

TITLE: VACCINE CONTAINING ISOLATES OF *Corynebacterium pseudotuberculosis* FOR EVALUATION OF IMMUNE RESPONSE IN SHEEP FEMALES

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ABSTRACT:

Goat-sheep farming is expanding in Brazil, being considered an activity of great importance for the Brazilian economy, especially in the Northeast region. However, some factors cause damage to production, especially diseases such as Caseous Lymphadenitis, a chronic disease caused by *Corynebacterium pseudotuberculosis*, characterized by external and internal abscesses, which can lead to death. The control methods currently available are not completely efficient. In this context, vaccines became the most promising strategy. The formulations may consist of DNA, dead or living bacterial cells, among others, but their action is still limited. Thereby, the aim of this study was to characterize the aspects related to immunological stimuli by vaccination of sheep against *C. pseudotuberculosis*. The vaccine was developed using 3 inactivated *C. pseudotuberculosis* isolates. For the vaccination, two groups of sheep were separated. The first one (G1 n = 06) with positive animals for the presence of antibodies against *C. pseudotuberculosis* and the second one (G2 n = 06) with sheep negative for the same test, only the animals of the G2 were vaccinated. G1 animals were used as positive controls and were also evaluated for serum bactericidal activity. After the vaccination, blood samples were taken, and the bactericidal activity was performed on the obtained serum. The extract obtained from the three isolates was placed in contact with rabbit red blood cells to evaluate the hemagglutinating activity. After the vaccination, the immune system of the animals responded positively, with an increase in serum bactericidal activity, decreasing the count of CFU / mL, a fact that is related to the activation of the animal's defense system, known as complement System. The hemagglutination assay was positive for the biological function of the protein with the protein extract, indicating the presence of lectins in the set of *C. pseudotuberculosis* proteins, once they agglutinate erythrocytes. The elaborated vaccine was able to confer protection to the tested animals and the presence of lectin indicates the capacity to stimulate the immune system of the animals, being an important advance in the immunization of the herds.

Keywords: Goat-sheep farming. *Corynebacterium pseudotuberculosis*. Caseous Lymphadenitis. Lectin.

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