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Production and Characterization of Hen Egg Yolk Immunoglobulins Against *Campylobacter jejuni*

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Poultry meat products are sources of *Campylobacter jejuni* for humans. Chickens usually become colonized after the 2nd week of age, suggesting the presence of natural barriers against *C. jejuni* such as the transfer of maternal immunity (IgY). The objectives of this study were to characterize the presence and specificity of antibodies against *C. jejuni* in egg yolks and to evaluate different protocols to maximize IgY production and efficiency. To do so, 40 SPF laying hens were separated in 4 groups: control, orally infected by *C. jejuni*, subcutaneously injected with bacterines or with *C. jejuni* outer membrane proteins (OMP). The immunizations and inoculations were based on the same mix of four well characterized strains and were performed at 16 weeks of age. Immunization boosters were given at 21 and 29 weeks of age. Eggs were collected and the IgYs were extracted from the egg yolks using a chloroform-based protocol. Total IgY and anti-*C. jejuni* antibody levels were determined by ELISA. Immunoblots against OMPs and total proteins of *C. jejuni* strains were performed to compare the specificity of antibodies obtained from each production methods. Inhibition of *C. jejuni* motility and the bactericidal effect of the immunoglobulins were performed to evaluate the neutralizing capacities of the IgYs produced.

Those upcoming results will allow to select the best method for antibody production to test an egg powder enriched with immunoglobulins against *C. jejuni* as a feed additive at the farm level to control *C. jejuni* intestinal chicken colonization.