

Small Ruminant Rearing in Jammu and Kashmir- A Brief Overview

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INTRODUCTION

High mountains, low hills and vast meadows in Kashmir provide enormous scope for small ruminant rearing. Further, sheep and goat rearing is the core occupation of many tribes viz; Gujjars, Bakerwals, Chopans, Gaddies and Changpas (Rather et al., 2019). Small ruminants (sheep and goat) play an important role in economy of Jammu and Kashmir. Thousands of poor marginal farmers and land less labours depend upon sheep and goat farming for their livelihood in J and K. The sheep and goat farming is a source of revenue for poor rural communities. It acts as cushion during crop failure and provides nutritional security to farmers at times of crises. Despite of these paybacks associated with sheep and goat farming, the sector in J and K is not exclusive of constraints. Therefore, this article explores the present status and constraints in small ruminant production in Jammu and Kashmir.

Importance of small ruminants of J&K

J and K is rich repository of sheep and goat genetic resources. Among the 43 registered breeds of sheep in the India; J&K contributes 6, viz. Bhakarwal, Changthangi, Gaddi, Gurez, Karnah and Poonchi and many other nonregistered breeds like Gaddi, Malluk, Purgi etc (Rather, et al., 2019). Similarly Gaddi, Purgi, Bhakarwal, Kashmiri and Changthangi are important goat genetic resource of J and K. The overall sheep and goat population of J and k is 3.248 and 1.730 million, respectively (Anonymous, 2019). The silent features of small ruminants of J and k are outlined below.

1. They provide high quality protein through milk and meat.
2. Provide hides, bone and valuable organic manure.
3. The production of *pashmina* shawls, carpets and blankets of Kashmir earn handsome foreign exchange.
4. They possess traits of adaptation to the harsh agro-climatic conditions and management conditions and traits for disease resistance.
5. They are easy to manage on low inputs.
6. These convert low quality feeds/ fodder in animal products (meat, milk, etc) efficiently (Rather et al., 2020 b).
7. They are also preserving the cultural and historical values hence sustain the inheritance value of livestock (Ganai et al., 2016).
8. They are backbone of any agrarian economy.

Constraints: Non-availability of feed and fodder particularly during winter months is important constraint (Khan et al., 2013) in small ruminant rearing in Jammu and Kashmir. Further, other constraints include low productivity, small flock size and lack of cooperative farming/ breed society. Further, sheep and goats are managed by weaker sections of society. Lack of scientific breeding programs, unhygienic and ill ventilated housing and unhygienic condition of the livestock can't be ruled out. Inaccessibility of farmers to pastures, overexploitation of pasture lands, depletion of forests and high costs of feed and fodder are among the major constraints which obliged farmers to restrict flock size to minimum numbers. Constraints to goat rearing farmers include non-availability of good breeding bucks and slaughter of elite breeding stock. Shrinkage of pastures due to encroachment and changes in horticulture practices like plantation of high density apple trees add to the constraints perceived by sheep and goat rearing communities. Poor health coverage, non-availability of veterinary hospitals/facilities in the remote areas and unawareness of farmers about livestock

management add to constraints. The data recording is non-existing and no data base is available. Poor credit facilities Khalidet et al. (2014), high costs of feed and fodder, poor accessibility to veterinary services, inadequate capital resources, poor infrastructure, lack of sufficient funds, improper implications of existing schemes/ policies, poverty and illiteracy (Shah et al., 2018) are also among constraints. As such many of the existing sheep farmers are forced to shift to some other occupations therefore, discouraged new entrants into the profession (Shah et al., 2018). Inadequate extension activities for transfer of technology and communication gap between the traditional communities and concerned administrative units add to the scenario (Shah et al., 2018). Long and harsh winters and high feed and fodder costs. The mortality is a drag on litter size and number of lambs sold per ewe (Bashir et al., 2020) and therefore, has negative impact on income of poor farmers. Haphazard or indiscriminate crossbreeding has endangered indigenous sheep breeds of J&K. Therefore, conservation of local sheep breeds in particular Guraz and Karnah sheep is highly recommended and cross breeding should be restricted to nondescript population and abstained in breeding tracts of these breeds. No goat development or up gradation programme/ policy in vogue. Sheep Husbandry Department has considerably improved wool production in terms of quality and yield but the augmentation in mutton production is not impressive owing to poor genetic potential of available genetic resources for mutton traits.

MAJOR REASONS OF LOW GENETIC IMPROVEMENT

Livestock improvement encompasses genetic improvement of genotypes through breeding and selection to ensure their sustainability. The term "livestock improvement" is used to denote improvement of productivity or economic performance of individual animal (Nimbkar & Ghalsasi, 2012) or flock. Good quality, reliable data on breeds maintained at sheep breeding farms is prerequisite for

formulating appropriate improvement policies. Currently, the accurate data is not available. Further, the minimum time period required for a genetic improvement programme has to be at least 10 to 15 years and such programs require strong institutional support. Closed flocks of small size maintained at sheep breeding farms suffer from inbreeding depression and genetic drift. Inbreeding is usually associated with the appearance of genetic defects and a general decline in vigour and performance (Mandal et al., 2004; & Ceyhan et al., 2011), decrease lamb survival (Lamberson & Thomas, 1984) and deleterious effect on additive genetic variance as well as on phenotypic values (Falconer & McKay, 1996). The amount of genetic improvement in the breeding programme depends on the accuracy of selection, the intensity of selection and the generation interval. However, in small populations there is low genetic variation, reproductive efficiency, intensity and accuracy of selection. In addition to lack of awareness, non-availability of proven sires, small flock size, lack of infrastructure, high mortality is high and non-availability of records are some reasons behind the no genetic progress. In J and K, small flock sizes, large fluctuations in rearing conditions and management between flocks, and over time within a flock, lack of systematic livestock identification, inadequate recording of livestock performances and pedigrees, and constraints related to the subsistence nature of livestock rearing (where monetary profit is not the most important consideration), the accuracy of selection will be much lower, resulting in even lower rates of genetic gain.

Interventions suggested

1. The data management should be digital with cloud bases portal for real time data analysis.
2. Introgression of Fec-B gene in sheep can used to increase litter size and number of lambs born per ewe.
3. Continued improvement of non-descript and improvement along with conservation of purebred stock is highly recommended.
4. However, increasing genetic worth and number of lambs born per ewe per year along is not sufficient for improving production potential of native breeds. Therefore, a multidimensional program should be framed and strictly adopted for augmenting small ruminant production. Therefore, fodder nursery should be established for production and transplantation of improved varieties of legumes and herbs. Seed production stations should be developed for self sufficiency in seed availability.
5. Clean drinking water facilities should be provided to livestock.
6. Disease control programs through adaptation of proper and timely dosing and vaccination regimes need to be adopted.
7. Establishment of effective diagnostic centers and identification of effective medicines for treatment requires top priority. Non-conventional feed and fodder resources should be utilized.
8. Housing improvement for livestock keeping in consideration proper drainage and ventilation.
9. Wastelands should be developed and used for fodder production.
10. Extension activities should be strengthened desired information should be provided to the farmers in the form of printed leaflets and mass media. Educating the farmers regarding importance of balanced feeding, disease control and breeding should be a routine practice.
11. Improvement in housing by way of providing proper drainage, ventilation and bedding material particularly during winter (Khan et al., 2013).
12. Development of entrepreneurship among the rural youth should be encouraged. Marketing facility should be developed for livestock and livestock related products.
13. A strong need based research and development support for transfer of technology is highly recommended.

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