

Transforming backyard poultry farming

from subsistence to sustainable through high value Kadaknath poultry

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Backyard poultry farming is considered as the potential option for poor households to earn their livelihood sustainably and achieve nutritional security in NICRA villages. National Innovations in Climate Resilient Agriculture (NICRA) is a network project of the Indian Council of Agricultural Research (ICAR) launched in February, 2011. In Chhattisgarh, this project was operational in two tribal villages, viz. Bakulahi and Gudeliya of Balodabazar–Bhatapara district under the leadership of Krishi Vigyan Kendra (KVK), Bhatapara. Land and livestock are significant assets of rural households for livelihood. In order to improve nutrient availability of poor households in tribal villages of Balodabazar–Bhatapara district, Chhattisgarh, low input backyard poultry farming using high value Kadaknath poultry breed was introduced under NICRA project for supplementing the earnings of farmers.

Keywords: Backyard poultry, Kadaknath, NICRA, Tribe

KADAKNATH is an important indigenous breed of poultry and native of Jhabua district of Madhya Pradesh. The original name of Kadaknath is Kalamasi which means the fowl having black flesh, however, this name is not as popular as the present name Kadaknath. The Kadaknath bird reveals appreciable degree of resistance to diseases compared to other 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 can thrive very well under adverse environments like poor housing, poor management and poor feeding. It is the only animal to have a geographical indication (GI) tag in India. Kadaknath chicken offers abundantly rich levels of nutrition to humans. Kadaknath black meat has an intense and distinctive taste, and it contains more protein (approx 25%) than white chicken meat (approximately 18%). Rich in vitamins B1, B2, B6, B12, C and E, niacin, calcium, phosphorus and

iron, the fowl has a lower fat content of only 0.73–1.03% as opposed to the approximately 25% in other chicken breeds. Kadaknath meat contains 18 amino acids of which, eight are essential for the human body. Black meat is also considered healthier as it contains 24% linoleic acid, as opposed to the 21% in white chicken. Furthermore, the cholesterol content in Kadaknath is only 184.75 mg/100 g as opposed to the 218.12 mg/100 g present in other chicken varieties. These attributes make Kadaknath meat and eggs highly desirable.

Challenges

Backyard poultry farming is popular in the NICRA villages as it hardly requires any infrastructure set-up and is a potent tool for upliftment of the poorest of the poor. It has also been noticed that the demand for rural backyard poultry farming is quite high in tribal areas. Among the poor villagers, backyard poultry farming is an age-old practice where they keep mostly desi/indigenous birds

which scavenge in the backyard and nearby field with very little health care and management. The major challenge for backyard poultry farming identified by KVK Bhatapara in the villages was the lack of high value suitable poultry breeds. Existing available breed of poultry birds in the villages were vulnerable to extreme climatic conditions and various diseases. Extreme conditions are more vulnerable in backyard poultry farming due to non-availability of proper infrastructure and balanced diet. Therefore, it is necessary to popularize suitable poultry birds, which can thrive in backyard free-range conditions without expensive inputs like commercial feed, supplement and medicine etc. Predator menace, harsh and diversified climatic conditions, diseases, consumer preferences, lack of low cost nutrient rich feed etc are some of the major issues which need attention while popularizing suitable bird for free range backyard farming. Adapting rural poultry



Distribution of Kadaknath chicks to farmers of NICRA villages

farming in backyards of household can ensure the availability of eggs and meat in rural and under developed areas, which will help in alleviating the incidence of protein deficiency particularly in tribal areas.

Extension activity adopted

The project members evolved with one possible solution in the form of high value Kadaknath poultry bird to transform backyard poultry farming from subsistence to sustainable in NICRA villages. This poultry breed goes well with the local climate and can adjust even in the extreme weather conditions. KVK Bhatapara conducted group meetings with the interested and potential farmers, addressing their concerns and motivated them to adopt the high value poultry bird Kadaknath. After the continuous efforts, a total of 50 farmers from NICRA villages were ready to go

for this bird. KVK officials trained them for Kadaknath rearing and advocated on technologies for poultry management, homemade low cost balance feed and marketing. Kadaknath poultry was provided to the 50 selected farmers under the NICRA project. 50 Kadaknath chicks (25–30 days old) were provided to each beneficiary.

Impact

Backyard poultry farming is the secondary source of income and provides nutritional security for farmer family. Kadaknath poultry has been highly beneficial in terms of income and nutritional security for the tribal farmers of NICRA villages. The birds gained the saleable weight of 1 kg in average 170–180 days in backyard conditions. The farmers sold the birds at ₹600–700/kg body weight which is higher than other available poultry breeds in the villages (Table

Table 1. Economic indicators for backyard poultry with 50 chicks of Kadaknath

Indicator	Finding
Average mortality rate (%)	10
Total no. of chicks after mortality	45
Cost of production (₹)	9350
Net income (₹)	28000
B:C ratio	2.99
Net income generated in 6 months per farm family (₹)	28000

1). This bird is becoming popular in NICRA villages and other farmers are taking keen interest to adopt this bird in their backyard. Now more than 100 farmers of both NICRA villages and adjoining villages have adopted Kadaknath in their backyards, and some farmers have constructed low cost poultry sheds for rearing Kadaknath bird after this intervention was done.

Godhan Nyay Yojana, a first of



Chicks of Kadaknath bird



Kadaknath birds at backyards

its kind scheme was launched in all districts of Chhattisgarh on 20 July 2020. With implementation of this scheme, state government aimed to give a boost to rural economy and to create employment opportunities in the rural areas. Under this scheme, cowsheds were constructed in the protected area. Self-help groups (SHGs) conducted various income oriented schemes including the preparation of vermi-compost at these centers. District administration was the major controlling body for this scheme in the district. Officers from district administration visited Kadaknath units established by KVK, Bhatapara and were highly impressed. Hence, the district administration requested the KVK to provide trainings on Kadaknath poultry to SHGs of other villages of the district under Godhan Nyay Yojana to provide a profitable

enterprise. Thus, several meetings with SHGs were conducted by KVK officials in the operational villages under Godhan Nyay Yojana in which they were made aware and motivated to start a new venture with high value Kadaknath bird and add up to their income. After the hard efforts of KVK, Kadaknath poultry is successfully replicated at 2 villages of Balodabazar–Bhatapara district under Godhan Nyay Yojana at present, and SHGs of 5 villages are ready to go with this high value Kadaknath poultry. SHGs are practicing this poultry in low cost poultry sheds.

SUMMARY

The eggs and meat of Kadaknath birds reared in the backyard farming fetch higher premium due to high consumer acceptability even

in the urban sectors due to higher nutritional value. Backyard poultry production promotes income opportunities particularly for the weaker sections in the tribal areas. The backyard farming will certainly improve the economic status of a majority of rural/tribal families. Backyard farming fulfills a wide range of functions e.g. the provision of meat and eggs, food for special festivals, chicken for traditional ceremonies, pest control and petty cash, utilizing minimum inputs and minimum human attention. It can be concluded that backyard poultry farming with Kadaknath is a proven technology for doubling the farmers' income in tribal areas particularly in Chhattisgarh state.

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SUCCESS STORY

Innovative micro-integrated farming system model

IFS is an interdependent, interrelated often interlocking production systems based on few crops, animals and related subsidiary enterprises in such a way which maximizes the utilization of resources of each system and minimizes the negative effect of enterprises on environment. The land terrain of Meghalaya hilly regions does not give advantage to the farmers to conquer the idea in large scale. Mrs Valarie Maring belonging to NICRA village Kyrדם of KVK Ri-Bhoi has developed a Micro-Integrated Farming System model by utilizing her *jalkund*, poultry unit and high-tech polyhouse to an economically viable innovative model. She established a *jalkund* unit of size 5×4×2 cu. ft. with a capacity of 40,000 litres of water by lining the *jalkund* with HDPE for effective storage of rainwater during *kharif* followed by release of fish fingerlings of Indian major carps into the *jalkund* unit, construction of poultry shed with 40 numbers of dual-purpose *Vanaraja* breed of poultry which act as a source of nutrients and biomass for fish and establishment of a high tech polyhouse in convergence with District Horticulture Office, Nongpoh for growing of cut flowers gerbera which has an advantageous output in the tribal areas of Ri-Bhoi district. From this micro-integrated farming system model, she could earn a net income of ₹89,410/year of which Rs 20,400 from poultry meat, ₹22,300 from poultry eggs, ₹4,870 from fish, and ₹41,840 from Gerbera. The activities are complimenting in this micro-integrated farming system, mitigating negative environmental effect through proper recycling of nutrients and resources.

Source : ICAR Annual Report 2021-22