Isolation of *Yersinia enterocolitica* from aborted fetuses and sows in pig farms with reproductive disturbances

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Abstract

The purpose of the study was to determine the occurrence of *Yersinia enterocolitica* in tissues of aborted fetuses, placentas, vaginal and rectal swabs of aborting sows from pig farms where reproductive disturbances were found and to determine and analyze the biotype and serotype affinity of the strains isolated. Altogether 97 fetuses aborted in various stages of pregnancy, 25 placentas and swabs from 231 sows were taken. All sows originated from farms where reproductive disorders appeared. In general, 1069 samples were collected. Two enrichment methods were used in this study; fast enrichment techniques in ITC broth, then plating onto CIN agar (ITC/CIN), and cold enrichment in phosphate buffered saline followed by plating onto CIN agar (PBS/CIN). From all samples examined, 96 *Y. enterocolitica* strains were isolated including 57 (59.4%) from rectal swabs of sows, followed by 6 (6.3%) from vaginal swabs and 2 (2.1%) from placentas. The bacteria were isolated from tissues of 18 out of 97 aborted fetuses. A total of 60 strains were selected for further examination – 29 strains originated from aborting sows and 31 from aborted fetuses. Among strains examined 54 isolates (90%) belonged to the biotype 1A of *Y. enterocolitica* and to the different serotypes O:3, O:5, O:6, O:7/13, O:8 and NT (not typable). Only 6 strains belonged to serotype O:3, biotype 4 *Y. enterocolitica*. Our study has revealed the possibility of *Y. enterocolitica* isolation from internal organs of aborted swine fetuses and sows from farms with reproductive disturbances. The results suggest the connection between fetal death, pregnancy course disorders and *Y. enterocolitica* infection.

Key words: *Yersinia enterocolitica*, isolation, sow, aborted fetuses

Introduction

*Yersinia enterocolitica* (*Y. enterocolitica*) is largely widespread in the environment. The microorganism has been isolated from both healthy as well as ill humans and animals, from food products, water ecosystems, sewage water or from plants and soil. As revealed, it can cause various pathological processes like enteritis, mesenteric lymphadenitis, internal organs abscesses or arthritis (Hariharan and Bryenton 1990, Bottone 1997, 1999, Gierczyński 2000). Pigs have been demonstrated to be a main reservoir and source of *Y. enterocolitica* infections. Pathogenicity of *Y. enterocolitica* is linked with invasive properties of this