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Managemental practices adopted and constraints faced by ponywallas in rearing of ponies associated with tourism in Kashmir valley

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Abstract

The study was carried out to ascertain the different managemental practices adopted and the constraints being faced by ponywallas associated with tourism in Sonamarg and Pahalgam. A significantly higher ($p < 0.05$) of ponywallas from Sonamarg (100%) were soaking concentrate mixture prior feeding than Pahalgam region (36.66%). In Pahalgam (91.66%) and Sonamarg (85%) equine rearing were of semi-intensive type with mainly kutch type of houses. Significantly higher ($p < 0.05$) respondents in Sonamarg 86.25% were disposing carcasses in open than Pahalgam 72.5%. Daily grooming of equines was done in both regions. Unavailability of credit and other subsidiary facilities, poor animal insurance facility, lack of on track veterinary services, involvement of middle men in fixation of rates and high feed and fodder costs were major constraints. Thus ponywallas in both the regions were socio-economically weak, illiterate and adapted unscientific methods of rearing besides were facing constraints that need to be taken care by the authorities.

Keywords: Constraints, managemental practices, ponywallas, socio-economic, tourism

Introduction

The Jammu and Kashmir is being regarded heaven on earth for its serene beauty which attracts tourists from all over the globe round the year and also is destination for annual pilgrimage of Shri Amaranth Yatra. Lot of area of meant for these activities in Kashmir valley is mountainous. So equines are used as an alternative mode of transportation in such remote regions. Jammu and Kashmir in year 2019 was ranked at 2nd in India in terms of population of horses and ponies (0.63 lakh) ^[1]. The welfare of equine is usually neglected because contribution from these equines has never been estimated and so has not been recognized which resulted being given less consideration to these equines than other livestock by the authorities ^[2]. The environmental protection concerns has lead world towards ecotourism for sustainability and in this area equines can play an important role by reducing the motorized means of transport that use fossil fuels and thus help in preserving the fragile mountain ecologies used by tourists ^[3]. Little attention has been paid to equine research and development till date. So documentation of socio-economic, management and other characteristics pertaining to equines could reflect a lot on overall status of equines in Kashmir valley.

Materials and Methods

The study was conducted in Pahalgam and Sonamarg region of Anantnag and Ganderbal districts of Kashmir valley as a reasonable proportion of the population from the Pahalgam and Sonamarg region are heavily dependent on these equines for their livelihood. The two routes leading to the Amarnath cave. The equine population not only hailing from the Pahalgam and Sonamarg itself but from different parts of state during the Amarnath Yatra period.

The data for the study was collected out through a face to face interview of ponywallas and personal visits to places where animals are kept/shelters in the Pahalgam and Sonamarg region during the period of Amarnath Yatra. The ponywallas were selected without any distinction with respect to the number of animals maintained by them. The grab sampling technique was followed in selecting the respondents and data was collected from such ponywallas in total of 200 in number hailing from different regions of the state and in particular from ponywallas who were local residents of the Pahalgam and Sonamarg region.

The number of respondents from Pahalgam and Sonamarg were 120 and 80 respectively and this sampling was proportionately on the basis of population of equines in the selected regions. The primary and secondary data was collected through a pre formed interview schedule based on different aspects of managerial practices employed for rearing ponies. The detailed information about the housing facilities or shelter of these animals was obtained by personal visits of such keeping places/sheds. It is to be emphasized that slight modifications were brought up in interview schedule during the course of study at the actual ground of the survey with a view to cover the aspects of equine management not covered in questionnaire. The data collected during the period of study was coded, tabulated and compiled systematically. This was followed by statistical analysis using standard procedures [4]. To ascertain the objectives under study, the simple technique of average and percentage were used. Percentages of various parameters under study were taken from each region and to arrive at an overall district figure, the values from two regions of study were taken together. Test of proportions (Z-test) was used analysis besides analysis of variance (ANOVA) followed by post-hoc analysis using LSD technique was also done. The response of pony rearers was ranked using Garret's Ranking Technique [5].

Results and Discussion

In the present survey it was found that out of 120 respondents interviewed in Pahalgam and Sonamarg only 11 respondents from both the areas were possessing mares which means (9.16%) respondents from Pahalgam and (13.75%) from Sonamarg. The average age at puberty of male ponies in Pahalgam and Sonamarg was (15.56±0.13) and (15.83±0.17) months, respectively and that of females in the two regions was (18.62±0.23) and (17.67±0.27) months, respectively. The average age at first oestrus in months in Pahalgam and Sonamarg was (18.83±0.27) and (17.84±0.17), respectively. However the average duration of oestrus cycle in days in Pahalgam and Sonamarg was (22.64±0.39) and (24.67±0.14), respectively and the average estrus duration in hours in the two regions was (164.22±9.41) and (166±3.33). Besides the age at first foaling in Pahalgam and Sonamarg were (31.64±1.19) and (33.83±0.43). The average duration of gestation period in days was observed to be (342.45±1.13) and (342.84±0.43) in the two regions, respectively. The average foaling interval (months) in the two regions were (29.27±1.72) and (26.62±0.61), respectively. The reproductive traits of male and female ponies hailing from the two regions of Pahalgam and Sonamarg were statistically similar. It was observed that method of breeding the females was only natural mating with non-descript males. Besides the ponywallas were not aware about the heat detection practices, neither the stage of oestrus was determined neither any pregnancy diagnosis was carried out post conception of females and nor any treatment was given to females (mares) in case of anestrus.

Horse is considered to have relatively poor reproductive efficiency and among horses thoroughbred is considered to have least [7]. Use of frozen semen for artificial insemination of mare is very limited by the peculiar reproductive activity of the horse, the difficulty in obtaining large quantity of semen from each stallion, variability in the cryopreservation procedures, low viability of sperm in the uterus and variable pregnancy rates from different stallions [7]. The main reason that ponywallas under our study were not interested in doing

A.I in mares was unavailability of A.I. facility. Adoption of breeding practices in equines was 46.87 and 39.37 per cent in watershed villages and non-watershed villages respectively [8], which infer that geographical distribution may also affect the breeding practices adapted by different pony rearers. Simple changes in management and handling of mares and stallions can improve reproductive efficiency and fertility or can overcome specific breeding problems [9].

In the present survey it was found that majority of respondents (72.72%) in Pahalgam and almost all in Sonamarg were used to practice of feeding concentrates to advanced pregnant mares. In both the areas respondents were not used to attend the mare so often at the time of labour and only with (9.1%) in Pahalgam and (27.28%) in Sonamarg were attending. However in cases of retention of placenta a slightly higher number of respondents from Sonamarg opted for veterinarians help over paravet /stockmen than in Pahalgam. Besides in both the areas of study the placenta was disposed by throwing it in open (Table 1). It was observed that pregnancy rates in mares were 10-15% higher in mares that are bred at subsequent oestrus periods when compared with first post-partum oestrus [6].

Majority of respondents from Pahalgam (90.90%) and Sonamarg (72.72%) were not used to cleaning of foals and trimming of hooves immediately after birth neither they were used to cutting and disinfecting the naval cords after birth. The colostrum feeding of foals in both the regions started within one hour of birth almost as per all of the respondents. However in both the regions suckling by foal was allowed up to 6 months with percentage of such respondents (81.81%) in Pahalgam and (90.90%) in Sonamarg, respectively. The quantity of colostrum being fed was ad libitum in both the regions. No significant differences were observed in the foal rearing management practices in the two areas of study. In contradiction to the present study Foals should be trimmed for the 1st time at 1 or 2 weeks of age and hoof care needs to start at an early age to maintain correctness [10]. In order to raise horse in a perfect physical condition the foals should be fed with balanced rations, colostrum should be given to new born foal within 36 hours after parturition and weaning at 5-6 months [11]. However in contradiction to the present study a study in Rajasthan revealed that most of the equine owners decanted the colostrum from the udder of mare and didn't allow the foals to suckle the colostrum [12].

The results for feeding method, type and source of feed, frequency and regularity of feeding indicated that grazing and stall feeding in combination represented the choicest type of feeding practice of all the ponywallas in both the areas of study i.e. Pahalgam and Sonamarg. With majority of ponywallas opting for group feeding in both the regions with a percentage of 55 and 58.75 compared to individual feeding of ponies with percentage of 45 and 41.25 in both Pahalgam and Sonamarg. However in case of grazing sites the proportion of such respondents against the harvested lands as preferential grazing place varied significantly with a significantly higher ($p < 0.05$) percentage of respondents (ponywallas) from Sonamarg 22.5 utilizing harvested lands for grazing compared to only 1.66 in Pahalgam region. It was observed that majority of the respondents in both regions were used to allow the drinking 4 times a day with a percentage of such respondents being 83.33 in Pahalgam and 90 in Sonamarg, respectively (Table 2). The horses have evolved as grass eaters but pasture grasses can't be provided all year due to cold climate in some countries and now a days

hay has largely been replaced by silage and haylage in equine diets in developed countries [13]. The energy intake is important for onset of ovulation as well as embryonic development, but less for fetal growth, while as excessive energy supply can favor twin pregnancy [14]. Thus it can be assumed that supplementation with additional energy and other supplements can play a vital role for better performance in terms of production as well as reproductive efficiency.

It was observed that all the ponywallas from both Pahalgam and Sonamarg were preparing hay for fodder deficit periods of year and equal proportion of ponywallas from both regions were not acquainted with chopping of green fodder. However in regional comparison significantly higher ($p < 0.05$) number of ponywallas from Sonamarg (100%) used to soak concentrate mixture prior to feeding than Pahalgam region (36.66%). Almost all (100%) Ponywallas from Pahalgam and (88.75%) in Sonamarg were not acquainted with the practice of chopping of dry fodder and it was significantly different ($p < 0.05$) between the two regions. A study in district Hisar found that farmers of adopted villages followed chaffing, hay and silage preparation and balanced feeding and more area under fodder crops as compared non-adopted villages of the district indicating importance of adaptation [15].

The system of housing or shelter provided to the ponies were of semi-intensive type (night shelters) in Pahalgam (91.66%) and Sonamarg (85%) and kacha type houses for ponies were prevalent in both the areas with a percentage of (83.33%) in Pahalgam and (90%) in Sonamarg. Whereas only (11.66%) and (10%) of houses were of pucca type in the respective areas. Besides the predominant roof types on pony houses in the areas were of double slope and single slope with percentage of double sloped roof tops higher in Pahalgam (53.33%) compared to higher percentage of single sloped roof tops in Sonamarg (58.75%). Although significant differences were observed in the two study areas in terms of type of material used in roofs with majority of roof tops constructed using galvanized tin sheets with proportion of such roof tops being significantly higher ($p < 0.05$) in Pahalgam (100%) than (90%) in Sonamarg. Moreover significant difference was also observed in terms of materials used in construction of walls for pony shelters with majority of shelter walls made up of brick and mud and proportion of such type of wall shelters being significantly higher ($p < 0.05$) in Pahalgam (92.5%) compared to (56.25%) in Sonamarg. However the proportion of pony shelters with walls made up of brick and lime cement and that of thatch was significantly higher ($p < 0.05$) in Sonamarg (17.5%) and (26.25%) compared to (7.5%) and (0%) in Pahalgam respectively. No other significant differences were observed in the rest of the parameters in both the study areas. However in terms of other facilities at housing or shelter provided to the ponies in Pahalgam and Sonamarg vary significantly in terms of provision of presence mangers and drinking water troughs within the animal house with the proportion of pony houses with mangers and water troughs within the house being significantly higher ($p < 0.05$) in Pahalgam (75.83%) and (89.16%) compared to (61.25%) and (78.75%) in Sonamarg, respectively. Besides significant difference was also observed in the manger types in use in both the areas of study and significantly higher ($p < 0.05$) proportion of kutchha type mangers with percentage of (55%)

were seen in Sonamarg when compared to (40.83%) in Pahalgam. In Sonamarg winter ranges from October to April and remains closed from December to February for public. A significant difference was observed in terms of provision of inclusion of winter bedding to ponies between the two areas of study with percentage of inclusion being significantly higher ($p < 0.05$) in Sonamarg (100%) when compared to (91.66%) in Pahalgam. A study on equines in district Anantnag revealed that the average of pucca house was 26.64% while kucha house was 73.36% [16]. The farmers in district Anantnag possessed equines as well as livestock. The shelters were either separate or shared for equines and other livestock species [17]. In contradiction to our study [18] reported that 74% equine owners did not provide any shelter to their equines in Tanzania.

Majority of cases in both the areas of study i.e. Pahalgam and Sonamarg for consultation of sick animals ponywallas from both the areas rely on veterinarians with a percentage of (76.67%) in Pahalgam and (75%) in Sonamarg, respectively. Major chunk of the ponywallas from both areas were involved in vaccinating ponies against diseases with percentage of such respondents being (60%) and (53.7%), respectively in Pahalgam and Sonamarg. However majority of ponywallas from both the areas were opting for leaving the dead animal as such while being significantly higher ($p < 0.05$) in Sonamarg (86.25%) than Pahalgam (72.5%) (Table 3).

Exercise to ponies was very limited in both areas and majority of respondents from both the areas used to groom the ponies on a daily basis with percentages of such respondents being (95.83%) in Pahalgam and (88.75%) in Sonamarg. The method of identification using branding with a significantly higher ($p < 0.05$) percentage of respondents from Sonamarg (20%) compared to only (10%) respondents in Pahalgam. Foals were having a positive response to early pre weaning paddock exercise and exercise over and above that normally occurring with pasture-reared foals, introduced as early as 3 weeks old, have positive effects on equine musculoskeletal system [19]. Reason behind the grooming of ponies being followed on regular basis is that the presentation of ponies lays an impact on the minds of tourist (customers) hiring them for safaries as the two areas are well known tourist destinations and failing to do so may result in reduced earnings.

The results indicated that in Pahalgam, availability of credit and other subsidiary facilities was the first main constraint to ponywallas (average score of 61.60). This was followed by involvement of middle men in fixation of safari rates/ Yatra charges (59.74). The other constraints perceived by ponywallas of Pahalgam are presented in (Table 4). In Sonamarg region, the main constraints were high costs of feed and fodder average score 58.30, followed by involvement of middle men in fixation of safari rates/ Yatra charges 58.24. The other constraints perceived by ponywallas of Sonamarg are presented in (Table 4). Similarly a study on Bakarwals rearing equines in Jammu and Kashmir revealed that poor health facilities, government apathy, poor credit and lack of animal insurance were main constraints as perceived by the community [20]. So facilities (health care, loan and credit) from government agencies and animal insurance may be helpful in their upliftment.

Table 1: Pregnant mare management

Parameter	Practices in vogue	Pahalgam N(11)	Sonamarg N(11)
Concentrate feeding to advanced pregnant mare	Yes	72.72(8)	100(11)
	No	27.27(3)	0(0)
Attending mare at time of foaling	Yes	9.09(1)	27.27(3)
	No	90.90(10)	72.72(8)
Help in case of retention of placenta	by veterinarian	36.36(4)	54.54 (6)
	by paravet/assisting staff	63.63(7)	45.45(5)
Foaling	normal delivery	90.90(10)	72.72(8)
	Dystokia	9.09(1)	27.27(3)
Washing of hind quarters of mare after expulsion of placenta	Not done		
Disposal of placenta	Thrown in open		

Figures in parenthesis are no. of respondents out of "N" from each area under study

Table 2: Feeding method, type and source of feed, frequency and regularity of feeding

Parameter	Practice in vogue	Pahalgam N(120)	Sonamarg N(80)
Type of feeding practice	Stall feeding only	0(0)	0(0)
	Grazing only	0(0)	0(0)
	both stall and grazing	100(120)	100(80)
Method of feeding	Individual	45(54)	41.25(33)
	Group	55(66)	58.75(47)
Grazing site	Common pastures	83.33(100)	77.5(62)
	Harvested lands	1.66 ^a (2)	22.5 ^b (12)
	Both pasture and harvested lands	15(18)	0(6)
Dry fodder used	Grass only	0(0)	0(0)
	Straw only	0(0)	0(0)
	both grass and straw	100(120)	100 (80)
Feeding jiggery	Yes	100(120)	100(80)
	No	0(0)	0(0)
Feeding of common salt	Yes	100(120)	100(80)
	No	0(0)	0(0)
Feeding of mineral mixture	Done	0(0)	0(0)
	not done	100(120)	100(80)
Cultivation of green fodder	Yes	0(0)	0(0)
	No	100(120)	100(80)
Concentrate mixture fed	home made only	0(0)	0(0)
	ready made only	19.66(23)	10(8)
	Both homemade and ready made in combination	80.33(97)	90(72)
Watering schedule	3 times	16.66(20)	10(8)
	>4 times	83.33(100)	90(72)

Values with different superscripts between regions within a row are significant at $p < 0.05$. Figures in parenthesis are no. of respondents out of "N" from each area under study

Table 3: Healthcare and sanitation facilities practices

Parameter	Practice in vogue	Pahalgam N(120)	Sonamarg N(80)
Consultation of sick animal	Consultation by vet	76.67(92)	75(60)
	Consultation by Paravet	23.33(28)	25(20)
Vaccination against diseases	Vaccination done	60(72)	53.75(43)
	Not done	40(48)	46.25(37)
Deworming	Deworming done	84.16(101)	77.5(62)
	Deworming not done	15.83(19)	22.5(18)
Sick animal isolation	Isolation done	25(30)	23.75(19)
	Isolation not done	75(90)	76.25(61)
Disposal of dead animals	Deep burial	27.5 ^b (33)	13.75 ^a (11)
	Leave as such	72.5 ^a (87)	86.25 ^b (69)
Cleaning of animal sheds	Daily	10.83(13)	16.25(13)
	Alternately	89.16(107)	83.75(67)
Cleaning of feeder and trough	Daily	89.16(107)	88.75(71)
	Alternately	10.83(13)	11.25(9)
Lice and tick control	Manual removal	73.33(88)	70(56)
	Dusting medication	26.67(32)	30(24)
Mosquito and fly control	Smoke from waste grass		

Values with different superscripts between regions within a row are significant at $p < 0.05$. Figures in parenthesis are no. of respondents out of "N" from each area under study

Table 4: Ranking of constraints by Garret's ranking technique

Factors	Pahalgam N (120)		Sonamarg N (80)	
	Average score (T/120)	Final Rank	Average score (T/80)	Final Rank
F1	30.24	10	40.93	8
F2	55.92	5	57.26	3
F3	53.14	7	51.40	7
F4	55.19	6	58.30	1
F5	61.60	1	55.84	6
F6	56.66	4	56.90	4
F7	59.74	2	58.24	2
F8	58.48	3	56.83	5
F9	29.23	11	33.84	9
F10	39.63	8	33.25	10
F11	36.43	9	33.24	11

F1= access to veterinary services/ distance of vet. Centre from residence; F2= availability of treatment for colic; F3=availability of regular and timely vaccination against diseases; F4=high costs of feed and fodder; F5= availability of credit and other subsidiary facilities; F6=poor animal insurance facility; F7=involvement of middle men in fixation of safari rates/ Yatra charges; F8=lack of on track veterinary services (Shri. Amarnath Yatra); F9= problems due to imbalanced diet to ponies; F10=problems due to lack of proper hygiene and sanitation; F11= ease in equine trade/marketing

Conclusion

It is concluded that the ponywallas in both the regions were socio-economically weak, illiterate, and were using mostly unscientific methods of rearing. Unavailability of credit and other subsidiary facilities, poor animal insurance facility, lack of on track veterinary services, involvement of middle men in fixation of rates and high feed and fodder costs were major constraints which require attention from concerned authorities.

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References

- 20th Livestock census All India report. Govt. of India, Directorate of Economics and Statistics. Ministry of Agriculture, department of Animal Husbandry, Dairying and Fisheries Krishi Bhawan, New Delhi, 2019.
- Fazili MR, Kirmani MA. Equine: The Ignored Working Animal of Kashmir: Status, Constrains, Research Areas and Ways for Improvement. Asian Journal of Animal Sciences. 2011; 5(2):91-101.
- Jammu and Kashmir Ecotourism Policy Draft. www.jkgad.nic.in/common/vieweventpdf. 2017.
- Snedecor GW, Cockran WG. Statistical Methods, 8th Ed. The Iowa State University Press, Ames, Iowa, USA, 1994.
- Zalkuwil J, Singh R, Bhattarai M, Singh OP, Rao D. Analysis of constraints influencing sorghum farmers using Garrett's Ranking Technique; A comparative study of India and Nigeria. International Journal of Scientific Research and Management. 2015; 3(3):2435-2440.
- Morris LHA, Allen WR. Reproductive efficiency of intensively managed Thoroughbred mares in New market. Equine Veterinary Journal. 2003; 34:51-60.
- Carbonara D, Buono R, Nicassio M, Lacalandra G. The use of frozen semen in an equine artificial insemination centre. Results of four year period (1998-2001). 2003; 14:31-34.
- Bhakar S, Malik JS, Singh S, Dahiya S. Comparative adoption level of farmers regarding improved animal husbandry practices in watershed and non-watershed villages. Journal of Dairying Foods & H.S. 2006; 25:51-54.
- Sue M, Donnell M. Reproductive behaviour of stallions and mares. Comparison of free-running and domestic in-hand breeding. Animal Reproduction Science. 2000; 60:211-219.
- Mckendrick S, Evans P, Bagley C. Proper basic hoof care, equine, Utah State University, Cooperative extension, 2010, 1-5.
- Sehu A. Feeding of foals (a review). Lalahan-Hayvancik-Arastma-Enstitusu-Dergisi. 2000; 40(1):76-89.
- Pal Y, Legha RA. Socio-economic status of mule producers and managerial practices of mule production in rural areas, Indian Journal of Animal Sciences. 2008; 78(11):1281-84.
- Schwarz FJ, Sliwinski H, Schuster M, Rosenberg E. Variation in the nutrient composition of different feed stuffs for horses. Equine Medicine. 2005; 21:9-10.
- Meyer H, Klug E. Dietary effects on the fertility of mares and the viability of newly born foals. Pferdeheilkunde. 2001; 17:47-62.
- Dhiman PC, Singh N, Yaadav BL, Srivastava DN. A Study on pattern of utilization and disposal of milk in the adopted and non-adopted villages in Hisar district. Indian Journal of Animal Sciences. 1990; 79(8):824-828.
- Bhat MA, Ganai AM, Farooq J, Sheikh GG, Haq Z. Socio-economic Status of Equine Owners, Shelter Management Practices and Morphometry of Equines in District Anantnag of Kashmir Valley. International Journal of Current Microbiology and Applied Sciences. 2018; 7:2873-2881.
- Hassan S, Ganai AM, Beigh YA, Farooq J, Shiekh GG, Masood D *et al.* Survey on socio-economic status of equine owners and shelter pattern for horses in district Budgam of Kashmir valley. In: Proceedings of 16th Biennial Animal Nutrition Conference on "Innovative Approaches for Animal Feeding and Nutritional Research" held at NDRI, Karnal, Haryana, India, 2016; 277.
- Swai ES, Bwanga SJR. Donkey keeping in Northern Tanzania. Socio-economic roles and reported husbandry and health constraints. Livestock Research for Rural Development, 2008, (20). <http://www.lrrd.org/lrrd20/5/swai20067.html>
- Rogers CW, Charlotte F, Bolwella JC, Tanner P, Weerenb RV. Early exercises in horses. Journal of Animal Behaviour. 2012; 7(6):375-379.
- Kirmani NR, Banday MT, Wani A, Pampori ZA, Adil S. Routes Adopted by Bakarwals during Migration of Livestock and its Constraints. Journal of Krishi Vigyan. 2020; 8(2):1-4