Socio-economic role, farming system and productive performance of local chicken in the Eastern Province of Sri Lanka

A.C. Victor¹, E. Subalini¹* and S. Thanuejah²

¹ Department of Animal Science, Faculty of Agriculture, Eastern University, Sri Lanka
² Department of Agricultural Biology, Faculty of Agriculture, Eastern University, Sri Lanka

Abstract
Local chicken population plays a major role in socio-economic status of rural farmers in Sri Lanka. However, the productivity is very low and no any improvements have been made to improve this genetic group. In this context, a study was formulated to investigate the present status and productive performance of local chicken in the Eastern province of Sri Lanka. The findings will be used to plan different improvement programmes for local chicken. Pre-tested structured questionnaire was administered to gather information on socio-economic role, management system, nutrition, resources and productive traits of local chickens. Hundred and fifty farmers from each district were interviewed to gather information. Statistical Package for Social Sciences (SPSS) was used to analyze the data. The results of the study revealed that the local chicken population such as village chicken and naked-neck chicken were reared mainly under a resource-driven management system with commercial objectives. Among the farmers rearing local chicken half was female with the average of 5.9 years experience in farming and 71% was young farmers of less than 40 years. Local chicken farming was the secondary income source among majority of the farm holdings (>80%). Predominant management system of local chicken was semi-intensive system with moderate management conditions and majority of the farms (69%) fallen into the small farm category according to the flock size less than 25 birds. Further the body weight of cockerel of village and naked-neck chicken at 7 months old was 2.32±0.21kg and 2.23±0.16kg respectively, while it was 1.71±0.09kg and 1.77±0.07kg for village chicken and naked-neck chicken, respectively. Age at first lay, monthly egg production, egg weight, hatchability, productive period and life time of village chicken was 6.14±0.21 months, 16.86±2.34, 46.31±2.11g, 84.64±4.61%, 21.64±0.21 months and 26.03±0.21 months, respectively while these traits of naked-neck chicken were 7.91±0.24 months, 18.72±2.64, 49.76±1.77g, 90.01±6.24%, 22.01±0.38 months and 24.97±0.24 months, respectively.

Key words: Local chicken, Naked-neck chicken, Village chicken

Corresponding author: subalinit23@yahoo.com
Introduction

Poultry production and in particular local chicken production play a significant role in the socio-economic and social life of these resource poor households, contributing to cheap source of animal proteins and cash income. Local chicken farming is still common in the rural villages of the Eastern province. Most families have few birds thriving on household refuse and in abandoned lands. There is still hope for expanding the farming of local chicken as the price of both compounded poultry feed as well as the price of egg and chicken are rapidly escalating.

The local chickens such as village chicken and naked-neck chicken remain predominant in most of the Sri Lankan villages despite the introduction of exotic and crossbred types, because farmers have not been able to afford the high input requirement of introduced breeds. Also local chickens are highly adapted to the harsh scavenging conditions, poor nutrition and disease and or parasite challenges. However, the productivity is low in local chicken under scavenging system.

Though some reports on the production performance of local chicken are available in Sri Lanka, no reports available on their present status and production potential in the Eastern Province of Sri Lanka as the local chicken is the major component in mixed farming system in the Eastern Province. Further, few reports are available on local chicken production on district basis in Sri Lanka (Subalini et al., 2010). However no compiled reports are available in the Eastern province of Sri Lanka. The paper highlights the current status of local chicken production with a view to identifying the major challenges which needs to be addressed in order to improve the livelihood of the rural households who are the custodian of these genetic resources.

Methodology

A field investigation was carried out at different locations of Ampara, Batticaloa and Trincomalee districts from February to June, 2013. A random of hundred and fifty producers keeping both village and Naked-neck chicken were selected from each district. The producers were selected based on the Farmers Registry available to Regional Veterinary Office. Primary data were collected from farmers through pretested structured questionnaires and interviewing them at their field in the areas. Information on socio economic characteristics, management
systems, availability of resources and productive traits of local chickens were collected during field investigation. A total of 75 adult birds were randomly selected from local and naked neck chickens in 150 poultry farms to gather the information regarding productive traits of chicken. The productive parameters measured were live weight of both cockerel and hen, age at fist lay, monthly egg production, egg weight, productive period, hatchability and life time. The collected questionnaires were checked for completeness and the data were analyzed using SPSS 11.0.

Results and Discussions

Socio-economic role of local chicken
The results of the study revealed that, half of the farmers rearing local chicken were female with the average of 5.9 years experience in farming. The higher number (71%) of young farmers (less than 40 years) of both sexes participating in farming of local chicken is a good sign since they are the farmers of the future who would ensure the sustainability of farming of these local chicken.

About 25% of the farmers who keep local chicken were involved in crop cultivation, 33% of those involved livestock farming, while 21% of the keepers were in fishing indicated that the available resources of the area are the deciding factor in selecting the component of mixed farming system. Twelve percent of the farmers rearing local chicken were integrated with crop while 6% with livestock and among the rest 41% of local chicken were diversified with other livestock species. The livestock diversification will diversify the income base for farmers.

As far as the total family income is considered, farming with local chicken considered as the secondary income source for most of the households (> 80%). Most of the (61.2%) of the keepers rearing local chicken only for home consumption while rest for selling and home consumption indicated that the local chicken is playing vital role in household nutrition.

Management System and condition
The predominant farming systems of local chicken were found to be semi-intensive (49%) and the management conditions were found to be moderate (Proper housing with irregular feeding). Further, the majority of intensively managed farms exhibited good management conditions (Proper housing and regular feeding). The present study further revealed that the scavenging
was the common method of feeding under extensive and semi intensive management system. Rice bran, broken rice, household waste, cooked and uncooked rice were the main components of feeds. However, the commercial chicken feed was also provided in some farm sheds especially for young laying birds. The majority of farmers (66%) not provided feed additives.

Majority of the farmers (76%) had the flock with all categories (hen, cockerel, pullet, layers, growers and chicks) in one flock. The majority (69%) of farms in the survey areas fallen into the small farm category according to the flock size (less than 25 individuals). No records are maintained by farmers in all areas studied on diseases and mortality.

**Productive traits of local chicken**

According to the Table 1, the body weight of cockerel of village and naked chicken at 7 months age was 2.32±0.21 kg and 2.23±0.16 kg, respectively while the body weight of hen was 1.71±0.09 kg and 1.77±0.07 kg for village chicken and naked neck chicken, respectively. The monthly egg production recorded in village chicken was 16.86±2.34 which was agreed with the value reported by Tadelle *et al.* (2003) (16.05±3.43) under scavenging system.

**Table 1: Productive traits of local chicken (± Standard Error)**

<table>
<thead>
<tr>
<th>Productive traits</th>
<th>Village chicken</th>
<th>Naked neck chicken</th>
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<tbody>
<tr>
<td>Adult weight (kg)</td>
<td></td>
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<tr>
<td>Male</td>
<td>2.32±0.21</td>
<td>2.23±0.16</td>
</tr>
<tr>
<td>Female</td>
<td>1.71±0.09</td>
<td>1.77±0.07</td>
</tr>
<tr>
<td>Age at first laying (months)</td>
<td>6.14±0.21</td>
<td>7.91±0.24</td>
</tr>
<tr>
<td>Monthly egg production (No.)</td>
<td>16.86±2.34</td>
<td>18.72±2.64</td>
</tr>
<tr>
<td>Egg weight (g)</td>
<td>46.31±2.11</td>
<td>49.76±1.77</td>
</tr>
<tr>
<td>Hatchability (%)</td>
<td>84.64±4.61</td>
<td>90.01±6.24</td>
</tr>
<tr>
<td>Productive period (months)</td>
<td>21.64±0.21</td>
<td>22.01±0.38</td>
</tr>
<tr>
<td>Life time (months)</td>
<td>26.03±0.33</td>
<td>24.97±0.24</td>
</tr>
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The higher values for egg weight were recorded at present study for both species (46.31±2.11g and 49.76±1.77g for village and naked neck chicken, respectively) compared with values reported by other studies (Subalini *et al.* (2010) in Sri Lanka (41.4g), and Kalit (2009) in India (40g). Practice of partial scavenging in semi-intensive management system allow the birds to have diverse nutritious feed which leads to higher monthly egg production and egg weight in village chicken.
Comparatively highest value for hatchability was reported by Subalini et al. (2010) (91.2%) in semi intensive system for naked neck than current value (90%) while in same study and by the Kalit (2009) lowest value for hatchability was recorded for village chicken (76.8% and 80% respectively) in compared with the value reported in the present study (84.64±4.61%).

The productive period (21.64±0.21 months and 22.01±0.38 months, for village and naked neck respectively) and life span (26.03±0.33 months and 24.97±0.24 months respectively) recorded in the present study was higher for both genotypes than the value reported by Subalini et al. (2010): 14.25 months and 12.75 months for village and naked neck chicken, respectively for productive period and 24 months 19 months for village and naked neck chicken respectively for life span. The variation might be due to the breed composition, feed availability, disease problem and broodiness (Kalita, 2009).

Conclusions
In the surveyed areas the village and naked neck chicken were reared mainly under a resource-driven management system with commercial objectives. Though these chicken genotypes are of little value for commercial production, they will remain valuable as sources of meat and secondary income to the rural household economy in the surveyed areas. The productive performance of these birds also good under existing farming system. It can be further improved with proper management and breeding.

References

