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Adoption of Improved Camel Husbandry Practices: An Exploratory study Among the Raika Pastoralists of Rajasthan

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ABSTRACT

A study was conducted among Raika Pastoralists of Rajasthan about various improved practices of Camel.the data was collected through personal interview with the help of pre-tested structure schedule from 120 Raika pastoralists of two districts of Marwar region of Rajasthan. among them only 27 Raika was rearing Camel. Data was analysed by help of adoption index and cumulative square root frequency. Majority Raika pastoralists continued adoption of colostrum feeding, ligation & disinfection of navel cord, grazing, deworming, control of ecto-parasites, feeding of tree leaves in summer season and vaccination. But, 95.65 per cent of them did not isolate their sick animals and 91.30 per cent respondents were never adopted shelter for animal due to camel required more space. Discontinuance adoption behaviour was also observed in some improved practices like purchase of quality camel for breeding purposes, upgradation, castration, and marketing of young camel. Non-availability of proven camel breed in the migratory routes was the main reason of discontinuance of these improved practices.

Keywords: Camel, pastoralists, raika.

INTRODUCTION

Camel is also known as "ship of desert". The camel is a symbol of human survival in the desert area of the world, camel history tied with pastoralists of the hot dry area. Camel is distributed geographically in tropical and sub-tropical dry zones of northern Africa, western Asia and North west India. (Wilson 1984, Wilson, Araya and Melaku 1990). Camel mostly found in African and Asian country and mostly rearing by nomad and pastoralists people when they pastoralists moves one place to another place for search a grass and water. pastoralists depend on camel milk for various months in a year (FAO 2019) Camel is domestic animal which rearing where rainfall is very law between 50- and 550-mm. camel is serving to people who is living in arid and semi-arid region and desert area of the world. Camel is used for various purpose like wool, transportation, fibre, milk, meat etc. (Younas and Iqbal, 2001). Camel Milkhave significant quality it is having medicinal useful, camel milk having potent therapeutic alternative which is useful for reducing insulin doses. Useful for Primary treatment of type 1 diabetes mellitus replacement (Owens 2002, Gordberg-Orellana 2003, Cefalu 2004) and camel milk also help and useful for improving long term glycemic control and significant reduction in the dose of insulin in type 1 diabetic patient (Agarwal *et. al* 2011). Despite of such significant role of camel, camel population is decreasing drastically day by day. Total population of camel in the world is 35 million (FAO 2019), Somalia having highest population camel about 6.2 million followed by Sudan with 3.2 million, Mauritania with 1.23 million, Ethiopia

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with 1.07 million, India with 1.03 million and Pakistan with 0.8 million population of Camel. (The world geography 2019) Camel population in Rajasthan is 3.25 lakh (2012 livestock census) which is almost 80 per cent camel population inhabiting in Rajasthan only. According to livestock census 2007 to 2012 livestock census camel population drastically decrease in Rajasthan by 22. 79 per cent. Main reason of decreasing camel population in Rajasthan is shrinking grazing resources. In Rajasthan camel mainly raring by Raika pastoralists, Raika are closely associated with camel and still also known as Camel man in various parts of Rajasthan as well as another state of India like Haryana, Madhya Pradesh, Uttar Pradesh. Camel also played significant contribution in civil law and order, defence and battle from ancient time till date. During the construction of Indira Gandhi canal in western Rajasthan camel helped to engineer. Camel corps constitute an important wing of border security force of India para military service (Chand et al.2010). a systematic evaluation to understand behaviour of Raika community for management of camel thus present study conducted in Marwar region of Rajasthan to analysis adoption level regarding improved camel husbandry practices.

METHODOLOGY

There are 3.25 lakh of camel in Rajasthan which constitute approximately 80 per cent of the India's total camel population (Department of Animal Husbandry, Rajasthan). Rajasthan is the house of the 61 per cent of the Raika pastoralists of India. Therefore, the present study was carried out in Rajasthan. Out of nine regions in Rajasthan, Marwar region was selected purposively due to the highest population of Raika pastoralists. Out of six districts of Marwar region, two districts *i.e.* Pali and Jodhpur were selected purposively based on the highest population of the Raika pastoralist. From each district, one tehsil (Bali from Pali district and Bilara from Jodhpur district) was selected purposively based on the highest Raika population. Thus, two tehsil Bali and Bilara were selected for this study.

Further, three villages from each tehsil were be selected, randomly. Therefore, the present study was conducted in six villages, from each village, 20 *Raika* pastoralists, who were camel herder and migrating along with their camel, were considered as the respondents for this study. Thus, a total 120 *Raika* pastoralists were interviewed either at their doorstep/migratory 23 respondents were rearing camel rearer, rest of the respondents was rearing either sheep or goat rearer for this study 23 selected camel rearer were taken to find out adoption of improved camel rearing practices. Thus, 23 *Raika* pastoralists were interviewed either at their doorstep/migratory.

Rogers (1961) defined adoption as, “A decision to make full use of an innovation as the best course of action available”. In the present study, adoption was operationalized as the actual use of improved livestock rearing practices by the Raika dairy farming practices by the respondent. Fifteen improved husbandry practices enlisted by Meena (2014). Same fifteen improved practices used for this study.

All the improved livestock rearing practices was scored on a three-point continuum *viz.* 'Adopted and continued', 'Adopted but discontinued' and 'Not Adopted' with a score of 2, 1 and 0, respectively. Adoption index of each individual respondent was quantified by the following formula:

$$Adoption\ Index = \frac{Obtained\ Score}{Maximum\ Obtainable\ Score}\ x\ 100$$

Finally, all the respondents were categorized into three level of adoption i.e. low, medium and high based on the Cumulative Square root Frequency Method.

RESULTS AND DISCUSSION

Meena (2014) enlisted 15 camel rearing practices as the improved practices applicable for arid region of Rajasthan. There were 23 sampled Raika households were engaged in camel rearing. To understand the adoption of improved camel rearing practices, the list of 15 improved camel husbandry practices were given to these households in a structured interview schedule with three-point continuum viz. adoption continued, adopted but discontinued and never adopted with score of 2, 1 and 0. Table 1 clearly shows that adoption of each improved camel rearing practices.

Majority Raika pastoralists continued adoption of colostrum feeding, ligation & disinfection of navel cord, grazing, deworming, control of ecto-parasites, feeding of tree leaves in summer season and vaccination. But, 95.65 per cent of them did not isolate their sick animals.They informed that during migration separation of sick animals were not possible. Therefore, most of them did not adopt this improved practice. 91.30 per cent respondents were never adopted shelter for animal due to camel required more space and they did not have more space some study revealed similar result in that area by Bhakat, 2019 most of the respondents around 98 per cent kept their animal in open and under tree in night and day. Discontinuance adoption behaviour was also observed in some improved practices like purchase of quality camel for breeding

purposes, upgradation, castration, and marketing of young camel similar result revealed by Champak *et al.,* 2009 most of Camel breeders produced off spring and reared for few years and sell to them in fair to earn money. Non-availability of proven camel breed in the migratory routes was the main reason of discontinuance of these improved practices.

Table 1: Distribution of respondents according to the adoption improved camel husbandry practices

n=23

Improved camel husbandry practices	Adoption continued	Adoption discontinued	Never adopted
Selection and purchase of quality camel breed	0 (0)	15 (65.21)	18 (34.78)
Provision of shelter for camel	2 (8.70)	0 (0)	21 (91.30)
Upgrading	1 (4.34)	7 (30.43)	15 (65.21)
Colostrum feeding	21 (91.30)	0 (0)	2 (8.70)
Ligation and disinfection of navel	21 (91.30)	0 (0)	2 (8.70)
Practices of weaning	6 (26.08)	0 (0)	17 (73.91)
Period of grazing	23 (100)	0 (0)	0 (0)
Feeding of crushed prosodies pods and tamarind seeds	2 (8.70)	0 (0)	21 (91.30)
Feeding of tree leaves in summer	15 (65.21)	0 (0)	8 (34.78)
Deworming	23 (100)	0 (0)	0 (0)
Ecto -parasiticide application	23(100)	0 (0)	0 (0)
Castration of male camel	6 (26.08)	15 (65.21)	2 (8.70)
Vaccination of camel	22 (95.65)	1 (4.34)	0 (0)
Isolation of sick animal	1 (4.34)	0 (0)	22 (95.65)
Marketing of camel calf at 3.5 years of age	3 (13.04)	6 (26.08)	14 (60.86)

(Values in parenthesis indicate percentage)

Index score of each 15 improved camel husbandry practices were calculated and presented in Table 2 Index scores are ranged between 0 and 1. Improved practices with higher index score represented highly adopted improved practices and vice-versa. Improved practices like grazing, deworming and control of ecto-parasite were having the highest index score *i.e.* 1.00 which expressed that all the respondents adopted and continued these practices. On the other hand, improved practices like isolation of sick animal, provision of shelter, feeding of crushed prosodies pod & tamarind seeds were among the least adopted practices.

Table 2: Ranking of improved camel husbandry practices

n=23

Improved camel husbandry practices	Index score	Rank
Selection and purchase of quality camel breed	0.33	VI
Provision of shelter for camel	0.09	IX
Upgrading	0.20	VIII
Colostrum feeding	0.91	III
Ligation and disinfection of navel	0.91	III
Practices of weaning	0.26	VII
Period of grazing	1.00	I
Feeding of crushed prosodies pods and tamarind seeds	0.09	IX
Feeding of tree leaves in summer	0.65	IV
Deworming	1.00	I
Ecto -parasiticide application	1.00	I
Castration of male camel	0.59	V
Vaccination of camel	0.98	II
Isolation of sick animal	0.04	X
Marketing of camel calf at 3.5 years of age	0.26	VII

Overall adoption of each household was calculated based on the summation of the adoption score of the 15 improved camel husbandry practices. Table 3 clearly expressed that 47.82 per cent of the respondents were having medium level of adoption followed by 26.08 per cent and 26.00 per cent of them were having lower and higher level of adoption towards improved camel husbandry practices.

Table 3: Distribution of respondents according to the differential level of adoption of the improved camel husbandry practices

n=23

Category	Reference Range	Frequency	Percentage
Low	12 – 14.98	6	26.08
Medium	14.99-18.49	11	47.82
High	18.50-24	6	26.00

CONCLUSION

It May be concluded that majority of camel reraers Raika had medium level of adoption and 26.08 and 26.00 per cent Camel reraers Raika had Low and High respectively, had adoption level of improved camel husbandry practices. out of fifteen practices few of practices namely Deworming, period of grazing and ecto-parasiticides practices was adopted and continued basis by all respondents. Majority of Raika (65.26 %) Selection and purchase of quality camel breed and Castration of male camel practices adopted but presently they discontinued these practices because of Non-availability of proven camel breed in the migratory routes. Improved practices. majority (95.65%) of Raika never adopted practice like isolation of sick animal because of migration life during migration they could not keep separate their animals. practice like Feeding of crushed prosodies pods and tamarind seeds majority (91.20%) never adopted because of their herd size is big and its time-consuming practices also majority (73.91%) of respondents never adopted Practices of weaning because most of the Raika not using their animal for dairy purpose and lack of knowledge.

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