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Woman empowerment and uplifting of tribal farmers through Kadaknath poultry farming in Dantewada district of Chhattisgarh

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Abstract

The experiment was conducted in the farm of Krishi Vigyan Kendra, Dantewada in the year of 2016-17 and “Kadaknath Poultry Farming Project” was implemented by District Administration Dantewada (DMF) in order to empowerment of woman and uplifting of tribal’s farmers of the district as well as conservation of endangered breed “The Kadaknath. KVK Dantewada has provided 203 Kadaknath poultry farms to SHG’s of woman, man and individual farmers. In addition, KVK also established eight (8) Kadaknath breeding unit and hatchery unit with the capacity of 12000 eggs. The experiment has found that beneficiaries of the project have highly benefited by poultry farming such as; Champa atami (Kasoli) followed by Bosaram atami (Kasoli) and Ramprasad veko (Bade Karali) getting annul income around Rs. 2.90, 2.82 and 2.87 Rs. in lakh respectively. KVK also maintained the data of egg and birds production of Kadaknath in the farm and played a vital role in supply and distribution of birds to the beneficiary’s farmers of the district. Maximum production of eggs and chicks were obtained from the cold season followed by rainy and summer season. Production of eggs and birds was recorded at the end of the year as 68,822 and 46,391 respectively. Where hatching reduction of the chicks were ranges between 20-30 percent resulting as mortality of 15,208 chicks and damaging of eggs recorded as 3,024 annually.

Keywords: Kadaknath poultry farming, KVK Dantewada, SHG’s of man and woman, tribal farmers, district administration Dantewada (DMF)

Introduction

Kadaknath chicken is famous for its taste and claimed aphrodisiac and medicinal properties. The blood, meat and body of the birds are black, and compared with other poultry, Kadaknath is high in protein. It also contains 18 kinds of essential amino acids and Vitamins B-1, B-2, B-6, B-12, C and E [7]. The Kadaknath species has not only opened up palates, but have become a major source of income for women in self-help groups in Chhattisgarh Dantewada district and are helping them gain financial independence. Many say they have successfully paid off outstanding debts and have also been able to buy their own agricultural equipments. In the last five months alone, poultry farmers of the Dantewada have sold Kadaknath chickens amounting to Rs 1.6 lakh [11]. The Kadaknath poultry farming is started from 2016-17 under DMF scheme. In this scheme KVK Dantewada has been provided 203 Kadaknath poultry farms to SHG’s of man and woman including 10 farms to the individual farmers. In general Kadaknath poultry shed made by KVK having 30x15fit in size including feeding and drinking facilities. In addition 600 chicks in two installments were also provided to the farmers with poultry feed for one year and marketing channel as well. The total cost of each Kadaknath unit is 3.32 lakh including feeding cost, in which only 5% and 10% share was taken from the woman and man SHG’s respectively. Individual beneficiaries contributed 10% share as like man SHG’s. Kadaknath poultry breed does not hatch her eggs. Thus hatching of Kadaknath egg naturally is a serious problem and to overcome such problem eight (8) Kadaknath hatchery units were established at farmer’s field as well as KVK campus. According to Dr. Narayan Sahu, a Senior Scientist and Head at Krishi Vigyan Kendra, Dantewada, about 2200 farmers of the area breed Kadaknath, the Krishi Vigyan Kendra provides chicks to farmers, which are then reared for six to eight months. Around 95 percent expenses of the poultry building are borne by the Krishi Vigyan Kendra. Apart from Chhattisgarh and Madhya Pradesh, poultry farmers in Maharashtra, Tamil Nadu and Andhra Pradesh have also been breeding the chickens. As of now, locals from both Madhya Pradesh and Chhattisgarh are making lakhs or rupees every

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month with sales of Kadaknath chicken and eggs. There are more than 203 poultry farms in the Dantewada district alone that produce about four lakh Kadaknath chicken annually.

Materials and Methods

The experiment was carried out in the farm of Krishi Vigyan Kendra Dantewada which is situated in South Bastar region of the state Chhattisgarh. The geographical area of Dantewada is (3,410.50 km²), Dantewada, Chhattisgarh, India is located at GPS coordinates of 18° 54' 2.7504" N and 81° 20' 42.6372" E, elevation is a 352 meters height, that is equal to 1,155 feet. The "Kadaknath Poultry Farming Project" was implemented by District Administration Dantewada (DMF) and the experiment was conducted in the farm of Krishi Vigyan Kendra, Dantewada in the year of 2016-17 in order to empowerment of woman and uplifting of tribal's farmers of the district as well as conservation of endangered breed "The Kadaknath". These days around 203 Kadaknath poultry farm has been established by the KVK with the financial and technical support of District administration Dantewada (DMF). Kadaknath poultry farm was established in the field of Champa atami (Kasoli) followed by Bosaram atami (Kasoli) and Ramprasad veko (Bade Karali) getting annual income around Rs. 2.90, 2.82 and 2.87 Rs. in lakh respectively. In addition, remaining farm was distributed among the SHG's of man, woman and individual farmers of the district. Previous years of rearing were an attempt by the

state government to preserve Kadaknath breed.

The poultry farmers Champa atami, Ramprasad veko and Bosaram atami who has been part of such a self-help group and also an individual farmer for the last three years, says they had received training from the KVK Dantewada, where they learnt to breeding and take care of the chicken. Now, they happily said rearing Kadaknath chickens has helped them to earn a steady income for their family, now they can provide better for their children's. In Dantewada district mostly, farmers following Deep Litter System (DLS) for the rearing of Kadaknath breed. Table No. 1 represented the estimated value of Kadaknath poultry farming rearing under Deep Litter System for 500 Kadaknath Birds in two cycles where total cost showed 3,21,100 Rs. for the establishment of the poultry farm which including expenditure of housing maintenance, poultry feed, wages, training and exposure visit, vaccine, growth promoter etc. Table no. 2 showed the detail information regarding spread of Kadaknath poultry birds in Dantewada district. Column A and B indicated the number of poultry reared and sold by the different farmers while column C showed the addition data of column A and B. In the initial period of the farming, KVK Dantewada provides 500 Kadaknath birds to the poultry farmers in two installments with their feed for one year. Once the farmers settled their farm properly the quantity of the providing feed reduced gradually.

Table 1: Estimates of Kadaknath Rearing under Deep Litter System for 500 Kadaknath Birds in two cycles

S.N.	Particular	Amount	Remark
1.	Fixed Capital or Non-Recurring Expenditure		
a.	Rearing Shed under DLS Housing system 1 square. Ft per bird	120000	Size 30x15ft
b.	Purchase of Equipments as Waterer- Feederer (Chick Grower) Chick Tray, Transport Cage, Digital Weighing Balance Etc.	10000	
c.	Training and Exposure Visit of Beneficiaries of Kadaknath Farming Farm at Bhuvneshwar Orissa or PUNE, Maharashtra	5000	
	Total	135000	
2.	Working Capital or Recurring Expenditure		
a.	500 Kadaknath Chicks for 2cycle@50/- Each with 2% mortality Coverage it may be enhance or decreased as per market price index	25000	To be purchase through Govt. poultry Farm KVK/Buvneshwar/PUNE poultry Farm as per Availability
b.	Cost Of Feeding For 500 birds for 2Cycles		
a.	per starter ration (0-10 days =20gm per x500 birds =10kg x 10 Days = 1Quin. x 2800/-	2800	
b.	Starter / F Grower ration (11-30 days =20 days) 30 gm per day x 500 birds = 15 Kg x20 days =3Quin x 2800/-	8400	
c.	Grow Ration (Day3Lto day 105) 70 gm per x 500 birds = 35 kg x 105 days = 36.75 Quin x 2400/- 88200	88200	
d.	Finisher Ration (Last 45 days) 100gm per day x 500 birds =50kg x 45 days =22.5 Queen x 2400/- 5400	54000	
c.	Under DLS system Litter Construction Vaccination, Transportation and Electricity Vaccination, Shedul- 1 st week F1 as by Nostrill / Ocular route, 2 nd week 14 days IBD as Nostrill / Ocular route, Day 30 R2B Lasota Strain in Drinking Eater, 60 Days R2B by Sub cut, on 65 Days Fowl pox Sub cut as Required	1500	
d.	Housing Management, VACCINE, growth promoter, Vety, Aid as Required	5000	
e.	Margin money For various sudden requires for the Farming	1200	
	Grand Total For 500 Birds		
	Fixed Cost + Recurring Cost		
		321100	

Table 2: Detail Information Regarding Spread of Kadaknath Poultry Birds in Dantewada District

SN	Column A					(6) No. of beneficiary farmers	Column B						Column C		
	(1) Village	(2) Year	No. of poultry birds				Hatchery Unit Established						Grand total		
			(3) Reared	(4) Sold	(5) Income (Rs.)		(8) Funding source	(9) Cost (in lakh)	(9) No. of chicks reared	(10) Chicks sold	(11) Income (Rs.)	Expenditure (Rs.)	Birds reared (3+9)	Birds sold (4+10)	Income (Rs.) (8+14)
1	Haram (at KVK Farm)	2016-17	2000	650	455000	1	DMF	2.7	1000	800	40000	22000	3000	1450	495000
2	Teknar	2016-17	500	300	150000	3	0	0	0	0	0	0	500	300	150000
3	Karali	2016-17	1500	900	450000	4	EP&HS	0.85	250	0	0	2500	1750	900	450000
4	Kasoli	2016-17	1500	900	450000	4	ARYA	1.7	0	0	0	0	1500	900	450000
5	Madse	2016-17	800	300	150000	6	0	0	0	0	0	0	800	300	150000
6	Padapur	2016-17	300	80	5600	1	0	0	0	0	0	0	300	80	5600
7	Faraspal	2016-17	300	95	6650	5	0	0	0	0	0	0	300	95	6650
8	Hiranar	2016-17	1500	620	43400	12	0	0	0	0	0	0	1500	620	43400
9	Badepneda	2016-17	300	300	15000	2	0	0	0	0	0	0	300	300	150000
10	Chitalur	2017-18	600	70	4900	4	0	0	0	0	0	0	600	70	4900

3. Result and Discussion

In point of view of livelihood opportunity in Dantewada district, Kadaknath poultry farming has achieved a respectable position for empowering woman SHG's and provide livelihood to tribal farmer's in area. [10] The rural poultry production particularly chickens play significant role in the socioeconomic development of countries. They reported that poultry are generally maintained by rural women and children that generate cash revenue and that supply adequate eggs and meat to their personal family's diet. Chickens generally scavenge around the homestead areas during day time, where they eat kitchen waste, left over cereal like rice, wheat, pulses, green grass, insects, and other available feed stuff. These waste feedstuffs are utilized by these native birds to produce a good quality, cheap source of animal protein. [1] The village poultry makes a substantial contribution to household food security throughout the developing world. It helps to diversify income, provides high quality food and fertilizer, and acts as form of household savings and insurance.

Generally Eggs consists of a yolk at the centre, surrounded by albumen, both enclosed within the shell. Kadaknath eggs are small in size, and production is less as compare to other egg producing poultry breed. It has high amount of protein than other poultry eggs [5]. Global egg production, consumption and their effects on human health, and use as functional foods

is expanding owing to their capacity to decrease the risks of some diseases, apart from easy availability and affordability [10]. In both developed and developing countries an increased egg production and consumption could significantly improve nutritional needs of a common man and children with developing or growing minds. Eggs are an economical source of nutrients for a healthy diet and life, especially important for the mental development of growing children [3] [4] [6]. Krishi Vigyan Kendra, Dantewada have established Kadaknath breeding unit and hatchery unit with the capacity of 12000 eggs. Table no. 3 represented the annual data of eggs production and birds hatching has arranged in month-wise with respect to damaged and hatching rate. Maximum production of eggs and chicks were obtained from the cold season followed by rainy and summer season. Total no. of eggs laid by the chicken and total number of birds obtained from the hatching unit was recorded at end of the year as 68,822 (eggs) and 46,391 (chickens) respectively. Where damage of eggs recorded as 3,024 annually while hatching reduction of the chicks was ranges between 20-30 percent resulting as mortality of 15,208 chicks. Maximum mortality of the chicks occurred due to cold and inconvenient management of the farm but it can be checked by housing maintenance, vaccination, using of growth promoter, provide better growth ration and convenient space management.

Table 3: Production of eggs and birds

S. N.	Production Months	(A) No. of eggs laid by the chickens (Monthly)	(B) No. of Damaged eggs (Monthly)	(C) Total No. of eggs obtained after damaging (A-B)	(D) Hatching reduction ranges between (20-30) C*H(r)/100	(E) Total no. of birds obtained from the hatching unit (C-D)
1	January	5726	210	5516	1214	4302
2	February	5638	197	5441	1252	4189
3	March	5265	185	5107	1226	3881
4	April	4940	184	4756	1189	3567
5	May	4935	186	4749	1378	3371
6	June	4867	171	4696	1362	3334
7	July	4984	179	4808	1395	3413
8	August	5093	182	4911	1277	3634
9	September	5524	211	5313	1328	3985
10	October	5597	209	5388	1240	4148
11	November	5632	194	5438	1197	4241
12	December	5681	205	5476	1150	4326
Total		68,822	3,024	61,599	15,208	46,391

Mortality of the birds depends on the environmental condition and maintenance, H(r) = hatching reduction

Table no. 4 represented the promising characters of the Kadaknath breed. It is an important indigenous breed of poultry inhabitation in vast areas of Dantewada district of Chhattisgarh. The Kadaknath poultry breed found appreciable degree of resistance to diseases compared with other exotic breeds of fowl in its natural habitat in free range. Kadaknath

birds are also resistant to extreme climatic conditions like summer heat and cold winter stress and having very less mortality rate. Its flesh is of higher value and is being used for the treatment of many diseases in human beings i.e. nervous disorder, chronic disease etc [10]. These breed having rich source of protein (>25%) and having low fat (0.73-1.05%)

and low cholesterol (184.75mg/100gm) than other birds. Due to rich source of protein, low fat and less cholesterol and medicinal uses the market value of the Kadaknath birds are high [7, 11]. Table no. 5 and 6 indicated the horizontal spread and establishment of Kadaknath poultry in the district in which 1878 beneficiaries of 75 villages have been benefitted by the project. Total 203 units have established or distributed among SHG's of woman, man and individual farmer as 145, 25, and 33 respectively.

Table 4: Promising Characteristics of Kadaknath poultry

S. No	Characteristics	Observation (Unit)
1	Body weight after 6 month	1.5 kg/bird
2	Price	500-700 Rs/Kg
3	Survival percentage	95-99%
4	High protein percent	>25%
5	Less fat percent	0.73-1.05%
6	Less cholesterol percent	184.75mg/100gm

Table 5: Horizontal Spread of Kadaknath poultry farming at Dantewada district

Name of District	No of village covered	No of units	No of beneficiaries	No of SHG's
Dantewada	75	203	1878	170

Table 6: Details of Kadaknath poultry farm established by Krishi Vigyan Kendra, Dantewada

Sr. No.	Category	No. of beneficiaries	No. of Unit established
District Mineral Fund			
1.	Women's SHGs	1595	145
2.	Men's SHGs	250	25
3.	Individual	33	33
	Total	1878	203

Points considered under Kadaknath poultry farming Project

- Selection of Woman SHG's
- Establishment of Kadaknath poultry farm
- Establishment of Kadaknath Hatching unit
- 600 chicks per unit
- Feeding and other materials for 600 chicks
- Capacity building of farmers
- Formation of FPO's for marketing

Impact of Kadaknath poultry farming in the operational area after dissemination and adoption by the farmers

1. Kadaknath poultry farming gives sustainable livelihood opportunity for women's, women's SHGs, tribal farmers, unemployed youths etc.
2. Kadaknath poultry breeds are highly adaptable in environment condition of Dantewada.
3. The eggs of Kadaknath are used for treatment of headaches, post delivery problems, asthma, nephritis and

many diseases of human beings.

4. Employment and income generation for tribal's.
5. Women employment through Kadaknath poultry farming.
6. Empowerment of Naxal affected family, physically handicap and Widow.
7. Market values and demands of this breed are very high and direct selling in large scale to nearby states and cities.
8. KVK Dantewada provides one window operation from farming to selling of Kadaknath birds.

Comparative studies of Kadaknath and Broiler poultry

In order to calculate the net income and expenditure of Kadaknath poultry farming only 50 poultry birds were taken as analysis in comparison with broiler poultry farming in one cycle. Table no 7 showed that income of Kadaknath poultry (42,300 Rs.) was comparatively higher as compare to broiler (3,850 Rs.). The economics of Kadaknath poultry and broiler farming under backyard condition are furnished below:

Table 7: Comparative studies of Kadaknath and Broiler poultry

Particulars	Kadaknath poultry (Unit 50 birds)	Broiler poultry (Unit 50 birds)
A. Cost (Rs.)		
➤ Cost of Chicks for 50 chicks	2500=00 (Rs. 50/ bird)	1250=00 (Rs. 25/ bird)
➤ Cost of feed for 50birds in 1 cycle	0	0
➤ Cost of equipments (Feeder, drinker etc.)	200=00	500=00
➤ Cost of medicine and vaccines	0	400=00
➤ Housing cost	0	0
➤ Labour cost	0	0
➤ Marketing cost	0	0
➤ Transporting cost	0	0
➤ Miscellaneous cost i.e. electricity etc.	0	0
B. Total Cost (Rs.)	2700	2150
C. Benefits (Rs.)		
➤ Sale of birds of 1.5kg weight	45000	6000
D. Net benefits (Rs.) (D=C-B)	42300	3850
B:C Ratio	15.67	1.79

Impact of adopted technology in economic and social terms

- Enhance the income of small and marginal farmers up to 32000 per member
- More than 1500 farmers get employment

- High demand and Market price up to Rs 700 /kg of live birds
- It have higher survival up to 95%
- Kadaknath poultry have several medicinal values

Conclusion

The research has found that the project has played a successive role in empowerment of woman and uplifting of tribal farmer's. The importance of Kadaknath poultry farming for woman and tribal farmers especially in Dantewada district is very high, because prior to implementation of scheme in the district people were migrating to other states for earning they were looking for livelihood and the project has provided livelihood to the tribal people. It has covered 75 villages of the district where migration of the people has almost stopped. These days, a SHG's getting around 2.5-3 lakh income while in some region some group getting 3-3.5 lakh annually. In addition, consumption of Kadaknath meat provides nutrition and medicinal benefits to the rural people. Apart from it conservation of the breed has done successfully after initiation of the Kadaknath poultry farming project in the district. Now, Kadaknath breed have been recognizing at National level.

Suggestions

1. Mostly poultry farmers' following Deep Litter System of poultry farming but it has some negative and positive side, negative part could be changed as benefit by proper maintenance of poultry farm.
2. Maximum mortality of the chicks occurred due to cold season and inconvenient management of the farm but it can be checked by housing maintenance, vaccination, using of growth promoter, timely growth ration and convenient space management.
3. We need to monitor and surveillance of the farm in certain interval of time.
4. Kadaknath chicken being famous because of its various kinds of useful property and its eggs also has high amount of protein. Kadaknath breed does provide us both meat and eggs but the eggs remains small in size it may be due to least growth ration, absence of growth promoter etc. we need to maintain the proper diet of poultry for the fulfillment of eggs and chickens.
5. For better outcome from the Kadaknath poultry farming we need to spread out the breed in the entire region by demonstration or exhibition.

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