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## Socio-Economic Upliftment of Rural Women through Backyard Poultry Rearing by using Giriraja Birds

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### Abstract

A field level study was undertaken to evaluate efficiency of production performance of Giriraja and Desi birds in 25 farmers each 20 birds under backyard system of rearing in Salem district of Tamil Nadu state with respect to live weight at five months, age at first egg laying, annual egg production, fertility and hatchability percentage. The average live weight of Giriraja birds at 5 months was 2.250 kg which was higher than that of Desi birds (1.350 kg). Age at first egg laying 156 days in Giriraja birds whereas the age at first egg laying in Desi birds was 171 days. The annual egg production was 192 eggs in Giriraja and 86 eggs in Desi birds. Moreover, the average weight of chicks of Giriraja and Desi birds at day old age observed was 43 g and 38 g respectively. Performance of Giriraja under backyard system of rearing was found satisfactory and the birds are well adapted to local agro-climatic condition.

### Background Information

In Salem district, Tamil Nadu Backyard Poultry Rearing is being recognized as important component of socioeconomic upliftment among the rural women especially landless labour, small and marginal farmers. Protein deficiency is a common phenomenon in the diets of rural peoples as their diets are predominantly based on cereals which contain high energy and low protein. So, large rural people face the problem of protein-calorie malnutrition, thus needing animal protein with high biological values which can be met through eggs and meat. Backyard Poultry Rearing generates self employment provides supplementary income with protein rich food at relatively low cost.

The Krishi Vigyan Kendra, Salem under the control of Tamil Nadu Agricultural University started functioning from 1994 under the approval from the Indian Council of Agricultural Research (ICAR). KVK has been closely linked with the farmers, farm women and agricultural labours. By its meaningful service, KVK has brought about impact in the economic upliftment of the weaker sections of the rural people.

As we are well aware that the tastes of desi chicken were accepted widely, obviously it has more demand. But when we think about commercial point of view, problem of low weight gain and less egg production with high mortality in chicks are the major problem observed by KVK Scientist.

### Intervention

#### 1. Introduction of High Yielding Giriraja Birds Suitable for Backyard Poultry Rearing

Giriraja is a breed of chicken developed by Karnataka Veterinary, Animal, and Fishery Sciences University in Bengaluru, India. "Giriraja" is a synthetic colored dual-purpose strain. Study and resistant, it can easily acclimatize

itself to any region and weather and perform better even in scavenging management. Its faster growth habit and higher egg laying capacity than indigenous birds have made marked improvement in livelihood of the farming community.

KVK has selected 'Giriraja' breed as a need based intervention for tackling the problem with desi bird and planned to introduce Giriraja birds for enhancing poultry keeping entrepreneurship in Salem district. In Salem district, Ammapalayam, P.Mettur and Panamarathupatti, Nalikalpatti, S. Attaiyampatti villages were selected for birds' distribution. Twenty five farmers from selected village given Giriraja chicks (20+2) for backyard rearing.

## 2. Introduction of Small Scale Incubator for Hatching Eggs

Introduced small scale incubator for the benefit of farmers. Established small scale incubator for the capacity of 520 eggs for hatching purposes in KVK premises.

## Results

KVK Scientist regularly monitors the performance of the chicks providing health care and technical support. KVK made it a point to vaccinate all the birds. Vaccination against Ranikhet disease was done on 7th day and booster dose on 21<sup>st</sup> day of age. Oral pellet vaccine introduced by Tamil Nadu Veterinary and Animal Sciences University (TANVASU) for control of Ranikhet disease. Easy storage and administration oral pellet vaccine used by farmers.

Giriraja birds are more suitable for backyard poultry. But, they do not have the habit of broodiness. There is a problem among the farmer to get a broody hen in all season. KVK solve this problem of hatching by installing small unit of hatchery in KVK for the benefit of farming community. KVK conducted various training programme on brooding, feeding management and vaccination to improve the status of Backyard Poultry Rearing in rural areas of Salem district. Totally 21 training's were conducted and 125 farmers and 272 farm womens were participated. Technologies like brooding, feeding, vaccination and deworming were imparted to the farmers.

### Productivity

Body weight measurement was taken every month. Blood sample test (Haemagglutination-inhibition titre) against Ranikhet disease was done one week before and after administering the vaccines. In backyard poultry rearing it is observed that three times higher body weight gain and egg production over desi birds. Mortality and Ranikhet disease incidence are almost nil while 30% in desi chicks.

## Extension Aspects

KVK followed up the trail with a number of training programmes, publications in their Newsletter and integrated the veterinary promoters in the dissemination process.

Table 1: Performance of Giriraja and Desi birds at farmers' field

| Sl. No. | Particulars  | Giriraja | Desi chicken |
|---------|--|----------|--------------|
| 1       | Weight of chicks at day old age (gm)                   | 43       | 38           |
| 2       | Average Live weight at 5 <sup>th</sup> months age (gm) | 2250     | 1350         |
| 3       | Livability %   | 97       | 70           |
| 4       | Age at first egg laying (Days)                         | 156      | 171          |
| 5       | Annual egg production (Nos.)                           | 192      | 86           |
| 6       | Haemagglutination-inhibition titre                     | 512      | 64           |
| 7       | Fertility %  | 89       | 85           |
| 8       | Hatchability %   | 84       | 78           |

### Production and Economic Gain

The backyard poultry unit is having an average 20 birds. From these birds around 3840 eggs were produced within 72 weeks of productive life. From this, 3415 fertile eggs, 2865 day-old chicks were hatched which cost about Rs. 85,950.00 (Rs. 30.00 per chick). The total gross income is around Rs. 56,950.00 from one unit of backyard poultry; while medication and vaccination and feed cost were around Rs. 29,000.00. The cost benefit ratio of one unit is 1:3.75.

### Horizontal Spread and Acceptance of the Technology

Farmers were more interested in rearing this Giriraja birds. Brooding is the problem in these birds. Small unit of hatchery installed in farmer's field by the technical support of KVK scientist. Other farm families purchased day-old chicks from beneficiaries at the rate of Rs. 30.00 chick and reared with their own farm and get benefited. About 30 farmers purchased day-old chicks from selected beneficiaries. All the technical supports are given by KVK scientist through training, demonstration and farm advisory services.

Backyard poultry thrives on kitchen waste, broken waste grains, insects, ants and worms also backyard organic waste. There is no special management required for rearing. For Giriraja breed doesn't require vaccination except Ranikhet disease vaccination.

KVK, Salem observed very good response from the beneficiaries and non-beneficiaries. KVK had given wide publicity through extension activities like popular articles and advisory services. Training's were conducted at management practices of backyard poultry rearing and hence 25% desi birds were replaced by Giriraja birds and overall production was increased due to proper management of backyard poultry rearing.





Figure 1: Oral pellet Ranikhet disease vaccination by KVK Scientist



Figure 2: Blood collection By KVK Scientist

### Conclusion

The economic return from the poultry largely depends on characters like body weight, age at first egg laying and egg production. Knowledge of these parameters is essential to decide selection programme for overall improvement. From the study, it can be concluded that Giriraja



Figure 3: Small Incubator for hatching Eggs



Figure 4: Regular monitoring the birds by KVK Scientist

chicken performs better than desi chicken in terms of age at first egg laying, annual egg production and body weight under backyard system of rearing. So, farmers from rural areas are selecting Giriraja over desi chicken. The backyard poultry farming with Giriraja provide a solution to improve the socio economic status of rural people.