Number of abstract: 302

First description of *Campylobacter lanienae* from feces of organic and conventional pigs, in France

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Abstract:

In the frame of the CORE Organic II funded European project SafeOrganic, fecal samples of 58 conventional pigs and 56 organic pigs, originated from 31 organic herds and 31 conventional herds, were collected in a slaughterhouse in order to isolate *Campylobacter coli*. Direct streaking from feces and incubation at 37°C of the Karmali plates allowed the isolation of another *Campylobacter* species: *Campylobacter lanienae*.
Indeed, among the 381 typical Campylobacter colonies isolated, it was not possible to identify the species for 118 isolates with the Wang's multiplex-PCR. However, 85 of these isolates were confirmed *C. lanienae* by Maldi-Tof and by 16S rRNA PCR. With the two species, *coli* and *lanienae*, the occurrence of Campylobacter in pig was estimated to 87.9% (51/58) for conventional pigs and 96.5% (52/56) for organic pigs.
A total of 55 isolates of *C. Lanienae* were tested for their resistance to 7 antibiotics. Only one was pansusceptible. Natural resistance of this species to Nalidixic acid was confirmed. Resistance to Tetracycline was significantly different between the two productions ($p <$ to 0.001) : 88 % of the conventional pig isolates were resistant against 14% of organic pig isolates. Moreover, 73% of the conventional pig isolates were multiresistant against 5% of organic pig isolates. The *C. lanienae* isolates were typed by PFGE using *Kpn*I and *Sma*I enzymes. The genetic diversity was very high, whatever the enzyme used (ID > to 0.98). No link between PFGE profile and isolate origin or antibiotic resistance pattern was evidenced.
This study allowed us to demonstrate for the first time in France that pigs may also carry in their feces a species rarely highlighted: *C. lanienae*. The lower level of antibiotic resistance and multiresistance of *C. Lanienae* strains for organic pigs may be related to the restricted use of antibiotics in this production.