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The epidemiology of influenza virus in sow farms: A case report

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Influenza virus is a common cause of respiratory disease in swine. It is generally accepted that pigs infected with influenza virus will shed virus for a period no longer than 7-10 days. The epidemiology and persistence of influenza virus in swine populations has been studied to a lesser extent. The recurring or chronic appearance of influenza virus in sow herds may be due to the continuous circulation of endemic viruses¹⁻³. The persistence of influenza virus in populations, such as sow farms, may be due to the continual infection of young susceptible pigs⁴. A sound understanding concerning the dynamics of influenza virus in swine populations may guide control and management practices for influenza virus.

The objective of this study was to assess the epidemiology and persistence of influenza virus in infected sow farms. One case is presented here, although more farms will be enrolled in this study. In order to determine the subpopulation responsible for maintaining influenza virus infections in sow farms, cross-sectional samplings of all subpopulations within the sow farm were conducted. Nasal swabs were collected from suckling pigs and adult breeding females and tested for influenza virus via Matrix RRT-PCR.

A 2,000 sow, farrow to wean farm experienced clinical signs of respiratory disease in late December, 2009. Nasal swabs were collected from suckling pigs and adult breeding animals for the first time 30 days following the appearance of clinical signs at the sow farm. Clinical signs included coughing, nasal discharge, sneezing, and dyspnea. Nasal swabs were again collected 60 and 90 days following the appearance of clinical signs at the sow farm. Results from the three sampling periods are displayed in **Table 1**.

Table 1 (*Denotes swabs tested in pools of 3)

Subpopulation	# Swabs	# Positive	Clinical
30 days post-clinical signs			
Sows	60	0	No
Gilts	60	0	No
Pigs (<11 days of age)	30	1	No
Pigs (11-18 days of age)	30	5	Yes
Pigs (18+ days of age)	30	19	Yes
60 days post-clinical signs			
Sows and gilts	30*	0	No
Pigs (11-18 days of age)	30*	0	Yes
Pigs (18+ days of age)	30*	4	Yes
90 days post-clinical signs			
Pigs (11+ days of age)	60*	0	Yes

Several observations were made at this sow farm. Thirty days following the appearance of clinical signs, influenza virus was not detected in adult breeding animals, while a high proportion of suckling pigs were infected as detected by PCR. The suckling pig population most affected was pigs greater than 11 days of age, with 63% of sampled pigs infected at weaning. Influenza virus was also detected in suckling pigs 60 days following the appearance of clinical signs at the farm. These observations noted certainly deserve more attention and will be studied in more detail.

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