SAFETY AND PROTECTION ELICITED BY A CEO LIVE LARYNGOTRACHEITIS VACCINE ADMINISTERED ALONE OR IN COMBINATION OF A RECOMBINANT ILT VACCINE AT DAY OF AGE

A. Mendoza-Reilley[1], A. Zamora[2], R. Paudel[2], C. Ellington[2], D. Maekawa[1], I. Alvarado[1], and M. Garcia[2]

[1]Merck Animal Health, New Jersey, USA
[2]The University of Georgia, Athens, USA

INTRODUCTION

Infectious laryngotracheitis (ILT) is a highly contagious acute respiratory disease of chickens causing severe production losses. Control is mainly achieved by biosecurity and immunization with live attenuated vaccines. However, CEO live vaccines have been characterized by suboptimal attenuation and possible reversion to virulence. Application of recombinant HVT (rHVT) ILT vaccines in combination of live attenuated vaccines have shown to significantly reduce clinical signs and viral shedding post-challenge. Furthermore, rHVT-ILT vaccines have shown to moderate post-vaccinal reactions associated with live CEO vaccines.

MATERIALS AND METHODS

In this study, one day old broilers were divided in the following treatment groups; 1) in ovo vaccinated with a rHVT-IBD-ILT vaccine, 2) gel drop vaccinated at day of age with a live CEO vaccine, 3) rHVT-IBD-ILT and CEO vaccinated, 4) drinking water vaccinated at 14 days of age with a live CEO vaccine, 5) Non-vaccinated/Challenged control, 6) Non-vaccinated/Non-challenged control. At 30 days of age, chickens in groups 1 to 5 were challenged at 30 days of age with a virulent ILTV genotype VI strain ($10^{3.8}$ $TCID_{50}$ per bird by ocular and nasal routes). Parameters used to evaluate the safety and efficacy of the different vaccination programs included body weight gain, clinical signs, and mortality post-challenge.

RESULTS AND DISCUSSION

Moderate to severe respiratory reactions post-vaccination was observed in the CEO vaccinated birds when compared with birds vaccinated with the rHVT-ILT + CEO vaccines. As expected, no respiratory post-vaccination reaction was observed in birds vaccinated with the rHVT-ILT vaccine. When compared with the Non-Vaccinated/Challenged control group, all the vaccination programs evaluated in this study provided protection against clinical signs and mortality post-challenge. However, the best overall protection was observed in birds vaccinated with the rHVT-ILT and CEO vaccines, followed by birds vaccinated with the rHVT-ILT vaccine.