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Short Communication

Subclinical psoroptic otocariasis in Brazilian sheep with comments on a technique for mite collection

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ABSTRACT

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Subclinical psoroptic otocariasis associated with *Psoroptes cuniculi* (Delafond) was diagnosed in four out of ten herds of sheep. Transmission of mites between sheep and goats and vice versa was detected in herds kept on the same pastures for over 2 years. Flushing the ear canals of sheep and goats with approximately 50 ml of water appeared to be more efficient than swabbing or otoscopic examination for diagnosis and/or mite collection.

In the course of research on parasitic otitis of domestic ruminants in Brazil, a total of 362 sheep comprising ten herds (six herds from the Southeastern, three from the Southern and one from the Northern states) have been examined for *Psoroptes* mites. All sheep were adults, of both sexes and mixed breeds. Part of the herds from Southeastern and Northern Brazil have been herded with goats infested with *Psoroptes cuniculi* (Delafond) on the same pastures for over 2 years. Mite collection was undertaken by flushing the ear canals with approximately 50 ml of water according to Leite et al. (1989). Mites and debris were collected in a vial with 70% alcohol and later examined under a stereoscopic microscope. Nymphs were not identified to sex or instar (proto- and tritonymph.

Mite infestation was diagnosed in four out of ten herds examined. All positive sheep were from the Southeastern and Northern states where sheep and goats generally are kept on the same pastures.

All specimens collected were identified as *P. cuniculi* (Delafond) although the taxonomic status of species within the genus is still a matter of controversy (Rafferty and Gray, 1987).

The population dynamics and structure in two herds of sheep and goats herded on the same pastures are shown in Table 1. Prevalence, number of mites collected, mean number mites per host and range of infestation were higher in goats than in sheep. However, the population structure was similar. These findings suggest that transmission of *P. cuniculi* between sheep and goats is possible, although the exact circumstance under which transmission occurs is not yet understood. Shastri and Deshpand (1983) and Yeruhan et al. (1984/5) have reported the occurrence of psoroptic otocariasis in sheep herded together with infested goats, respectively in India and Israel. Heath et al. (1989), however, were unable to detect any *Psoroptes* mites in the ears of sheep pastured together with infested goats in New Zealand. It is also suggested that goats are more suitable hosts than sheep in these regions, although the life cycle could be completed and maintained in both hosts. As goats and sheep are an important source of protein in some regions of the World, the epidemiological role played by subclinical-infested animals in transmission of *P. cuniculi* among herds or between species should be investigated.

The absence of clinical signs even in highly-infested animals (Table 1) is intriguing. It is recognized that skin lesions are produced as a result of feeding behavior of *Psoroptes* mites (Rafferty and Gray, 1987).

The association of psoroptic ear mites with sheep and goats in Brazil appears to be similar. The infestation in goats is often symptomless (Faccini et

TABLE 1

Population dynamics and structure of *Psoroptes cuniculi* (Delafond) in sheep and goats herded on the same pastures for over 2 years

Dynamics	Southeastern		Northern	
	Sheep	Goats	Sheep	Goats
No. hosts examined	28	18	24	28
Prevalence (% of infested hosts)	46	78	83	89
No. mites collected	674	2390	5729	15 224
Mean no. mites/host	52	171	286	609
Range (no. mites/host)	29–76	76–229	188–424	259–934
Structure (%)				
Female	27	28	31	30
Male	19	22	17	20
Nymphs	22	23	22	23
Larvae	18	17	18	17
Eggs	14	10	12	11

al., 1981; Bavia et al., 1984/5), although a few cases of otitis have been reported (Giovannoni and Kubiak, 1946).

The flushing technique used in the present study was originally proposed for collecting ear mites of the genus *Raillietia* in cattle (Faccini et al., 1987; Leite et al., 1989). If ones assumes that both genera, *Raillietia* and *Psoroptes*, contain species that do not burrow in the tissue and are found at the base of the external ear canal, the expected recovering rate for *Raillietia* sp. and *Psoroptes* sp. would be similar. Although there has not been an attempt to quantify the technique for collecting mites of the genus *Psoroptes*, our experience suggests that flushing the ear canals of sheep and goats is more efficient than other methods used to date for in vivo aural examination, e.g. swabbing and otoscope. Disadvantages of these techniques have already been pointed out by Cook (1983) and Heath et al. (1989). Both sheep and goats tolerate well the flushing of their ear canals. The only side effect observed was a transient loss of equilibrium in some animals.

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