

COMPARISON OF DIRECT DIAGNOSTIC TOOLS FOR DETECTION OF *MYCOBACTERIUM AVIUM* SUBSP. *PARATUBERCULOSIS* IN WILD RED DEER (*CERVUS ELAPHUS*)

Presented by Rosario Volpe the 28th of January

ABSTRACT

Paratuberculosis is a chronic granulomatous enteritis of ruminants responsible for important economic losses in cattle industry. The disease is reported in wild ruminants but many questions remain on the pathology in wild species. The purposes of this study were (1) to fully describe 34 true cases of paratuberculosis in red deer and (2) to determine the sensibility of direct diagnostic tests compared to the results of mycobacterial (*Mycobacterium avium paratuberculosis* - *Map* - and *Mycobacterium avium avium* - *Maa*) cultures.

The 34 cases were selected *a posteriori*, all were *Map/Maa* positive in culture. In the group, single (*Map*) and mixed (*Map/Maa*) infections were detected in 70% and 30 % of cases, respectively. These animals were either killed for sanitary reasons or found dead. A complete necropsy was conducted and direct diagnostic tests were performed.

Unlike in cattle, paratuberculosis concerned both young and adult cervids. All but 2 were emaciated but signs of diarrhea and *Map* excretion were not always observed. At necropsy, 82 % of cases presented mesenteric lymphadenitis and intestinal lesions were observed in 42 % of cases. Disseminated mixed infection with lesions in the lung was observed in 2 animals. Microscopic examination revealed multibacillary (80%) and paucibacillary (20%) forms. Different direct diagnostic tests were compared. The sensibility of PCR IS900 was 100 % if tests were carried on lymph nodes and small intestine. Histopathology yielded excellent results provided that examination is thorough.

In conclusion, paratuberculosis in red deer concerns both young and adults and mixed mycobacterial infections are not uncommon. If monitoring program must be implemented in wild cervids, mesenteric lymph nodes are top-grade organs for direct diagnosis and PCR associated with histopathology could be used instead fastidious mycobacterial cultures.

Keywords : Mycobacteria, Paratuberculosis, Deer, Culture, Histopathology