

## RESEARCH NEWS

### Peste des petits ruminants in India

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Peste des petits ruminants is a highly infectious and often fatal viral disease of sheep and goats, appropriately referred to as goat plague<sup>1</sup>. It was thought to be absent in India. However, thanks to the efficiency of modern biotechnology, the situation today is different. M. S. Shaila (Indian Institute of Science, Bangalore) together with T. Barrett (Institute for Animal Health, Pirbright, England) and A. Diallo (IEMVT, Paris, France) developed cDNA probes for the nucleocapsid protein (N) genes of peste des petits ruminant virus (PPRV) and the closely related rinderpest virus (RPV) and used the probes for differential diagnosis of RPV and PPR in field outbreaks<sup>2</sup>. With the help of these probes, Shaila and her collaborators (Venkatesan and Purushothaman of Madras Veterinary College) recognized the occurrence of PPR in South India<sup>3-4</sup>. It is possible that PPR was already present in India, but misdiagnosed as rinderpest. As the two diseases have similar symptoms, PPR of sheep and goats could be easily confused with rinderpest. The two viruses along with measles, canine distemper and

phocine distemper viruses belong to the morbillivirus subgroup of *Paramyxoviridae*. These viruses also share cross-reactive antigenic proteins.

The discovery of PPRV has given a new dimension to rinderpest control programmes in India. Although rinderpest vaccine offers cross-protection in experimental sheep and goats against PPR, its long-term immunity has not been established. Therefore, it is appropriate to develop a PPR vaccine in the country. This is especially important considering the confirmed occurrence of the disease outbreaks in Karnataka, Tamil Nadu and Andhra Pradesh in 1992 (Shaila, personal communication). The importance of sheep and goats to Indian economy needs no overemphasis. It is important to concentrate on the epidemiology and diagnosis of PPR along with that of rinderpest and develop an integrated rinderpest/PPR eradication programme. Whereas these two diseases are non-existent in advanced countries, PPR is endemic in several regions of Africa.

The differential molecular diagnostic

approach has been useful to identify a rinderpest outbreak in Indian bison populations at Bhadra Reserve Forest in Karnataka. When the reasons for the death of a large number of bisons were speculative, the application of molecular diagnostic probes led to unequivocal identification of the disease as rinderpest (unpublished results). The discovery of the presence of PPRV is no doubt an instance *par excellence* of the benefit of modern biotechnology to animal husbandry in India.

1. Scott, G. R., *Virus Infections of Vertebrates* (eds. Dinter, Z. and Morein, B.), Elsevier, Amsterdam, 1990, vol. 3, p. 355.
2. Diallo, A., Barrett, T., Barbrun, M., Shaila, M. S. and Taylor, W. P., *J. Virol. Methods*, 1989, **23**, 127-136.
3. Shaila, M. S., Purushothaman, V., Bhavsar, D., Venugopal, K. and Venkatesan, R. A., *Vet. Rec.*, 1989, **125**, U602.
4. Shaila, M. S., Venugopal, K., Purushothaman, V. and Venkatesan, R. A., *Indian Vet. J.*, 1990, **67**, 385-386.

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