

78 EXPERIMENTAL MYCOPLASMA ARGININI MASTITIS IN GOATS

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To determine the pathogenicity of Mycoplasma arginini isolated from natural cases of goat mastitis, 8 lactating goats were inoculated with M. arginini and 2 were used as controls, inoculated with sterile mycoplasma medium only. Two ml of M. arginini culture, containing 10^5 to 10^6 colony forming units/ml, were inoculated through the teat canal into the right halves of the goats udders. Half of the animals were sacrificed on the eleventh day post inoculation (PI) and the remainder on the twenty-second day PI. All the 8 goats inoculated with M. arginini developed clinical mastitis from the second day PI and their milk became yellowish and thick. Milk protein precipitated, leaving the supernatant fluid clear and watery. The affected udder halves became hot, tender and painful during the first 2 to 3 days and started decreasing in size from the fourth day onwards. All animals were agalactic from the fourteenth day PI. M. arginini was reisolated from the milk of the inoculated udder halves and also from the inoculated udder tissues, whereas non-inoculated udder halves and supramammary lymph nodes failed to yield the organisms. Total leucocytes counts of milk rose many folds from the seventh to the fourteenth day PI. On histopathological examination, the goats sacrificed at the eleventh day PI showed typical purulent mastitis and those sacrificed at the twenty second day PI showed chronic suppurative mastitis with atrophied acini and proliferation of fibrous connective tissue.

KEY WORDS: Mycoplasma, Mastitis, Goats

79 SEASONAL AND NUTRITIONAL EFFECTS ON SERUM ANTIBODY LEVELS IN GOATS

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Serum antibody levels were measured in 120 Moxoto female goats over a 14 month period, commencing with animals 4 to 8 months old, using the zinc sulfate turbidity test. Goats were divided into four treatment groups, each receiving different nutritional energy levels: a) native range (caatinga) without supplementation and b), c) and d) native caatinga and supplementation at 0.6%, 1.2% and 1.8% of the body weight with sorghum grain, respectively. The four groups did not show a statistical difference in total serum antibody levels. All

groups did, however, show a seasonal variation in antibody levels. Antibody levels were highest during the months of June to December (approximately the dry season) 1.1 ± 0.04 zinc sulfate turbidity units versus 0.75 ± 0.01 from the months of January to May (approximately the rainy season). This difference was statistically significant ($P < 0.05$). The lower levels of serum antibodies during the rainy season may be a partial explanation for the increased incidence of diarrhea, pneumonia, parasitism and other major diseases recorded during this period of the year in northeast Brazil.

KEY WORDS: Season, nutrition, serum antibodies, caprine.

80 SEROLOGICAL DETECTION OF ABSSESSES CAUSED BY CORYNEBACTERIUM PSEUDOTUBERCULOSIS USING THE DIG-ELISA

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Developing a serological assay capable of detecting animal subclinical infections and the internal form of caseous lymphadenitis caused by Corynebacterium pseudotuberculosis is extremely important. This study presents results obtained from the application of the diffusion in Gel-Enzyme Immunosorbent Assay (DIG-ELISA) to detect Immunoglobulins G and M against a crude toxin of C. pseudotuberculosis. The DIG-ELISA is based on the ability of antibodies to diffuse from a well in an agar gel and subsequently adhere to an antigen coated petri dish. IgM and IgG were detected using rabbit anti-isotypic antibodies to caprine antibodies and subsequent addition of enzyme linked sheep anti-rabbit antibodies. Reactions were visualized by the addition of a substrate containing gel. Semi-quantification was assessed by measuring the diameter of reaction zones corresponding to the primary antigen-antibody reactions. Serum was collected from 224 adult goats with and without external abscesses prior to slaughter. The location of external abscesses were recorded and samples cultured for bacterial isolation. After slaughter, animals were examined for the presence of internal abscesses, which were cultured when found. 172 goats (76.8%) did not present abscesses, 37 (16.5%) had external abscesses only and 15 (6.7%) had internal abscesses, 13 of these abscesses were located in the lungs and 2 in the liver. Animals without abscesses had reaction zone diameters of 10.9 ± 0.4 mm for IgG, which were statistically different ($P < 0.05$) from those goats with external or internal abscesses, which had reaction zone diameters of 15.9 ± 0.7 mm and 16.4 ± 0.4 mm, respectively. IgM values were too inconsistent to be of any diagnostic value. The DIG-ELISA appears to be well suited for serological screening of animals with abscesses caused by C. pseudotuberculosis.