

**INFLUENCE OF DIFFERENT VACCINATION STRATEGIES AGAINST *SALMONELLA* TYPHIMURIUM  
IN PIG FARMS ON EXCRETION AND SEROLOGY AT SLAUGHTER AGE**

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Vaccination against *Salmonella* Typhimurium (ST) might be effective to control *Salmonella* infections at farm level, but may affect the herd's serological status. The present study investigated the effect of different vaccination strategies against ST on the excretion of ST field-strains and on *Salmonella* serology at slaughter age.

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 (SalmoporcR, IDT Biologika) was applied. To monitor excretion, individual fecal samples and shoecover samples were collected and tested for the presence of ST field-strain (isolation using ISO6579:2002, serotyping, distinguishing field/vaccine-strains using IDT *Salmonella* DiagnostikumR). Blood samples of 10 fattening pigs/group/cycle/farm were collected at slaughter. Sera were analyzed by ELISA (IDEXX) and S/P-ratios were assessed. Data were analyzed using a logistic regression model (excretion) or a linear regression model with LSD-procedure for post-hoc-tests (serology).

For the fecal and shoecover samples (n=1193), 6-3-4-8-6-5% were positive for ST field-strain in groups 1-2-3-4-5-6, respectively. No significant differences were detected between farms,

cycles and groups. The mean S/P-ratios of groups 1-2-3-4-5-6 were, 0.80-1.50-1.76-1.75-1.88-1.03, respectively. Significant differences between groups were related to farm and cycle. Overall, the S/P-ratios of groups 2-3-4-5 were significantly higher than the S/P-ratios of the control group ( $p \leq 0.001$ ). No significant difference was detected between the S/P-ratios of groups 1 and 6.

When applying vaccination against ST in farms with a relatively low infection pressure, the effect on excretion was not clear. Nevertheless, vaccinated animals clearly developed a serological response, which has implications for serology-based *Salmonella* monitoring programs in slaughter pigs.