



DEVELOPMENT OF INACTIVATED *ESCHERICHIA COLI* AUTOGENOUS VACCINE AGAINST NEONATAL DIARRHOEA IN LAMBS

**PASCU, C., HERMAN, V., COSTINAR, L., IANCU, I., BADEA, C.,
IORGONI, V., GLIGOR A**

University of Life Sciences „King Mihai I” from Timisoara, Faculty of Veterinary Medicine –
300645, Calea Aradului 119, Timisoara, Romania

Abstract: *The present investigation aimed to isolate and identify Escherichia coli from neonatal diarrhoea in lambs and to prepare a potent autogenous vaccine to control this enteritis. Firstly, 6 Escherichia coli isolates O78 were collected from diseased lambs. All six strains presented resistance at more than two antimicrobials, and were susceptible only at ceftiofur. Inactivated whole culture vaccine (bacterin-type vaccine) was developed from Escherichia coli serogroup O78. The efficacy of the autogenous vaccine produced was proved at the lambing season ending, when only 2% from newborn lambs died. The lambs were healthy, were sucking, and any digestive disorders were absent.*

• Introduction

The etiology of diarrhoea in lambs and kids during the first weeks of life are represented by *E. coli*, rotavirus, *Cryptosporidium* sp. and *Salmonella* sp. From all these, *E. coli* scours are most common

• Material and method

The research was done in a flock of sheep in which appeared digestive disorders in lambs, with an increasing mortality rate. Anatomopathological examinations were performed on seven lamb corpses with ages between 0 and 6 days. For bacteriological tests were collected samples represented by bone marrow, liver and spleen. *E. coli* strains were isolated and identified according with methodology described in literature. For vaccine it was used an *E. coli* strain which are isolated from lamb. The procedure of obtaining vaccine was described in paper.

• Results and discussions

• Bacteriological exam results

There were isolated 6 *E. coli* strains

Results after vaccine administration

Pregnant ewes were vaccinated twice before lambing, in November and at the beginning of December, 2019. After vaccination, ewes were kept under surveillance to observe possible side effects, systemic, or local reactions, but these reactions were minor or absent in all vaccinated ewes.

The efficacy of the autogenous vaccine produced by us was proved in 2023, at the lambing season ending, when only 2% from newborn lambs died, percent considered within normal limits, being represented by various accidents that occurred at the time of lambing or from other causes. The lambs were healthy, were sucking, and any digestive disorders were absent.

• Conclusions

The autovaccine (bacterine type) has been shown to have a good safety and ability to induce a strong immunity to lambs, following the administration to ewes of this vaccine cases of infection with *E. coli* in lambs decreasing to zero, as well as the mortality rate.



E. coli broth cultures



Adjuvanted *E. coli* broth cultures