

LOW PRODUCTIVITY OF INDIAN DAIRY ANIMALS: CHALLENGES & MITIGATION STRATEGIES

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Productivity of Dairy animals

Dairy is considered as one of the promising sector for the rural food security and Livestock provides employment to about 8.8% of countries population and it provides livelihood to 2/3 of rural population (Gamit et al, 2021).. On average in the world an average dairy farmers keeps 3.2 cows per farm (Nimbalkar et al, 2022). Feeding attributes to 60-70 percent of the total cost in dairy business so the farmers must adopt technics to rear high yielding fodder varieties in their farm itself and should be aware of storage of excess fodder, preparing complete feed and raising fodder trees to prepare for the lean season. In 2015-16 average milk yield of indigenous buffalo was 5.76Kg/day and cattle 3.41 kg/day (Vekariya et al, 2021). In 2022 the milk productivity of Exotic cow is 11.36 Kg, Crossbred cow is 8.32 kg, Indigenous buffalo is 6.62 kg, ND Buffalo 4.81 kg, Indigenous cow 4.07 kg and ND Cow is 2.83 kg per day (Statista, 2022). Dairy farming in India is considered majority as a part of integrated farming, the farmers utilize the byproducts of crops as the inputs for dairy and the manure from dairy as a good bio fertilizer to improve the soil fertility.

Status of dairy in India

As per 19th livestock census, with population of 108.7 million buffaloes and 190.9 million cattle India ranks first and second in buffaloes and cattle population respectively. Dairy farming is the central source of livelihood to over 100 million people in India (Vekariya et al, 2021). As the family size increasing, and becoming nuclear, the land holding is subdivided thus making the rural people landless, marginal and small farmers. For all these people dairy farming is the major source of income and employment. Since 1970, India's milk production has grown by an average of nearly 4% per year and in 2006 India became the largest milk producing country in the world (Muhammad et al, 2009). At national level, nearly 36% of the milk production is contributed by Indigenous Buffaloes followed by 26% by crossbred cattle, 12% by Indigenous cattle, 9% by non-descript cattle and 13% by non-descript buffaloes (GoI, 2017).

In India the average annual milk yield (Productivity) from cattle is 1777 kg per animal per year against the world average of 2699 kg per animal per year during 2019 (PIB 2021). This indicates the average milk production per animal (productivity) is very low when compared with many other countries. The milk production from 17 million tons in 1951 to 221 million tons in 2021-22 indicates the paradigm shift in the growth of Indian Dairy industry and also the per capita availability of milk has increased to around 444 Gram/day (Shanmathy et al, 2018).

In India the land under Fodder cultivation is around 4.86 % of cultivable land and land under permanent pastures and grasslands is around 3.6 %, the production of quality fodder seed is prime important, the annual requirement of fodder is around 120 MMT but production is around 8 MMT (Khanna, 2016), so this is the major and urgent issue that has to be addressed on emergency basis to sustain the dairy farming. Adaptation of Sexed semen and Embryo transfer technologies will become the game changers in the production of high producing and locally adopted animals. The Indian dairy industry is more dominated by the buffaloes so the

genetic and breeding interventions in enhancing the productivity of buffaloes will surely improve the overall production from the diary sector.

Breeding policy

The breeding policy must be implemented strictly to development the more adaptable cattle under Indian conditions. The cattle reared under semi intensive system should contain exotic inheritance between 50-62.5%, to achieve this the F1 cross bred females must be bred with progeny tested crossbred males (semen) with exotic inheritance between 50-75%. In case of Intensive system the exotic inheritance of 62.5-75% can be acceptable to achieve this the F1 Females can be bred with progeny tested exotic males (Dasari, 2013).

Challenges:

1. Lack of availability of better breeding services like AI (Artificial Insemination) and PD (Pregnancy Diagnosis) round the clock at doorstep, lack of knowledge on scientific breeding techniques like exact time of AI, Missing heat, Slit heat, Incidence of repeat breeders, Importance of AI, Crossing with local ND Bulls.
2. Lack of awareness on improved feeding techniques, complete feed, mineral supplementation.
3. Lack of knowledge on preventive healthcare measures (Deworming, vaccination).
4. Prevalence of major disease, Especially Mastitis Metritis Agalactia which affects the instant and long-term productivity of the animal.
5. Inadequate supply of quality and sufficient medicines to the veterinary institutions due to budget constraints and high cost of medicines.
6. Majority of the dairy farmers in the rural areas are not concentrating on "a calf a year" concept, milking the cow until it becomes dry and then thinking about inseminating it.
7. Inaccessibility of Veterinarians due to large span of control and heavy work load, in terms of implementation of multiple schemes and attending day to activities.
8. With meager facilities and lack of field diagnostic kits many of the diseases are being treated without proper diagnosis by using broad spectrum medicines which in turn affects the long term health status of animal. And paves a way for development of Anti-Microbial Resistance.

Mitigation measures:

1. Organizing regular extension activities to sensitize the farmers on scientific breeding techniques, methods to improve the productivity of animals- role of various factors like nutrition, breeding, genetics, health care, management.
2. Regular Training to the persons performing AI, and also giving incentives on successful inseminations.
3. Recognizing and felicitating the farmers who are getting good productivity and utilizing their services to sensitize the fellow farmers.
4. Supply of quality medicines, feed and high producing dairy animals, farm machinery on subsidized rates
5. Identification and encouragement of indigenous technical knowledge on enhanced productivity.
6. Farm mechanization with Brush cutter, Chaff cutter, Milking machines, AMCU will definitely play a role in minimizing the labor stress and attracts more people into this sector.
7. New innovations have to come to improve the per animal productivity with little production cost.
8. Utilization of fullest potential of mass media channels and new ICT tools like YouTube, Whatsapp, Facebook, Mobile apps to eliminate the language and geographical barriers and for instant international reach.
9. Genetic up-gradation of local non-descript animals with superior germplasm containing native breeds will produce more sustainable fruitful results instead of introduction of exotic crossbred germplasm which are susceptible to the climatic variations.

10. These clearly indicates the importance of a separate extension wing for capacity building to the farmers on all production and reproduction aspects by organizing regular trainings and awareness campaigns and implementation of government schemes without compromising the regular day to day activities of local veterinary officials.

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