

## Positivity of Pathogenic *Leptospira* in Pigs from Rural Communities on the Coast of Ecuador

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**Abstract :** Leptospirosis impacts animal production and is responsible for important economic losses in the pig industry. Infection is associated with reproductive failures that lead to abortions, stillbirth, and perinatal mortality. The leptospira serogroups that have been traditionally linked to disease in pigs are Pomona, Australis, and Tarassovi. Unfortunately, knowledge about pig leptospirosis is biased towards infection in large-scale commercial farms from developed countries, where exposure is usually limited to host-specific serotypes. The aim of our study is to describe leptospirosis in pigs from rural communities located in the coast of Ecuador-South America, where leptospirosis is endemic. A particularity of these pigs is that, because they are usually raised in the backyard of their owner's houses, exposure to other leptospira excreted by other animals is likely to occur. Therefore, we collected 420 kidney samples from pigs sacrificed at a local slaughterhouse, and *Leptospira* positivity was tested in all samples by amplifying the Lipl32 gen. Our results show pathogenic *Leptospira* positivity in 19.3% (81/420) of pigs. Microagglutination test was performed in 60 PCR positive samples with titers >1:100 in 17 pigs, titers of 1:50 in 28 pigs, and no MAT titers in 15 pigs even though *Leptospira* DNA was found in their kidneys. Interestingly, reacting serovars were very diverse, with 18.3% of pig sera reacting with two or more serovars. Additionally, serovar Canicola was found in 16.7% of pigs followed by Tarassovi (10%), Australis (6.7%), Pyogenes (5%), Icterohaemorrhagiae (1.7%), and Grippityphosa (1.7%). It is also important to highlight that most of the analyzed animals came from small-scale farms where pigs may be exposed to the pathogen by exposure to other domestic and peridomestic animals such as rats, dogs, horses, donkeys, and even wildlife. This would explain the finding of non-pig adapted *Leptospira* serovars such as Canicola, which is commonly reported in dogs.

**Keywords :** *Leptospira*, Lipl32, peridomestic, pig, serovar

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