

ABSTRACT

Nasal swabs collected from 148 buffalo calves, one day to less than 10 months old, were examined for the presence of "mycoplasmas" in four farms in Sri Lanka, located at Polonnaruwa, Nikaweratiya, Narangalla and Mawalawatte. 33 per cent of these buffalo calves had respiratory disease at the time of sampling. The other 67 per cent were apparently normal, but in contact with the calves showing respiratory disease.

"Mycoplasmas" were detected in 18.4 per cent (9/49) of clinically sick calves, and in 13 per cent (13/99) of normal calves. The majority of the calves (28.6 per cent) yielding mycoplasmas were in the 181 day to less than 10 months age group. The association between the presence of Mycoplasma bovigenitalium in nasal swabs and clinical respiratory disease in sick animals was not significant ($P > 0.01$). It must be realised that the sampling carried out was limited. However there is the possibility of other species of "mycoplasmas" being associated with respiratory disease in buffalo calves.

"Mycoplasma" isolates were characterized on the basis of sensitivity to digitonin, fermentation of glucose, formation of films and spots, reduction of tetrazolium salts, aesculin hydrolysis and by serological tests, viz., growth inhibition, metabolism inhibition and indirect immunofluorescence, using antiserum prepared against reference cattle mycoplasma strains.

It was possible to identify the isolates by the detailed studies carried out. Of the 22 buffalo "mycoplasma" isolates, 12 were Mycoplasma bovigentialium, 5 were Mycoplasma bovirhinis, 3 were Acholeplasma laidlawii and the other two could not be identified.

With repeated sampling of 10 buffalo calves, naturally infected with mycoplasmas in the Polonnaruwa farm, mycoplasma strains were recovered on more than one occasion from four buffalo calves. Except in one buffalo calf, the other nine harboured mycoplasmas from between 54 and 254 days of age. The mycoplasmas recovered from each calf were biochemically and serologically similar at every isolation.

The buffalo "mycoplasma" isolates, viz., M. bovigentialium, M. bovirhinis and A. laidlawii were closely related to the reference strains which were derived from cattle. Antigenic heterogeneity was seen among the "mycoplasma" isolates even though they belong to a single species.

The antibody titres measured by the metabolism inhibition test in paired sera of 15 buffalo calves, infected as well as non-infected, showed that only some calves had a fourfold rise, or a high antibody titre against M. bovigentialium isolates.

This is the first report of the isolation and characterization of buffalo calf "mycoplasmas" in Sri Lanka.