

SURVEILLANCE OF INFECTIOUS DISEASES

IN ANIMALS AND HUMANS IN SWEDEN 2022

*Chapter excerpt:
Swine dysentery*



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Reporting guidelines: Reporting guidelines were introduced in 2018 for those chapters related to purely animal pathogens. The guidelines build on experiences from several EU projects, and have been validated by a team of international experts in animal health surveillance. The aim is to develop these guidelines further in collaboration within the global surveillance community and they have therefore been made available in the form of a wiki on the collaborative platform GitHub (<https://github.com/SVA-SE/AHSURED/wiki>). Feel free to contribute!

Layout: The production of this report continues to be accomplished using a primarily open-source toolset. The method allows the source text to be edited independently of the template for the layout which can be modified and reused for future reports. Specifically, the chapter texts, tables and captions are authored in Microsoft Word and then converted to the LaTeX typesetting language using a custom package written in the R software for statistical computing. The package uses the pandoc document conversion software with a filter written in the lua language. Most figures and maps are produced using R and the LaTeX library pgfplots. Development for 2022 has focused on generalising the R package to accommodate conversion into formats other than LaTeX and PDF, with a focus on markdown files which can be published as HTML websites using the Quarto publishing system. The report generation R package and process was designed by Thomas Rosendal, Wiktor Gustafsson and Stefan Widgren.

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Swine dysentery



Figure 53: A national collaboration between the National Veterinary Institute and the industry, with the aim of eradicating swine dysentery (SD), has been active since 2020. All information on positive herds is shared within this network. By the end of 2022 there were six herds positive for SD, a decrease by half since the year before. Photo: Marie SJölund.

BACKGROUND

Swine dysentery (SD) caused by *Brachyspira hyodysenteriae* (*B. hyodysenteriae*) is a severe disease affecting the large intestine of pigs. Clinical signs of SD include mucohaemorrhagic diarrhoea occasionally being blood-tinged, ill-thrift, inappetence and weight loss. Mortalities can be significant, but the largest economical losses are induced by a reduced weight gain and treatment costs.

SD was rare in Sweden prior to the ban of the use of low dose antibiotics for growth promotion in Sweden. Following this ban in 1986, SD was more frequently diagnosed. Since then, improvements in management and biosecurity have contributed to a reduction in the occurrence of SD in the population. More recently, a voluntary programme for certifying the SD status of nucleus and multiplying herds has also contributed to a reduction in the occurrence and spread of SD. The pig health organisations organise and operate the programme. In addition, SD has also successfully been eradicated from affected herds following special sanitation protocols involving removal, medication, cleaning and disinfection. Despite this, SD is still diagnosed in a few herds annually. Therefore, herds may trade pigs despite the presence of subclinical SD. Herd owners may also choose

to change abattoir or animal-health organisation without informing them of their existing SD status, rendering further spread possible.

Tiamulin has been the drug of choice for controlling SD. However, in 2016, tiamulin-resistant SD was identified for the first time in Sweden. This is particularly worrisome as few antibiotics are available for treatment of SD. Fortunately, the tiamulin resistant strain of SD was successfully eradicated, but this incident awakened a general interest in eradicating SD at a national level.

LEGISLATION

SD is not a regulated or notifiable disease.

SURVEILLANCE

Nucleus and multiplying herds have been actively tested for the presence of SD since the 1990s. A national network with the aim of eradicating SD at the national level was established in the autumn of 2019 and became active on the 1st of January 2020. It includes the pig producers' organisation, abattoirs, pig health organisations and the National Veterinary Institute (SVA). The work is coordinated from SVA, and all diagnosed cases of SD during the period 2016–2019

as well as the present status of these herds were defined. From the 1st of January 2020, all herds where clinical signs make SD a differential diagnosis, are tested at SVA by culturing from rectal swabs. All information on positive herds is shared with the network.

In herds that were previously diagnosed with SD and not yet declared free from the infection on the 1st of January 2020, measures on transports agreed within the network were implemented to reduce the risk for infecting other herds. Similarly, from then on, these measures have been applied to all herds that test positive for SD until they have been declared free from the infection.

RESULTS AND DISCUSSION

During 2016–2021, SD was diagnosed in 33 herds, whereof 12 still had not been declared free by the 31st of December 2021.

In 2022, a total number of 93 herds were tested for SD (Table 27). Some herds were sampled more than once with a total of 112 sampling occasions. Of the sampled herds, 20 were nucleus or multiplying herds tested within the programme. All these herds tested negative. The other 73 tested herds were tested due to clinical signs indicative of SD. SD was detected in two specialised fattening herds of these 73 herds. SD could not be detected in the supplying piglet producing herds. By the 31st of December 2022, SD had been confirmed in six herds, where eradication programmes were active in one of these herds.

The overarching goal of the programme and the network is to eradicate SD from the Swedish pig population. By the end of 2022, there were six herds positive for SD compared to 12 herds one year earlier (Table 28). The lower number of herds positive for SD could partly be explained by a change in the criteria to declare herds free from SD. Previous criteria included sampling on three occasions which was rarely met by specialised fattening farms. The present criteria for

specialised fattening farms require testing one one single occasion after all stable units have been emptied, cleaned and disinfected. Therefore, eight herds could be declared free from SD in 2022. Overall, the Swedish situation on SD has continuously improved by an increased certainty of the disease status from intensified testing of the population.

Table 27: Herds monitored for swine dysentery (SD) in Sweden during 2022.

Reason for testing	Sampled herds	Positive herds
Certification testing of breeding stock herds	20	0
Testing on clinical suspicion	73	2
Retesting of previously positive herds	19	6

Table 28: Number of herds positive for swine dysentery (SD) at the end of 2022.

Herds with SD on 2022-01-01	6
New herds diagnosed during 2022	2
Herds declared free from SD during 2022	8
Herds with SD on 2022-12-31	6

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