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Yak population trends and their breeding status in the UT of Ladakh

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Abstract

Yaks (*Bos grunniens*) have been an irreplaceable part of nomadic pastoralists of Ladakh and adjacent areas of Central Asia for centuries. Yaks not only provide these pastoralists with their basic needs in the form of food (milk & meat), dung for fuel, hides and hairs for clothing, as beasts of burden and transportation but they also help sustain the rural environment in these tundra deserts by leaving a very little ecological footprint. The present study was taken up with an objective to ascertain the population and breeding status of yaks and its crosses in the Ladakh region. As it was observed through studies that since few decades, the dependence on yaks has declined as a result of several factors including lack of quality breeds for breeding, insufficient pastureland, and socio-economic development. This paper tries to describe the earlier and present trends in yak populations and breeding of yaks. In the present study it was revealed that yak population in both areas under study were showing a declining trend with youth being attracted towards the other job opportunities and that the yak breeding practices that were being followed were the traditional ones resulting in increased inbreeding within the population.

Keywords: Yak, pastoralist, beasts of burden, crosses, breeding status, inbreeding

Introduction

Livestock, especially yak and its crosses, have been an immensely important livelihood resource for the people of Ladakh region. These animals have been closely associated with the culture, religion, and social fabric of the pastoralist tribes in these areas due to its ability to survive in this extremely harsh climatic and with very little resources at disposal. It is the vital source of food, clothing, shelter and fuel. As agricultural activities at such high altitude is unsustainable the locals in these areas have adapted to a pastoral mode of life, rearing different livestock for their survival. Pastoralism has been the lone means of survival and subsistence for these people (Hagalia 2004; Walker and Meyers 2004; Walker *et al.* 2004) [3, 9, 10].

Studies have revealed that pastoral practices in the Ladakh region have decreased drastically with lifestyle changing from being nomadic to sedentary, resulting in over grazing and increased pressure on the available rangelands in the area surrounding these settlements (Singh *et al.* 2013) [8]. Besides this overgrazing has resulted in the change composition of plant population and a reduced plant cover with a threat of extinction to valuable fodder species.

Studies have revealed that the yak population in Ladakh has decreased considerably over the last few decades. Reasons being very low production of yak, increasing competition for grazing lands from high producing cattle crosses, coupled with the formidable chances for employment in other sectors such as tourism etc. These issues along with growth in population, increased demand for goods and services, and education, has led to a rapid change in the pastoralist lifestyle (Singh *et al.* 2013) [8].

Material and Method

Present study was conducted in yak and its cross rearing areas of District Kargil and District Leh in UT of Ladakh. From the Kargil district 5 villages namely Mushko, Holiyal, Rangdom, Abran and Aksho were selected with first two villages being from Drass and rest from Zaskar region respectively. On the similar lines 5 villages from block Nyoma of Leh district namely Chumanthang, Chumur, Hemya, Korzak, Kungium were selected. Owing to the presence of yak and its cross rearing communities in these regions.

To ascertain the trends in population and breeding of yak and its crosses a survey was carried. Wherein the rearers were interviewed with respect to their livestock Inventory especially yak and its cross numbers and the present breeding status with respect to these animals.

Representatives from 158 families i.e. 79 families from Kargil & 79 families from Leh. Respondents for this study were selected purposively in the adjoining rangelands owing to their sporadic locations and less population. Information for present study was gathered on an open-ended questionnaire. Besides door to door surveys of the animal shelters and keeping places was done to count the heads.

Results and Discussion

In the present study it was observed that when it came to the number of yaks their was a significant difference observed between the two areas of the study with an average number of yaks (0.2405 ± 0.5469) per family compared to (0.7089 ± 0.09035) yaks in Kargil and Leh respectively. However there was no significant difference observed when it came to the number of yakmo (female yaks). Besides this no significant difference was observed when it came to the number of dzo's (sterile male produced from male yak \times local female cattle cross). Significant differences was also seen in the average number of Dzomo's (fertile female produced from male yak and local female cattle cross) between the two regions under study (3.8101 ± 0.23770) and (1.6076 ± 0.08717) in Kargil and Leh respectively. Moreover significant difference was also seen when it came to the average number of Garmo's (fertile female produced by male yak \times dzomo) per respondent between the two regions with (0.7975 ± 0.09598) in Kargil and (3.4557 ± 0.18618) in leh respectively. There was no significant difference between the two regions what so ever when it came the average number of Gar's (sterile male produced by male yak \times dzomo) (Table 1). The Table2 gives the actual head count of the different animals in the sample no.of respondent from different villages from the two areas

under study at the time of survey. In a similar kind of study by Shrestha *et al.* 1996 in Nepal observed that production from the female yak (nak) is generally low and herders prefer to keep crossbreeds, which have a higher milk productivity.

Table 1: Average number of Yak and it's crosses per respondent (Mean \pm SE)

Species	Kargil (N= 79)	Leh (N= 79)	Overall (N= 158)
Yak	0.2405 ± 0.5469^b	0.7089 ± 0.09035^a	0.4747 ± 0.05586
Yakmo	2.0127 ± 0.13541	1.8354 ± 0.14235	1.9241 ± 0.09818
Dzo	0.1392 ± 0.04675	0.2405 ± 0.06793	0.1899 ± 0.04130
Dzomo	3.8101 ± 0.23770^b	1.6076 ± 0.08717^a	2.7089 ± 0.15378
Gar	0.1519 ± 0.05722	0.1772 ± 0.05909	0.1646 ± 0.04101
Garmo	0.7975 ± 0.09598^a	3.4557 ± 0.18618^b	2.1266 ± 0.14883

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

The result revealed that there was a significant decrease in the yak population over the last few decades in the entire region of the UT of Ladakh. Which was reiterated by the 20th livestock census by the department of Animal Husbandry and Dairying (livestock census 2019). However earlier (19th livestock census) placed the erstwhile state of Jammu & Kashmir which included the UT of Ladakh as it's part at the top spot when it came to yak populations. 20th livestock census revealed that the yak population was showing a declining trend in the region with a decrease of 51% with the population decreasing from 54493 to 26221 yaks only. However no specific and sufficient data in relation to the other crosses was available.

Table 2: Animals within different villages of the study areas

	Mushko (19)	Holiyal (15)	Rangdom (25)	Abran (10)	Aksho (10)	Chumanthang (19)	Chumur (15)	Hemya (25)	Korzak (10)	Kangium (10)
Yak	3	2	5	5	4	10	12	17	9	8
Yakmo	43	23	56	20	17	24	31	49	17	24
Dzo	4	1	5	0	1	6	3	5	1	4
Dzomo	48	41	109	52	51	32	22	42	16	15
Gar	2	1	7	2	0	5	3	4	1	1
Garmo	3	4	27	18	11	48	37	97	49	42

Breeding status

Genetic diversity within the yak population in the region of Ladakh has not yet been investigated. However, there are major physical differences between the yaks of Kargil and Leh region in terms of body size. With yaks from Kargil being larger and heavier than the yaks from Leh with its body weight ranging between 500-600 kg's. This difference being mainly attributed to better quality and quantity of forage in Kargil.

When it came to the breeding status and breeding practices that are being followed in study area it was observed that 100% of the respondents from both the regions were following natural breeding only and there has been no effort to improve the breed through selective, cross breeding and artificial insemination. The season of breeding being between the months of July to October when most of the pastoralists are usually away from the villages. Besides this 100% of the respondents from both the areas under study said that the first parturition in yaks occurs at the age of 5-6 years and the rate of survival being low as well with only 1-2 calves surviving

in a span of 4-5 years out of 3-4 which are born.

When asked about the type of yak bull used for the breeding and the no.of males kept for breeding all the respondents from both the regions opted for local yak bulls with desirable characters. Besides this majority of the village clusters maintain male yaks with different physical attributes, and they rarely exchange them with the yaks from far away villages. Moreover none of respondents from both the regions was aware about the stage at which the yakmo's were bred neither they were having any sort of information with respect to the heat detection and pregnancy diagnosis. When enquired about the treatment of anestrus and repeat breeders 100% of the respondents responded to have never ever gone for any such treatment. In a similar kind of study carried out by Pandey *et al* 2020 [4] it was revealed that modernization; in-breeding and unavailability of pure yak germ plasm, climate change threats, diseases incidences and declining of forests and shrinking of grazing pastures in high altitudes some of the reasons in the decline of yak rearing. On similar lines Sherchand and Karki 1996 revealed that small herd size and inbreeding problems

have adversely affected yak farming in Nepal due to the lack of a systematic planned breeding programme to develop genetically improved breeds of yak. Parajuli *et al.* 2013 revealed in their study that Yak and nak farming is still practiced in a traditional manner in Nepal with little or no attention being given to breed improvement, enhancement of productivity.

References

1. Govt. Of India. 19th Livestock Census—All India Summary Report. Department of Animal Husbandry and Dairying, Ministry of Agriculture, New Delhi; c2012.
2. Govt. Of India. 20th Livestock Census—All India Summary Report. Department of Animal Husbandry and Dairying, Ministry of Agriculture, New Delhi; c2019.
3. Hagalia W. Changing rangeland use by the nomads of Samad in the highlands of eastern Ladakh, India. MS Dissertation, Agriculture University of Norway, Oslo, Norway; c2004.
4. Pandey N, Somvanshi S, Kumar S, Prakash B, Singh C. Yak rearing practices by (Brokpa) pastoralist of Tawang Arunachal Pradesh. *Journal of Entomology and Zoology Studies*. 2020;8(3):1067-1071.
5. Parajuli P, Paudel N, Gyawali R. Changes in pastoral production systems in high- altitude village-rangeland interfaces in Nepal. High-altitude rangelands and their interfaces in the Hindu Kush Himalayas. Kathmandu, Nepal: ICIMOD; c2013. p. 48-54.
6. Sherchand L, Karki NP. Conservation and management of yak genetic diversity in Nepal.' In Miller D; Craig, SR; Rana, GM (eds), *Proceedings of Conservation and Management of Yak Genetic Diversity, Workshop*, 29-31 October, 1996, Kathmandu, Nepal. Bangkok, Thailand: FAO Regional Office for Asia and the Pacific; c1996. p. 47-56.
7. Shrestha BS, Kshatri KS, Shrestha NP, Sherchand L. Morphological characteristics, productive and reproductive performance of yak/nak.' In Kuwar, BS; Shrestha, HR (eds), *Proceedings of the 1st National Workshop on Livestock/Fisheries Research in Nepal*. Lalitpur, Nepal: National Animal Science Research Institute. 1996 May 7-9;73-80.
8. Singh NJ, Bhatnagar YV, Lecomte N, Fox JL, Yoccoz NG. No longer tracking greenery in high-altitudes: Pastoral practices of Rupshu nomads and their implications for biodiversity conservation.' *Pastoralism: Research, Policy and Practice*. 2013;3:16.
9. Walker BH, Meyers JA. Thresholds in ecological and social-ecological systems: a developing database. *Ecology and Society*. 2004;9(2):3.
10. Walker BH, Holling CS, Carpenter SC, Kinzig AP. Resilience, adaptability and transformability.' *Ecology and Society*. 2004;9(2):5.