A STUDY OF PHYSIOLOGICAL AND PERFORMANCE ASPECTS IN FOUR PURE BREEDS OF RABBITS AND THEIR CROSSES

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SUMMARY AND CONCLUSION

This study was carried out to evaluate the physiological and performance aspects in four pure breeds of rabbits and their crosses. The Baladi Red rabbits as native breed have a good adaptability to local conditions, Chinchilla Giganta, French Giganta Papillion (Pepion) and Simenwar as exotic breeds have high ability of productive performance, high mother and milking abilities. Also, the study aimed to evaluate crossing effects in these rabbits from physiological point of view. The research study lasted for two successive years started in December, 2003 and ended in August, 2005.

The study involved the following productive aspects: litter size and weight at birth and at weaning, pre-weaning litter mortality ratio, body weight, weight gain, feed intake and feed conversion per bunny from weaning to marketing weekly and biweekly growth rate during (32-46), (46-60), (60-74) and (32-74) days of age. The following physiological aspects were studied: red blood cells count, hemoglobin content, haematocrit value, total protein (albumin and Globulin) concentration, albumin/globulin ratio and triglycerides. Also, carcass traits, heterosis % and superiority % of crossbred rabbits were evaluated.

Significant results obtained could be summarized as follows:-

Concerning productive aspects effects of mating group on litter size and weight at birth and at weaning, preweaning mortality, body weight and growth rate at different ages of study were highly significant ($P \leq 0.001$). Crossbred groups showed the best performance compared to purebred groups, while BR X BR showed lower performance except at preweaning mortality which was the best. Buck age effects were significant ($P \leq 0.05$) on litter size at birth.

Mating group differences had highly significant effects ($P \leq 0.001$) on feed intake, weight gain and feed conversion at various ages except at wk1 of age after weaning were significant ($P \leq 0.01$), also at wk3 and

wk(1-6) in case of feed conversion. The values of feed intake for crossbred rabbits were higher than those of purebreds. The crossbred litters produced from mating BR with other breeds had obvious improvement in body weight, weight gain and feed conversion especially when other exotic breeds as a dam were used.

Effects of month of kindling on LSB, LSW, LWB, LWW, PWM %, MKWB, body weight, growth rate, feed intake, weight gain and feed conversion were significant ($P \leq 0.01$) at various age stages. January month showed the best results in different productive aspects, while May- June were lower in performance while, March month showed the best of PWM %.

Sex effects were significant ($P \leq 0.01$) at wk3 of age in feed intake and at wk6 in case of feed conversion. Females had insignificant higher growth rat and heavier body weight than males.

Mating group effected RBCs, Hb, Ht %, TP and Trig ($P \leq 0.001$), Alb ($P \leq 0.01$) and Glo and Alb/Glo ($P \leq 0.05$). Litters which were produced by mating BR X BR showed higher RBCs, Hb and Ht % than other litters.

Age of bunny affects had high significant differences ($P \leq 0.001$) on RBCs, Hb, Ht %, TP and Trig. While significant effect ($P \leq 0.01$) on Glo and Alb/Glo ratio, as well as significant effect ($P \leq 0.05$) on Alb. Bunnies at 9 weeks have higher value than at 6 weeks. Month of kindling effects were significant on TP, Glo, Trig and Alb/Glo ratio ($P \leq 0.001$), RBCs, Hb and Ht % ($P \leq 0.01$) and Alb ($P \leq 0.05$). January month showed higher values of RBCs, Hb, Ht % and Trig, while May- June months showed higher values of TP, Alb and Glo.

Effects of mating group were highly significant ($P \leq 0.001$) for preslaughter, carcass, liver, heart, abdominal fat, giblets and skin weights and dressing %. Crossbred rabbits were heavier than purebred rabbits for preslaughter, carcass, liver, heart, abdominal fat, giblets and skin

weights. Month of kindling effects were highly significant ($P \leq 0.001$) on dressing %.

Positive heterosis % was shown for litter size and weight at birth and at weaning and all postweaning weights. Positive superiority was shown for litter size at weaning, litter weight at birth and at weaning. Negative heterosis and superiority was shown for prewaning mortality and feed conversion which means positive effects. Positive heterosis % and superiority % were shown for some carcass traits. It means that simple crossing between any two breeds could improve some carcass traits studied in this research.

CONCLUSION

It could be concluded that the superiority of crossbred rabbits in some blood metabolites can be due to their ability to maintain their normal set-up biological functions under Middle Egypt conditions especially Fayoum city. The variations of some blood components may be due to the genetic variations, which play an important part in the productive and reproductive traits.

From the present results, it may be advised that the Egyptian breeders apply simple crossing between Baladi Red, Chinchilla Giganta, Simenwar and French Giant Papillion rabbits by using Baladi Red bucks with does from the other breeds.

Approximately more than fifty percent of the progeny will have a coloured fur, which could be more favourable and acceptable to the consumers in Egypt and will increase the financial income of the breeders.