Zealand White rabbit's bucks after weaning were used in the present research through two experimental periods. The first was carried out during winter season for 12 weeks on 40 animals where the ambient temperature (AT) and relative humidity (RH%) values were $21.39 \pm 0.49^\circ\text{C}$ and $64.65 \pm 0.59\%$, respectively. The second was carried out during summer season for 12 weeks on another 40 animals where the AT and RH% values were $35.31 \pm 0.31^\circ\text{C}$ and $53.78 \pm 0.67\%$, respectively. Under each of season experiment, rabbits divided to 4 equal groups, 10 rabbits in each. The 1st group served as control without any treatment. The 2nd group exposed to spraying pyrosol between rabbitries two times daily. The 3rd group supplemented with taurine in drinking water at the rate of 1 gm/liter. The 4th group exposed to pyrosol with adding taurine. Results showed that significant decrease in BWG, DMI and FE and significant increase in daily WI in rabbits of four experimental groups exposed to hot summer season as compared to winter season. Pyrosol sprays caused significant decrease in BWG, DMI and daily WI of rabbits. Adding taurine increased significantly BWG, DMI and daily WI. Adding taurine with exposed to Pyrosol sprays alleviate the side effect of pesticide on feed and gain of rabbits. Serum glucose level in rabbits decreased significantly while serum total cholesterol, LDL and HDL concentrations increased significantly due to exposed the rabbits to summer season as compared to winter season. Pyrosol sprays caused significant increases in glucose, total cholesterol, LDL and HDL concentrations. Adding taurine decreased significantly glucose, total cholesterol and HDL concentrations and increased significantly HDL. Adding taurine plus exposed to pyrosol sprays caused recovering the decrease in glucose level to reach the same level in control group.

Heat stress of summer season increased significantly serum cortisol level and decreased significantly serum ATP-ase and Chol-E-ase enzymes activities as well as glutathione concentration in rabbits. Pyrosol sprays caused significant increases in cortisol concentration and significant decreases in each of ATP-ase, Chol.-E-ase enzymes activities and glutathione concentration. Adding taurine decreased significantly cortisol level and increased significantly ATP-ase, Chol.-E-ase and glutathione concentrations. Adding taurine with exposed to Pyrosol sprays alleviate the side effect of pesticide on serum cortisol hormone and some oxidative enzymes activities. Serum ALT and AST enzymes activities and urea-N and creatinine concentrations increased significantly due to exposed rabbits to summer of Egypt. Pyrosol sprays affect negatively liver and kidney functions. Adding taurine with exposed to Pyrosol alleviate the negative effect of pesticide on liver and kidney functions. Heat stress of summer season decreased significantly serum trace elements concentrations in rabbits. Pyrosol sprays caused significant increases in Pb and Cd concentrations. Mortality rate increased from 10% during winter season to 27.5% during summer season. Pyrosol sprays caused significant increases in mortality rate from 10% in control group to 35% with sprays of pyrosol and decreased to 20% in group exposed to pyrosol with taurine.

KEYWORDS: Blood Components, Growth, Hormones, Oxidative Stress, Pyrosol, Rabbits, Taurine