

## Research Article

### Teat and Udder Disorders in Goats (*Capra hircus*) in Bihar, India

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#### ABSTRACT

Bihar, a state of India with 2<sup>nd</sup> largest goat population in the country, gets substantial source of income for rural farmers from goats. But, teat and udder ailments cause a great economic loss. To find out the types of ailments data were collected from different districts of Bihar in different seasons for 34 months according to the lactating status, age group of animals etc. Out of total observed animals, 17.88% goat populations in different districts were found to suffer from different teat and udder affections whereas 4.96% animals were observed to have asymmetrical udder. Among the affections, mastitis was more prevalent (4.20%), followed by udder abscess (3.63%), udder fibrosis (3.24%), teat laceration (2.74%), teat fistula (1.72%), supernumerary teats (1.65%) and teat obstruction (0.70%). Chi-square test of analysis revealed that the effects of lactation status and season were highly significant ( $P < 0.01$ ) on the occurrence of teat and udder disorders. Lactating animals (21.13%) were found more susceptible than non-lactating (14.96%) animals. Further, seasonal variation was also observed with maximum incidences in monsoon months (6.55%), followed by post-monsoon (4.96%), pre-monsoon (3.88%) and lowest during winter season (2.49%). The incidences of teat and udder ailments may be due to lack of knowledge regarding clean milk production, teat and udder care, poor management practices and non-availability of veterinary aids in time. The teat and udder ailments may be minimized with good husbandry practices including timely veterinary care.

**Key Words:** goat, teat, udder, ailment, age, season

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#### INTRODUCTION

The state of Bihar possesses 10.57 million of goats, which is 2<sup>nd</sup> largest goat population in the country, next to Rajasthan. Goat farming is one of the best subsidiary sources of income to the poor people of rural Bihar. The density of goat population in Bihar is 107.97 numbers/ sq km (Bhatt et al., 2013). The Bihar state is located between 25°11'N Latitude and 85°32' E Longitude and above 51 msl. The average annual rainfall in Bihar is 1053 mm and average number of rainy days is 52.5 (Dey et al., 2007). Generally farmers in Bihar maintain a small flock of goats for milk and meat purposes. The poor people, who cannot afford to maintain a cattle or buffalo, consume goat milk as a household product. But, teat and udder affections cause a great loss to the poor farmers. Unscientific milking and management practices are the main cause for teat and udder affections. The unhygienic goat sheds in which goats are maintained in many places also predispose such affections. The farmers are less aware about clean milk production and teat or udder health. Further, they also do not pay enough attention on udder care and sometimes even mishandle the udder which always leads to teat and udder affections. The disease conditions of teats and udder

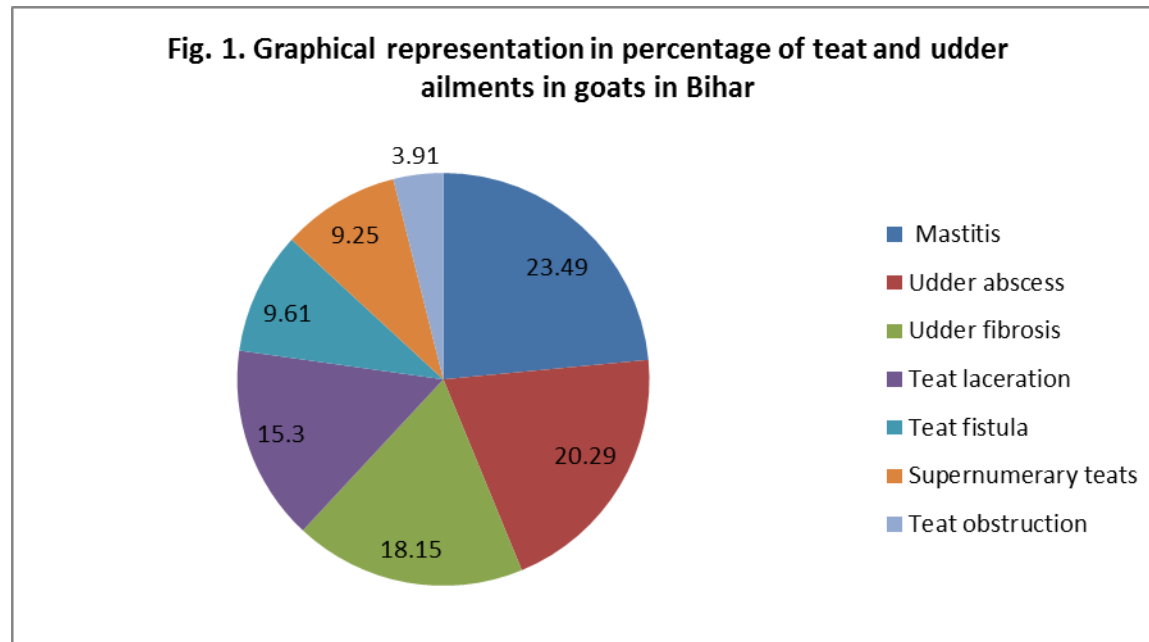
not only cause discomfort to the animals with painful milking but also make teats and udder prone to mastitis. Besides, there are many cases of congenital abnormalities of the mammary region, which comprises absence of the glands, supernumerary glands, absence of teats and so on. The prevalence of udder and teat affections were reported from Rajasthan (Kashyap et al., 2014), but so far there is no such information available from Bihar state. Considering the aforesaid information the present investigation was undertaken to find out the incidences of teat and udder affections of goats in Bihar state in India.

#### MATERIALS AND METHODS

The experiment was In total, 1572 lactating and non-lactating female goats were randomly examined from various animal health camps organized by the ICAR Research Complex for Eastern Region, Patna in different districts like Ara, Katihar, Samastipur, Sheohar, Patna and from institute goat farm, animal fair and local market. The data were collected from June 2011 to May, 2014. Each animal was examined carefully to find out the symmetry of udder and clinical conditions like mastitis, udder abscess, fibrosis, teat fistula, laceration, obstruction and

supernumerary teats. The collected data were subjected into Chi-Square test of significance to find out the effect of various factors viz. sex and seasons in occurrence of teat

and udder disorders in goats as per the methods described by Snedecor and Cochran (1989).



## RESULTS AND DISCUSSION

### *Incidences of different types of teat and udder affections*

The results of the teat and udder affections in goats revealed that a total of 78 goats (4.96%) had asymmetrical udder with two teats out of 1572 lactating and non-lactating female goats (Table 1). In total, 281 (17.88%)

animals were observed with pathological conditions. Among the pathological conditions, the prevalence of mastitis was in 66 (4.20%) cases, followed by udder abscess 57(3.63%), udder fibrosis 51 (3.24%), teat laceration 43 (2.74%), teat fistula 27 (1.72%), supernumerary teats 26 (1.65%) and teat obstruction 11 (0.70%) (Figure 1).

Table 1: Incidence of different types of teat and udder affections in goats

Sr. No.	Types of affections	Animal affected		% of affected out of total animals
		Number	Percentage	
1	Mastitis	66	23.49	4.20
2	Udder abscess	57	20.29	3.63
3	Udder fibrosis	51	18.15	3.24
4	Teat laceration	43	15.30	2.74
5	Teat fistula	27	9.61	1.72
6	Supernumerary teats	26	9.25	1.65
7	Teat obstruction	11	3.91	0.70
Total		281	100.00	17.88

The present findings of normal two teats with symmetrical order corroborates with the findings of Ozoje (2002), Amao et al., (2003) and Kashyap et al., (2014). But, Amao et al., (2003) observed higher incidences of asymmetrical udder in does which may be due to difference in goat breeds in study areas. However, the incidences of pathological conditions like mastitis, udder fibrosis, udder abscess etc were more in present findings than the findings of Kashyap et al., (2014) but, supernumerary teats were found less. The incidences of more pathological conditions in udder and teat affections in this case may be due to lack of awareness in clean milk production, unhygienic condition of animal shed and poor health status of goats in particular. Kashyap et al., (2014) also opined that potential

risk factors for pathology of mammary glands include previous mastitis history, increased parity, poor body conditions etc. He also observed that cases of udder fibrosis could be attributed to the negligence by the owners with delayed presentation in the clinics or not noticed that lead to chronic mastitis resulting in fibrosis of the udder. O'Connor (2005) also opined that chronic mastitis may arise independently or follow the acute form, infection usually occurs by the secretory ducts, rarely by way of the blood and lymph stream. Tyagi and Singh (2012) also observed that it may sometimes lead to gangrenous mastitis. In this study the incidence of teat laceration may be due to crossing of thorny fencing which are applied by the farmers to protect their crops. The pendulous udder

comes in contact with fencing and lead to teat laceration. Tyagi and Singh (2012) and Kashyap et al., (2014) also opined that the fencing was the predisposing factor for teat laceration and it may be due to pendulous udder and long teats. They also observed that teat obstruction was due to faulty milking and suckling that causes trauma of teat and obstruction of milk flow due to growth inside the teat canal.

Supernumerary teats were found to be congenital in nature by O'Connor (2005), Bemji and Popoola (2011), Adebayo and Chineke (2011). In present study, less number of supernumerary teat was observed but Ozoje (2002), Amao et al., (2003) and Kashyap et al., (2014) reported higher incidences of supernumerary teats than the present findings. The occurrence of supernumerary teats could be attributed to the presence of recessive mutant allele in the homozygous state.

Table 2: Teat and udder affections in relation to lactating status and age group of goats

Variables	Animals	Number of animals observed	Number of animals affected	% of animals affected	$\chi^2$ value
Lactating status	Lactating	743	157	21.13	10.17**
	Non-lactating	829	124	14.96	

\*\*P < 0.01

Statistical analysis revealed that the effects of lactating status on the occurrence of teats and udder disorders (Table 2) are highly significant (P < 0.01). Animals which were lactating were found to be affected significantly higher than the animals which were dry. However, no comparable data is available for variation in relation to lactating status of animal. High incidence of udder lesions

during lactation stage could be due to anatomical positioning of the mammary glands and lactation stress. Pendulous udder in lactating stage also predisposes the chances of injury and further complications. Increased milk production, late lactation stage, long teats and housed goats are the factors which lead to prevalence of teat and udder affections in the advanced age.

Table 3: Teat and udder affections in relation to seasons

Sr. No.	Season	Number of animals observed	Animal affected		% of affected out of total animals	$\chi^2$ value
			Number	Percentage		
1	Pre-monsoon (March, April, May)	402	61	21.71	3.88	36.01**
2	Monsoon (June, July, Aug.)	377	103	36.65	6.55	
3	Post-monsoon Sept., Oct., Nov.)	441	78	27.76	4.96	
4	Winter (Dec., Jan., Feb.)	352	39	13.88	2.49	
	Total	1572	281	100.00	17.88	

\*\*P < 0.01

Effect of season on the incidence of udder and teat affects (Table 3) was also highly significant (P < 0.01). The occurrence of disorder was more in monsoon season (June, July and August) followed by post monsoon (September, October and November) and pre monsoon (March, April and May). However, the incidence was less during winter season (December, January and February). This might again be due to the unhygienic conditions of animals and animals' sheds during monsoon and post monsoon seasons due to improper drainage systems at many places

### CONCLUSION

The findings of the present study revealed there were significant occurrences of teat and udder disorders at different districts of Bihar. Improper attention to teat and udder, unhygienic maintenance of goats, goat sheds and inadequate veterinary care were the factors responsible for majority of occurrence of this disorder. The economic loss due to teat and udder disorders could be minimized with proper scientific management and awareness regarding clean milk production and udder health.

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