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Prevalence of Gastrointestinal Parasites in Yaks of Lehe VDC, Manaslu Conservation Area

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Abstract

Qualitative analysis of 44 fecal samples of yaks from Lehe VDC of Manaslu Conservation Area showed the positive result in 36 samples (81.82%). *Strongyle* showed the highest infection (47.23%) while the least was with *Amphistomum* (8.34%). Infection with *Trichuris*, *Ascaris*, *Eimeria* and *Coccyx* were also reported in the present study. The pattern of infection was both mixed (52.78%) and single (47.23%).

Key Words: *Ascaris*, GI parasites, prevalence, *Strongyle*, *Trichuris*

Introduction

Yak is Himalayan cattle, native to Himalayan region of Nepal, Bhutan, China and India. It is the only domestic animal which survives and thrives in high Himalayas and is found in alpine and subalpine zone where flat lands with extensive grassy meadows exist. In different parts of the world, yak farming has been recognized as an important source of income for various pastoral tribes in the remote areas in many countries including Nepal.

Gastrointestinal parasitic (GI) infection in livestock including yak is very common. The economic losses due to parasitic infection are numerous (Newton 1995) causing morbidity and sometimes also mortality in the animals which have direct impact upon the livelihood of people. GI parasites degrade their health resulting decrease in production of quality milk, meat and hair product (Waller 2002). Since parasites have significant impact upon on the health and nutrition of their host, the identification and further treatment of the parasites is a must for increasing the productivity of yak.

Researches on gastrointestinal infection in yaks are being conducted in various parts of the world especially in Bhutan, China, India and Nepal. Joshi (1982) has reported the incidence of liverfluke in both yak and their cross breeds with cattle in many villages of Nepal. Similarly Weiner *et al.* 2003 have found out *Fasciola hepatica*, *Echninococcus* cysts and nematodes in yaks of Nepal.

A number of studies on the gastro-intestinal nematode fauna of yak have been performed in various parts of the world, such as in China (Hogg 2004, Yunfeil *et al.* 2004), India (Katiyar *et al.* 1981, Rai *et al.* 1989, Ansari *et al.* 1989, Yadav *et al.* 2007, RangaRao *et al.* 1994, Bandyopadyay *et al.* 2010, Rahaman *et al.* 2010), Bhutan (Wangdi 1996) and Tibet (Liu 1994). As expected, a comprehensive array of species have been reported, representing the range of important nematode, trematode and cestode species commonly found in bovine and ovine hosts, some being apparently yak-specific (Waller 2002). One incidence

was reported by Yadav *et al.* 2007 for the isolation of *Parafilaria bovicola* from yak of Arunanchal Pradesh of India which is the causative agent of verminous haemorrhagic dermatitis. Some studies have also reported the helminthic infection in the Bhutanese yaks (Wangdi 1996) and Tibeten yaks (Liu 1994).

Moreover no documented record of yak GI parasites of the cited area has been reported thus the present study will identify the occurrence of the parasites that can be a useful tool for the control of parasitic diseases having at Lehe VDC which might have direct impact upon the yak production.

Methodology

Study Area and Sample Collection

Sample collection was done during October 2010 in the Lehe VDC around Hinang gumba of Manaslu conservation area which is located at an altitude of 11831feet and 28° (N), 84°(S). A total of 44 fresh fecal samples were collected and were placed in a zip lock poly bag to which few drops of 10% formalin soaked in cotton was added as a preservative. The samples were then stored in a cool and dark area and brought to laboratory for further analysis.

Sample Analysis

Collection of fecal samples All samples were analyzed qualitatively (sedimentation and differential floatation method) in the lab for the presence of gastrointestinal parasite.

Results and Discussion

Faecal sample examination showed the total prevalence of 81.82% (36/44) with 52.78% (19/36) mixed infection and 47.23% (17/36) single infection. *Strongyle* infection was reported to be maximum i.e. 47.23% (17/36) which is similar to the study performed by RangaRao *et al.* (1994) and Rahaman et al. (2010). *Ascaris* infection was reported to be 41.67% (15/36), coccidian parasites (*Eimeria*) 38.89% (14/36), *Trichuris* 30.56% (11/36), *Fasciola* 19.45%(7/36) and *Amphistomum* 8.34% (3/36). *Eimeria, Trichuris* and *Strongyle* were also reported in a study performed by Hogg (2004) while presence of *Fasciola* has been reported by Weiner *et al.* (2003). Since the yaks found in Lehe VDC are similar to all the domesticated yaks in other parts of the world thus the parasites reported were also in accord with the researches performed by different researchers. The presence of GI parasites have significant impact upon the health of yak, thus interfering their growth, so further researches on yak parasites need to be undertaken to determine the prevalence of zoonotic diseases and their impact on yak and their hybrids for their healthy development and increase production. Determination of the prevalence of parasites can help yak herders and veterinary professionals in making recommendations for treatment, control and pasture rotation to limit parasitic burdens and consequently increase productivity of yak.

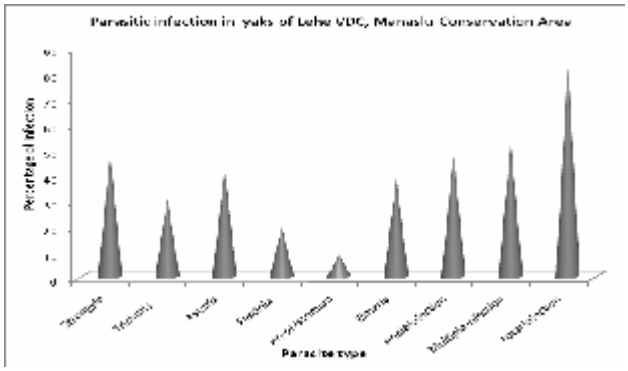

Fig. 1. Percent prevalence of gastrointestinal parasitic infection in yaks of Lehe VDC, Manaslu Conservation

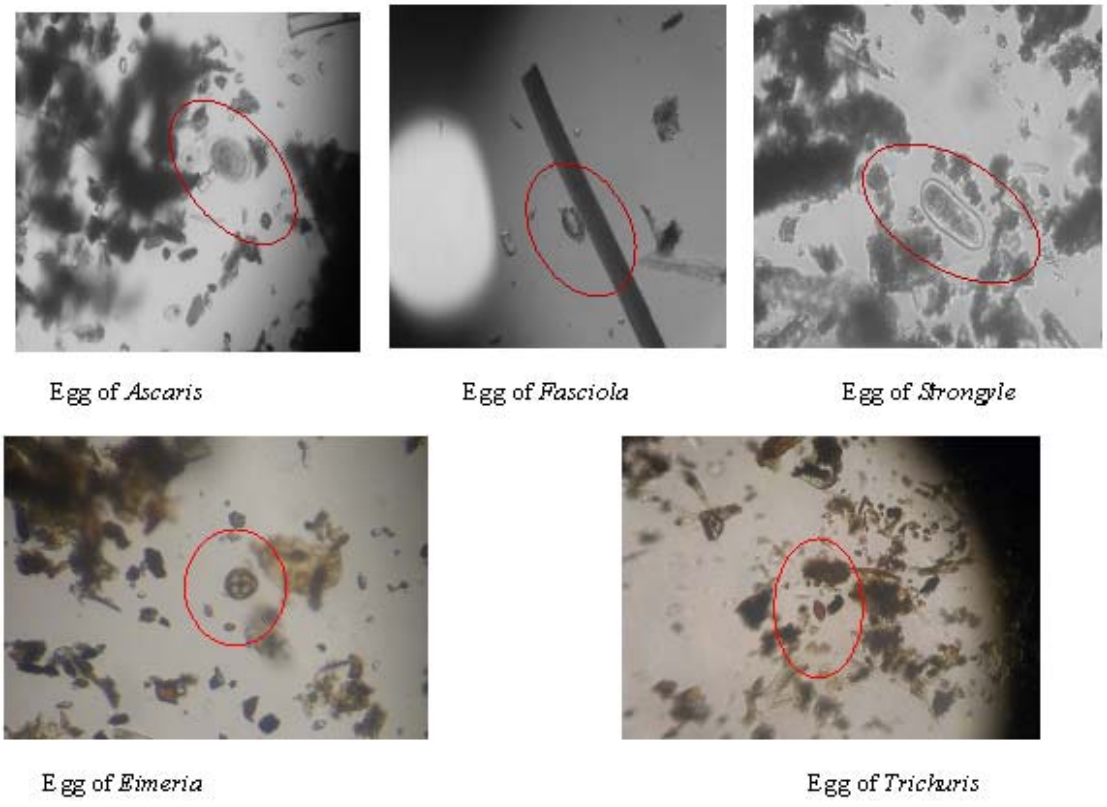

Fig. 2. Eggs of different parasite

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