SEROLOGICAL INVESTIGATION OF SWINE INFLUENZA A VIRUS IN POLISH FARROW-TO-FINISH PIG HERDS BETWEEN JANUARY 2018 - JULY 2022

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Background and Objectives

Swine influenza A virus (swIAV) plays a major role in the porcine respiratory disease complex (PRDC)[1]. Circulating in sow farms additionally huge impact on reproductive parameters have been demonstrated[2]. The aim of this serological investigation was to study the distibution of subtypes in Polish farrow-finish herds and fattening farms.

Material and Methods

From January 2018-July 2022 in total 2833 serum samples from 218 farms, producing pigs with Polish breed (no imported animals), were investigated for swIAV within routine diagnostic. The sera were tested for Influenza by Hemagglutination Inhibition (HI) test at IVD GmbH, Seelze, Germany. Only swIAV non vaccinated farms with a minimum of 10 samples/farm were included in this evaluation. A farm was considered positive if two or more samples were positive (HI titer ≥ 40) at least for one subtype. H1avN1 antigen (Ag) type1, H1avN1 antigen type2, H1huN2, H3N2, H1pdmN1 and H1pdmN2 virus subtypes were used for HI.

Results

In total 74.8% (n=163) of the sampled farms were tested positive for swIAV. Among those farms 79.1% (n=129) tested positive for H1avN1 Ag type1, 75.5% (n=123) for H1avN1 Ag type2, 63.2% (n=103) for H1pdmN1, 66.3% (n=108) for H1pdmN2, 23.9% (n=39) for H1huN2, and 17.2% (n=28) for H3N2. Slight differences could be observed in the individual years. 19.3% (n=42) all farms were only positive for one subtype, 33.9% (n=74) for two, 16.1 (n=35) for three and 5.5% (n=12) for all 4 subtypes.

Discussion and Conclusion

Our findings differ from the findings of Czyzewska-Dors et al. in 2017[3], following up 145 farrow-finish-farms in Poland in the period of March 2011- February 2015 by HI. There 59.3% of the herds were tested positive for H3N2, whereas in our study only 17.2% of the swIAV positive farms seroconverted to H3N2. The positivity rate for H1avN1 remained very similar with 77.2% compared to 79.1% in our study. The amount of farms positive for pandemic subtypes also was higher compared to the afore mentioned study. Our data indicate that there is a change in the subtypes circulating in Poland. The detection rates of pandemic subtypes are rising over the years.

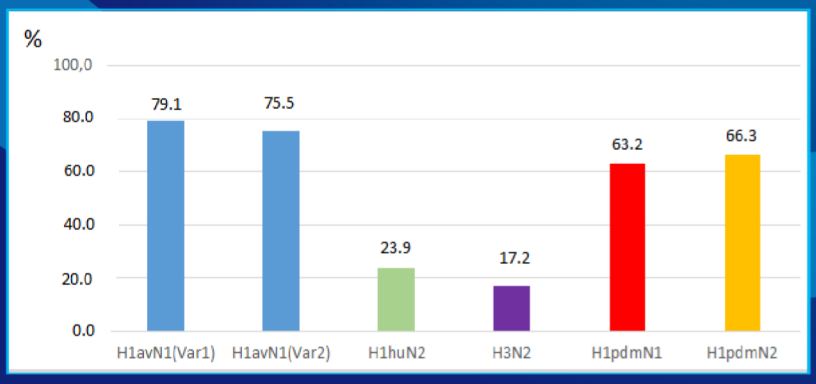

Figure 1. *Overall percentages of different swIAV subtypes detected by HI on 163 positive tested farms in Poland between January 2018 and July 2022.*

References

[1]Saade et al. 2020 Vet. Res. 51, 80
[2]Gumbert et al. 2020 Porc. Health Manag. 6, 4
[3]Czyzewska-Dors et al. 2017: Journal of Veterinary Research 61, 157–161