



Managerial practices and welfare of pack animals in middle Himalayan region of India

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In India there are around 1.58 million equines which are primarily kept in Himalayan region and scarcely distributed in other parts of the country (Annual Report 2009). More than 500 villages in Uttarakhand depend mainly on pack animals for their supply and transportation (Farooque *et al.* 2008). In hilly region the pack animals, mainly mules and horses, transport people, agricultural commodities, building materials and play a major role as a source of livelihood to the farmers. But these animals often suffer from maltreatment, overloading and ill feeding despite their uses (Swarup 2007). Animals suffer from lack of shelter, insects bite at markets or working sites. Shortage of fodder and grazing areas and rising costs of feeds are big problems especially in winters (Burn *et al.* 2010). Therefore the present study was undertaken taken to focus on the managerial practices and welfare of pack animals of hilly areas in middle Himalayan region of India.

The present study was conducted purposively in Chamoli and Uttarkashi districts of Uttarakhand during the winter (January and February 2015). The pack animal owners were selected using snowball sampling and a total sample size of 80 respondents (40 from each district) was selected. Each owner selected had a minimum of 2 pack animals. Information regarding the socio-economic status, existing management and welfare practices followed was collected using a semi-structured and pre-tested interview schedule by personally interviewing the respondents and physical observation of animals. Different practices followed by them were also observed keenly, recorded and compared as per the standard practices recommended for the pack animal rearing and welfare. Analysis of collected data was done as per Snedecor and Cochran (1994).

The study revealed that majority of the pack animal owners were middle aged with a mean age of 36 years and education up to high school and they were rearing pack animals as their primary occupation with more than 9 years of experience. The owners provided concentrate, green fodder and dry fodder but it depended on the availability, price and kind of work taken by the animals. The concentrates fed included gram, jaggery, wheat bran and

about 4.8 kg concentrate was fed during the work. The amount of concentrate feed reduced to 1.98 kg during the day of rest. Rao *et al.* (2010) also found that the equine owners provided jaggery to protect animals from tiredness and cold and to aid proper digestion. About 18% of the pack animal owners answered in favour of decreasing quantity of concentrate in resting hours (Panwar 2004). Majority of the owners fed green fodder (more than 2 kg) during the work and only 1.75 kg during the rest. The majority of respondents fed 3 to 4 kg dry fodder on working day and reduced the quantity to about 2.7 kg during the rest; however there was no significant difference between amounts of provided feeds during rest and working hours. The fodder fed mainly included the local available grass, lucerne and maize and dry fodder were mainly *bhoosa* and straws. Mineral mixtures and salt were not fed to the animals. Present study agrees with Rao *et al.* (2010) who reported that about 95% of equine owners fed mostly straws and stovers like wheat *bhoosa* to provide bulk to the feed. Biswas *et al.* (2009) reported that equines were provided available feed, mainly grass, and few cereal by-products. Mineral mixture was rarely fed as a routine practice. The owners were feeding animals in the best possible way but this was not as per the scientific recommendations.

With regards to housing management and welfare, it was found that cent per cent of the owners had a provision of *kutch* type sheds for the animals and majority (51.51%) of the sheds had a height of 6 to 7 feet followed by 19.7% having sheds with height of 8 feet. It was lower than the recommended height of 15 to 20 feet. The roofs of sheds were temporary and were made of tent or tin sheets and the walls were either absent or made of stones. The animals were tied together under one shed and the floor space area for each animal was lower than the recommended value of 10×10 feet² (3×3 m²) for mules and 14×14 feet² (4.2×4.2 m²) for horses. The ventilation inside the sheds was however adequate, but this may be because of no proper walls favouring easy passage of air. Disinfection of the sheds was not carried out and there was no provision of drainage. This study is in line with study of Biswas *et al.* (2013), who found that floor space was not adequate and the equine sheds had no proper height but in most cases the houses had proper ventilation.

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Majority of the owners (72.5%) practiced deworming but only 32.5% respondents were practicing regular deworming of their pack animals. Panwar (2004) reported that about 40% respondents were practicing deworming of the pack animal but did not practice it regularly. Regular vaccination was not done by any of the respondents. Majority of the owners (52.5%) had never vaccinated their animals followed by 47.5% who had sometimes vaccinated their animals against equine influenza. Panwar *et al.* (2008) also reported that no mule and donkey owner was practicing vaccination of the animals. Biswas *et al.* (2013) reported that vaccination was not carried out in most (96%) of the animals. Isolation of the diseased animals was practiced only by 27.5% of the pack animal owners while 72.5% respondents did not isolate the diseased animals. It might be due to lack of scientific knowledge about isolation and no provision of extra shelter by the pack animal owners. About 60% of the owners used local or traditional medicines (turmeric, mustard oil and local weeds called *Eupatoruim adenophorum*) for remedies of leg and back injuries (Shelima *et al.* 2007, Biswas *et al.* 2013). Majority of the respondents (87.5%) said that they took the animals to the veterinary doctor for treatment followed by local healers (6.25%), paravets (5%) and self-treatment (1.25%). None of the respondents left the animal without treatment which showed that they are concerned

about the health of the animals. It resembles with the findings of Biswas *et al.* (2013), who found that owners mostly got animals treated by veterinary doctors but this findings do not agree with the findings of Mekuria and Abebe (2010) and Shelima *et al.* (2007) where animals were mostly treated with traditional medicines without consulting a registered veterinarian.

It is evident that 100% respondents were aware of the attributes like freedom from thirst and hunger, freedom from injuries and diseases etc. About 90% respondents said that they knew about freedom from fear and distress of the animals followed by 87.5% knowing about freedom from pain and discomfort; 81.25% respondents told about the freedom to express normal behaviour and enough space for movement of animals. But none of the respondents were aware about the Space Prevention of Cruelty to Animals (SPCA) or People for Ethical Treatment of Animals (PETA) as animal welfare agencies.

The welfare or ethical practices used by the farmers (Table 1) suggested that majority of the respondents (52.5%) have never beaten their animals followed by rarely beating of animals (27.5%). The respondents said that beating is required when the animals do not walk properly or not listen to him. Usually they used thin sticks to beat the animals. All the owners massaged their animals after work. The present study contradicts the findings of Ramaswamy

Table 1. Distribution of welfare and ethical practices used by pack animal owners

Beating the animal	Welfare/ Ethical practices						
	n=80	Massaging after work	n=80	Load (in kg)	n=80	Hours used for work (h)	n=80
Rarely	22 (27.5)	Yes	80 (100)	Up to 50	15 (18.75)	3–6	31 (38.75)
Sometimes	16 (20)	No	0 (0)	50–100	65 (81.25)	6–9	44 (55)
Never	42 (52.5)	-				9–12	5 (6.25)

Figures in parentheses indicate percentage of respondents.

Table 2. Distribution of pack animals based on observed health and behaviour parameters

Characteristics	Pack animals (n, 225)			
		Horse (n, 22)	Mule (n, 203)	Pooled (n, 225)
Coat	dry/ matted/ uneven	18 (81.82)	203 (100)	221 (98.22)
	coat normal	4 (18.18)	0 (0)	4 (1.78)
Ectoparasites	present	0 (0)	0 (0)	0 (0)
	absent	22 (100)	203 (100)	225 (100)
Mucous membrane	anaemic	7 (31.82)	65 (32.02)	72 (32)
	normal	15 (68.18)	138 (67.98)	153 (68)
Limb deformity	present	0 (0)	51 (25.12)	51 (22.67)
	absent	22 (100)	152 (74.88)	174 (77.33)
Scars on body	present	9 (40.91)	160 (78.81)	169 (75.11)
	absent	13 (59.09)	43 (21.18)	56 (24.89)
General aptitude	alert	20 (90.91)	149 (73.4)	169 (75.11)
	apathetic	2 (9.09)	54 (26.6)	56 (24.88)
Response to owner	friendly	22 (100)	203 (100)	225 (100)
	aggressive	0 (0)	0 (0)	0 (0)

Figures in parentheses indicate percentage of respondents.

(1994) who reported that most of the animal owners were not even aware of animal welfare practices. The owners kept a maximum weight of 100 kg on the back of the animals irrespective of their body weights and used the animals for 6 to 9 h/day with rest in between which was as per the recommendations of Prevention of Cruelty to Draught and Pack Animals Rules (Gazette of India 1965).

The distribution of animals based on health and observed behaviour are presented in Table 2. A total of 81.82% horses and 100% mules had dry/ matted/ uneven coat. Almost all equines in the study area were free from ectoparasitic infestation which contradicts the findings of Ahmed *et al.* (2010) who found 11% of the equines were infested with ectoparasites. A total of 68.18% horses and 67.98% mules had normal mucous membrane whereas 31.82% horses and 32.02% mules were anaemic. Biswas *et al.* (2013) observed that 17% of the animals showed unhealthy skin coat, 16% having ectoparasite infestation and 13% with abnormal mucous membrane. The study showed that 25.12% mules suffered from limb deformity but most of the mules (74.88%) and cent per cent horses were free from limb deformity. Majority of the mules had scars on their body followed by absence of scars. However, majority of the horses had no scar on their body. Skin lesions were reported as the major welfare issue in working equines (Burn *et al.* 2010, Biffa and Woldemeskel 2006). Most of the equines were alert in behaviour followed by apathetic animals. Biswas *et al.* (2013) also observed that majority of the animals were alert and most of them were friendly with their owners.

SUMMARY

The results revealed that most of the owners provided all kind of feed to the pack animals but there was variation in amount of feeds during work and rest. Majority of them provided *Kutch* type shelters to pack animals with less adequate heights and floor space areas. Majority of the equines had dry matted coat, normal mucous membrane, no limb deformity, free from ectoparasites and about 75% of them had scars on their body, alert aptitude and almost all animals were friendly to owners. They carried load of 100 kg on back of animals and majority of them (55%) used the animals for 6–9 h with rest in between. The owners put best efforts to keep the animals in the best way. The farmers followed all the routine practices recommended for pack animal rearing, although most of them were not aware of the scientific rearing practices. Most of the farmers consulted a veterinarian for treatment. However, they also exploited the animals and did not follow the norms made by the government, therefore, the pack animal owners need to be trained as per the scientific recommendation for better management practices of the pack animals so that they can utilize these animals to their maximum potential for enhancing livelihood without compromising with the welfare measures.

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