



E-ISSN: 2320-7078

P-ISSN: 2349-6800

JEZS 2020; 8(1): 206-208

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Received: 13-11-2019

Accepted: 15-12-2019

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## Studies on productive performance of back yard poultry in Beed district

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### Abstract

The present Front Line Demonstrations conducted during three consecutive years 2015-16, 2016-17 and 2017-18 at three contact villages of Deendayal Research Institutes Krishi Vigyan Kendra, Ambajogai, District Beed (Maharashtra). The demonstrations were conducted in a randomized block design consisting of three treatments with 10 replications of each. The KVK demonstrated the improved strains of backyard poultry Vanaraja and Kaveri in selected farmer's field to scale up the practice in the locality by proving their potential over the local strains. During three consecutive years, the significantly higher mean body weight was observed in improved backyard chicken strains Kaveri (744 gm and 2150 gm) than Vanaraja (690 gm and 2089 gm) and local strain (744 gm and 1260 gm) at 6<sup>th</sup> and 20<sup>th</sup> weeks of age. The body weight at sexual maturity is significantly higher in Kaveri (2110 gm) and Vanaraja (2041 gm) than the local strain (1195 gm). The mean annual body weight gain was observed significantly higher in Vanaraja (3600 gm) as compared to local and improved strain Kaveri. The significantly lower per cent annual mortality observed in local poultry strain (9) than improved back yard poultry strain. However, annual mortality in Kaveri strains (18) was significantly lower than Vanaraja (27). The average age at first lay was significantly lower in back yard poultry strain Kaveri (182 days) than local (190 days) and Vanaraja (187 days). The average egg weight at 40<sup>th</sup> week (gm) was found significantly higher in Vanaraja (58 gm) as compared to local (48 gm) and Kaveri strain (55 gm). The average annual egg production was observed significantly higher in Kaveri strain (162) as compared to Vanaraja and local strain. Kaveri has proved to be most superior strain for back yard poultry which having faster body weight gain, less mortality, early sexual maturity, high egg laying potential and laying brown colour eggs.

**Keywords:** Back yard poultry, Vanaraja and Kaveri

### Introduction

Indian poultry industry contributes significantly in agriculture production system. Poultry has been domesticated probably about 8,000 years ago. The scientific poultry rearing system developed impetuously during the last four decades. In the world, India rank seventh in chicken meat and third in egg production<sup>[1]</sup>. Back yard poultry population represents 40 per cent in Indian poultry industry<sup>[2]</sup>.

Poultry sector especially backyard farming plays a crucial role in livelihood of millions of people and women empowerment.<sup>[3]</sup> Poultry population in rural areas has increased marginally from 63 million to 73 million in past 35 years. Backyard poultry is advantageous as it provides supplementary income in shortest possible time with little minimum capital investment, simple in operation and ensures availability of eggs and meat even in remote areas. It is a type of organic farming with no harmful residue in eggs and meat. It is eco-friendly approach. Further, these are very active in pest control, provide manures, and required for special festivals and traditional ceremonies<sup>[4]</sup>.

Though, backyard poultry has been playing significantly in rural economy and women empowerment, but it gets neglected<sup>[5]</sup>. Generally, an indigenous bird performs poorly in terms of egg and meat. There is great need of promoting backyard poultry with improved strain to harvest maximum profit. With aim of this, KVK has been focused on promotion of improved backyard poultry strains such as Vanaraja and Kaveri through Front Line Demonstration. Vanaraja chicken strain is developed by the project directorate on poultry, Indian Council of Agricultural Research (ICAR), Hyderabad whereas, Kaveri by Central Poultry Development Organisation (CPDO), Bhubaneswar.

## Materials and Methods

The front line demonstration was conducted during three consecutive years 2015-16, 2016-17 and 2017-18 at three different contact villages of Deendayal Research Institutes Krishi Vigyan Kendra, Ambajogai District Beed (Maharashtra). The demonstration was conducted in a randomized block design consisting of three treatments with 10 replications of each. The improved strain of back yard poultry such as Vanaraja and Kaveri compared with local poultry. Ten farmers were selected from each village during three consecutive years. Chicks were purchased from Directorate of Poultry Research, Hyderabad. In this demonstration, 30 chicks of each strain were reared by each farmer in separate pen. The uniformity was maintained in feeding and managemental practices as much as possible. Chicks were maintained in shed which was previously

cleaned and disinfected. The feeders and drinker were fixed in such a way that the chicks were able to eat and drink conveniently. Feed and water were supplied *ad libitum* to the poultry throughout the year. During night, electric bulb was used to provide necessary light. The proper vaccination program was followed by each farmer for prevention of poultry diseases. Drinkers were washed and cleaned daily in the morning and feeders were cleaned weekly before being used.

## Statistical analysis

Data of body weight gain, age at first lay, annual mortality, average egg weight at 40<sup>th</sup> week and annual egg production were obtained and analyzed statistically as per Snedecor and Cochran [6].

**Table 1:** Average body weight of different back yard poultry strains at different age during year 2015-16, 2016-17 and 2017-18

Mean body weight (gm)	2015-16			2016-17			2017-18		
	Local	Vanaraja	Kaveri	Local	Vanaraja	Kaveri	Local	Vanaraja	Kaveri
At 6 weeks of age	420 <sup>c</sup>	690 <sup>b</sup>	744 <sup>a</sup>	419 <sup>c</sup>	689 <sup>b</sup>	744 <sup>a</sup>	419 <sup>c</sup>	690 <sup>b</sup>	744 <sup>a</sup>
At 20 weeks of age	1260 <sup>c</sup>	2089 <sup>b</sup>	2150 <sup>a</sup>	1260 <sup>c</sup>	2090 <sup>b</sup>	2151 <sup>a</sup>	1260 <sup>c</sup>	2089 <sup>b</sup>	2150 <sup>a</sup>
At sexual maturity	1195 <sup>c</sup>	2040 <sup>b</sup>	2110 <sup>a</sup>	1195 <sup>c</sup>	2041 <sup>b</sup>	2111 <sup>a</sup>	1195 <sup>c</sup>	2042 <sup>b</sup>	2110 <sup>a</sup>
Annual body weight	1610 <sup>c</sup>	3600 <sup>a</sup>	3000 <sup>b</sup>	1609 <sup>c</sup>	3600 <sup>a</sup>	3001 <sup>b</sup>	1609 <sup>c</sup>	3600 <sup>b</sup>	3002 <sup>a</sup>

Values with different superscript are significantly differed at  $P < 0.05$

**Table 2:** Productive performance of different back yard poultry strains during year 2015-16, 2016-17 and 2017-18

Parameter	2015-16			2016-17			2017-18		
	Local	Vanaraja	Kaveri	Local	Vanaraja	Kaveri	Local	Vanaraja	Kaveri
Average annual mortality (%)	10 <sup>c</sup>	27 <sup>a</sup>	18 <sup>b</sup>	9 <sup>c</sup>	27 <sup>a</sup>	18 <sup>b</sup>	9 <sup>c</sup>	27 <sup>a</sup>	17 <sup>b</sup>
Average age at first lay (days)	192 <sup>a</sup>	187 <sup>b</sup>	182 <sup>c</sup>	190 <sup>a</sup>	187 <sup>b</sup>	182 <sup>c</sup>	190 <sup>a</sup>	187 <sup>b</sup>	183 <sup>c</sup>
Average egg weight at 40 <sup>th</sup> week (gm)	48 <sup>c</sup>	58 <sup>a</sup>	56 <sup>b</sup>	48 <sup>c</sup>	58 <sup>a</sup>	55 <sup>b</sup>	48 <sup>c</sup>	58 <sup>a</sup>	55 <sup>b</sup>
Average annual egg production (no.)	60 <sup>c</sup>	148 <sup>b</sup>	162 <sup>a</sup>	60 <sup>c</sup>	149 <sup>b</sup>	162 <sup>a</sup>	59 <sup>c</sup>	149 <sup>b</sup>	162 <sup>a</sup>

Values with different superscript are significantly differed at  $P < 0.05$

## Result and Discussion

The front line demonstration was conducted during three consecutive years 2015-16, 2016-17 and 2017-18 at three different contact villages of Deendayal Research Institutes Krishi Vigyan Kendra, Ambajogai District Beed (Maharashtra). The improved strain of back yard poultry such as Vanaraja and Kaveri compared with local poultry and obtained data statistically analyzed as presented in table No. 1 and 2. During three consecutive years, the significantly higher mean body weight was observed in improved backyard chicken strains Kaveri (744 gm and 2150 gm) than Vanaraja (690 gm and 2089 gm) and local strain (744 gm and 1260 gm) at 6<sup>th</sup> and 20<sup>th</sup> weeks of age. The body weight at sexual maturity is significantly higher in Kaveri (2110 gm) and Vanaraja (2041 gm) than the local strain (1195 gm). The mean annual body weight gain was observed significantly higher in Vanaraja (3600 gm) as compared to local and improved strain Kaveri (Table no. 1). The similar results were recorded by Vetrivel and Chandrakumarmangalam, 2013 [7]; Mohanty and Nayak, 2011 [8]; Yadhav and Khan, 2011 [9] and Padhi, 2016 [10].

The significantly lower per cent annual mortality observed in local poultry strain (9) than improved back yard poultry strain. However, annual mortality (%) in Kaveri strains (18) was significantly lower than Vanaraja (27). The present results were comparable with Banja *et al.* (2017) who reported 20 and 31 per cent annual mortality in Kaveri and Vanaraja, respectively. The average age at first lay was significantly lower in back yard poultry strain Kaveri (182 days) than local (190 days) and Vanaraja (187 days). The

average egg weight at 40<sup>th</sup> week (gm) was found significantly higher in Vanaraja (58 gm) as compared to local (48 gm) and Kaveri strain (55 gm). The average annual egg production was observed significantly higher in Kaveri strain (162) as compared to Vanaraja and local (Table no. 2) which was similar to the findings of Muralidharan (2013) who reported 186 eggs production per year in case of Kaveri poultry [11].

## Conclusion

From present study it could be concluded that Kaveri has proved to be most superior strain for back yard poultry which having faster body weight gain, less mortality, early sexual maturity, high egg laying potential and laying brown colour eggs. The promotion of Kaveri strain in individual farms and farmers group become supplementary income source that can be added to the livelihood of farmers.

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