# Performance Evaluation of Chicks, Obtained Through a Selective Breeding Programme to Introduce into Backyard Poultry Farming

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## Introduction

Poultry production has increased rapidly and tremendously in the last two decades in Sri Lanka (Gamage *et al.*, 1993). The Department of Animal Production and Health (DAPH) – Government of Sri Lanka during the past decade through the Central Poultry Research Station (CPRS), Karandagolla, Kundasale has been distributing upgraded indigenous chicken among Backyard farmers.

Breeding Indigenous cockerels with Black shaver commercial layer hens is the breeding program practiced presently (2011) at CPRS to upgrade the Indigenous chicken. Performance evaluations of resulting chicks obtained through a selective breeding of Black Shaver hens with Indigenous cockerels is the first step of the project. Program was carried out at CPRS, Karandagolla.

## Methodology

Hundred thirty eight breeder birds at age of twelve months were randomly selected for the study. Twenty hens and three cockerels were included in each mating group. Three treatment mating groups; a. Black Shaver hens with indigenous cockerels, b. Black shaver hens with Black shaver Cockerels and c. Indigenous hens with indigenous cockerels were maintained in constant conditions. The latter two treatments were regarded as Control 1 and Control 2. A replicate was maintained for each mating group.

Separately collected, numbered, cleaned and fumigated eggs were set into brooder once per week. Eggs were candled on 18$^{th}$ day and transferred into Hatcher machine. Chicks were taken out on 21$^{st}$ day. Wing band was given to each bird for identification.

Data of eggs, birth weights, weekly body weights, average feed intake per day and mortality were recorded in treatments and two control groups including replicates.

Data were analyzed using Microsoft office excel and SPSS 16.0 analytical software. Central tendency, Dispersion, One way Analysis of Variance tests were conducted for the collected data.

## Results and discussion

According to the eggs data analysis results at the 5% level of significance, there were a significantly lower number of fertile eggs ($p<0.01$) in Indigenous group than treatment group eggs. There were significantly higher number of good chicks in black shaver group than treatment ($p<0.01$) and indigenous groups ($p<0.01$).

Feed intake of treatment chicks is significantly lower ($p<0.05$) in treatment chicks' than black shaver chicks.

There were significantly higher mortality ($p<0.01$) of treatment chicks' than black shaver chicks and significantly lower ($p<0.01$) mortality of treatment chicks' than indigenous chicks.

## Conclusions

Considering all the results of study, the birth weights and weekly body weights of treatment chicks' were almost similar to that of black shaver and indigenous chickens. Feed intakes of treatment chicks' were lower than black shaver chicks.

Treatment / Resulting chicks of selectively bred group had the better performance than indigenous chicks when considering most of the evaluated factors. Black shaver chicks had the best performance out of all three groups. Overall performance of treatment chicks' were in between the black shaver chicks and indigenous chicks.

## References

Gamage D.V.S., M.G. Jeyaruban, G.S. Wijekoon and G.G. Podimenike 1993. Development of local commercial egg laying strains at Central Poultry Research Station (CPRS) at Karandagolla,Annual report 1993,Sri Lanka Veterinary research Institute,Gannoruwa,Peradeniya.