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Review Article

Adoption of Improved Dairy Practices by Dairy Farmers

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Abstract

Dairy farming is one of the most important economic activities in Uttarakhand state, and is closely intervened with farming systems.Traditionally, a significant importance is attached to animal husbandry in this region. According to Uttarakhand Dairy Development Board, milk production in state has increased steadily. Milchcow and buffalo are reared at all altitudes and they have high potential to develop dairy farming. Milk production in the state is 1741(000 tonnes) in the year 2017-2018 and per capita availability 447 gms/day.Various measures have been taken by the Government to develop dairy business and livestock farming. Present paper aim is to discuss the status of dairy farming in India.

Keyword: Dairy farming; status.

INTRODUCTION

"India's place in the sun would come from the partnership between wisdom of its rural people and skills of its professionals"-Dr. VergheseKurien. The Indian Agricultural system is predominantly a mixed crop-livestock farming system, with the livestock sector supplementing farm income by providing employment, draught animals and manure. India has vast resources of livestock, which plays an important role in National economy and socio economic development of million of rural households. **Sabapara *et al.* (2014)** concluded that majority of the dairy farmers were middle to old aged, literate, nuclear type of family having more number of children and have medium level of extension contact. **Ahuja *et al.* (2016)** revealed that majority of the respondents were middle aged, literate having nuclear family with medium family size, small land holding, some were landless with small and medium herd size, low extension contact, low media exposure and very low social participation.In India the significance of animal husbandry in the Indian economy arises also becauseof its assistance to deal with the serious problem of unemployment and under employment forweaker section in the country and for providing subsidiary occupation. In an integrated system,crops and livestock interact to create a synergy, with recycling allowing the maximum use of available resources. Crop residues can be used for animal feed,while livestock and livestock by-product production and processing can enhance agricultural productivity by intensifying nutrients that improve soil fertility, reducing the use of

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chemical fertilizers and on the other hand, milk, meat, wool, egg from livestock ensures steady source of income to rural households.

DAIRY FARMING IN INDIA

Dairy farming is recognized as an instrument for social and economic development. Dairying is a potential source of gainful employment, creating additional income to rural people, particularly landless farm labourers, marginal and small farmers who are resource deficit. **Kalaivani *et al.* (2017)** revealed that majority of dairy contract farmers were male, marginal farmers were from nuclear family and belonged to old age and low income group. **Dipu *et al.* (2019)** revealed that the peri urban small and marginal dairy farmers are not full dependent on dairy farming for income and young people are less interesting in dairy farming as well. The livestock, specifically dairying is highly integrated with crop production. More than 75 percent of the farmers keep 2-3 milch animals for survival of their livelihood. **(Gaikwad, 2021)**.

World milk production during 2018-19 was 843.75 million tonnes. India is largest milk producing country having 17 million tonnesmilk production in 1951 to 187.7 million tonnes in the year 2019. India accounting for more than 22 per cent of the World milk production and per capita availability of milk in India is 394 gms/day. Out of the total milk production in India, about 48 per cent milk is either consumed at the producer level or sold to non producers in the rural India and the 52 per cent of the milk is marketable surplus available for sale to consumers in urban areas. It is anticipated that India needs around 600 million tonnes of milk per year to fulfill the demand for milk and milk products. This means that India's milk production needs to grow at around 3.2 per cent CAGR for the next 40 years according to **(Ramsinbhai 2019),** FICCI paper on development of Dairy sector in India.

The rapid growth of milk production is mainly because of the increase in the number of animals rather than improved productivity and the low productivity is due to the reason that people do not adopt improved dairy farming practices at the desired level.

Over the decades the country has witnessed significant changes in Animal Husbandry Management in country. The credit of this by and large goes to the network of public and private institution involved in bringing out improved dairy practices. In India dairying is recognized as an instrument for social and economic development but, in spite of several years of efforts, the pace of development is not uniform in different parts of the country **Patil *et al.* (2009)** stated that majority of the respondents 72.44 per cent stated their constraints as low milk production from local breeds, 45.33 per cent as shortage of green fodder and 41.33 per cent as lack of clean water while 25.33 per cent stated lack of preservation facility as their constraint in adoption of improved dairy farming practices. **Dhaka *et al.* (2017)** revealed that lack of knowledge, poor extension support, poor credit support, lack of proper communication system, high cost of inputs, and lack of conviction were the major constraints perceived by the farmers in adoption of improved dairy farming practices.**Meena *et al.* (2017)** concluded that non availability of livestock extension officers, veterinary doctors, preference of natural services are the constraints in adoption of improved dairy farming practices.**Rajadurai *et al.* (2018)** revealed that the major constraints faced by the dairy farmers were high cost of concentrates, low price of crossbred cow milk, shortage of land, repeat breeding for adoption of improved dairy farming practices. **Rajpoot *et al.* (2018)** stated that low price of milk and milk products, lack of technical knowledge, high cost of construction, no vaccination against contagious diseases and lack of loan facility were major constraints in adopting improved dairy farming practices. **Rathva *et al.* (2019)** stated that high cost of feed, lack of insemination facility in time, high cost of production of milk were the major constraints perceived by the dairy farmers. **Minhaj *et al.* (2020)** revealed that lack of finace, inadequate housing, lack of proper knowledge of milk production, high cost of feed supplements, poor conception rate of A.I. and high cost of treatment were the major constraints faced by dairy farmers in adoption of improved dairy farming practices. **Sharma *et al.* (2020)** revealed that the majority of dairy owners 78 percent were not adopting the scientific feeding parameters due to poor technical knowledge and lack of training, unawareness, poor resources, and non availability of green fodder as not available throughout the year in majority of dairies.

According to **Ministry of Fisheries, Animal Husbandry and Dairying,** Government of India is making efforts for strengthening infrastructure for production of quality milk, procurement, processing and marketing of milk and milk products through various Dairy Development Schemes like: National Programme for Dairy Development (NPDD), National Dairy Plan (Phase-I), Dairy Entrepreneurship Development Scheme (DEDS), Support to Dairy Cooperatives, Dairy Processing

and Infrastructure Development Fund (DIDF) etc.

DAIRY FARMING IN UTTARAKHAND

The Government has provided infrastructural and policy framework from which millions of dairy farmers are benefiting from it. Market and institutional help provided by the Government are some other factors. Dairy farming in the rural area has become a major source of livelihood generation for the people who do not have enough land resources and other means of income generation living in poor conditions by providing employment opportunities.**Satyanarayan *et al.* (2017)** concluded that family size, familytype, annualincome, economicmotivation, land holding and education had positive effect on adoption of scientific practices.Growing urban and industrial centers like, Dehradun, Haridwar, Rishikesh, Haldwani-Kathgodam, Nainital, Rudrapur, Pantnagar and Kashipur etc. are creating continuous demand of milk andmilk products. Role of **Uttarakhand Co-operative Dairy Federation Limited (UCDFL)** and milk unions of the districts is important in this regard which are working with thousands of milk societies spread throughout the Uttarakhand. Economic status of the milk producers belonging to these milk societies is continuously being improved by the sale of milk.

ADOPTION OF IMPROVED DAIRY PRACTICES

Adoption is a decision to make full use of an innovation as the best course of action available. Adoption is essentially a decision making.The sequences of stages in the process of adoption by farmers are (a) Awareness of the existence of an innovation. (b) Conviction of usefulness. (c) Acceptance in thesense of willingness to try the innovation (d) Complete adoption. Adoption of an innovation is a process composed of learning, deciding, and acting over a period of time. The adoption of specific practices is not the result of a single decision to act but series of actions and thoughts decisions.Improved dairy farming practices are the dairy practices involving better and new technologies of dairying which ultimately ensures good animal health, better milking hygiene, nutrition, environment, high production of milk and socio economic management. **Tailor *et al.* (2012)** revealed that feeding of green fodder, feeding of colostrums to newly born calves have high adoption whereas practices like Artificial insemination, rearing of crossbred, pregnancy diagnosis and full hand method of milking had low adoption level. **Divekar *et al.* (2016)** concluded that higher extent of adoption was observed in reproductive management, followed by health care management, while lower extent of adoption was seen in milking and general management practices. **Khode *et al.* (2017)** concluded that majority of the respondents 38.13 percent had medium level of adoption of improved animal husbandry practices. **Meena *et al.* (2017)** concluded that 80 percent of the dairy farmers adopted improved reproductive practices, 96.67 per cent of the dairy farmers adopted improved dairy management practices, 76.67 per cent of the dairy farmers adopted improved health care practices. **Godara *et al.* (2018)** revealed that majority of the dairy farmers had medium level of adoption regarding breeding, feeding, management and health care practices. **Kadian *et al.* (2018)** observed that 66.25 per cent of respondents had medium level of adoption of breeding practices, 68.34 per cent fell under medium level of adoption in feeding practices, 70.83 per cent under medium level of health care practices and 51.25 per cent fell under medium level adoption of management practices. Different improved dairy farming practices are- Feeding practices, Breeding practices, Management practices, Health care practices.[1] **Animal health care Practices:** Poor animal health is one of the principal constraints to increasing small-scale dairy productivity, as it results in high morbidity and low production. Overcoming this constraint could significantly improve productivity and result in real and direct benefits for producers. It includes Vaccination of all animals as recommended or required by local animal health authorities, regularly checking of animals for signs of disease, attending sick animals quickly and in an appropriate way, use of veterinary medicines as prescribed by veterinarians.[2] **Breeding practices:** Milk producers can improve productivity and returns from dairying through selective breeding and control of reproduction. Reproductive efficiency (e.g., calving intervals, conception rates) can be improved by using genotypes that are suitable to the production environment, and appropriate husbandry practices. Artificial insemination (AI) is used mainly for cattle, and to a lesser but growing extent for other dairy animals such as sheep and goats. In developing countries, AI is routinely used by large-scale dairies, which often produce breeding males that are sold to smaller producers for natural mating.[3] **Feeding practices:** The quantity and quality of the feed and water provided largely determines the health and

productivity of the dairy animal, and the quality and safety of its milk. Regular grazing, feeding advance pregnant animal with extra concentrate, feeding colostrums to newborn calves, regular feeding of green fodder etc are some suggested feeding practices.[4] **Management practices:** Management practices ensures proper care of the animals, proper keeping of animals in ventilated houses, adequate spaces for them, proper cleanliness of the animals and maintaining adequate open space for them. Through these practices good animal health and high milk productivity can be assured. Growing population, changing lifestyle, expanding urbanization and increasing climate changes are developing new challenges in Bovine breeding systems, the challenge is to provide essential nutrients to promote health especially reproductive health, fortunately along with the challenges, the developments in science and technology are also emerging to tackle these challenges.

Further, the number of indigenous breeds with better adaptability, disease-resistance and feed efficiency ratio is declining, it is the need of the hour to conserve and improve the productivity of Indian indigenous breeds. For accomplishing this task, adoption of improved dairy practices like focusing on 100 percent Artificial Insemination coverage along with the application of advanced cutting-edge reproductive technology developments, feeding of good fodder, good management and health care system are needed All these steps promise to give a long term sustainable solution to both livelihood and security of about 70 million farming community of India as well as provide enhancement in milk production. **Gupta *et al.* (2019)** observed that 56.66 per cent of respondents have medium level of adoption about improved dairy management practices followed by 22.5 per cent respondents have low level of adoption and 20.83 per cent have high level of adoption about improved dairy management practices. **Bidyut *et al.* (2020)** revealed that 53.85 percent respondents had medium level of adoption of improved dairy farming practices, while 53.08 percent respondents had low adoption level of improved dairy farming practices.

An assessment of adoption of improved dairy farming practices is important for dairy development and to improve the production efficiencies.

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