The aim of this study is to determine the effects of thermal stress on pregnant rabbits physiological performance and to detect the action of vitamin C in alleviating these effects. Twenty-six rabbits were used during two years study. In the first year, 12 does were divided into two equal groups in the first year (HSW is group treated with heat stress and CW is control group which was kept under natural air temperature, respectively) and 14 does were divided into two equal groups in the second year (HSV is group treated with heat stress and CV is control group, respectively). Rabbits in second year only were added orally with vitamin C (20 mg/kg of body weight/doe day). All rabbit does were maintained inside rabbitry experiment of farm throughout the experiment. Treated rabbits (HSW and HSV) were exposed to summer heat (August) outside the rabbitry and under a shadow for one hr between 13:00 and 14:00 on days 9 and 10 of pregnancy. Data were collected on does on days 1, 3, 7, 9, 10, 13, 15 after mating, for 6 weeks during pregnancy and lactation periods on rabbit does and after kindling on kids for two weeks.

Results showed exposure of rabbits to degrees of thermal stress according to calculation of temperature-humidity index. The study revealed the significant effects of heat stress on pregnant doe physiological performance. These effects were elevations in rectal temperature, respiration rate, pulse rate, and ear lobe temperature of pregnant rabbits during heat exposure. Moreover, a reduction in feed intake with obvious increase in water consumption, addition of rabbits with vitamin C (ascorbic acid) orally as 20 mg / Kg body weight reduced the pronounced effects of heat on pregnant does. Moreover, heat stress caused changes in some hematological parameters and triiodothyronine (T3) hormone. Vitamin C alleviated the effect of thermal stress on pregnant doe rabbits regarding the above parameters. Heat stress caused reduction in litter size and litter weight of newborn rabbits. In addition, the mortality rate of bunnies reached 17% in heat stressed-does, while it was 9% preweaning in pregnant does consumed vitamin C during pregnancy. Milk yield in heat-stressed rabbit does was lower than their control group, which were kept under natural air temperature in Ismailia environmental conditions.