RAPID DETECTION OF *SALMONELLA TYPHIMURIUM* IR *SALMONELLA CHOLERAESUIS* IN SWINE FAECAL SAMPLES BY ONE TUBE NESTED POLYMERASE CHANE REACTION

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Summary. Public health implications of *Salmonella* infections in animals and products of thereof enforce strengthening of the surveillance and search for efficient diagnostic tools. Conventional *Salmonella* detection takes several days. Polymerase chain reaction (PCR) or conventional nested PCR tests have been developed to shorten analysis time but still can generate contaminants due to complex manipulations and can be hampered by inhibitors of PCR present in the tested sample. To overcome those problems and shorten analysis time we have developed one-tube nested PCR assay based on the detection of *Salmonella*-specific *invA* gene using well defined primer sets. Swine feaces spiked with *S. typhimurium* and *S. choleraesuis* were used as a sample model. The assay was able to detect 150 CFU/g feaces compared to 15 CFU/ml in saline. Simultaneously, the detection level of the applied single PCR tests as well as conventional nPCR reached 150 and 15 CFU/ml of saline and, respectively, $15x10^7$ and $15x10^2$ CFU/g of swine feaces. The sensitivity of the test was increased up to 15 CFU/g using enrichment in buffered peptone water for 4 hours. No serovar-dependent differences were observed. It was concluded that 4-step procedure including 4-hour nonselective pre-enrichment, DNA extraction, PCR amplification and electrophoretic detection of known molecular weight product (283 bp) can be used as a screening test for *Salmonella* detection in swine feaces.

Keyword: swine, faeces, *Salmonella*, PCR.