RESEARCH ARTICLE

A success story in central Gujarat on tribal women empowerment through improved backyard poultry farming

B. S. Khadda, Kanak Lata, Raj Kumar and J. K. Jadav

ICAR- Krishi Vigyan Kendra- Panchmahals (CIAH), Vejalpur, Godhra- 389 340, Gujrat, India.

Corresponding authors email Id: khadda74@gmail.com

Manuscript received: Dec.,10, 2017; Decision on manuscript: Dec, 25, 2017; Manuscript accepted: Jan., 5, 2018

Abstract

The present study was conducted to empowerment of tribal women through backyard poultry farming by replace the Desi non-descript low producing poultry birds with faster weight gain and higher eggs producing strain Pratap Dhan. For this purpose Krishi Vigyan Kendra, Panchmahal has implemented Front Line Demonstration on backyard poultry farming entrepreneurship for the tribal women folk by providing improved poultry birds "Pratap Dhan" to strengthen their livelihood and economic improvement. The overall mean body weights of chickens at 8, 10, 20 and 40 weeks of age were 553.06±9.97, 785.39±16.32, 1905.32 ±46.35 and 2411.63±51.22 g, respectively. The average hen day egg production up to 40 and 72 weeks of age were recorded 57.94±0.39 and 169.92±1.40, respectively. The average expenditure on rearing of chicken was calculated Rs. 27,248. The total gross and net income earned from sale of eggs and birds for rearing of chickens were rupees 87,323 and 60,075, respectively. The benefit cost ratio was recorded 1: 3.20 which appears to be very much economical and viable for rearing under backyard farming system.

Key words: Backyard poultry, body weight, egg production, *Pratap Dhan*, Women empowerment

Introduction

Backyard poultry farming is not only meets the nutritional security of tribals but also generates self employment and provides supplementary income. The demand for local chickens and eggs is very high as compared to broiler and layer eggs due to their better taste, texture and flavor as perceived by the local population (Sapcota *et al.*, 2002). However, low weight gain and less egg production with high mortality in chicks are the major problems. Thus, the *Pratap Dhan* birds have been identified for intervention due to its faster growth habit and higher egg laying capacity than indigenous birds have made marked improvement in livelihood of the tribal community. Keeping these facts in view, an attempt was made to evaluate the impact of backyard poultry farming for empowerment of tribal women in central Gujarat.

Materials and methods

The area of study is characterized as hot semi-arid climate. The mean summer temperature is 34.9^0 C while the mean winter temperature is 21.3^0 C indicating that the area falls under hyperthermic soil regime. The annual water needed or potential evapotranspiration of the area ranges between 1500 to 1600 mm whereas, actual mean usual precipitation is about 831 mm thus causing an annual water deficit of nearly

769 mm, rain is confined to three months (July to September) with average rainy days about 31. The mean monthly maximum temperature ranges from 26 and 40^0C, while the minimum monthly temperature varies between 09^0C and 26^0C. The Krishi Vigyan Kendra, Panchmahal has a planned to empowerment of tribal women through backyard poultry farming by replace the Desi non-descript low producing poultry birds with faster weight gain and higher eggs producing strain *Pratap Dhan*. For this purpose Krishi Vigyan Kendra, Panchmahal has implemented Front Line Demonstration on backyard poultry farming entrepreneurship for the tribal women folk by providing improved poultry birds to strengthen their livelihood and economic improvement. The beneficiaries were trained on all aspects of improved backyard poultry farming like selection and storage methods of eggs, candling of eggs, vaccination and deworming of birds, feeding and general management practices for poultry. Poultry chicks (*Pratap Dhan)* were procured from Maharana Pratap University of Agriculture and Technology, Udaipur. The chicks were brooded up to 6 weeks of age in deep litter system with *Ad lib.* starter feed and drinking water. The chicks were vaccinated against Marek's disease and new castle disease (*Ranikhet*). After 6 weeks the birds were distributed to the selected women at the rate of 20 birds per household who provided shelter at night time and allowed free scavenging in backyard during day time. They were provided additional feed ingredients like crushed maize and broken rice @ 25-30 g/bird/ day with kitchen waste and other crop by-products to fulfil the nutrient requirements. Follow-up visits were regularly conducted to the entire household for offering technical advice. The performance of birds at household level was assessed by collecting data on the basis of body weight at 8^{th}, 10^{th}, 20^{th} weeks of age and thereafter at 40^{th} weeks of age, mortality from 6 to 40 weeks of age. Egg production 'Data Card' was distributed to farm women to record daily egg production. A partial budget analysis measure was used in for expenditure and income i.e. the cost of chicks, cost of feeds, medicines and equipments were considered whereas, the cost of labour was not considered for calculation as the family members reared chicken. The cost of feeds, medicines and equipments was calculated on basis of market rate prevalent during the study period which was purchased by respondent and selling price of eggs received by respondent during study period were taken rupees 07/egg. The female birds were marketed at the rate of Rs. 100/ at around 10 weeks of age and rupees 300/ male bird around five to six months of age. The data for different traits were analyzed using standard statistical procedures as described by Snedecor and Cochran (1994).

Results and discussion

Mrs. Develi ben w/o Shri Bhura bhai is unemployed women from Padora village of Goghamba taluka of Panchmahal district of central Gujarat. She is a traditional farmer engaged in animal husbandry and also reared some Desi poultry birds for home consumption and could not succeed due to lack of scientific knowledge of backyard poultry farming. She underwent training on scientific poultry rearing at KVK, Panchmahal. She was supplied 20 chicks of Pratap Dhan and started a small semi-intensive poultry unit with the technical help of KVK, Panchmahal. Locally available bamboo, thatch grass and mud were used for constructing poultry shed and paddy husk as litter material for night shelter. She followed natural incubation practice integrated with scientific techniques. She reported that the hens' laid 1869 eggs in 72 weeks of age. She selected 580 eggs and placed on jute and then covered with cotton cloth and woven basket and stored on a self inside their family building. When the hen stops laying all the eggs are placed under her, according to the traditional practice and

successfully hatched 423 chicks out of which 165 female and 206 male chicks were raised up to time of marketing. She reared the birds under backyard system supplemented them with some concentrate feed *viz.,* crushed maize and broken rice (25-30g per day) and also adopted deworming and vaccination practices. The means of body weight and other economic traits of *Pratap Dhan* chicken reared by Smt. Develi ben have been presented in Table 1.The parameter wise observations showed significantly better performance of *Pratap Dhan* poultry bird over the local ones; in respect of average body weight of male (2652.72±56.43g) and female (2170.54±48.43 g) at 40 weeks of age, average age at first laying(155.36±1.21 days), age at sexual maturity(171.46± 2.53 days), average house hold egg production up to 72 weeks of age (169.92±1.40), and egg weight at 40 weeks of age (53.49±0.21g).

The recurring cost i.e. cost of feeding and medicines and income from sale of eggs and chickens are presented in Table 2. According to Smt. Develi ben the total expenditure on rearing of chicken was calculated Rs. 27,248. The total gross and net income earned from sale of eggs and birds for rearing of chickens were Rs. 87,925 and 60,677, respectively. The benefit cost ratio was recorded 1: 3.23, which appears to be very much economical and viable for rearing under backyard farming system.

Now, Mrs. Develi ben is a model poultry farmer and she is guiding other farm women on backyard poultry production. She has successfully demonstrated backyard poultry rearing as a component of farming system which could create agro-entrepreneurship leading to sustainable livelihood security to rural youths and farm women. Based on the facts revealed, it may be concluded that the improved poultry strain *Pratap Dhan* have an immense production potential in field under semi- arid region and poultry farming under backyard system is a profitable and economic venture for resource poor tribal women in terms of livelihood and economic security

Acknowledgements

The authors are thankful to the Director, CIAH Bikaner for encouragement and providing facilities and are also thankful to Professor, Department of Animal Production RCA (MPAU&T), Udaipur for valuable suggestion and comments in this article.

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Table 1: Performance of *Pratap Dhan* chicken under backyard

Traits	Male	Female	Pooled
8 week body weight (g)	595.55±9.35	510.57±10.46	553.06±9.97
10 week body weight (g)	890.49±11.90	680.30±16.31	785.39±16.32
20 week body weight (g)	2075.43±60.52	1735.21±56.57	1905.32±46.35
40 week body weight (g)	2652.72±56.43	2170.54±48.43	2411.63±51.22
Age at first egg laying (days)	-	155.36±1.21	-
Age at sexual maturity (days)	-	171.46± 2.53	-
H.D.E.P. up to 40 weeks of age		57.94±0.39	
H.D.E.P. up to 72 weeks egg production		162.92±1.40	
Egg weight at 28 weeks of age (g)		47.43±0.26	
Egg weight at 40 weeks of age (g)		55.39±0.21	
Per cent mortality from 6 to 40 week of age	14.28	7.69	10.98

Table 2 : Economics of backyard poultry farming

Particulars	**Cost involved**
Cost of chicks (Rs.)	Free of cost supplied by KVK
Cost of feeding (Rs.)	25248
Cost of medicines and miscellaneous (Rs.)	2000
Total cost of rearing (Rs.)	27,248
No. of eggs produced	1955
No. of eggs consumed at home	410
No. of eggs sold	965
No. of eggs spoiled during brooding	157
No. of eggs hatched by broody hen	423
No. of birds died	52
No. of female birds sold	165
No. of male birds sold	206
Total income from eggs (sold and consumed)	**9625**
Total income from birds (sold and consumed)	**78,300**
Gross income	**87,925**
Net income	**60,677**
B:C Ratio	**1: 3.23**