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INFLUENCE OF DIFFERENT VACCINATION STRATEGIES AGAINST *SALMONELLA* TYPHIMURIUM IN PIG FARMS ON THE NUMBER OF CARRIERS IN ILEOCECAL LYMPH NODES

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Persistent *Salmonella* Typhimurium (ST) infections in pigs are characterized by chronic colonization of the lymphoid tissue and constitute a major source of human salmonellosis. The present study investigated to which extent different vaccination strategies against ST reduce the number of pigs positive for ST field-strain in ileocecal lymph nodes.

Five vaccination strategies were tested on three Belgian pig farms: 1. vaccination of sows; 2. vaccination of sows and piglets; 3. vaccination of sows and fatteners; 4. vaccination of piglets; 5. vaccination of fatteners. A comparison was made with a non-vaccinated control group (group 6). Each vaccination strategy was implemented in each farm, during two consecutive production cycles of the same sows. An attenuated vaccine (Salmoporc®, IDT Biologika) was applied. Ileocecal lymph nodes were collected in the slaughterhouse and tested for the presence of ST field-strain (isolation using ISO6579:2002, serotyping, distinguishing field/vaccine-strains using IDT *Salmonella* Diagnostikum®). Data were analyzed in a logistic regression model.

In total, 2528 lymph nodes were collected. In groups 1-2-3-4-5-6, respectively, 16-3-7-9-8-10% of the lymph nodes were positive for ST field-strain. Significant differences were detected between the farms ($p \leq 0.001$), cycles ($p=0.002$) and groups ($p \leq 0.001$). The differences between groups were independent of farm, but related to cycle. In cycle 1, no significant differences were detected between groups 1-2-3-4-5 and the control group. In cycle 2, compared to the control group, the number of pigs positive for ST field-strain was significantly higher in group 1 and significantly lower in groups 2-3-4 (odds ratios, respectively: 2.27-0.27-0.48-0.44, p-values, respectively: 0.001-≤0.001-0.014-0.009). No significant difference was detected between group 5 and the control group.

Although only clearly pronounced in the long-run, the results of this study suggest a positive effect on the number of ST field-strain carriers when applying vaccination of sows and piglets, vaccination of sows and fatteners and vaccination of piglets.