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Constraints Perceived by the *Gujjars* regarding Adoption of Improved Animal Husbandry Practices

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ABSTRACT

Gujjar is a major tribal pastoral community of India. In Jammu and Kashmir state, *Gujjars* that deal with dairy and animal husbandry practices are known as *Dodhi Gujjars*. Their herd mainly constitutes of local buffaloes, buffaloes of Nili-Ravi breed and in some cases they keep two or three indigenous cows also. The study was conducted in Jammu district of Jammu and Kashmir, with a view to find out the constraints faced by *Gujjars* in adoption of improved animal husbandry practices. The data were collected from 120 *Gujjar* respondents belonging to R.S Pura and Bishnah block of Jammu district with the help of structured interview schedule containing selected dependent and independent variable, through personal interview technique. In general, constraints related to awareness of the respondents and non availability of veterinary services were perceived as the most serious constraints in adoption of improved animal husbandry practices by the *Gujjars*. Lack of knowledge about; "keeping up to date management records, antibiotics in milk and their ill effects to human population, recommended feeding practices", high cost of mineral mixture, perception of A.I. as an unnatural process and veterinary center/ dispensary functioning without a veterinary assistant surgeon were the most serious constraints perceived by the *Gujjars*.

Keywords: Tribal, Constraints, *Dodhi*, *Gujjar*, Jammu and Kashmir, Pastoralists.

Gujjars are numerically the third largest community in Jammu and Kashmir after Kashmiri Muslims and Dogras. Main concentration of *Gujjars* lies in Rajouri, Udhampur, Poonch, Jammu, Kangan, Kupwara, Uri, Shopian, Daksum and Kandi areas of the Kashmir valley (Raina, 1999). *Gujjars* are one of the major semi-nomadic pastoral communities of the state, predominantly rearing buffaloes, which play a crucial role in their economy and social status. They practice transhumance pastoralism that involves cyclical movements from lowlands to highlands, to take advantage of seasonally available pasture at different elevation in the Himalayas (Bhasin, 1988). The population of Jammu district is about 15.26 lac (Census, 2011), and has a large demand for milk and milk products round the year, which is not being sufficiently met. The *Gujjars* of Jammu district are mainly dependent on dairy business and are called *Banihara or Dodhi Gujjars*. They are hard working, spend all of their time with their livestock, and provide 'milk and milk products' to domestic households and almost all the famous sweets shops of Jammu city. Productivity of the milch animals of *Gujjars* is very low due to poor management. The efficiency of any business like dairy depends on such combination of resources that are most economical. The profitability of dairying activity of *Gujjars* depends primarily on the productive traits of the breed maintained. The productivity means the ratio of output to input. The number of dry animals is more in their herd as compared to the pregnant and milch animals. Moreover, most of their income is spent on feeding of the animals, which results in their poor economic condition. The average milk yield per animal per lactation of *Dodhi Gujjars* of Jammu and Kashmir is about 1351.68 litres and the ratio of milch animals to dry animals is 3:2. Some of the reasons of low productivity of livestock of *Gujjars* is due to shortage and poor quality of feed and fodder resources, quantity

and quality of feed and fodder resources, surplus number of livestock, inadequate veterinary service and defective marketing system (Koundal, 2012). The price of milk and feed are contrary to each other and they find it very difficult, to make the both ends meet. It has drastically affected the economical potential of *Dodhi Gujjars* and they are in the same position in which they were hundreds of years before (Tribal Research and Cultural Foundation, 2007). This makes a strong case for regional strategies to be planned, to pursue the goal of higher milk production, for the elevation of economic condition of this tribal community and to make the district self sufficient in milk production. Increasing the animal productivity through adoption of improved animal husbandry practices would help to amplify the overall economic and social benefits to *Gujjars* from the livestock sector. There have been no adequate studies conducted in the state of Jammu and Kashmir to generate data about the constraints perceived by this important tribal community, which deals with livestock rearing as a sole source of their livelihood. Keeping these factors in mind, the present investigation was planned to identify the constraints perceived by *Gujjars* in Jammu district of Jammu and Kashmir state with the objective to analyse and document the constraints which hamper the adoption of improved animal husbandry practices by this tribal community of Jammu and Kashmir.

MATERIALS AND METHODS

Jammu district comprises of eight blocks. The population of *Gujjars* is more or less equal in all the blocks of the district so two blocks were selected randomly i.e. R. S. Pura and Bishnah. Thereafter, four villages with predominant *Gujjar* population were selected purposively, from each of the two selected blocks. A list of *Gujjars* practicing dairy farming in each village was prepared and the respondents were then selected by systematic random sampling method. Thirty *Gujjar* respondents were selected from each of these 4 selected villages, constituting a total sample size of 120 respondents. In the present study, constraint analysis was operationalised as those irresistible forces that acted as hindrances in adoption of improved animal husbandry practices, as perceived by the respondents. The data was collected from the study area with the help of a pre-structured interview schedule after proper pre-testing and modifications. Responses were obtained in the areas of general management, clean milk production, feeding, breeding and health care. Each area of improved animal husbandry practices contained ten constraints and the respondents were asked to rate them on three point continuum i.e. very serious (score = 3), serious (score = 2) and somewhat serious (score = 1), based on seriousness of the perceived constraint. The constraints were then ranked based upon their mean percent score which was calculated using the formula; MPS = Obtained score/ Maximum possible score. The maximum possible score of overall constraint perception of *Gujjars* regarding improved animal husbandry was 3600. Whereas, the maximum possible score of each area of improved animal husbandry was 360.

RESULTS AND DISCUSSION

Table 1 describes the general rank of constraints in different areas of improved animal husbandry practices as perceived by the respondents. As is evident from table 1, health care constraints were perceived as most serious, whereas breeding constraints were perceived as least serious by the respondents.

Table 1. Constraint perception scores of *Dodhi Gujjars* in different areas of improved animal husbandry practices.

Constraints	Total state-ments	Score obta-ined	Mean	Mean percent score (MPS)	Rank
General management	10	2621	2.18±0.022	72.8	2
Clean milk production	10	2574	2.15±0.016	71.5	4
Feeding	10	2592	2.16±0.013	72.0	3
Breeding	10	2142	1.79±0.005	59.5	5
Health care	10	2920	2.43±0.014	81.1	1

Maximum score = 3600*

Similar findings were reported by Gangasagre and Karanjkar (2009). They reported that improved breeding practices were most adopted, whereas improved health care practices were least adopted by the respondents. Contrary to this Devendra *et al.* (2002) reported that feeding constraints were perceived most serious by the respondents. Hamdani (2008) found that constraints in dairy farming mostly related to economy of respondents

Table 2. Item wise scores of general management constraints, as perceived by the *Dodhi Gujjars*

S. No.	General management constraints	Score obtained	Mean score	MPS	Rank	Overall rank
	Lack of knowledge about cheap and scientific housing of animals.	329	2.74	91.4	2	6
	High cost of raw material for scientific housing of dairy animals.	288	2.40	80.0	5	15
	Inadequate space for housing of dairy animals.	328	2.73	91.1	3	7
	Lack of knowledge about importance of sanitation and hygiene.	298	2.48	82.8	4	11
	Lack of clean water in sufficient quantity round the year.	154	1.28	42.8	10	5
	Lack of knowledge about keeping up to date management records.	360	3.00	100	1	1
	Lack of knowledge about new born calf management.	256	2.13	71.1	7	20
	High cost of disinfectants and sanitizers.	286	2.38	79.4	6	16
	Lack of finance for dairy management practices through scientific methods.	166	1.38	46.1	8	30
	Lack of awareness about animal insurance scheme.	156	1.30	43.3	9	31

Maximum score = 360*

were perceived as more serious. Manhas and Sharma (2008) revealed that the respondents had expressed infrastructural constraints as the most severe impediment, whereas technical constraints were hampering the dairying to the least extent. Basunathe *et al.* (2010) revealed that the major reasons for the non-adoption or discontinuation of improved technologies were non-availability of service, lack of knowledge among farmers and withdrawal of free/ subsidized services by government.

There was a significant difference between different groups of respondents with respect to constraints encountered by them. Lack of finance for improved management practices, high cost of feed supplement/ mineral mixture, lack of good breeding stock, and non availability of veterinary facilities were the most serious constraints as stated by Khandi *et al.* (2011). Moreover, Kour (2014) reported that high cost of feed supplements/ mineral mixture, lack of knowledge of cheap and scientific housing, high cost of treatment, lack of space for milking barn and lack of knowledge of scientific feeding of calves were major constraints perceived by the dairy farmers. Whereas, Sharma (2011) reported that high cost of raw material for dairy shed, high cost of mineral mixture, problem of abortion, repeat breeding in dairy cattle and high cost of FMD and other vaccines were the major constraints perceived by the dairy farmers. The variation seen in various studies may be due to diverse factors like availability of health care facilities, availability of fodder and availability of breeding stock. Regional factors cannot be ignored too. The item wise scores have been elaborated in tabulated form below.

For general management practices, 'lack of knowledge about keeping up to date management records' was perceived as most serious constraint followed by, 'lack of knowledge about cheap and scientific housing of animals'.'Lack of clean water in sufficient quantity round the year', was perceived as least serious constraint (table 2). Gangil *et al.* (2004) reported that knowledge of livestock owners was very poor about importance of maintenance of herd records. This may be attributed to the fact that there is high level of illiteracy among *Gujjars* as already reported by Koundal (2012). However, Mohi and Bhatti (2006) observed lack of capital and labour as most serious constraints in adoption of housing practices. Inadequate space for housing of dairy animals is also a serious constraint. This may be because most of the *Gujjars* do not actually own the land they dwell upon. The land may be custodian/ state land or land leased temporarily from a local resident on the basis of a nominal rent for some months, before the tribal family migrates to some other part of the state.

In case of clean milk production practices, 'lack of knowledge about antibiotics in milk and their ill effects to human population' was perceived as most serious constraint followed by, 'non-availability of milk cooling

facility'. This may be due to the fact that not even a single milk cooling facility was available in the sampled villages even though the temperature is very high in summer months. Adulteration of milk with dirty water cannot be ignored. It is one of the serious constraints for hygienic milk production as the productivity of livestock of *Gujjars* is low and they add tap water to increase the quantity of milk for sale. The least serious constraint perceived was 'transport facility not available for timely sale of milk' (table 3). Transportation vans have been bought collaboratively by some *Gujjar* families in which they transport milk everyday to the city. Rajendran and Prabaharan (1998) reported that the major constraints in milk production were high feed cost, low price of milk, inadequate input and low productivity problem.

In case of feeding practices, 'lack of knowledge regarding recommended feeding practices' and 'high cost of mineral mixture', were perceived as most serious constraints whereas 'lack of water for irrigation facilities for growing fodder', was perceived as least serious by the respondents (table 4). Thorat and Kulkarni (1994) reported that high cost of feed and fodder was the major constraint faced by the dairy farmers. Inadequate supply of fodder and feed to the animals, lack of knowledge regarding preparation of silage and scientific feeding of animals were the other constraints faced by the farmers. Deoras *et al.* (2004) found that higher cost of concentrate was the reason for not feeding it to the animals in the rural areas. Umar *et al.* (2011) reported that the main constraints among feeding practices, were inadequate knowledge about proper feeding of dairy animals and under feeding due to limited financial resources. Lack of knowledge regarding improved feeding practices may be because no trainings and awareness camps are being organized in the villages which are home to *Gujjars*. Due to low profitability from livestock business, economic impediments in purchase of mineral mixtures and concentrates may be a factor behind observed results.

For breeding practices, 'perception of A.I. as an unnatural process' was perceived as most serious followed by 'poor conception rate of A.I.'. 'Lack of knowledge about proper time of mating/ insemination after heat', was perceived as least serious by the respondents. (table 5). Umar *et al.* (2011) reported that the major constraints faced by the dairy farmers, regarding breeding practices were ill equipped A.I. services, repeat breeding and lack of pedigree bull for natural services, followed by low genetic potential of local animals, poor knowledge of A.I. services and poor availability of resources to maintain superior breed of milch animals. The perception of A.I. being an

Table 3. Item wise scores of clean milk production constraints, as perceived by the *Dodhi Gujjars*

S. No.	Clean milk production constraints	Score obtained	Mean score	MPS	Rank	Overall rank
	Lack of knowledge about hygienic milking.	318	2.65	88.3	4	9
	Non-availability of milk cooling facility.	349	2.91	96.9	2	3
	Non-availability of water for proper cleaning of milking utensils.	143	1.19	39.7	9	35
	High cost of detergents, antiseptics and sanitizers to wash milk utensils.	276	2.30	76.7	6	18
	Lack of space to milk animals in separate shed.	222	1.85	61.7	7	24
	Adulteration of milk with dirty water.	340	2.83	94.4	3	4
	Lack of devotion to milk animals at regular intervals.	151	1.26	41.9	8	34
	Transport facility not available for timely sale of milk.	120	1.00	33.3	10	39
	Lack of knowledge about antibiotics in milk and their ill effects to human population.	360	3.00	100	1	1
	Milking without washing the udder.	295	2.46	81.9	5	13

Maximum score = 360*

Table 4. Item wise scores of feeding constraints, as perceived by the *Dodhi Gujjars*

S. No.	Feeding constraints	Score obtained	Mean score	MPS	Rank	Overall rank
	Non-availability of land for fodder production.	270	2.25	75.0	4	19
	Non-availability of green fodder.	182	1.52	50.6	8	28
	Non-availability of dry fodder.	194	1.62	53.9	7	26
	Lack of water for irrigation facilities for growing fodder.	132	1.10	36.7	9	38
	Lack of knowledge regarding recommended feeding practices.	360	3.00	100	1	1
	Non-availability of mineral mixture/ UMMB.	332	2.77	92.2	2	5
	High cost of mineral mixture.	360	3.00	100	1	1
	Lack of knowledge about preservation of fodder.	213	1.78	59.2	6	25
	High cost of concentrate feed.	324	2.70	90.0	3	8
	Lack of knowledge about feeding of new born calves.	225	1.88	62.5	5	23

Maximum score = 360*

Table 5. Item wise scores of breeding constraints, as perceived by the *Dodhi Gujjars*

S. No.	Breeding constraints	Score obtained	Mean score	MPS	Rank	Overall rank
	Non- availability of superior bulls for mating.	293	2.44	81.4	3	14
	Lack of knowledge about A.I. method.	120	1.00	33.3	9	39
	Perception of A.I. as an unnatural process.	360	3.00	100	1	1
	Poor conception rate of A.I.	297	2.48	82.5	2	12
	High charges by staff for doing A.I in animals.	139	1.16	38.61	7	36
	Lack of knowledge about proper time of mating/ insemination after heat.	120	1.00	33.3	9	39
	Lack of knowledge about grading up technique for herd improvement.	244	2.03	67.8	5	21
	Untrained and inexperienced staff at veterinary hospital/ dispensary for doing A.I.	152	1.27	42.3	6	33
	Lack of knowledge about detection of heat signs in animals.	137	1.14	38.1	8	37
	Problem of abortion and repeat breeding in dairy animals.	280	2.33	77.8	4	17

Maximum score = 360*

unnatural process may be related to the traditional values and difficult persuasion of *Gujjars* about a new practice due to their poor literacy rate and low social and extension contacts.

In case of health care practices, 'veterinary center/ dispensary functioning without a veterinary assistant surgeon', was perceived as most serious constraint by the respondents. This was followed by, 'location of veterinary dispensary/ hospital at a far off place' and 'high cost of allopathic veterinary medicines', as serious constraints. On the other hand, 'high cost of vaccines', was perceived as least serious by the respondents. (table 6). More or less similar constraints have been reported earlier by other workers. Keshava and Mandape (2001) found that major problems faced by farmers in dairy farming were proneness of animals to diseases, costly cattle feeds, unavailability of veterinary facilities and regular milk market. Tiwari *et*

Table 6. Item wise scores of health care constraints, as perceived by the *Dodhi Gujjars*

S. No.	Health care constraints	Score obtained	Mean score	MPS	Rank	Overall rank
	Lack of knowledge of common contagious diseases, their causes and control measures.	304	2.53	84.4	5	10
	Location of veterinary dispensary/ hospital at a far off place.	354	2.95	98.3	2	2
	Non-availability of medicines and vaccines in government veterinary hospital/ dispensary.	295	2.46	81.9	6	13
	High cost of allopathic veterinary medicines.	354	2.95	98.3	2	2
	Lack of knowledge about services available for animal health care in veterinary centers.	324	2.70	90.0	4	8
	Non-availability of veterinary center/ dispensary in the area.	328	2.73	91.1	3	7
	High cost of vaccines.	180	1.50	50.0	9	29
	Ineffective treatment of animals.	184	1.53	51.1	8	27
	High cost of veterinary consultation.	237	1.98	65.8	7	22
	Veterinary center/ dispensary functioning without a veterinary assistant surgeon.	360	3.00	100	1	1

Maximum score = 360*

al. (2003) reported that majority of the respondents felt improved feeds as costlier and non-availability of hospital as most serious constraint along with other constraints. Mohi and Bhatti (2006) found that poor results of A.I., unavailability or distant location of A.I. centre, inadequate facilities at A.I. centre were perceived as most serious constraints in adoption of breeding practices.

Veterinary center functioning without a veterinary assistant surgeon was the overall most serious constraint of this investigation. A qualified veterinary professional is the first line of extension system and transfer of technology to the stakeholders. This may be due to the fact that there is a very large animal head to veterinarian ratio in the state of Jammu and Kashmir. The estimated population of livestock of Jammu and Kashmir is 160.407 lakh (Integrated Sample Survey, 2011-12) whereas the number of veterinarians in Animal and Sheep Husbandry Department, J&K is around 900 only, as per the tentative seniority lists of Department of Animal and Sheep Husbandry (2012-13). Presently we have approximately one veterinarian per 20000 livestock heads. Nevertheless, it can be suggested here that there is need to increase the knowledge level of *Gujjars* through various methods like trainings and awareness camps. There is also need to relook at the performance of rural banking system, micro finance institutions, packages of animal husbandry loans and other schemes like kisan credit cards and livestock insurance at grass root level, to elevate the economic condition and to overcome the obstacles in adoption of improved animal husbandry practices by the *Gujjars* of Jammu and Kashmir.

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