

EXTENSION FOR PROMOTION OF IMPROVED BACKYARD POULTRY



Promotion of improved strains of backyard poultry can potentially improve nutritional status and income of rural communities, if adequate extension support could be provided. However the focus has been more on the provision of subsidies than on the knowledge and skills, opines Drs M. Rajalakshmi, S V N Rao and K. Natchimuthu.

CONTEXT

Poultry Sector, besides providing direct or indirect employment to nearly 3 million people, is a potent tool for subsidiary income generation for many landless and marginal farmers. The sector also provides nutritional security to the rural poor (DAHD, 2011). The rural backyard poultry in India is contributing to about 30% to the national egg production (about 70 billion). Though losing its importance under the impact of commercial and contract poultry farming, modernization and industrialization, poultry farming is prevalent in the rural and tribal areas of the country (Ahlawat, 2013).



The main objective of the extension and advisory services (EAS) is to improve the decision-making capability of the farming community. The quality of decision-making depends upon the quality of information provided through the extension and the way the information is disseminated. Every technology needs certain conditions to show its worth. The weakest link in the promotion of livestock production technologies is poor delivery of technical inputs as well as EAS. The department of animal husbandry have monopoly on these services in all the states.

In association with ICAR, the Department of Animal Husbandry, Dairying and Fisheries (Government of India) has taken up a targeted programme to upgrade the traditional backyard poultry (Box 1). This programme is intended to give a fillip to the rural backyard poultry with an eye on improving the nutritional status and to supplement the income of the rural households. These initiatives resulted in the development and release of improved strains like Vanaraja, Krishibro, Krishilayer, Caribro, Carired, Gramapria, Naked neck broiler, Dwarf broiler, Swarnadhara etc.

These improved strains are currently multiplied and distributed among farmers through several programmes. The ICAR has also taken up initiative in propagating these strains under All India Coordinated Research Projects (AICRPs). The Directorate of Poultry Research Hyderabad, and the Central Avian Research Institute (CARI), Bareilly, are actively involved in these activities. Agricultural and veterinary universities in different states are also engaged in promoting the improved strains of backyard poultry.

Box 1: Promoting Rural Backyard Poultry

Promoting backyard poultry in rural areas is an activity under the National Livestock Mission, implemented by the Department of Animal Husbandry, Dairying and Fisheries (DAHDF). The Rural Backyard Poultry Development component covers beneficiaries from the BPL families. Chicks reared up to the age (6 to 8 weeks) where they can survive at the farmers' backyard are distributed to the beneficiaries, the cost of ceiling for which is Rs. 50 per chick during the first year. The beneficiary is also provided with a lump sum amount towards cages, night shelter, feeders, etc., for 20 birds (ceiling Rs. 1500/- during the first year). Establishment of mother units are allowed at State Poultry establishments as well as for beneficiaries with a revised Outlay of Mother Unit (fixed/ infrastructure) ceiling at Rs. 1,50,000 and subsidy 40% during the first year (The ceiling and subsidy may be reviewed if required in future). Operational credit-cum-subsidy may be availed under the Central Grower Unit component of Poultry Venture Capital Fund. Only low-input technology birds are propagated, the varieties of which are circulated by the Department from time to time".

While farmers adopting improved strains of backyard poultry need strong EAS support, they are often left in the lurch and there is nothing like EAS and Veterinary health care support for them (Box 2).

Box 2: EAS in the Poultry Sector

There are three types of poultry farming in India:

- i) **Commercial layer or broiler farming:** A large number of birds are maintained under intensive system owned by a single or group of farmers. As the stakes are very high, emphasis is on quality inputs including EAS which are always available on the farm.
- ii) **Contract layer or broiler farming:** In this type, the contractor owns lakhs of birds reared by several thousands of small farmers under intensive system in different locations. The contractor provides all the technical inputs and EAS free of cost to these farmers. The farmers are paid for their labour as rearing charges at the end of the production period.
- iii) **Backyard Poultry farming:** The farmers maintain few dual purpose birds (both for egg and meat) mostly local/desi under semi-intensive or scavenging system. Being a low-input and low output system, neither the Veterinarian provides nor the farmers demand technical inputs and EAS. These birds are not even protected against the most important Ranikhet disease, which accounts for high mortality of birds in rural areas. The contribution of the BYP to the total family income is not more than 5% which appears negligible to both the service provider and the service receiver (Rao and Natchimuthu, 2012).

The growth of commercial poultry production in the last three decades is phenomenal mainly due to the effective delivery of all inputs and EAS. The development of commercial poultry is confined to rich entrepreneurs concentrated in few districts. The per capita egg and chicken consumption are very high in urban and semi urban areas compared to rural areas. Although the annual egg production in India has gone up to 70 billion, the per capita consumption of eggs in rural areas (15 eggs per annum) did not go up mainly because of the low purchasing capacity. Reports showed that the consumption of eggs and chicken was high in families rearing improved backyard poultry strains (Sasidhar, 2009; Athilakshmy and Rao, 2013).



Rearing of improved BYP strains has potential to supply much needed animal protein and supplementary income to the rural poultry farmers. These birds are genetically superior in producing more eggs. The birds gain weight quickly and hence need extra care in their management which obviously demand effective EAS (Ahuja and Sen, 2007). KVKs in Northeastern states had good success in popularising improved strains like Vanaraja and Gramapriya (layer). But the success is limited to a few areas and that too depends upon the provision of EAS support.

The practice changes required to rear these strains are discussed in Box 3.

Box 3: From local birds to improved strains: What it means in practice?

In case of **local or desi birds** the brooding hen

- serves as a natural brooder,
- protects the chicks form predators, and
- induces the chicks to learn feeding on worms, seeds, insects, grains, vegetable waste etc. while scavenging and also drinking water, skill to escape from predators etc. The farmers who practice rearing of local birds need not depend upon other agencies for procurement of chicks (natural brooding and hatching), commercial feed, feeders, waterers etc., hence, this is considered as self-generating system.

When it comes to rearing of **improved strains of BYP**, the farmers have to acquire knowledge and skills necessary for taking **appropriate decisions** to exploit their production potential. These include aspects like **artificial heating/brooding** (readymade or improvised, temperature adjustments), **medication** (medicines, dosage and route of administration); **feeding** (completely on chick mash, completely scavenging or both (period of scavenging)); **watering** (readymade waterers or improvised), **housing** (type of housing, night shelter), Identification of poor growth or weak chicks and their management, **regular vaccination** (for which diseases and when), **control of mortality** (reasons for mortality – disease, predator attacks, poor management) **post mortem** of dead birds for proper diagnosis and control (whether to take the dead birds for post mortem or not, if yes where and how to get it done), **weighing the birds** at different stages (how to weigh, approximate required weights at different ages), **recording** of feed consumption and egg production etc. Different poultry farmers need different advice and also the knowledge or skill to practice.

This leads to what is referred to as practice change (Bennett, 1979) which is necessary to rear the improved strains of poultry. How to bring the changes in these practices? EAS should support farmers in taking good decisions related to all these practices, if the farmers have to benefit from this shift to improved strains.

BACKYARD POULTRY IN PUDUCHERRY

In Puducherry Union Territory, the distribution of Giriraja, an improved dual-purpose strain to the poultry farmers under the centrally sponsored scheme at a subsidised price is an ongoing programme for the past several years. Surveys conducted in two regions of Puducherry UT(Karaikal and Puducherry) revealed that almost all the poultry farmers who received Giriraja birds either sold or consumed before the birds reached the stage of egg production. Although they were distributed for betterment of the rural people, these birds were either sold or consumed before the birds reached the stage of egg production (Athilakshmi and Rao, 2013).

The Problem



The government departments or NGOs usually distribute 6 to 8 week old chicks of improved strains at 50–75% subsidy to the backyard poultry farmers. Many of these farmers sell these birds in the market for realising short-term benefits and thus compromising on the long-term benefits of eggs for household consumption and sale of adult birds for generating income. The

subsidy itself is considered as a gain by these farmers. Moreover, these farmers are neither given training on rearing of these birds nor provided with extension advice. The distribution of the birds is seen as an end rather than as a means to improve nutritional status and the source of supplementary income to the rural farmers.

The agencies which distribute these chicks depend on the field veterinarians and para-veterinarians for delivery of EAS and veterinary services. Although they are expected to provide these services, in reality, it does not happen leading to heavy mortality of birds (mostly unreported) inflicting severe losses to the BYP farmers as well as to the national exchequer. Compared to local birds, improved strains (for that matter any improved technology or practice) demand quality EAS and veterinary services for better performance. The improved strains require at least five vaccinations (five visits of a veterinarian) at different ages to protect the birds from Ranikhet, Fowl pox, etc. in addition to deworming and health care services. This is scrupulously followed in the contract and commercial poultry farms but not in BYP.

The institutions which are selling these chicks of improved strains usually have a high demand because these birds with coloured plumage were considered similar to desi birds and fetch better price than broilers. This is partly also due to the increasing health consciousness of the urban consumers who of late have started preferring coloured birds normally reared under traditional system.

Some of the pilot studies have shown that those farmers who purchased (not on subsidy) day-old chicks continue to rear up to the end of egg production period mainly because their family members developed attachment to the chicks and disliked slaughter of these birds for home consumption. In addition they could observe the potential of the birds to produce more number and large-size eggs compared to that of the desi birds.

ACTION RESEARCH

A study was undertaken to assess the impact of rearing Swarnadhara chicks (improved back yard poultry strain) on the rural households of Puducherry. The BYP farmers were provided with timely and reliable EAS to help them take appropriate decisions. The following steps were adopted in the research.

Selection of interested BYP farmers: The investigator (a woman veterinarian) had a series of group meetings in three selected villages with BYP farmers. In rural areas, BYP rearing is the domain of women folk. They were given information on comparison between desi birds and improved birds. The group meetings helped 137 farmers to take a *strategic decision* on rearing improved birds. Out of these, 65 farmers participated in the on campus training programme on their own cost. The training methods included direct exposure to different strains of improved breeds, method demonstration on artificial heating (as the improved strains of chicks will be without the brooding hen), litter management, feeding of chick mash etc. Printed literature in local language was also distributed to the trainees as reference material.



Procurement of Swarnadhara chicks: Fifty trainees paid the entire expenditure towards the cost of chicks, transportation and medicines (contrary to the usual practice of getting all the inputs free of cost or on subsidy). The investigator accompanied two group leaders who had an opportunity to see the hatchery and the activities associated with chick production at Bengaluru. The day-old chicks were transported to Puducherry by rail and road and 1863 chicks were distributed to the farmers as per their demand. This exposure enabled the farmers to understand the process of procurement and transportation of chicks to Puducherry. In this process the farmers acquired the skills of taking *tactical decisions*.

Monitoring the management of chicks: The investigator monitored the development of rearing chicks through personal contacts over phone and weekly visits to the poultry farms. During these visits, advice on various aspects (*technology management*) which are essential to help them take operational decisions on managing the chicks were provided. This technology management involves operational decisions – day to day activities. Most of these practices are not necessary when the farmers are rearing local chicks. Effective monitoring helped the poultry farmers in

getting the right advice at right time necessary to reduce the mortality and improving the efficiency of the birds. The investigator being a veterinarian not only provided the advice (information) but also the technical service (vaccinations, deworming, disease diagnosis, treatment etc.)

Marketing decisions: These birds being dual purpose could be used for both egg and meat production. The sample farmers of the study included those who purchased more number of chicks (ranging from 50 to 200) for sale at the age of 8 to 16 weeks for meat purpose and those who purchased in small numbers (less than 20) for egg production. All the farmers were advised to maintain records of feed consumption, vaccination and deworming mortality, egg production and other cost parameters. These records were checked by the investigator during her weekly visits. Economics of rearing birds for sale was also worked out at different stages to guide the farmers on the appropriate time to sell the birds in the market, which usually fluctuates depending upon the season and supply of the birds from neighbouring states (Tamil Nadu and Andhra Pradesh).



IMPACT

Though this research started with 50 households in eight villages, in a span of one year, 97 households spread over 24 villages in Puducherry started rearing Swarnadhara birds. Out of these, 29 households were purchasing chicks in multiples of hundreds. These farmers sold their birds at an average price of Rs. 225 per bird with a range of Rs 150 (8th week) to Rs.450 (40th week). These farmers were purchasing the chicks regularly (once in a month) from Bengaluru and over a period of time their dependency on the investigator was almost negligible.

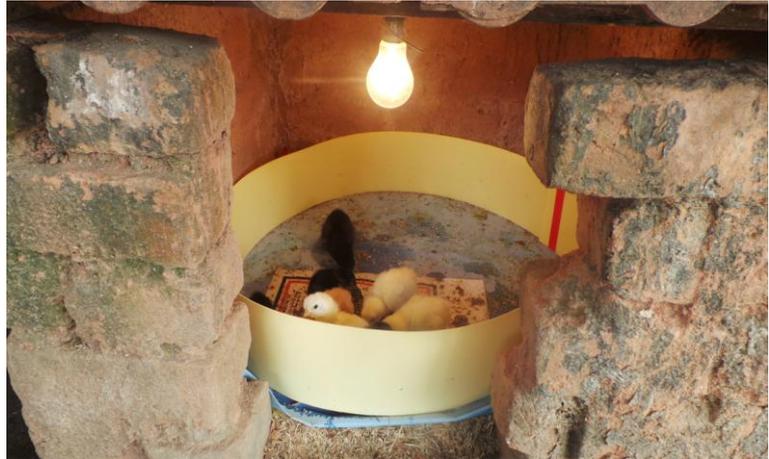
Thirty-seven households purchased chicks (less than 20) for egg production that too for household consumption. The farmers who purchased chicks for egg production realised the potential of the birds in producing big brown eggs which usually are sold as desi egg in the market for Rs.10 per egg. Only one farmer sold the eggs to her neighbours, whereas the rest either consumed the eggs or gifted to their neighbours and or friends. These households consumed a total of 3,978 eggs produced during 10 months period (August 2014 to May 2015).

Through effective EAS, the poultry farmers acquired the knowledge and skills necessary for rearing the chicks from day one. The farmers are continuously purchasing day old chicks (without any subsidy) and seeking EAS suggestive of the positive and sustainable impact of rearing improved strains of BYP. The entire expenditure on these inputs and services are met by them that too in a place like Puducherry, where the people are tuned for subsidies and freebies.

The egg production and consumption of eggs at household level has gone up among the BYP households. Almost all the farmers used eggs for household consumption confirming thereby that the farmers tend to consume eggs produced in their farms (backyard) rather than purchasing and

consuming eggs. Except few, most of the farmers did not slaughter the birds and reared them for egg production.

The spin offs of such initiatives have a major impact on the diffusion of technology in several villages with more and more BYP farmers started rearing improved strains of poultry. The investigator and the students of veterinary college are providing the EAS including veterinary health care to the BYP farmers who are purchasing these chicks. To sustain the gains and to enlarge the area of operation it is contemplated to train the BYP farmers or SHG leaders or barefoot doctors to provide these services.



CONCLUSIONS

Supply of day-old chicks rather than 6- to 8-week old chicks to the interested and trained farmers helps to improve the nutritional status through consumption of eggs in the rural areas. There is no point in wasting resources on subsidies as the BYP farmers are ready to pay for the supply of inputs and services provided supply of inputs and services is regular.



Effective extension and advisory support, is critical for the successful rearing of improved strains of BYP. Hence, it is necessary to ensure the supply of inputs and EAS before embarking on any BYP development programme. The conditions identified as essential for the successful rearing of improved strains are as follows:

- Selection of interested BYP farmers
- Regular supply of quality chicks and feed
- Prompt delivery of inputs (training, vaccines and medicines) and technical services

- Effective delivery of EAS and proper monitoring of the birds
- Remunerative market for improved birds (similar to that of desi birds)
- Sufficient backyard area with good food base for scavenging
- Capacity and willingness of farmers to purchase and feed chick mash for the first six weeks and
- Good neighbours (as these birds quite often soil the neighbours' premises with droppings).

The present investigation serves as a guideline for all those involved in promoting BYP for improving the nutritional status and to supplement the income of the rural poor.

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Drs M. Rajalakshmi, (mraji@rediffmail.com), S V N Rao (svnrao1953@gmail.com) and K. Natchimuthu (natchimuthuka@gmail.com), are working as Training Assistant; Professor & Head; and Associate Professor respectively at the Department of Veterinary and Animal Husbandry Extension, Rajiv Gandhi Institute of Veterinary Education and Research(RIVER), Puducherry, India.

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