

## Retrospective Study on the Prevalence of Foreign Body in Goats' Rumen: Omdurman Province, Khartoum State, Sudan (1998-2002)

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**Abstract:** Goats in Khartoum State are frequently raised as small backyard flocks to provide milk for personal consumption. Rumen foreign body is a major threat to goats in Khartoum. Omdurman Province is one of Khartoum State Provinces. The percentage of the foreign body in goats' rumen was high in the year 1999 (47.8%) and then declined to 33.3 and 39.1% during years 2000 and 2002 respectively. and Foreign body surgical operations (rumenotomy) percentage reached up to 44.4% compared to other surgical operations performed in goats in Omdurman Province. The present study aimed to compare the prevalence of foreign body in goats' rumen in Omdurman Province and the seasonality evidence and to provide recommendations for prevention and control.

**Key words:** Goats, rumen, foreign body, omdurman province

### INTRODUCTION

Goats are important species of livestock in most traditional agricultural production system. Rural families own small ruminants for provision of milk, meat and other needs. The recognition of the importance of goats is developed as results of the capacity that goats can service under marginal conditions unfavorable for cattle and sheep<sup>[1]</sup>.

In Sudan, goats are widely distributed animal species. In 2002 goats estimation was 41.485.000 million head<sup>[2]</sup> therefore; they play a major role in milk supply especially in villages and at the suburbs of cities and towns. Rearing goats provides a small but important supply of animal's protein of high biological values, plus essential minerals and fat soluble vitamins<sup>[3]</sup>.

Four local types of goats are found in Sudan; Nubian, Nilotic, Desert and Tagari or hill goats<sup>[4,1,5]</sup>.

Small number of foreign breeds was imported into Sudan as Damascus, Anglo Nubian, Saanen and Toggenburg goats<sup>[5]</sup>. Minor numbers of crosses of these breeds with indigenous were found in Khartoum State and El Gazira State<sup>[6]</sup>.

Goats in many villages and towns in Sudan, sometimes, are left freely in the streets to feed on any thing available even garbage and other harmful materials such as nylon sacks (Fig. 1). Accumulation of these foreign indigestible materials (Fig. 2) causes intermingling of these substances in the rumen and due to churning of the rumen then leads to precipitation of some of the



Fig. 1: Goats eating garbage (Nylon sacks)

ruminal contents and salts to form a hard mass occupying a large space in the rumen and consequently impairs

Table 1: The prevalence of foreign body in goats' rumen in omdurman province (Omdurman veterinary hospital during 1998 to 2002)

Year	Total no. of surgical cases in goats	No. of foreign body in goats' rumen	Prevalence%
1998	23	10	43.4%
1999	140	67	47.8%
2000	34	18	52.9%
2001	45	15	33.3%
2002	46	18	39.1%
Total	288	128	44.4%

Table 2: Seasonality of prevalence of foreign body in goats' rumen in Omdurman Province during 1998 to 2002

Season	Summer			Autumn			Winter		
	March- June			July-October			November-February		
Month	Other surgical cases	Foreign body cases	Prevalence %	Other surgical cases	Foreign body cases	Prevalence %	Other surgical cases	Foreign body cases	Prevalence %
1998	No record available			6	4	66.6	17	6	35.2
1999	14	11	78.5	64	32	50	62	24	38.7
2000	20	12	60	No record available			14	6	42.8
2001	14	4	28.5	16	7	43.7	15	4	16.6
2002	18	5	27.7	20	10	50	8	3	37.5
Total	66	32	48.9	106	53	50	116	43	39



Fig. 2: Foreign indigestible materials from goat's rumen

digestion, increases intra-ruminal pressure specially in pregnant ones and causes emaciation, poor condition and clear reduction in milk production<sup>[7]</sup>.

Goats with rumen foreign body were emaciated and usually diarrheic. They also invariably manifested acute pica, chewing odd objects even in presence of good quality food<sup>[7]</sup>.

Rumenotomy is a common practice in goats for removal of foreign bodies and saving goats life.

## MATERIALS AND METHODS

**Study area and data collection:** Area of study was Omdurman Province, Khartoum State. Data were collected from the records of cases and surgical records in Omdurman Veterinary Hospital.

**Statistical analysis:** The incidence of foreign body was calculated by dividing the number of rumenotomy cases by the number of other surgical cases.

The data of this study was analyzed using computer statistical package analysis using the SAS Program<sup>[8]</sup>.

## RESULTS AND DISCUSSION

Foreign body incidence is responsible for many goats' deaths per year in Sudan. Khartoum State has three Provinces, Khartoum, Omdurman and East Nile. The percentage of foreign body in goats' rumen was high (44.4%) in Omdurman Veterinary Hospital. In year 1999 high incidence (47.8%) was reported while in year 2001 lower incidence (33.3 %) were recorded (Table 1).

The rate of the seasonality of goats' ruminal foreign body in Omdurman Province was higher in autumn 50% and summer 48.9% and declined in winter season 39% (Table 2). The prevalence rate during summer was higher 78.5% in the year 1998 and lower 27% in year 2002. In winter the prevalence of foreign body decreased from 11 to 3% during the same period.

Goats in Omdurman area usually come from remote areas and villages surrounding Omdurman Province. These areas lack Veterinary services and the people are of low socioeconomic index. This might inflect the unwillingness of goat owners to bring in goats for

diagnosis of foreign body and are avoiding the cost and expenses of submitting goat for surgery.

Rumen foreign body incidence in Omdurman Province is affected by seasons as the prevalence rate is higher in summer and autumn and declined in winter season. This is due to the abundance of berseem and green forage which reduces the incidence. In summer and autumn seasons there is fluctuation in Berseem hay (*Medicago sativa*) and green forage yield. This fluctuation reflected in prices of Berseem hay.

In the year 2000, Khartoum State Emergency Environmental Health Correction Project started its activity. The project succeeded in proper disposal of wastes and plastic /nylon sacs. Goat keepers are then returned to keep them in doors. This led to declination in the incidence of ruminal foreign body 33.3%-39.1% during years (2001-2002), respectively.

The abundance and low price of Berseem hay share in lowering risk of ruminal foreign body.

Concentration of veterinary services and clinics nearby these villages play a role in goats' health and management.

This retrospective study leads us to stress on presenting educational information to the goats owners through veterinary extension.

Excellent success will be obtained by using community health workers for surveillance and primary diagnosis of foreign body.

Passing Legislation and laws should be issued to enforce all necessary measures to control and limit the use of nylon sacs as in other States in Sudan.

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