

Original Research Article

<https://doi.org/10.20546/ijcmas.2020.912.418>

A Study on Growth Performance of Nandanam II Turkey under Intensive System

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ABSTRACT

Keywords

Nandanam II turkey, Body weight and Feed conversion ratio

Article Info

Accepted:
25 November 2020
Available Online:
10 December 2020

A study was carried out to determine the growth performance of Nandanam II turkeys under intensive systems of management in TANUVAS – RREC, Pudukkottai, Tamil Nadu. A commercial breed of new strain turkey, Nandanam -II turkey was used. In this study, Birds were kept in an enclosed deep litter poultry house (intensive system) in TANUVAS –RREC Turkey unit from 0 to 8 weeks (brooder) and 9 to 16 weeks in grower shed and fed with turkey brooder and grower mash and supplement diets respectively. Parameters assessed in this study was hatch weight, body weight at 4 weeks intervals upto 16th week, feed intake, feed conversion ratio were recorded. Results of feed intake and body weight showed a consistent increase with increase in age. Performance results showed that turkey had 50.51 ± 0.41 gm, 391.71 ± 4.60 gm, 1289.75 ± 15.84 gm, 2235.15 ± 16.43 gm, 3209.42 ± 34.73 gm hatching weight, fourth week body weight, eighth week body weight, twelfth week body weight, sixteenth week body weight, , respectively. It can be concluded that, the rearing of Nandanam -II turkey is possible under intensive system of rearing in the Pudukkottai district.

Introduction

Deficiency of poultry meat and eggs in the country are 78.91% and 65.38 % respectively per person per year (FAO/APHCA, 2012; Saleque, 2010; Das et al., 2008). The commercial poultry sector has got an industrial shape within the period of 3 decades and becomes one of the leading enterprises contributing lot in national economic growth, followed by garments. Commercial broiler and layer farming have emerged during the last quarter of 20th

century and then flourishes within short period. Expansion of poultry farming, both at commercial and domestic levels, is meant absolutely the expansion of modern chicken strains of layer and broiler. In addition to chicken, the other poultry species that traditionally rearing and kept by our rural poultry keepers are quail, geese, pigeon and guinea fowl. The growth, development and expansion of above mentioned species of specialized fowls are remained unchanged for decade after decade as because of a little or no attention has been paid to them.

In such a situation, it may be pertinent to focus on the rearing of alternative poultry species. One of the best choices may be the turkey (*Meleagris gallopavo*), which has been recently introduced and slowly expanding in small scale throughout the country. Turkey (*Meleagris gallopavo*) is a large gallinaceous bird of the family *Meleagridae* and occupies an important global position next to chicken and duck approximately 5% of world poultry population (Besbes, 2009). More importantly, turkeys have unique and remarkable phenomena in adaptability to wide range of climatic conditions and can be raised successfully almost everywhere in the world if they are well fed and protected against diseases, predators and adverse weather conditions (Bhanja and Majumdar, 2001). Turkey is more resistant to disease compared to other poultry species like chicken, duck, and quail. It has also been reported that mortality rate of turkey is very low compared to other poultry bird (Sampath, 2012).

Turkey farming in India has now shifted from backyard farming to scientific intensive farming due to change in market priorities and consumer preference. Considering the future of economic and livelihood potential of practicing Turkey farmers, Tamil Nadu Veterinary and Animal Sciences University, Chennai has released a new strain, Nandanam Turkey-1 for commercial rearing. It is developed with the base population of Non-descript and Beltsville small white turkeys for the improvements in all the economic traits.

Certain traits such as hatch weight, weekly body weight, feed consumption, at different ages will help in understanding production potential of Nandanam turkey. Therefore, the main objective of our study is to investigate the growth performance of Nandanam II turkey under intensive system of rearing.

Materials and Methods

The study was conducted at Turkey unit of TamilNadu Veterinary and Animal Sciences University- Regional Research and Education Centre, Pudukkottai, Tamil Nadu, India during the year 2019-20. A total of 100 day-old poulters were obtained in one hatch from turkey breeding stock. Each birds were individually weighed and wing banded. Birds were fed pre brooder mash diet up to four weeks of age, brooder mash diet from five to eight weeks of age. After eight weeks of age, birds were transferred to the deep litter house and were fed with grower mash diet up to 16 weeks of age. Feed was supplied twice daily, once in the morning and another at afternoon. Fresh and clean drinking water was made available at all the times. Poults were vaccinated with R2B1 at 7 days of age and Lasota dose was administered at 28 days of age in the farm house against Newcastle disease. Fowl pox vaccine was administered at 6 weeks of age through the puncturing of wing web (w/w). Then, ND Killed vaccine was vaccinated at 2 months of age and repeated every three months. Individual bird body weight was recorded at day one and subsequently on four weekly intervals up to 16 weeks of age. Daily mortality, hatch weight, body weight at four weeks intervals upto 16th week of age and feed conversion ratio were recorded.

Results and Discussion

The mean body weight obtained from Nandanam Turkey-II from 0, 4, 8, 12, and 16th weeks of age are presented in Table 1.

Body weights

At hatch the mean body weight of Nandanam turkey-II was 50.51 ± 0.41 . Four weeks intervals of mean body weight at 4th, 8th, 12th and 16th week were 391.71 ± 4.60 , 1289.75 ± 15.84 , 2235.15 ± 16.43 , 3209.42 ± 34.73

respectively. The results were in accordance with the report of Roberson *et al.*, (2003) who observed increased body weights in sexes of different commercial strains.

Sex ratio

The male and female was 1:03 which is about 48.98% because of very much useful for better reproductive rates. It might be of 1.04 like

Sudan where male and female ratio maintained at 1:046 (*Osama et al.*, 2013). It depends on the farmers’ experience which combination is suitable for successful reproductive. Even though a good ratio of male and female has less productivity because of absence of frequent mating, heavyweight of male and disturbance during mating (*Osama et al.*, 2013).

Table.1a Mean values on body weights (g) of Nandanam turkey –II

Breed	Hatch weight	4 WEEK (g)	8 WEEK (g)	12 WEEK (g)	16 WEEK (g)
Nandanam II	50.51±0.411	391.71±4.60	1289.75±15.84	2235.15±16.43	3209.42±34.73

Table 1b Data on male: female ratios, average body weight(kg) at 16 th week and feed conversion ratio

Sl.no	Particulars	Value
1.	No of Males	52
2.	No of Females	48
3.	Average body weight of males at 16 th week	3.32
4.	Average body weight of Females at 16 th week	3.08
5.	Feed conversion ratio	3.02
6.	Livability percentage	100

Feed conversion ratio

The feed conversion ratio of the 16th week age Nandanam II turkey is 3.02. The turkey requires high protein and other nutrients in their diets. Thus, feed cost represents halve to two-thirds of the total costs in a poultry production system (Mbanasor and Sampson, 2004), therefore it is necessary to identify the animals who eat less but perform at the same level as their contemporaries. Turkeys are good foragers and it could reduce feeding cost through obtain added nutrients from forage because they are better able to digest fiber due to larger microbial population in their digestive tracts (Brad *et al.*, 2010). highest feed was required for a 20+ weeks aged chick who takes on an average 192.13 grams feed per day, followed by 10-20 weeks aged turkey

who takes on an average 132.54 grams feed per day. There is no specific feeding standard for turkey. Farmers used to feed their turkey according to broiler and layer feeding manual (Rahabul, 2018).

From this study, it is concluded that the rearing of Nandanam -II turkey is possible under intensive system of rearing in the Pudukkottai district.

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How to cite this article:

Ilavarasan, S., S. Jaishankar, T. Lurthu Reetha, A. Sheeba and Jyothi priya, R. 2020. A Study on Growth Performance of Nandanam II Turkey under Intensive System. *Int.J.Curr.Microbiol.App.Sci*. 9(12): 3520-3523. doi: <https://doi.org/10.20546/ijcmas.2020.912.418>