Evaluation of a covalent mix-enzyme linked immunosorbent assay for screening of Salmonella antibodies in pig serum - DTU Orbit (21/03/2019)

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In this study, a commercial Salmonella covalent mix-enzyme linked immunosorbent assay (ELISA) for serological detection of Salmonella infection in swine was evaluated by comparing it with the conventional fecal culture method and inter-laboratory proficiency testing, using a panel of sera tested in 5 laboratories from Europe and North America. Comparison with culture results showed that 88.5% of 26 culture-positive animals were ELISA positive, as were 55% of 60 animals from 2 culture-positive pig herds. Of 90 animals from 2 high health farms with no clinical symptoms of salmonellosis, 98.9% tested negative. The interlaboratory comparison study found a kappa value of 0.9 between our laboratory (using an automated system) and the manufacturer laboratory (using the manual method). Comparison of ELISA results from all 5 participating laboratories showed very good to excellent agreement, between 85% and 97.5%. We found this assay to be useful for the screening of antibodies against Salmonella present in swine serum. It agrees well with bacterial cultures, is reproducible, sensitive, specific, repeatable, and suitable for automation.

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