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Growth performance of New Zealand white rabbits under traditional rearing system of Andhra Pradesh

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Abstract

The present study was carried out to find the weekly weight gain in New Zealand white rabbits reared under organized farm, Medikonduru, Andhra Pradesh, it revealed that overall body weight gain (gm) from 2nd weeks to 16 weeks of age in rabbit attained maximum of 1068.60±132.08 gm. Further, the average weekly body gain (gm) between weeks from 2nd weeks to 16 weeks of age in rabbit attained maximum of 114.78±12.94 gm. The maximum body weight gain was recorded at 16th weeks with step increase from weaning (at 2nd week). Moreover, overall body weight gain between weeks was higher in between week 3 to week 4. In conclusion, regular rational diets were improve the bodyweight gain caged rabbits under traditional system.

Keywords: growth performance, New Zealand white rabbit, rational diets, weekly body weight gain

Introduction

Rabbit (*Oryctolagus cuniculus*) is one of the most prolific breeder among other domesticated livestock species, their feeding habit is in no competition with human beings and their optimum performance can only be ensured in a mixed feeding regime involving forage and formulated feeds without compromising their reproductive efficiency^[1]. Rabbit farming is one of the small scale sectors, maintained by small and marginal farmers. It gaining now a days in terms of nutritious meat, low cost of meat production. Rabbits often gave birth to large litters, offspring grow fast and reach either market or breeding weight more quickly than any other species. Rabbits are reared not only for wool, meat purpose and also as companion animals, they can easily accommodates to wide range of cellulose rich foods. The whole point of meat production is to covert plant proteins of little or no use into high value animal protein for people as food in order to meet their protein requirement. In efficient production systems, rabbits can turn 20% of the protein they consume into edible meat^[2]

Rabbits can be reared in backyard with minimum expense by providing kitchen/vegetable waste grasses, tree leaves^[2]. The Government of India through its important of Animal Husbandry also felts the significant potential of rabbit farming for the country which has been reflected by the inclusion of rabbit as an important livestock species for the first time in the livestock census. 2003. Traditional rabbit rearing has the potential to support rural poor economically and can contribute to the gross domestic product (GDP) as well^[2].

Materials And Methods

Animal and housing:

The present study was carried out to find the weekly weight gain in New Zealand white rabbits reared under organized farm, Medikonduru, Andhra Pradesh. Farm have the total population of 150 rabbits, included 120 female and 30 male. All the rabbits were reared in cage system. New born bunnies were weaned from the doe at the end of the 2nd week.

Feeding management

All the rabbits were fed with ration of wheat bran, maize, ground nut cake, mineral mixture. Leafy vegetables (Cabbage) and grass (Hedge Lucerne) were also included in the ration.

Measurement of body weight

Electronic weighing balance was used to measure the body weight (gm) of rabbits. Body weight of rabbits (n=6) were measured from end of 2nd weeks to 16 weeks to find out the average body weight of the rabbits up to 15 weeks. Further, weekly body weight gain of rabbits also measured and tabulated.

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Statistical analysis

The statistical analysis of the recorded data was done by adopting computer software programme for Windows XP (version 17.0, SPSS Inc. Munich) and Excel (version 2007, Microsoft). The average body weight of the rabbits were analyzed by descriptive statistics to understand the variation in body weight of rabbits from 2nd weeks to 16 weeks (average of 15 weeks) and paired t-test was performed to understand the weekly body weight gain between weeks. The significance of all the parameters were measured at P<0.05 level significance [3].

Results and Discussion

The present study recorded (n=6 rabbits) weekly body weight gain and overall average body weight of rabbits and overall body weight of rabbits between weeks from 2nd weeks to 16 weeks of age (Table 1 to 3 and Figure 1 to 8).

The overall body weight gain (gm) from 2nd weeks to 16 weeks of age in rabbit 1, 2, 3, 4, 5, 6 were 968.93±127.70; 983.13±123.38; 940.53±123.45; 1027.20±132.30; 1009.46±123.39 and 1068.60±132.08, respectively. Further, the average weekly body gain (gm) between weeks from 2nd weeks to 16 weeks of age in rabbit 1, 2, 3, 4, 5, 6 were 104.71±11.62; 105.78±8.06; 106.42±8.26; 114.78±12.94; 107.57±10.13 and 112.42±11.53, respectively. The maximum body weight gain was recorded at 16th weeks with step increase from weaning (at 2nd week). Moreover, overall body weight gain between weeks was higher in between week 3 to week 4.

In the present study, all the rabbits were fed with ration of wheat bran, maize, ground nut cake, mineral mixture. Further, regular leafy vegetables (Cabbage) and grass (Hedge Lucerne) were also included in the ration. This combination of ration statistically increased the weekly body weight gain in all the rabbits included in the study. The present observation accordance with the statements of Gidenne (1992), Garcia *et al.* (1999) and Arijeniwa *et al.* (2000) [1, 4, 5] who reported that to promote optimal growth performance of rabbits, appropriate feeding strategy is necessary. Plant fibers are one of the main components of rabbit diets, because they play a key role in rabbit feeding by contributing to caecum

activity for efficient digestion.

Table 1: Overall average body weight of rabbits (n=6) from 2 weeks to 16 weeks

Rabbits	Weeks	Overall average body weight (gm) (Mean±SE)
Rabbit-1	15 wks	968.93±127.70
Rabbit-2	15 wks	983.13±123.38
Rabbit-3	15 wks	940.53±123.45
Rabbit-4	15 wks	1027.20±132.30
Rabbit-5	15 wks	1009.46±123.39
Rabbit-6	15 wks	1068.60±132.08

Table 2: Average weight gain of rabbits at weekly interval:

Rabbits	Average body weight gain (gm) b/w weeks (Mean±SE)
Rabbit-1	104.71±11.62
Rabbit-2	105.78±8.06
Rabbit-3	106.42±8.26
Rabbit-4	114.78±12.94
Rabbit-5	107.57±10.13
Rabbit-6	112.42±11.53

Table 3: Overall body weight gain of rabbits between weeks:

Between weeks	Overall body weight gain (gm) b/w weeks (Mean±SE)
WK-2 - WK-3	95.66±6.92*
WK-3 - WK-4	150.66±23.35*
WK-4 - WK-5	139.66±14.74*
WK-5 - WK-6	88.50±18.61*
WK-6 - WK-7	78.50±4.13*
WK-7 - WK-8	86.16±7.03*
WK-8 - WK-9	115.66±9.07*
WK-9 - WK-10	120.66±7.72*
WK-10 - WK-11	123.50±11.31*
WK-11 - WK-12	139.50±15.84*
WK-12 - WK-13	101.83±16.81*
WK-13 - WK-14	85.33±11.97*
WK-14 - WK-15	127.33±11.82*
WK-15 - WK-16	67.66±7.85*

*Significance at P<0.05 level

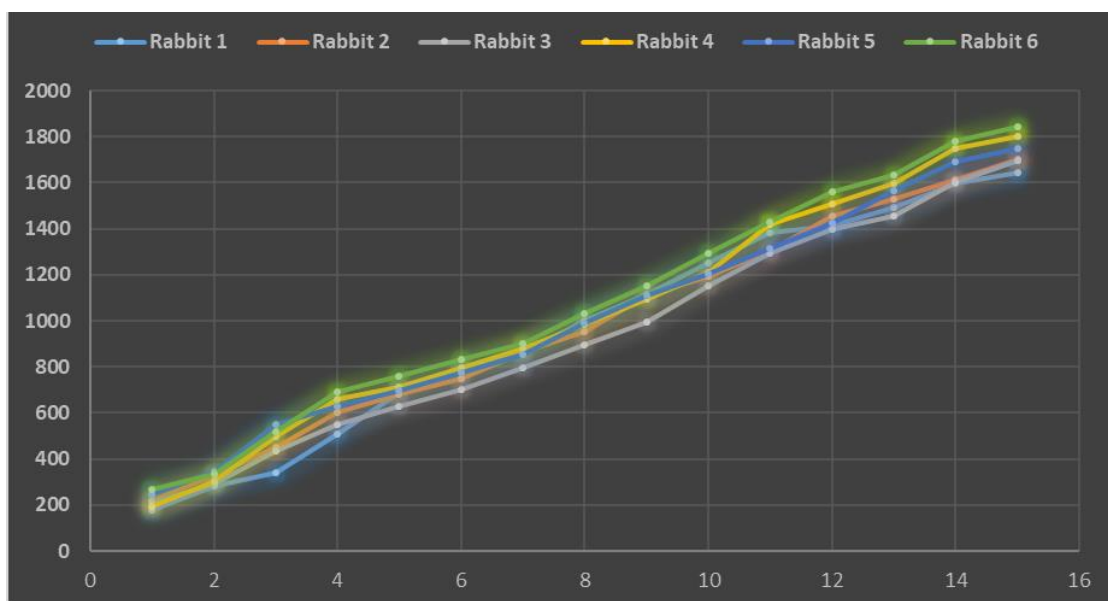


Fig 1: Weekly body weight gain in rabbits 1 to 6

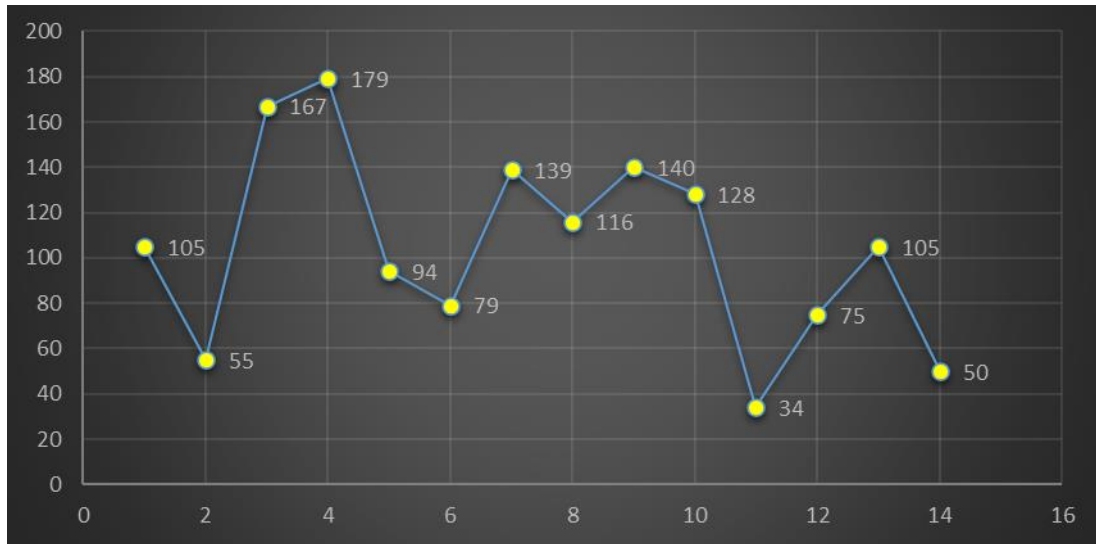


Fig 2: Weekly weight gain b/w weeks-Rabbit-1

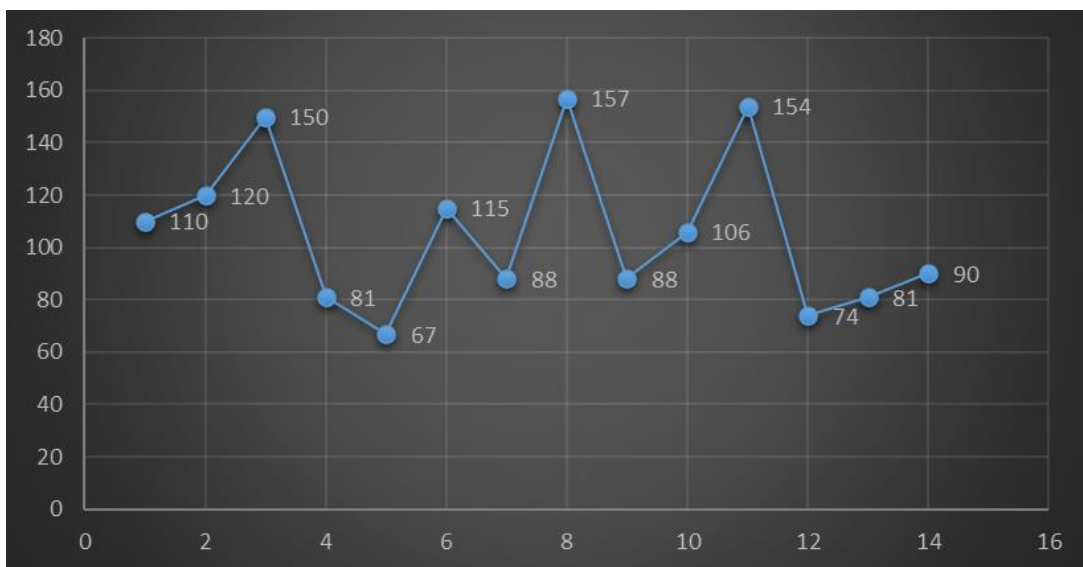


Fig 3: Weekly body weight gain b/w weeks-Rabbit-2

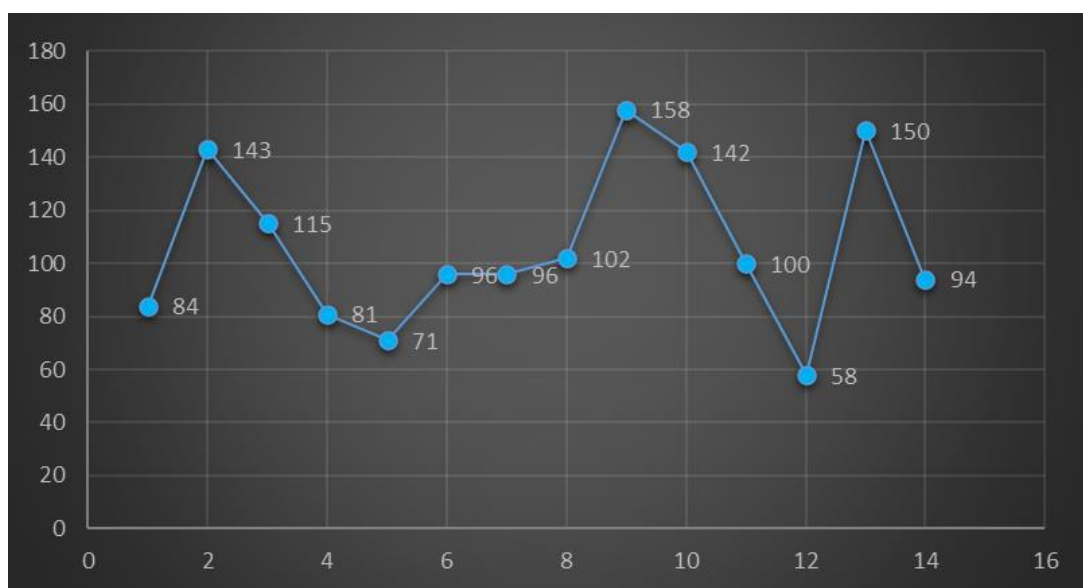


Fig 4: Weekly body weight gain b/w weeks-Rabbit-3

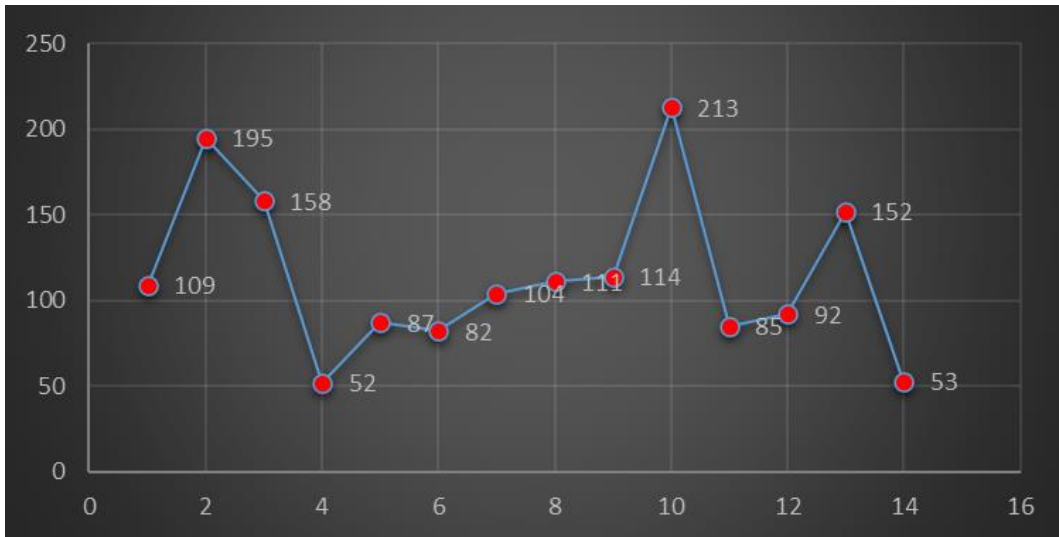


Fig 5: Weekly body weight gain b/w weeks-Rabbit-4

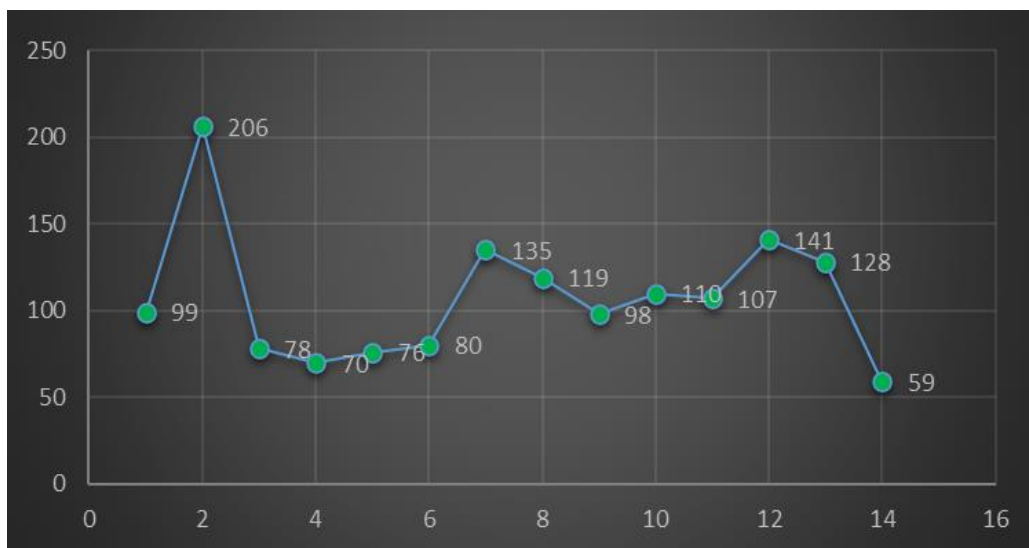


Fig 6: Weekly body weight gain b/w weeks-Rabbit-5

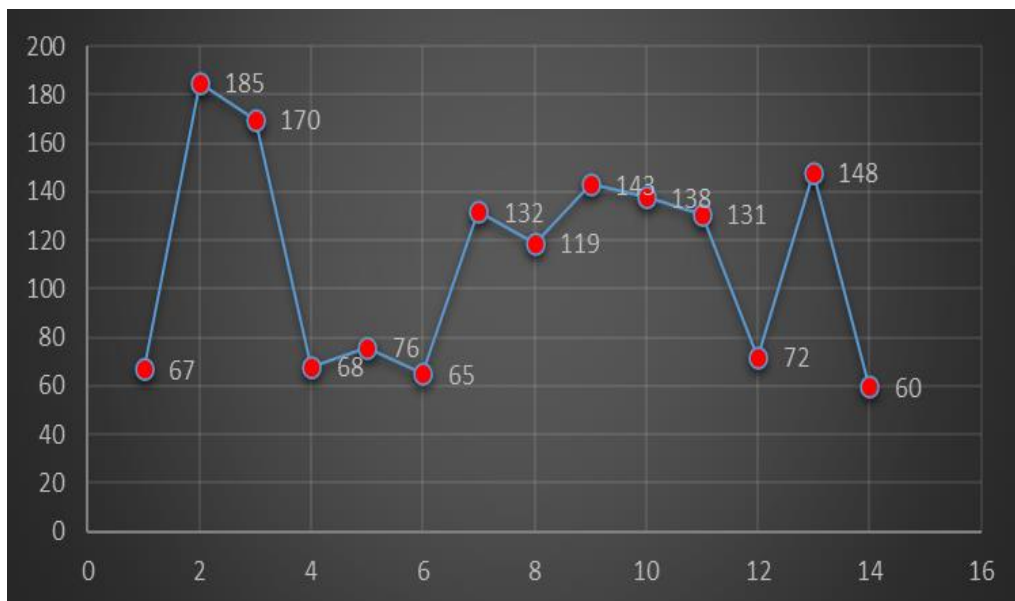


Fig 7: Weekly body weight gain b/w weeks-Rabbit-6

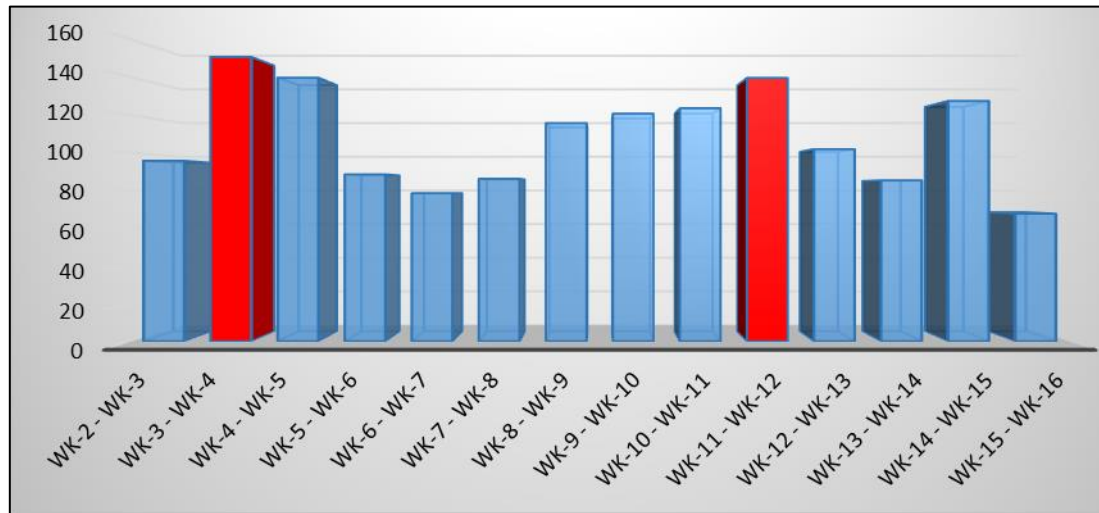


Fig 8: Overall body weight gain (gm) b/w weeks in rabbits

Conclusion

Optimum performance in New Zealand white rabbits reared under organized farm recorded to be weekly body weight gain obtained between 3rd weeks to 5th weeks followed by 11th to 12th weeks. Rabbits were fed with rational diets sufficient to improve the body weight gain in caged rabbits under traditional system.

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