

## **HYPERTHELIA IN GOATS OF SIROHI BREED, RAJASTHAN, INDIA**

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### **ABSTRACT**

Sirohi breed of goats is amongst some well known breeds found in India. It is also known by other names as Devgarhi, Parbatsari and Ajmeri. This breed is reared for milk and meat purposes. These goats thrive well even in poor rearing conditions and are thus preferred by the rural communities. A unique anomaly was observed in the goats of Sirohi district of Rajasthan. A group of 8-12 mature and immature does had four teats instead of the normal two teats as is a feature of these goats. These supernumerary teats were smaller as compared to the normal teats and were functional. The presence of 'hyperthelia' in the Sirohi breed of goats is discussed.

**Key Words:** *Goats, Hyperthelia, Sirohi Breed, Supernumerary Teats*

### **DESCRIPTION**

Goat (*Capra*, Linn.), a hollow-horned ruminant of the subfamily ovine, which also contains the sheep contributes to the sustainable livelihoods especially in the rural areas of Rajasthan. Deer are distinguished by four teats, goats and sheep by two; the intermediate genus antelope, by four or two in several species.



**Figure 1: Sirohi breed doe showing supernumerary teats**

An exception to this was seen in *Capra quadrimammis* vel Jharal (Hodgson, 1835) by its four teats that proved that infinite variety of nature cannot be designated by our assumptions and peremptory divisions. Multiple teats or hyperthelia are just that an extra teat or two, which may or may not connect to functional mammary tissue. Many of them do not connect to milk producing portions of the udder. Relatively small

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supernumerary teats, completely separate from and cranial to the main teats are occasionally observed in goats. About 12% of the Barbari goats (Bhatt, 1988), 30% of West African dwarf goats in Ghana (Oppong and Gumedze, 1982) exhibited this trait. Similar cases of supernumerary teats or hyperthelia were observed in the Sirohi breed of goats in Pindwara region of Sirohi district in Rajasthan (Figure 1). One such flock of goats had about 10-12 mature and immature does that exhibited hyperthelia that is presence of two extra teats. The two extra teats were smaller in size as compared to the main teats and were positioned near them. All four teats were found to be functional which means they were connected to the milk producing part of the udder either the primary gland or a functional separate mammary gland. Inbreeding is a common phenomenon in goats as usually a single buck can inseminate a flock of 20-30 does. The presence of supernumerary teats in a flock can definitely be linked to inbreeding which proves this trait to be inheritable as has been reported earlier (Oppong and Gumedze, 1982). The inheritance of hyperthelia in cattle has been considered to be polygenic but some workers proposed determination by a single gene (Brka *et al*, 2000). Juler (1927) suggested a recessive mode of inheritance while Tuff (1950) favoured dominance. Ivanova (1928) proposed dominant inheritance at the rear of the udder and recessive inheritance for the rest of the positions. Amao *et al.*, (2003) reported that supernumerary teat constitute a major udder abnormality in West African dwarf goats. In a study it has been stated that the incidence of supernumerary teats decreased with increase in herd size (Akpa *et al*, 2010). Occurrence of hyperthelia in goats and cattle increases the possibility of mastitis and threatens udder health as they become more prone to infections (Steiger and Gunenfelder, 1988). Surgical removal of extra teats is also an option for prevention of udder related diseases. Herd-owners can prevent the inheritance of this trait by selecting and isolating goats with this congenital anomaly. The tendency of this trait increases if both parents carry genes for supernumerary teats and so inbreeding should strictly be avoided for further transmission of this genetic abnormality.

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