

# A study of protection conferred by a combined live-inactivated *Salmonella* vaccination program in commercial pullets.

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## ABSTRACT

To evaluate the efficacy of combined live and inactivated vaccination program, a group of 28 commercial pullets were vaccinated with live *Salmonella* vaccine (two administrations at 1st and 6th weeks of age) via drinking water and revaccinated with inactivated *Salmonella* vaccine (at 16th weeks of age) by intramuscular route. They were evaluated in comparison to another group of 28 birds vaccinated with a live vaccination program (three administrations at 1st, 6th and 16th weeks of age) via drinking water. Two additional unvaccinated groups of 28 birds (challenged) and 10 birds (unchallenged) were included as controls. At 20 weeks of age (28 days post vaccination), the three groups were challenged orally with *S. enteritidis* LA5 at dose level of  $10^9$  cfu per bird. Individual cloacal swabs were taken at 1, 3, 7, 14 days after the challenge and tested for the presence or absence of *Salmonella*. In addition the pullets were divided in two groups and sacrificed at 7 days and 14 days after the challenge. Each time three groups of 14 birds and one group of 5 birds were examined for the presence of macroscopic lesions and internal organs (caecum, liver and spleen) were aseptically obtained from each individual bird. Semi-quantitative bacteriological examination was performed. In general the pullets vaccinated with the live and inactivated program had better protection against challenge in terms of lower salmonella recovery from intestinal organs and reduction of the intestinal colonization compare to live vaccinated and non vaccinated control groups. In this respect the combined vaccination programs could be useful to reduce the vertical transmission to the eggs and diminish the presence of *Salmonella* in the farm environment.