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Backyard rearing of white Pekin duck: A tool for economic upliftment of resource-poor farmers

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Abstract

Duck farming is an age-old traditional practice in Assam that has great potential of income generation at minimum investment. Scientific interventions directed towards improvement in duck rearing practices can play a pivotal role in making it a self-sustainable and lucrative venture. In this milieu, the present study was conducted under a Front-Line Demonstration (FLD) programme of KVK, Kokrajhar to evaluate different economic parameters associated with backyard rearing of White Pekin ducks in the district. The study was conducted for a period of two years starting from 2021-22 covering 8 villages from two sub-divisions of Kokrajhar district. A total of 29 beneficiaries having prior experience in duck farming were selected for the study. Each beneficiary was provided with 25 numbers of day-old *White Pekin* ducklings that were initially kept under artificial brooding for a period of 2 weeks. Subsequently, the ducklings were reared under semi-intensive system with supplementation of locally available feedstuff. They were offered optimal amount of feed that included a mixture of grains, crushed maize, boiled and broken rice, kitchen waste etc. supplemented with commercially available mineral mixture. The ducklings were provided with all necessary health care support besides vaccinating them against duck plague. The results of the study revealed that the average body weight of ducks at 0, 15, 30, 45, 60 and 90 days of age was 58.66 ± 1.2 , 174 ± 1.45 , 606.66 ± 14.52 , 940.33 ± 17.03 , 1326.66 ± 8.81 and 1990.33 ± 40.41 grams respectively. The Feed Conversion Ratio (FCR) could be estimated as 4.20 ± 0.06 at 90 days whereas the mortality rate was recorded to be 4.5 ± 0.26 . The dressing percentage recorded was 67.87 ± 0.43 . The estimated benefit cost ratio was 3.0 ± 0.26 . The findings of the study clearly indicates that backyard rearing of White Pekin duck is a promising venture for the resource-poor farmers of the district and can contribute significantly towards their economic upliftment by enhancing their household income.

Keywords: White Pekin duck, backyard farming, FLD

Introduction

Duck farming is an age-old traditional practice in Assam that has great potential of income generation at minimum investment. Scientific interventions directed towards improvement in duck rearing practices can play a pivotal role in making it a self-sustainable and lucrative venture among the various species of poultry. Indigenous duck breeds constitute more than 90% of the total duck population and contribute about 7-8% of the total egg produced in country. In Assam, Duck rearing is mostly a traditional and house-hold practice in the hands of women and rural farmers. Recently duck farming is gaining popularity as component of livelihood and employment generation. In the North-Eastern part of India including Assam, duck meat is cherished and is an important cuisine in different celebrations and festivities. As a result, duck farming is receiving attention from different stakeholders including scientific and extension communities thereby bolstering the availability of nutritious duck meat as well as eggs. Lately, duck growers including women self-help groups in the villages are adopting farming of White Pekin ducks owing to their fast growth and market demand coupled with its easy forward marketing linkages and appreciable economic. Duck farming in Assam has a potential for sustainable income in both organized farming and backyard system of rearing. In most of the times, to avoid high-cost involvement of commercial feeds, duck growers in villages use a single diet approach in which duck feed, comprising rice bran, broken rice with other locally available feed materials are used for the entire life cycle of the. Duck supplements their feed by eating fallen grains, snails, earthworms, insects, and small fishes. Ducks are hardy, easily brooded and resistant to common avian diseases. Although it is more

economical to raise ducks either for egg or meat purpose introducing backyard duck farming with improved breed will provide subsidiary income from meat and eggs at an earlier age requiring lower inputs, minimal human attention with higher income generating activity especially for the rural women. Among the meat purpose breeds, White Pekin duck is one of the most popular duck breed. It is fast growing and has low feed consumption with fine quality meat. Feed conversion ratio of white Pekin duck is reported to be 1:2.3 to 2.7³. Considering the above facts present study was undertaken to evaluate the performance of White Pekin breed of duck for meat purpose in Kokrajhar district.

Materials and methods

The present study was conducted as a part of Front Line Demonstration programme at different location of Kokrajhar district of Assam under Krishi Vigyan Kendra, Kokrajhar from 2021-22 to evaluate the White Pekin ducks rearing in backyard system, a promising tool for economic upliftment of resource poor farmers and enhancing house hold income. A total of 19 demonstrations were conducted in different locations of the district. Each farmer was provided 25 numbers of day old ducklings of White Pekin ducklings that were initially kept under artificial brooding for a period of 2 weeks. Subsequently, the ducklings were reared under semi-intensive system with supplementation of locally available feedstuff. They were offered optimal amount of feed that included a mixture of grains, crushed maize, boiled and broken rice, kitchen waste etc. supplemented with commercially available mineral mixture. The ducklings were provided with all necessary health care support besides vaccinating them against duck plague. The pre-trained beneficiaries were selected for the study.

Management and Feeding System: The day old ducklings were reared under artificial brooder for 2 weeks in

confinement. During brooding period ducklings were fed with broiler starter and rice bran @ 3:1 with *adlib* water. Thereafter, ducklings were allowed to scavenge for a part of the day and gradually scavenging time is increased in backyard system of duck rearing. During the day time, ducks were allowed to forage and scavenge for the whole day in nearby ponds and other water bodies. During scavenging ducks had the access to natural vegetation, azolla, snails, insects, earthworm, fallen grains, kitchen waste and other edible items. Besides scavenging ducks were offered limited amount of feed twice daily at forenoon and afternoon made of mixture of grains, crushed maize, boiled and broken rice and select kitchen wastes @ at least 80-100 g/duck/day. Mineral mixtures were supplemented with feed @ 1 tsf for 20 ducks alternate days to avoid deficiency and metabolic dysfunctions.

Health care

Ducks were vaccinated for duck plague vaccine at the age of 45 days. During 1st week ducklings were provided with vitamin B complex in water as well @ 1 tsf for all the duckling of a farmer.

Performance Parameters

Live body weights of ducks were recorded at day old, 15, 30, 45, 60 and 90 days of age. Mortality pattern and disease incidences were also recorded during the study period. Mortality in ducks was recorded for whole period. Rearing cost was recorded as per existing market price for different inputs to assess the cost benefit of rearing under backyard system of rearing.

Results and Discussion

The mean for various traits of White Pekin duck reared in backyard system at Kokrajhar district of Assam has been presented in Table 1.

Table 1: Mean $\pm$ SE of different economic parameters of White Pekin duck reared under backyard system in Kokrajhar district of Assam

Sl. No	Parameters of study	Results (Mean $\pm$ SE)
a	Mean Body weight (g) at 0 days	58.66 $\pm$ 1.2
b	Mean Body weight (g) at 15 days	174 $\pm$ 1.45
c	Mean Body weight (g) at 30 days	606.66 $\pm$ 14.52
d	Mean Body weight (g) at 45 days	940.33 $\pm$ 17.03
e	Mean Body weight (g) at 60 days	1326.66 $\pm$ 8.81
f	Mean Body weight (g) at 90 days	1990.33 $\pm$ 40.41
g	Mortality (%)	4.5 $\pm$ 0.26
h	FCR	4.20 $\pm$ 0.06
i	Dressing percentage (%)	67.87 $\pm$ 0.43
j	B:C ratio	3.0 $\pm$ 0.26

Body weight

The mean body weight of White Pekin duck at 0, 15, 30, 45, 60 and 90 days of age was recorded as 58.66 $\pm$ 1.2, 174 $\pm$ 1.45, 606.66 $\pm$ 14.52, 940.33 $\pm$ 17.03, 1326.66 $\pm$ 8.81 and 1990.33 $\pm$ 40.41grams, respectively. Present findings were lower than the findings recorded by Devaki⁴ in their study on performance of White Pekin in Integrated Farming System where they were recorded 1780g in 60 days old. However, Rabbani⁵ was reported at per growth rate in Maize based diet where they were recorded 1485.41 g at 8 weeks age. The body weight gain received in 90 days under backyard system is to the mark of satisfactory for limited and recycling input and farmers were complacent with the result.

Feed Conversion Ratio

Feed conversion ratio (FCR) was found to be 4.20 $\pm$ 0.06 in the present study. Rabbani⁵ reported lower rate of FCR (3.16) in their study on White Pekin and Devaki⁴ reported 3.75 FCR in their study. Higher FCR in present study might be due to feed composition and farming condition in backyard system or rearing. Rice bran and broken rice were major by-products from rice mills which were incorporated in the feed. These two ingredients are cheap and easily available locally in Kokrajhar district. Ducks feeding on aquatic plants such as azolla and snails, worms etc. provided nutritional supply and substantially contributed to lowering feeding cost.

Dressing percentage

Dressing percentage of White Pekin duck in the present study was found to be 67.87 ± 0.43 percent. Present findings were in accordance with the findings recorded by Kokoszynski⁶ in which they were recorded 68.7% in male and 69.0% in female White Pekin Duck. However, present findings were lower than the findings recorded by Steczny⁷ in his study where they were reported 70.1 ± 0.2 in male and 70.4 ± 0.2 percent in female White Pekin duck respectively.

Mortality and Adaptability

In the present study, mortality of ducks was recorded to be 4.5 ± 0.26 percent, most of which was found during brooding period. Mortality included small, weak duckling and accidental reasons. Thus, the adaptability of white Pekin breed in backyard rearing system in the climatic condition of Kokrajhar district of Assam was found literally suitable.

Economics

The benefit cost ratio of White Pekin duck was recorded as 3.0 ± 0.26 , which indicates that the rearing of White Pekin duck is economical and viable for meat production purpose.

Impact of rearing White Pekin duck

Rearing White Pekin ducks has a transformative impact on the farming community, providing a sustainable and accessible avenue for traditional and backyard systems. The breed's remarkable attributes, including a fast growth rate, low extra effort requirements, and high dressing percentage, enhance farmers' satisfaction and economic returns. Adaptability of the breed fosters inclusivity, enabling a broader demographic to engage in duck farming. As a tool of socio-economic resource, White Pekin duck rearing can become a catalyst for community development and economic upliftment among resource poor farmers, ultimately contributing to the overall well-being and resilience of the local farming community.

References

1. Ghosh S, Saha M, Sahoo NC. Improving livelihood of poultry farmers of South 24 Parganas District of West Bengal by introduction of White Pekin ducks with marketing linkages. In: International Conference on Advances in Agriculture, Environmental and Biosciences for Sustainable Development (AAEBSSD-2021); 2021; Virtual Mode, India. p. 235.
2. Mavromichalis I. Protein in Pekin duck feed most important nutrient [Internet]. 2014 [cited 2021 Dec 11]. Available from: <https://www.wattagnet.com/Articles>
3. Singh R. Modern duck farming practices in India. Bihar Water Decors. 2019;1-7.
4. Devaki K, Senthilkumar K, Nisha PR. Performance of Pekin ducks and Desi ducks under integrated farming system at Kancheepuram district in Tamil Nadu. Journal of Krishi Vigyan. 2019;8(1):217-220.
5. Rabbani MAG, Das SC, Ali MA, Hassan MR, Ali MY. Growth performance of Pekin ducks under full confinement system fed diets with various nutrient concentrations. Asian Journal of Biological Sciences. 2019;12(4):717-723.
6. Kokoszyński D, Wasilewski R, Saleh M, Piwczyński D, Arpášová H, Hrněar C, *et al.* Growth performance, body measurements, carcass and some internal organs

characteristics of Pekin ducks. Animals. 2019;9(11):963.

7. Steczny K, Kokoszyński D, Bernacki Z, Wasilewski R, Saleh M. Growth performance, body measurements, carcass composition and some internal organ characteristics in young Pekin ducks. South African Journal of Animal Science. 2017;47(3):399-406.