

PORK SAFETY

Title: Role of *Helicobacter pylori* as an Emerging Foodborne Pathogen in Swine – **NPB #98-158**

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ABSTRACT

This study focused on important factors regarding the potential for swine to serve as reservoirs and to transmit *Helicobacter pylori* to people. A new medium, *Helicobacter pylori* Special Peptone agar (HPSPA) was developed and tested that enhanced the cultivation of *H. pylori* in the laboratory. This medium was used as the standard medium, to which selective agents were added. Various selective agents were compared and a combination of 6 antibiotics (vancomycin 10 mg/l, amphotericin B 5 mg/l, cefsulodin 10 mg/l, polymyxin B sulfate 31,000 IU/l, trimethoprim 40 mg/l and sulfamethoxazole 20 mg/l) proved to be highly selective while still allowing relatively large colonies of *H. pylori*.

The stomachs of 135 swine were sampled and *Helicobacter* spp. were not isolated from any of the samples, indicating that swine are not likely to be naturally infected with *H. pylori*. However, *Campylobacter coli* was isolated from the stomach of 28, 36 and 82% of pigs sampled from 3 different abattoirs. The high prevalence of *C. coli* in the stomach suggests that this bacterium may be more acid resistant *in vivo* than was previously thought, which could relate to the high incidence of *Campylobacter* spp. in foodborne illness in humans.

In addition, a novel *Campylobacter* sp. was isolated from the stomachs of swine at 2 of 3 abattoirs sampled. The importance of this bacterium has yet to be determined, but it also appears to have a mechanism of surviving the low pH of the stomach. While the presence of *Campylobacter* spp. was not correlated with visual pathology, the potential for these bacteria to colonize the gastrointestinal tract of swine should be studied to further define the ecology and potential impact of these organisms in swine.

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