

TITLE: AN ESSAY: IMMUNO RESPONSE VIA IC-ELISA WITH WHOLE HYPERIMMUNE EGGS AGAINST ESCHERICHIA COLI IN CALVES FROM 1 TO 15 DAYS OF LIFE

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ABSTRACT: *E. coli* produce very profuse and watery diarrhea in calves at 4 days of living, it could be fatal through dehydration and collapse, especially in calves at 96 hours of living. The oral administration of IgY as passive immunization it has become a very eligible option through many essays against viral and bacterial pathogens in different species among the years. In this essay, 20 Lohman Brown Hens were randomly chosen to produce hyperimmune eggs, for this purpose, 10 hens were immunized with total protein of *E. coli* ETEC (1,075 µg/L) with Hydroxide aluminum as adjuvant and the rest remain as control, the hyperimmune eggs where tested via I-ELISA reaching over 1/4000 IgY anti-*E.coli* titer, the control eggs reach 1/2000 IgY anti-*E.coli* titer. 15 Holstein Friesian calves were randomly selected in three groups after 12hr of birth (G0: Colostrum + milk supplement; G1: Colostrum + milk supplement + whole egg; G2: Colostrum + milksupplement + whole hyperimmune egg). Serum samples were obtain every three days and the immune response where measured in IC-ELISA against serum samples of the immunized Hens groups which were previously measured alone for IgY anti-*E. coli* titer in I-ELISA. The calves from G2 (day 3: 2,17 ± 0,33 A; day 6: 2,04 ± 0,33 A; day 9: 2,08 ± 0,35 A; day 15: 1,87 ± 0,54 A) has a significant difference (p<0,05) with the G0 (day 3: 1,79 ± 0,28 A; day 6: 1,89 ± 0,35 A; day 9: 1,39 ± 0,94 A; day 15: 0,68 ± 0,9 A) and G1 (day 3: 1,87 ± 0,305 A; day 6: 1,61 ± 0,14 A; day 9: 1,57 ± 0,12 A; day 15: 1,5 ± 0,305 A), having higher A lectures indicates a lower general immune response against *E. coli*. The G0 at day 15 had the highest immune response (0,68 ± 0,97 A) between the three groups, but with worst symptoms of diarrhea or infection, which means that the whole egg, hyperimmunized or not, brought local protection to the calves against ETEC *E coli*, which were effective preventing diarrhea at the time of this essay.

Keywords: Egg yolk immunoglobulins, IgY, Escherichia coli, Neonatal calf diarrhea