

***Toxoplasma gondii*: Pig seroprevalence, associated risk factors and viability in fresh pork meat**

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Abstract

This study was conducted on 161 fattening pig farms located in Aragón (Northeast Spain). Serum samples from 1200 pigs were tested for antibodies against *T. gondii* by indirect immunofluorescence assay (IFA). Antibodies to *T. gondii* ($\geq 1:20$) were detected in 301 pigs (24.52%). The seroprevalence observed in the present study indicates a widespread exposure to *T. gondii*, as seropositive pigs were found in 96.67% of the farms studied although low pig titers were determined. Risk factors associated with *T. gondii* seroprevalence were presence of cats in or around the farms, presence of dogs around the facilities, low number of animals in the farms, poor hygiene and bad maintenance of the farms. Finally, it was observed that where rodent baits were used, *Toxoplasma* prevalence was lower. Risk management measures including control of cats and rodents on the farms, among others, could help to reduce the observed prevalence levels. By mouse bioassay, *T. gondii* was detected in 73.7% and isolated from 42.1% of seropositive pigs and a significant relation between the titers of pigs and the presence and viability of *T. gondii* in the tissues was found. The detection of *T. gondii* is not possible by currently practiced meat inspection. Nevertheless, the increased probability of detecting viable forms of *T. gondii* in tissues of pigs with titers $\geq 1:80$ could be used as the cutoff for discriminating higher risk animals, and could be used as an effective control tool for the industry of cured meat products. In practical terms, we propose that this value could be used as a critical limit in the HACCP system.