



1st International Symposium on Swine Influenza, Zagreb, 23rd-25th September 2026
ESFLU
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FROM SCIENCE TO POLICIES

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12. BIOSECURITY MEASURES FOR OPTIMIZED MANAGEMENT AND CONTROL OF SWINE INFLUENZA IN PIG HERDS

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Introduction and Objectives

Swine influenza (SwIA) is a respiratory disease of pigs that poses a major threat to the pig sector, affecting animal health and the farm economy. Biosecurity, together with vaccination, is a strategy to prevent and control respiratory diseases at the farm level. This study aimed to identify on-farm prevention and control practices for SwIA with the greatest preventive potential, as determined by expert opinion and scientific literature.

Materials and Methods

Two complementary approaches were used: a bibliographic review of peer-reviewed literature from the Web of Science database, and an expert opinion survey. In total, 96 biosecurity measures grouped in six external and internal biosecurity topics were initially identified. Experts in pig diseases and biosecurity were asked to rate the importance of the topics and the biosecurity measures for SwIA. In the literature review, 73 of the 322 initially identified publications were deemed relevant because they presented and evaluated biosecurity measures against SwIA. The results of the literature review and expert opinion were used to calculate the literature priority index (LPI) and the expertpriority index (EPI) and later integrated into a four-quadrant analysis.

Results and Discussion

'Purchasing/Introduction of breeding pigs and piglets' and 'Animal flow' were the most important topics according to experts (EPI = 1). The strongest evidence in the literature was found for the 'Ventilation/ farm climate' topic, with the effectiveness of several measures being experimentally tested. Regarding biosecurity measures, 93% of them were poorly investigated in literature (LPI < 54). Based on the four-quadrant analysis it was found that only 3 out of 96 measures (Q2) were prioritized by experts and showed a high evidence in literature: 'Density of pigs farm around', 'Type of farm' and 'All-in-all-out system'. Two measures were studied in literature but not prioritized by experts (Q1): 'Animal density' and 'Minimum number of visitors', on the contrary, 31 measures were considered important by experts but not investigated (Q3).

Conclusion

We identified the most important preventing measures for SwIA (measures in Q2) and highlighted research gaps (Q1 and Q3), identifying potential research priorities.