Low prevalence of Yersinia enterocolitica 4:O3 in sow tonsils

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Introduction: Yersinia enterocolitica 4:O3 is the most common bioseerotype causing disease in humans in Finland. Prevalence of Yersinia enterocolitica 4:O3 in tonsils of fattening pigs has shown to be high in Finland in earlier studies. However, the prevalence in sow tonsils has not been studied. The aim of this study was to compare the prevalence of Y. enterocolitica 4:O3 between tonsils of fattening pig and sows.

Material and Methods: Pig tonsils were collected from 7 slaughterhouses during 1999 and 2000. A total of 210 and 214 tonsils were studied from fattening pigs and sow, respectively. A 10-g sample of tonsil tissue was homogenised in 90 ml of TSB. Y. enterocolitica was isolated using different culture methods: direct plating, overnight enrichment in TSB, selective enrichment in MRB and cold enrichment in PMB. Subculture on selective CIN agar plate was done after every step. Four colonies of typical “bull’s eye” appearance on CIN agar plate were further characterised. Isolates showing urea hydrolysis were identified using the API 20E system. Y. enterocolitica isolates were bio- and serotyped.

Results: Prevalence of Y. enterocolitica 4:O3 in tonsils of fattening pigs and sows was 51% and 11%, respectively. Prevalence was varying from 30% to 83% when fattening pigs were studied and from 0 to 30% when sows were studied. In all slaughterhouses, the prevalence of Y. enterocolitica 4:O3 in tonsils was at least 40% lower in sows than in fattening pigs.

Discussion: The prevalence of Y. enterocolitica 4:O3 in sows was low when compared to the prevalence in fattening pigs. One reason for the lower prevalence in sows may be the natural resistance against the bacteria. The isolation rates varied between slaughterhouses and this may be due to different prevalences of infected herds in different areas.