

JOINT EVENT

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**Influenza in a wildlife/livestock interface: surveillance in backyard farms from Mexico**

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Characterization of the wildlife-livestock interface represents a key element to understand epidemiological dynamics. Almost 77% of livestock pathogens infect multiple host species, including wildlife. In addition, wild birds in proximity to farms, lack of biosecurity measures and close contact among several animal species are considered as risk factors for the introduction and spread of *influenza A virus* (IAV). In Mexico, backyard farms represent an important percentage of the national animal production and have an essential role in the household economy of rural people. Nevertheless, a knowledge gap remains in the wildlife-pig interface. Backyard farms near to Lerma marshes, a natural protected area and bird conservation zone with legal waterfowl hunting, constitute a relevant surveillance area for influenza virus. Therefore, seven pig backyard farms located within a radius of 5 Kms from the marsh boundaries were sampled and tested by high sensitive qRT-PCR for the detection of IAV. Besides, a simulation modeling approach was implemented considering three different scenarios of connectivity among farms (low, medium and high) to evaluate the contribution of backyard pig trade network in the influenza transmission. All farms were characterized by lack of vaccination, low biosecurity, close contact between poultry and swine, close proximity to other farms and low distance to roads. Furthermore, the consequence of these modifications in connectivity directly influenced both time and duration of influenza virus transmission. The complexity of this system enhances the necessity to further evaluate this wildlife-pig interface which provides an overview of the national reality.

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