Czech Academy of Agricultural Sciences

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Pathology of subclinical paratuberculosis (Johne's Disease) in Awassi sheep with reference to its occurrence in Jordan

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[fulltext]

In this study, the pathological lesions and occurrence of subclinical Johne's disease in Awassi sheep is investigated using histopathological (HP) and immunohistochemical (IHC) examinations, Acid Fast Staining (AFS) of tissue sections, direct smears from tissues and culture. Histopathological examination of 202 ilea and the corresponding mesenteric lymph nodes (179) was conducted. In addition, IHC examination, using rabbit polyclonal antiserum, of 134 ilea and 123 mesenteric lymph nodes was also conducted. The occurrence of the disease was observed in 50% and 93% of the ilea examined using histopathology and IHC

techniques, respectively. Fifty nine percent of lymph nodes were positive by IHC. The histopathological lesions were graded from I–IV, I being the least severe, based on the type of cellular infiltrate (lymphocytes, macrophages and epithelioid cells) and the severity of the lesions. Grades III and IV (SP) were considered positive while I and II were considered suspected. Analysis of the results also revealed that the majority of suspected cases (grades I and II) reacted positive with the IHC. Furthermore, the IHC reactions were classified into three categories depending on the number of stained cells and the intensity of the staining (I-mild, II-moderate and III-strong). Direct smears, and tissue sections obtained from the ilea and stained with AFS revealed that out of 202 tissue samples, 53 (26%) and 22 (11%) were positive, respectively. Results of the culture revealed that 22 (11%) out of 202 were positive. These results showed that the occurrence of paratuberculosis (Johne's disease) in Awassi sheep is very high in Jordan and needs further study in order to develop rational methods of control effective for the Jordanian sheep

Keywords:

sheep; paratuberculosis; histopathology; acid fast stain; ileum; immunohistochemistry

[fulltext]