PROFITABILITY OF TWO VACCINES AGAINST MANNHEIMIA HAEMOLYTICA ON A LAMB FEEDLOT

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INTRODUCTION

Ovine respiratory syndrome (ORS) is an emerging pathology, largely due to the new Veterinary Medicinal Products Regulation ((EU) 2019/6), that makes the restriction of the use of antibiotics necessary. This situation makes the implementation of prophylactic measures crucial. Vaccines containing the leukotoxin of *Mannheimia haemolytica* appear to be the best option for controlling ORS.

The aim of this study was to evaluate the profitability of two vaccines against *M. haemolytica* through the study of production parameters on a lamb feedlot, such as average daily gain (ADG), mortality, feed conversion rate (FCR), and number of animals in the sick pen. The return on investment (ROI) of vaccination with a leukotoxoid-based vaccine (Pasterbact®) was also calculated.

MATERIALS AND METHODS

The study was performed in a lamb feedlot located in Baza (Granada, Spain) and 440 lambs with an average weight of 25 kg were included. The animals were homogeneously separated into two groups: Group A (N=220) was vaccinated with a leukotoxoid-based vaccine (Pasterbact®), and Group B (N=220) was vaccinated with another *M. haemolytica* bacterin-based vaccine (vaccine B). In both groups, the animals were vaccinated with a single 2-ml dose upon arrival at the feedlot.

The duration of the study was 76 days, and the weight of the lambs (average by group) was measured every 10-11 days. The number of animals in the sick pen with respiratory signs was also reported, as well as the number of deaths.

A descriptive study of the productive parameters was conducted, and a proportion test was performed to compare the morbidity and mortality between both groups. Statistical analysis was carried out using the R software v4.0. A p-value < 0.05 was chosen as the limit for statistical significance. The differences of profitability were shown through a ROI, with the extra cost of the leukotoxoid-based vaccine (Pasterbact®) being the investment. The costs of the lambs, vaccines, feed consumption, and meat produced were considered.

RESULTS

This trial resulted in a higher average final weight (+878g) and ADG (+13g/day), and a lower average FCR (-0,157) in Group A compared to Group B.

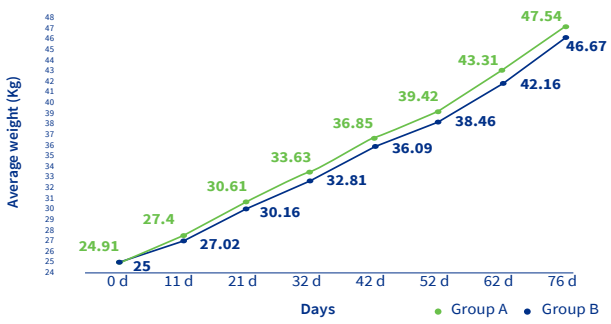

Figure 1. Evolution of average weight (kg) in group A and B

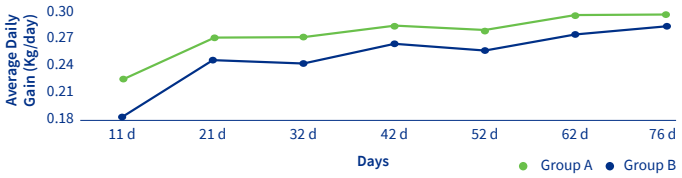

Figure 2. Evolution of Average Daily Gain (Kg/day) in group A and B

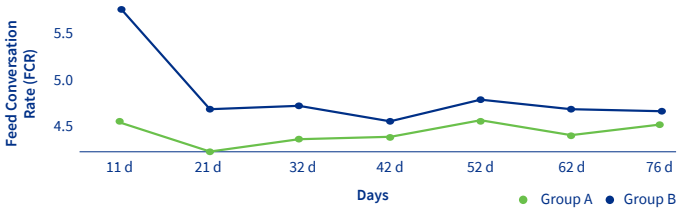

Figure 3. Evolution of Feed Conversation Rate (FCR) in group A and B

The leukotoxoid-based vaccine (Pasterbact®) showed a 12% reduction of morbidity and a 50% reduction of mortality compared to Vaccine B (p-value > 0.05).

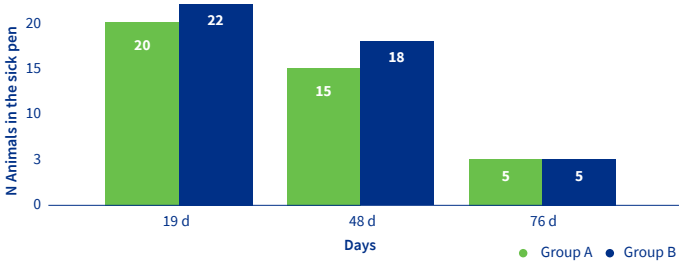

Figure 4. Evolution of n° animals in the sick pen in group A and B

Considering all the above parameters, Group A presented a positive benefit of +3.21€ per lamb compared to Group B.
Taking into consideration the extra cost (+0.30€) of the leukotoxoid-based vaccine (Pasterbact®), the ROI was of 1:10.7.

CONCLUSIONS

The leukotoxoid-based vaccine (Pasterbact®) demonstrated a greater improvement of the productive parameters (Average Daily Gain and Feed Conversion Rate) and health of the lambs compared to the bacterin-based vaccine (Vaccine B). It is cost-effective and reduces the impact of ORS in lamb feedlots.