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TITLE

EVALUATING DIFFERENT SEROLOGICAL TESTS FOR PRE-SLAUGHTER SALMONELLA SURVEILLANCE

Lars Kunstmann¹, Leif Meedom¹, Veerle Hautekiet², Wouter Van der Veken², Gerben Hoornenborg³

¹ *Huvepharma N.V., Denmark*

² *Huvepharma N.V., Belgium*

³ *Vet-Team Denmark*

CONTENT

Three commercial ELISA tests are evaluated as prognostic tools to anticipate Salmonella detection in meat juice in a farrow-to-finish herd under a Salmonella control program (based on probiotics; Clostridium butyricum, Miya-Gold®). Salmonella classification depends on detection of antibodies in the meat juice, and thus estimates of serum antibody half-lives combined with OD% levels may serve as a guide during production.

Two batches of 10 pigs each were ear tagged and bled at 11, 15 and 20 weeks of age. A sample from each bleeding was sent to three different labs. Two of those labs used the commercially available Herdcheck Swine Salmonella test by IDEXX (based on three antigens), whilst the third lab used an in-house ELISA (DTU, based on two antigens) test. The latter is the reference Salmonella test for meat juice surveillance of slaughter pigs in Denmark. Results were tested for difference in variance (F-test) and means (T-test). For pigs showing an incline in OD% between bleeding 1 and 2 but a decline in OD% between bleeding 2 and 3, $t_{1/2}$ was estimated fitting a model of exponential decay between OD%-2 and OD%-3

The DTU test and IDEXX tests differed significantly in variance ($P < 0.05$) and means (compared to DTU: IDEXX-1 = $P < 0.03$; IDEXX-2 = $P < 0.003$). IDEXX-1 and IDEXX-2 means did not differ significantly ($P > 0.47$) from each other. Mean Salmonella half-lives were calculated in weeks. For the DTU test this resulted in $t_{1/2} = 7.0 \pm 1.9$ weeks, for IDEXX-1 in $t_{1/2} = 11.0 \pm 1.6$ weeks and for IDEXX-2 in $t_{1/2} = 10.9 \pm 2.5$ weeks.

Depending on which lab and which tests are used results can differ significantly. As such comparison of results originating from different labs/from different methods should not be accepted.