

## MORTALITY IN SHEEP DUE TO PNEUMONIC PASTEURELLOSIS AND HAEMONCHOSIS

P. C. SHARMA<sup>1</sup>, N. JINDAL and R. S. KHOKHAR

Department of Veterinary Epidemiology and Preventive Medicine  
College of Veterinary Sciences, CCS Haryana Agricultural University, Hisar - 125 004

### SUMMARY

The present paper describes the mortality at an organized sheep farm of Hisar during the winter of 2004-05, in which about 250 sheep died out of 300 affected in a total population of 6000. Mixed infection (pneumonic pasteurellosis and haemonchosis) was responsible for the mortality in sheep. Harsh winter conditions together with high humidity due to sudden rains in the last week of December were the precipitating factors. Although the sheep were under regular anthelmintic treatment at this farm, yet the occurrence of haemonchosis in sheep indicated the resistance to the anthelmintic used.

**Key words:** Pasteurellosis, haemonchosis, mortality

Pneumonic pasteurellosis is one of the major causes of mortality in sheep. The causative agent (*Pasteurella* spp.) being normal inhabitant of the upper respiratory tract, may infect the lower respiratory tract under stress conditions such as harsh weather, overcrowding, transportation, lambing and concurrent infections prevalent during the season at a particular geographic area. The present paper puts on record some observations on the mortality at an organized sheep farm of Hisar.

At the farm maintaining about 6000 sheep, a sudden mortality started during the last week of Dec., 2004 that continued till third week of Jan., 2005 during which 250 of the 300 affected sheep, died. The farm was visited and detailed investigations were carried out in order to work out the factors that led to mortality at the farm. The farm was surveyed and sheep grazing at different places were examined. The animals were apparently healthy and a large proportion grazed normally, however, proportion of sheep grazing at one place was found dull, depressed and anorectic. Mortality was occurring in this group only. Rectal temperature of some of the affected animals was taken from this group. Suitable clinical materials viz. blood from live animals, and swabs of tracheal froth, lung tissues

and heart blood from four animals at necropsy were collected for cultural examination. Post-mortem changes were also recorded. Trypticase soy agar and MacConkey's lactose agar were used for cultural examination. The isolated organisms were subjected to *in-vitro* antibiotic sensitivity assay.

The affected animals were dull, depressed and anorectic with elevated body temperature (up to 105° F). These animals were weak and not able to walk properly. As reported, the affected animals lagged behind during grazing, sat frequently and had difficulty in getting up. Majority of the affected animals had nasal discharge which was thick in consistency and also had respiratory distress. The course of the disease varied from 1-3 days. The conjunctivae of the affected animals were pale in appearance. On post-mortem examination, carcasses were found emaciated with pale musculature. In the gastro-intestinal tract, except moderate congestion in the abomasum, no other gross changes were observed. Thin thread like worms i.e. *Haemonchus* spp. in bunches were observed in the abomasum. The lungs were severely consolidated indicative of pneumonia. Trachea was also congested and contained froth. In one of the carcass, fluid was also seen in the thoracic cavity. Petechial haemorrhages on epicardium were noticed in all the four cases. *Pasteurella*

<sup>1</sup> Corresponding author

organisms were isolated on bacteriological media. The organisms were Gram-negative with typical bipolar morphology. In *in-vitro* antibiotic sensitivity assay, the organisms were found sensitive to enrofloxacin, gentamycin, chloramphenicol and ofloxacin; and resistant to ciprofloxacin, pefloxacin, erythromycin, neomycin, kanamycin, norfloxacin and nitrofurazone.

All these observations suggested that the mortality in sheep was due to the combined effect of haemonchosis and pneumonic pasteurellosis. The latter condition precipitated due to harsh winter weather in which temperatures at night were drastically low. Another important factor that contributed to the precipitation of pasteurellosis has been the down pore in the last week of the Dec. 2004 which led to increased humidity of the environment. Such conditions are favorable for the growth of *Pasteurella* organisms. These observations have been reported earlier in bovines with haemorrhagic septicaemia (Jindal *et al.*, 2002). Haemonchosis is also one of the most important parasitic problems in sheep responsible for outbreaks (Katoch *et al.*, 1999). There are reports of anthelmintic resistance against *Haemonchus contortus* in sheep or goats (Yadav and Uppal, 1992, 1993). Although the sheep were under

regular anthelmintic treatment at this farm, yet the occurrence of haemonchosis in sheep indicated the resistance to the anthelmintic used. *H. contortus*, has been reported to cause immunosuppression in sheep (Tizzard, 1992). It appears that this parasitic infection might have been one of the contributing factors that led to the precipitation of *Pasteurella* organisms in sheep. Prevention and control measures viz. segregation of the affected animals, their treatment with suitable antibiotics, and anthelmintic treatment in proper doses helped in reducing the incidence of the conditions considerably at the farm.

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