

The effect of environmental enrichment on the growth, health and behavior in New Zealand rabbits ⁽¹⁾

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Abstract

The study aims to establish data related to the friendly feeding environment and relieve stress on animals during the experiment, thereby to assure reliable animal test results. The study was conducted on 36 rabbits aged 4 weeks (half of which was male and the other half female), raised in enriched cages (EU) and un-enriched cages (UE) for 6 weeks to investigate the influence of rabbit growth, health and behavior in different feeding environments. The results showed that in spite of the significantly better feeding efficiency of the UE female rabbit group than the EN rabbit group between 4 – 5 week, 5 – 6 week and 6 – 7 week at the beginning, there was no significant difference between the two groups, regardless of male or female, after 7 – 8 week. The analysis of hematology assay indicated that the volumes of hemoglobin (Hgb) and hemotocrit (Hct) in male EN rabbits are significantly higher than those of UE group ($P < 0.05$). In serum biochemistry assay, the levels of triglyceride (TG) are significant higher in male UE rabbits than that of EN group ($P < 0.05$), but the levels of GOT and r-GT are significant higher in EN group than in UE group ($P < 0.05$). For the results of behavior assay, more male rabbits rested in EN group than in UE group in the morning ($P < 0.05$); however, the behaviors of social activity, exploration and self-grooming in UE male rabbits were more significant than those in EN group ($P < 0.05$). More male rabbits were hopping in the EN group than in the UE group at noontime and in the afternoon ($P < 0.05$); In addition, rabbits in EN group consumed more water than those in UE group in the afternoon ($P < 0.05$). Female rabbits showed consistent behavior in different time periods, however, more female rabbits were in EN group were hopping more than the ones in UE group ($P < 0.05$) at all time. In conclusion, enriched cage environment has more influence on the physiological values of blood and hopping behavior but not on the growth of rabbits.

Key words: Behavior, Enrichment, New Zealand rabbit.

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