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Research Article

CONSTRAINTS PERCEIVED BY TRIBAL DAIRY FARMERS ON IMPROVED DAIRY FARMING PRACTICES IN MADHYA PRADESH

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Abstract: Livestock raring happens to be an integral part of the livelihood of tribal households and to the broad rural economy since ancient times and have been contributing enormously in socio-economic development of millions of households and national economy. Integration of dairy component along with crop farming provides livelihood security to the tribal farmers. However, due to lack of technical know-how, financial and institutional constraints they face challenge in adoption of improved dairy farming practices. Two districts from most tribal populated area of Madhya Pradesh (*i.e.*, Jhabua and Dhar) were selected. From each district two blocks and from each block/tehsil two villages were selected randomly. Thus, a total of eight villages were selected and from each selected village 15 respondents were randomly selected. Overall, a total of 120 respondents were selected for the study. The salient findings of the study highlighted that, inadequate knowledge about breed, distant location of veterinary hospitals, lack of credit facilities for purchase of feeds, fodders and mineral mixture, and non-availability of veterinary doctors and staff were the top four constraints as perceived/reported by the respondents, with respect to dairy farming. The study also suggests facilitating training and extension activities among dairy farmers to create more awareness regarding improved dairy farming practices among tribal farmers.

Keywords: *Constraints, Dairy, Farmers, Farming, Tribal*

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Introduction

Tribals are historically a disadvantaged and economically a backward people. They have been at the lower end in all indicators of living conditions and household assets [1]. Their characteristics include rural-oriented, illiteracy, economic backwardness such as lower income higher incidence of indebtedness and fewer assets among others and social retardation such as low status [2]. The main constraints faced by the majority of tribals in the participation of different on-farm activities were lack of irrigation facility, unavailability of agricultural labour and high labour charges and lack of training facility for farming. While, with regard to off-farm activities major constraints faced by the respondents were lack of proper knowledge about different off-farm activities, lack of training facility in tribal area for skill development related to different off-farm activities, poor economic status of tribes and lack of transportation facility in tribal area [3]. In India, Scheduled Tribes constitute 8.6 percent of total population numbering 104.28 million [4]. Some of the major tribal groups in India include Gonds, Bhils, Santhals, Khasis, Angamis, Bhutias and Great Andamanes. Livestock contribute to food, economic, environmental, institutional, health, educational, social, infrastructural, nutritional security; and thus, in total to the livelihood security of the tribes by providing transport and on-farm power. Livestock manure helps in preserving soil fertility; and they fulfil a wide range of socio-cultural characters of tribes. Among the livestock systems, dairy farming plays significant role in nourishing the rural livelihoods. Apart from the dairy animals like cattle and buffaloes, other including sheep, goat, pig and poultry are also very important species of livestock production system of the tribes. However, past studies have highlighted several constraints in dairy farming faced by the tribal farmers. Singh *et al*. (1989) identified few constraints that barred adoption of dairy like poor knowledge of A.I., high cost of cattle feed, easy availability of natural services, distant location of veterinary hospitals and small size of the holding [5].

Devi *et al*., (2007) revealed the constraints in adoption of dairy husbandry in Ranchi district of Jharkhand and found that the constraints faced by the rural dairy farmers were the lack of A.I. facility, breeding constraints, feed and fodder oriented constraints, health oriented and market oriented constraints [6]. Chaudhary and Intodia (2000) revealed that poor irrigation facilities for growing green fodder, high cost of concentrate and transportation of feed and fodder and non-availability of improved fodder seeds were found as the major serious constraints of livestock owners [7]. Meena and Fulzele (2006) reported that the main constraints felt by the tribal respondents were low space, annual income and other resources, non-availability of livestock officers and veterinary doctors in time among the tribal farmers [8]. Studies among Toda tribe of Southern India [9] and among Gujjar in Himachal Pradesh by Jarial (2006) reported that lack of A.I. facility, ill equipped A.I. centres, lack of services at A.I. centres were the major breeding constraints [10]. Similar kind of findings were reported by Das(2003) in case of Van Gujjar of Uttarakhand in North-Western part of India [11] beside that Singh *et al*. (2004) reported from his study on constraints and strategies in rural livestock farming in Almora district of hilly Uttarakhand and stated that the average milk production from local cow, cross breed cow and buffalo was 1.52, 2.55 and 2.75 litres per day, respectively [12].

Garai *et al*. (2017) reported in her study that pucca floor was not present, natural service with diseased bull, non-availability of seeds of succulent and high yielding variety and non-availability of mineral mixture in local market as the major constraints [13]. Current scenario of livestock development and potential interventions for livelihood improvement was studied by Sirohi and Chauhan (2010) in Jharkhand and reported that the low productivity and low-income level in livestock production system are due to various financial, infrastructural and institutional constraints faced by the dairy farmers [14].

Besides that, Gupta (2011) reported that constraints identified by the respondents were low availability of green fodder round the year, high cost of concentrates, high cost of milk production, low price of liquid milk and risk of keeping high cost animal [15].

Materials and Methods

The study was carried out in Madhya Pradesh state. Two districts from the most 'Bhil' tribe populated districts of Madhya Pradesh (*viz.* Jhabua and Dhar) were selected, purposively; and two blocks or tehsils from each selected district were selected, randomly. Thus, a total of four blocks were selected. Two villages from each block/tehsil were randomly selected. Thus, a total of eight villages were selected for the study. Fifteen respondents from each of the selected villages were chosen randomly. Thus, a total of 120 respondents were selected. Data were collected with the help of an interview schedule, which was well structured and prepared on the basis of specific objectives of the study, in order to collect the required information. Constraints were defined as obstructions or complications as faced or perceived by the respondents, in dairy farming practices. Constraints varied from individual to individual and region to region. In the course of study, the first-hand information with regards to constraints was collected with the help of an interview schedule prepared to measure the constraints faced in breeding, feeding, management and healthcare practices. Further, the 'weighted mean technique' was used to rank the constraints using the formula:

$$\bar{X}_w = \frac{\sum w_i X_i}{\sum w_i}$$

Where,
$\bar{x}_w$=Weighted item
W_i=weight of i^{th} item X
X_i=value of the i^{th} item X

Results and Discussion

To measure the constraints perceived by tribal farmers in dairy farming, the "weighted mean method" was used. In all, constraints which were severely affecting the dairy farming in the region were recognized on the basis of their mean scores and the respective ranks.

Breeding Constraints

In case of breeding the major constraint was 'inadequate knowledge about breeds', so due to lack of knowledge about breeds, they were unable to select good quality animals. So, there is a need to educate the farmers regarding the good quality breeds of animals. Another most important constraint as reported by the respondents was 'lack of Artificial Insemination (A.I) facility'. Due to lack of A.I facility, farmers were not able to inseminate their animals well on time. Other breeding constraints included the non-availability of good quality bull, lack of knowledge about recommended practices of animal husbandry and unawareness of heat symptoms.

Feeding Constraints

In case of constraints pertaining to feeding, the important constraint as reported by the respondents was 'lack of credit facilities for purchase of feeds, fodder and mineral mixture'. As large numbers of farmers were not capable to avail loan due to the complex procedure of loan availability, they perceived it as a major constraint, because of their low income and high cost of feeds, fodders and mineral mixture. So, there is a need to improve the credit opportunities for dairy farmers in the study area. The next major constraints as perceived by the farmers happened to be 'lack of irrigation facility' followed by 'non-availability of land for green fodder'. Due to lack of green fodder and clean water, the animals were not getting green fodder and access to portable water, which posed difficulty in rigorous health of the herd. The last ranked important constraint as perceived by the respondents was 'lack of knowledge about balanced feeding'. Due to lack of knowledge about balanced feeding, the farmers were not able to feed the proportionate amount of nutrients to their animal, which was consequently decreasing the productivity of their animals. So, there is a need to educate the farmers regarding improved feeding practices.

Healthcare and Management Constraints

The most severe constraint as reported by the respondents in case of healthcare and management was 'non-availability of veterinarians' followed by 'distant location of veterinary hospitals. As very few doctors were employed in the area and they had to cover large areas in the locality, which lead to non-accessibility of the veterinary doctors well in time. Also, due to distant location as well as non-availability of veterinary hospitals in the area, farmers were not receiving timely treatment of their animals, which was seriously affecting the productivity of the animals. Further, the farmers were bound to consult the 'Para-vets' or other sources in their neighbourhood for treatment of their animals, which was also expensive for them. Other constraints perceived were non-availability of good quality bull, lack of knowledge about recommended practices of animal husbandry and unawareness of heat symptoms.

Marketing Constraints

In perusal of constraints related to marketing, the most important constraint was 'longer distance to market'. Due to this reason, farmers incurred more expenses on commutation and also led to untimely disbursal of their products in the market. The second important constraint was 'low price of produce in the market'. This is due to unregulated marketing channels and supply and demand gap which let to abrupt price fluctuation in the market, thus hampering the farmers' income. Other marketing constraints in the order of priority were lack of organized milk marketing facilities, high cost of inputs in market, high cost of transportation and involvement of middlemen. Therefore, to overcome these constraints there is a need of providing infrastructural security to the farmers for improving dairy farming, including financial assistance to the farmers and make them aware regarding improved dairy farming practices for maximizing the profit and improving upon their livelihood conditions.

Table-1 *Constraints as perceived by respondents in dairy farming, (n=120)*

SN	Constraints in Breeding	Score	Rank
1	Lack of A.I. facility	4.01	2
2	Non-availability of good quality bull	3.05	3
3	Unawareness of heat symptoms	1.09	5
4	Inadequate knowledge about breeds	4.50	1
5	Lack of knowledge about recommended practices of animal husbandry	2.32	4

SN	Constraints in Feeding	Score	Rank
1	Lack of irrigation facility for green fodder	4.79/4.60	2
2	Non-availability of land for green fodder cultivation	3.63	3
3	Poor quality of available feed and concentrate	2.56	5
4	Inadequate resources for balance feeding	2.95	4
5	Lack of credit facilities for purchase of feed, fodder and mineral mixtures	4.60/4.79	1
6	Inadequate knowledge about balance feeding	2.45	6

SN	Constraints in Healthcare and Management	Score	Rank
1	Non-availability of essential medicines	7.23	4
2	Delay in treatment of sick animals	7.53	3
3	Inadequate supply of vaccines	6.70	5
4	High fee of veterinarians	6.11	6
5	Poor housing of cattle shed	2.60	9
6	Isolation of disease animals	2.64	8
7	Non-availability of veterinarians	8.18	1
8	Lack of knowledge about proper preventions measures of disease	3.60	7
9	Distant location of veterinary hospitals	7.96	2
10	Unhygienic condition of cattle shed	2.47	10

SN	Constraints in Marketing	Score	Rank
1	Involvement of middle men	2.19	6
2	Longer distance of market	3.85	1
3	Lack of organized milk marketing facilities	3.69	3
4	High cost of transportation	3.40	5
5	High cost of inputs in market	3.56	4
6	Low price of produce in the market	3.75	2

Conclusion

Tribal areas are in the nature's lap and dairy sector has unique potential to absorb them and creating opportunities for employment. Several studies revealed that, provision of extension and training of modern agricultural practices, facilitated tribals in adoption of innovation with relative advantage and compatibility in their own field conditions. However, the underlying constraints in the dairy sector have always posed a challenge before the tribal farmers due to several reasons. Therefore, it can be concluded from the study that, among all the perceived constraints, distant location of veterinary hospitals, lack of credit facilities for purchase of feeds, fodders and mineral mixture and non-availability of veterinary doctors and staff were the major three constraints as perceived /reported by the respondents in dairy farming.

Application of research: The present study also suggests that there is strong need to sensitize and train the farmer and other stakeholders about improved dairy farming practices through adequate extension, policy and financial support.

Research Category: Dairy Farming

Abbreviations: AI: Artificial Insemination

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Study area / Sample Collection: Jhabua and Dhar

Cultivar / Variety / Breed name: Nil

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