



DIFFERENTS LIVESTOCK REARING MANAGERMENTAL PATTERN IN INDIA: A REVIEW

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ABSTRACT

In India majority (70-80%) of the livestock produce is contributed by the poor landless, marginal and small farmers. which indicates its high potential of generating employment and income, especially to the poor and unemployed youths and women. An official records and statistics often undermine the overall contribution by animals, as they overlook the multi-purpose role that animal resource has in agricultural production. The basic principles of livestock management practices are feeding, breeding, housing and health care are major elements in increasing dairy animal production. Livestock has immense role to meet the nutritional gap and play a major role in overcoming seasonal income variability and availability. In India, incomes from livestock farming account for 15–40% of total farm household earnings. Supporting the economically weak and specially women to properly raise animals can have a good impact on their income, social status and the local environment. A mixed crop-livestock system is a dominant form of agricultural production in India where livestock provides food for household consumption, draught power, manure and fuel. Livestock in return are generally provided with crop residues and by-products for their sustenance. Livestock also act as store of wealth, insurance to agriculture crisis and a tool for socio-economic development particularly for the small holders and landless.

KEY WORDS: Socioeconomics, Livestock, feeding, breeding, health.

INTRODUCTION

Dairying is a crucial component of Indian livestock sector and milk being a valuable agricultural produce. Overall development, sustained income growth and rapidly growing urban population have fueled rapid growth in demand for milk and milk products (Kumar *et al.*, 2011). Milk is the main output of livestock sector accounting for 66.7% of the total value of output of livestock. The basic principles of livestock management practices are feeding, breeding, housing and health care are major elements in increasing dairy animal production. The India inefficiency in milk production is the rule rather than exception (Rajendran and Mohanty *et al.*, 2005; Delgado *et al.*, 2008). Annual milk production could increase more rapidly if milch animals were only properly fed and given better health care that has been evidenced in co-operative dairy network under Operation Flood. Majorities (80%) of the dairy farmers are small, marginal and landless laborers who produce 70% of India's total milk produce (Kumar, 2012). In India majority (70-80%) of the livestock produce is contributed by the poor landless, marginal and small farmers (Walli *et al.*, 2012), which indicates its high potential of generating employment and income, especially to the poor and unemployed youths and women. An official records and statistics often undermine the overall contribution by animals, as they overlook the multi-purpose role that animal resource have in agricultural production (Sansoucy *et al.*, 1995).

Socioeconomics profile of different livestock farmers

Personal

Socio-economic profile of dairy farmers may influence the adoption and scientific management practices for dairy cattle rearing. Information regarding socio-economic

profiles of dairy farmers like age, sex, education, landholding, *etc.*, and their relation with dairy management practices has been reported by various authors summarized as follows:

The majority of the livestock farmers were in the age group of 40-50 years to the findings of (Gurav *et al.*, 2014; Raut *et al.*, 2014) in Kolhapur district. (Shinde *et al.*, 2011) who also reported majority of 89% of male respondent in comparison to female were only 11% in Solapur district. (Thombre *et al.*, 2010; Mande *et al.*, 2008), who also reported that majority of dairy owners, had agriculture as primary occupation to get income. (Desai *et al.*, 2012) in Satara and (Gurav *et al.*, 2014) in Kolhapur district of Maharashtra were reported that dairy owners had a family size of 5.38 ±0.50. The (Gurav *et al.*, 2014) reported in Khoalpur area that only 55% farmers have secondary education in this district of Maharashtra.

Land holding

(Pushpa, 2006) were reported that in western Maharashtra farmers have irrigation source, mainly river, tube well and upon applying conversion factor of one acre of irrigated land is equivalent to 2.5 acres of dry land, and so dairy farming is most developed in this area of state. (Desai *et al.*, 2012) in Satara area above 4 hector land holding big farmers was 89%. (Raut *et al.*, 2014) who reported that maximum farmers in semi medium landholding capacity its 2- 4 hectare in Maharashtra. (Gurav *et al.*, 2014), who reported an average landholding of 0.51-0.80 acre/ family in Kolhapur district of Maharashtra. (Shinde *et al.*, 2011) reported that was 28% of livestock owner have 3-5 herd size in Solapur area. Majority of dairy farmers had medium herd size a finding was reported by (Kale *et al.*,

2011) in Satara district. (Shinde *et al.*, 2011) reported that in Solapur area 13% of land is under fodder cultivation and here 90% of milk animals were buffaloes 21% HF.

Existing livestock rearing practices among the farmers

Housing management practices

Basic concept of housing is that it should normally buffer the extremes of climatic condition to lower peak stress on animal. It should also create a microenvironment inside the animal house, which protects the animal from stressful environment. Due to huge diversity in Indian climatic and topographic condition, housing need of the animals is different (Thomas and Sastry, 1991) in different areas. Housing requirement of animals in India is given least care and importance

It was observed on separately keeping dairy animals up to 89% by (Sasane *et al.*, 2012) in Palus taluka of Sangli district. (Sinha *et al.*, 2009b) reported that 63.33% dairy owners in rural area of Bareilly provided bovine shelter that was part of the residence of the owner. Singh *et al.* (2015) observed that the shed were with Kachha floor and thatched roof is 75% in Jharkhand. (Roy and Nagpaul, 2007) who reported majority of cattle sheds to be with no walls, probably due to difference in place and periods of study. (Shinde *et al.*, 2011) who reported that in Solapur area, buffaloes were mainly reared for family milk and fuel requirement. (Sasane *et al.*, 2012) reported that the 61.22% of animal sheds in rural areas of Kolhapur district were provided optimum floor space to the animals housed. (Deoras *et al.*, 2004) observed that higher number (98%) of animal shed had mud floor in rural areas of Rajnandgaon city of Chhattisgarh. But in urban areas only 47.1% of animals shed had mud floor, significantly higher number of (47.1%) of sheds had concrete floor and 5.5°A had brick floor. They also found that the majority of animal sheds in rural areas had improper drainage, whereas, in urban areas 17.2% were using two row system. (Grewal *et al.*, 1982) reported the lower growth in buffalo calves reared on dirt or kuccha floor against brick paved floor.

(Malik *et al.*, 2005) reported in Uttar Pradesh that sizeable number of landless agricultural labour category were sharing their family accommodation with animals and bore well or hand pump was the main source of drinking water for animals.

Feeding management practices

Dairy industry in India faces acute shortage of feed supplies which causes low productivity and deficiency in animals. Inadequate nutrition is the single largest factor responsible for low milk production. Scarcity in concentrate feeds, green fodder and dry fodder in country limits the exploitation of the genetic potential of the animals, causing low production. Unscientific feeding practices, lack of knowledge of balanced ration etc., is a great obstacle in path of achieving optimum production (Bidwe *et al.*, 2009) who also reported that 42.33% of the dairy farmers in Buldhana district of Maharashtra were provided green fodder to their animals throughout the year. (Biswas, 2014; Verma *et al.*, 2007) who reported that both *desi* and crossbred cattle were fed on a basal diet mainly of rice straw throughout the year in Gangetic plains of West Bengal. (Kale *et al.*, 2011) stated that majority

(90%) of dairy farmers in Kolhapur area farmers fed concentrate regularly to their animal's individual, majority fed compounded concentrate mixture and Feeding on milk yield was the major criteria for concentrate allowance to the lactating animals. (Shinde *et al.*, 2011), who stated that only milking, cows and bullocks were provided with half to one kilogram of concentrate in Solapur district. (Sasane *et al.*, 2012), who reported majority 100% of farmers in Palus thasil of Sangli district to feed the conc. mixture, farmers feed mineral-vitamin supplements for few days just after parturition or erratically as and when the milk production went down

(Shinde *et al.*, 2011) reported that in Solapur district, of availability of green fodder is 41.00%. And low availability of green fodder. (Kale *et al.*, 2011; Sinnha, 2006) who reported that ingredients like oil cakes, broken grains, mineral mixture *etc.*, were often farm produced or were bought from market. (Malik *et al.*, 2005) revealed that milk production was the major criteria adopted by most of the respondents for feeding their animals. Availability of feeds and fodder.

Calf rearing management practices

Calf management practices are important aspect of dairy cattle management as a whole. Calves are considered as future herd. Calf-hood stage is crucial as it has direct effect on the future productive performance of the animal. No immediate gain often leads to negligence in calf rearing by farmers. Proper management and care of animals help to exploit the full potential of the animals at maturity

(Sasane *et al.*, 2012; Rathore *et al.*, 2010) reported that all the farmers cared of calf at the time of calving. (Sasane *et al.*, 2012) in Sangli and (Singh, 2015) in MP districts farmers practices were feeding of colostrum within 2 hours of birth. (Sasane *et al.*, 2012) who reported that the practice of deworming done was 83.63% of the cattle owners in palus thasil of Sangli district. (Singh *et al.*, 2015) in MP 78.33% and (Wani *et al.*, 2009) who reported a higher percent of farmers practicing vaccination of calf. (Thakur *et al.*, 2012) reported that newborn death due to diarrhea was an important health issue in Himachal Pradesh.

(Khatik, 1994; Meena *et al.*, 2008) reported that majority of the respondents consulted priest or local quack or self-medication was the main practice for sick animals. A very few of the respondents called Veterinary Doctor or Stockman for the purpose of treatment of their sick animals. (Kokate, 1984) in Maharashtra reported in their study that majority of the tribal respondents did not practice colostrum feeding, naval cutting and dehorning. (Bagga, 1967), reported in the villages of Hissar district that first suck to the calf was allowed by a majority between 2 and 3 hours after birth. Some respondents did not allow the calf to suckle till the placental membranes were removed. Some allowed the calf to suckle colostrums believing it to be energy giving. Some extracted some quantity of it before allowing the calf to suckle. (Antony and Thomas, 1997) observed that the farmers left more milk in the udder at the end of milking or allowed the calves more time with the mother cow if the calf was female in Southern Kerela.

(Malik and Nagpal, 1999) found in Haryana that 94.4% of the respondents attended the newly born calf and only 85.6% followed the practice of ligating/ cutting and disinfection of navel cord. They also found that buffalo keepers provided bedding material on floor (91.7%) and put on jacketing (80.6%) to protect the young calves from severe cold during winter season. Singh and Singh (2000) observed in rural Haryana that majority of the respondents go for suckling practice up to 6 months age of calf.

(Mudgal *et al.*, 2003) observed in Madhya Pradesh that on the basis of nutrients the most Neglected category was of calves where 46.7% cow calves and 57.1% of buffalo calves were not supplied their DM requirement. The DCP supply was deficient in 80% cow calves and 92.9% of buffalo calves.

Reproduction

(Singh *et al.*, 2014) was reported that were 48.50% of dairy farmers confirming their animal in heat on the basis of bellowing in Madhya Pradesh. (Kumar *et al.*, 2014), who also reported that majority 94.25% of farmers practiced natural service in Madhya Pradesh. (Kokate, 1984), reported that majority of the respondents (76.00%) could identify a cow in heat by observing the symptoms like bellowing, mounting on other animals and frequent urination. Further, it could be observed that majority of tribal cattle owners (66.00%) diagnosed pregnancy in the advanced stage through external appearance. Major constrains regarding feeding of dairy animals among tribal dairy owners of South Gujarat were repeat breeding (81%), low conception rate through AI (54.5%), belief that per rectal pregnancy diagnosis leads to harm the pregnant animals etc., as reported by (Sabapara *et al.*, 2012).

Health management

Sound health is one of the most important factors for getting optimum production. So, a need in following modern scientific treatment and preventive measures needs attention. However traditional/ ethno-veterinary medicines that are potential and foolproof should be highlighted and continued. (Kumar, 2014) observed that HS vaccination was carried out by farmers 26.75% in Madhya Pradesh and (Sasane *et al.*, 2012) reported that in Kolhapur only 15.45%. (Kumar *et al.*, 2014) reported in their study in Madhya Pradesh 30% of farmers to consult the local assistant first and lastly veterinary doctor. (Biswas, 2014; Rathore *et al.*, 2010) who reported that 34.32% and 91.75% of farmers in West Bengal and in Churu district of Rajasthan leave the carcass as such in the open river/area.

Milking management

India ranks first in milk production with a production of 121.8 million tons (estimated milk production 2010-2011, BAHS, 2012). About 70% of the milk is produced by landless laborers, marginal and small-scattered farmers in rural areas or unorganized sector with poor infrastructure and accessibility of marketing. Milk being a perishable commodity requires quick delivery for marketing and processing. Proper marketing plays important stimulating role for milk production and growth of dairy industry. Major portion of the milk marketing is in the hands of middlemen and unorganized sector while only small

portion is marketed through milk cooperatives in organized sector. Unorganized marketing leads to flow of profits of the milk producers into the clutches of the middlemen and other intermediaries. Betterment and strengthening of the marketing infrastructure will help the producers to get remunerative price of their produce directly.

It is also reported that Maharashtra state generates an about 1.6 crore litres of milk every day, out of which Kolhapur district of western Maharashtra alone is producing about 20 lakh litres of milk. As against this, Vidarbha region produces only 80,000 litres of milk per day (Khode *et al.*, 2009). In Konkan livestock rearing and fishing are the other flourishing agricultural practices. In livestock, the concentration is mainly on small animals Dhangar and Maratha communities rear the Konkan Kanyal goat for meat, (Anurudh K Singh, 2014).

Age at first breeding of cattle and buffalo were as in case of buffalo 36.40, (Shinde, 2011) and who reported that 88% of the milk produced in Solapur district is marketed cooperative in irrigated area. (Sasane *et al.*, 2010) who reported majority 100% of cattle keepers milked their animals at the same place after cleaning of teats and udder. (Sasane *et al.*, 2012) who also reported in Kolhapur 84.55% of dairy owner used clean utensils and 53.64%, of dairy owner required more than 7 minute for milking time. (Atawade *et al.*, 2005) concluded in rural areas of Akola district that in the total cost, the variable cost was the major item of cost, which accounted for 90.4% and the share of fixed cost was 9.6%. (Bardhan *et al.*, 2005) observed in Tarai area of Uttaranchal that feed cost constituted the 66.5% of total maintenance costs and 16.8% of total maintenance cost as labour expenditures. Besides, these items of costs, veterinary expenditures, depreciation and interest on fixed capital contributed 3.7%, 5.6% and 7.5% to the total maintenance costs respectively. The also found that returns occurred mainly from the sale of milk (97%). Sale of dung contributed minute amount to total returns from buffalo enterprise (3.3%). And it concluded in Uttaranchal that present status of milk production from indigenous cattle is a highly unprofitable and unviable proposition. They also reported that, the farmers, in spite of poor genetic potential and low productivity of the animals, were using various resources in excess amount, which in turn pushed up the production cost.

2.3 Milk and their economics

(Khode and Sawarkar, 2009) in their study of Vidarbha Development Programme Package found that majority of beneficiaries 65.12% had secured medium awareness of improved dairy cattle management practices; while 18.60 per cent and 16.28% of beneficiaries had low and high awareness of improved dairy cattle management practices, respectively.

The most of milk collected from in rural area farmers by keeping one or two dairy animals reported by (Vaidyanathan, 1988). (Kumar, 1995) the 42.5% marginal farmers have land holding up to 2.5 acre. Majority 45.71% farmers were having small herd size up to 16 to 22 animals reported by (Kannan, 2002; Rao *et al.*, 2000; Das, 2010) A Lactation milk yield for indigenous cattle ranges from 457kg to 1830kg/ per lactation A dairy farming in Assam reported that average lactation yield of 215.96 ±6.62 liter

in indigenous cattle. (Prakash, 2009) In Haryana reported that avg. lactation length for local cattle was ranged from 7 to 8 month. (Biswas *et al.*, 2014) A Majority of the farmers practiced two times milking with used clean wide mounted milking pails. (Malik *et al.*, 2005) The Most commonly used method of milking was knuckling by 70% were as full hand milking was followed by only 24%. (Biswas *et al.*, 2014; Singh *et al.*, 2013) Majority 62 to 78% of farmers marketed their milk to the middleman or sweetshops. (Sinha *et al.*, 2006), Total milk production cost per liter was 10.3, 10.4, 9.9, 11.1 and 11.8 Rs for landless, marginal, small, medium, and large farmers respectively and a profit per liter milk was Rs. 1.4, 1.1, 2.4, 0.8, and 0.7 for landless, marginal, small, medium, and large farmers respectively.

CONCLUSION

The study will help in identifying the socio-economic characteristics of farmers in the research area apart from the existing livestock rearing practices followed by farmers. The study will identify awareness among respondents about improved livestock rearing practices as well as help in identifying and prioritizing the constraints faced by farmers. This information will helpful for policy makers, government, NGO, concerned professionals, and other agencies working on cattle husbandry and rural development and will help in strengthening of development initiatives by different organizations and departments including government. The study reveals different managemental practices followed by dairy farmers in India and the gaps from the standard practices, the findings give a view of the current scenario of cattle rearing. In the first place, the dairy farmers directly contribute significant economic value to the country in the form of wool, milk, meat and other animal products.

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