

Increased sow mortality -an unsolved problem

11th ECPHM Workshop for residents Budapest 2022
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Overview

- Herd description
- Anamnesis
- Differential Diagnoses
- Necropsies
- Herd investigation
- Interventions
- Discussion



Herd Description

- Farrow-to-finish/piglet producing
- 400 SIP
- 2-week interval, batchwise production
- 11 groups, 36 sows per group
- Weaned at 5 weeks of age
- 5500 finisher/year
- 5500 piglets sold at 30 kg



Herd Description -Health program

Sows

- *Erysipelothrix rhusiopathiae*
- Porcine Parvovirus
- Porcine Circovirus type 2
- *Mycoplasma hyopneumoniae*
- *Escherichia coli*

Piglets

- Porcine Circovirus type 2
- *Mycoplasma hyopneumoniae*



Herd Description - System

Sows

- Loose-housed
- ESF-Agrisys
- 2 Dynamic groups à 110 sows
- Wet feed



Anamnesis

Farm visit October 2020

Increased sow mortality during September

- sudden death
- 10 SOWS

November 2020 – 3 dead sows in one day in one of the dynamic groups



Differential diagnoses

Infectious	Non-infectious
<i>Clostridium novyi</i>	Mycotoxins - aflatoxins
<i>Salmonella Cholerasuis</i> *	Circulatory failure
<i>Actinobacillus suis</i>	Intestinal torsion
<i>Streptococcus suis</i>	Gastric ulcer
<i>Glaesserella parasuis</i>	Toxicity -Se, Fe, Coal tar
<i>Actinobacillus pleuropneumoniae</i>	Deficiencies -Se, E-vitamine
<i>Erysipelothrix rhusiopathiae</i>	
<i>Bacillus anthracis</i> *	
African swine fever*	
Classical swine fever*	

Necropsies in field

Macroscopic findings

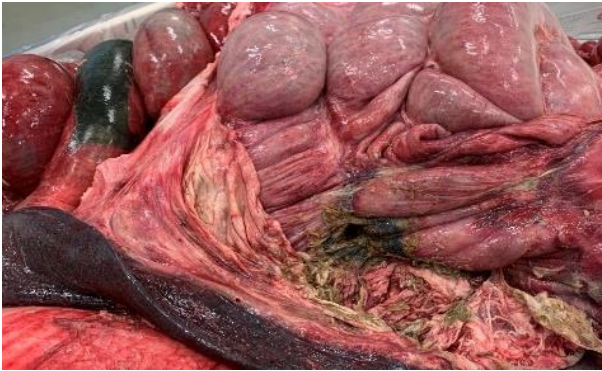
- Focal transmural perforation/rupture of the proximal colon
- Acute general peritonitis
- No enlarged lymphnodes

Microscopic findings

- Autolysis – difficult to evaluate



Necropsies



Diagnosics

- *Salmonella ssp* - liver, spleen, lung, lymphnodes
 - not detected



Case definition

- Sudden deaths occurs in clusters in sows with a focal transmural perforation or rupture of the proximal colon and acute general peritonitis without any known previous clinical signs



Differential diagnoses – colon perforation/rupture

- **Infection –*Salmonella ssp***
- **Torsion –no signs of torsion, no hemorrhagic segments**
- Corp al/traumatic
- Feed
- Management
- Toxicity



Risk factors–colon perforation/rupture

- Nutrition
- Environment
- Diseases
- Genetics
- Management



Herd investigation - nutrition

- Water -4 l/min
- Water sample –no remarks
- Feed recipe/content – feed advisor
- Feed analyses – hygiene/mycotoxins – no remarks
- Sifting test
- pH in the feed – 4,4
- Straw – new straw every day on the lying area



Herd investigation - environment

- The floor around the feeding stations was eroded
- No other damage to the interior
- The dead sows were always found in the same area –electricity?



Herd investigation - diseases

- No clinical signs
 - Parasites (*Ascaris suum*, *Trichuris suis*, *Oesophagostomum* ssp., *Hyostromgylus rubidus*)
- low prevalence of *Oesophagostomum* ssp., *Hyostromgylus rubidus*



Herd investigation - genetics

- No pattern was found



Herd investigation - management

- Straw – new straw every day on the lying area
- Clean the water cups daily
- Check if every sow has been eating daily
- Stress –stereotypies – 1 sow sham chewing



Herd investigation – sow movements

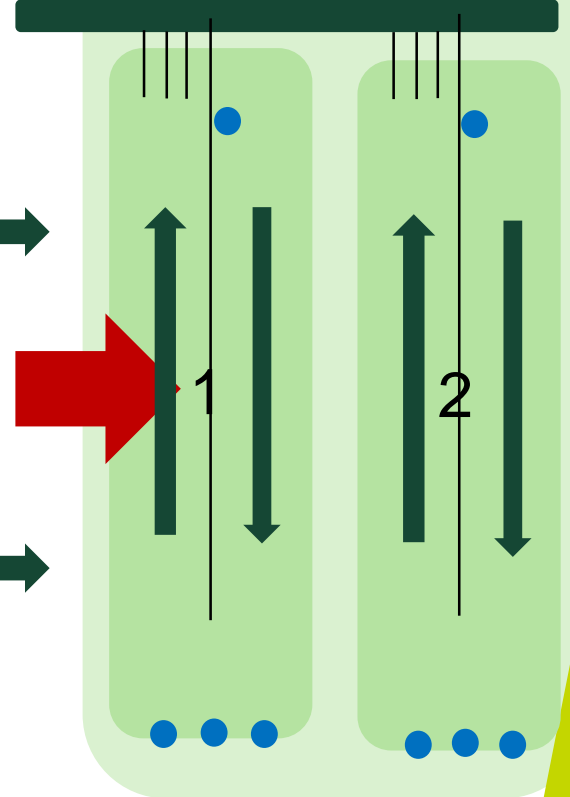
Farrowing units



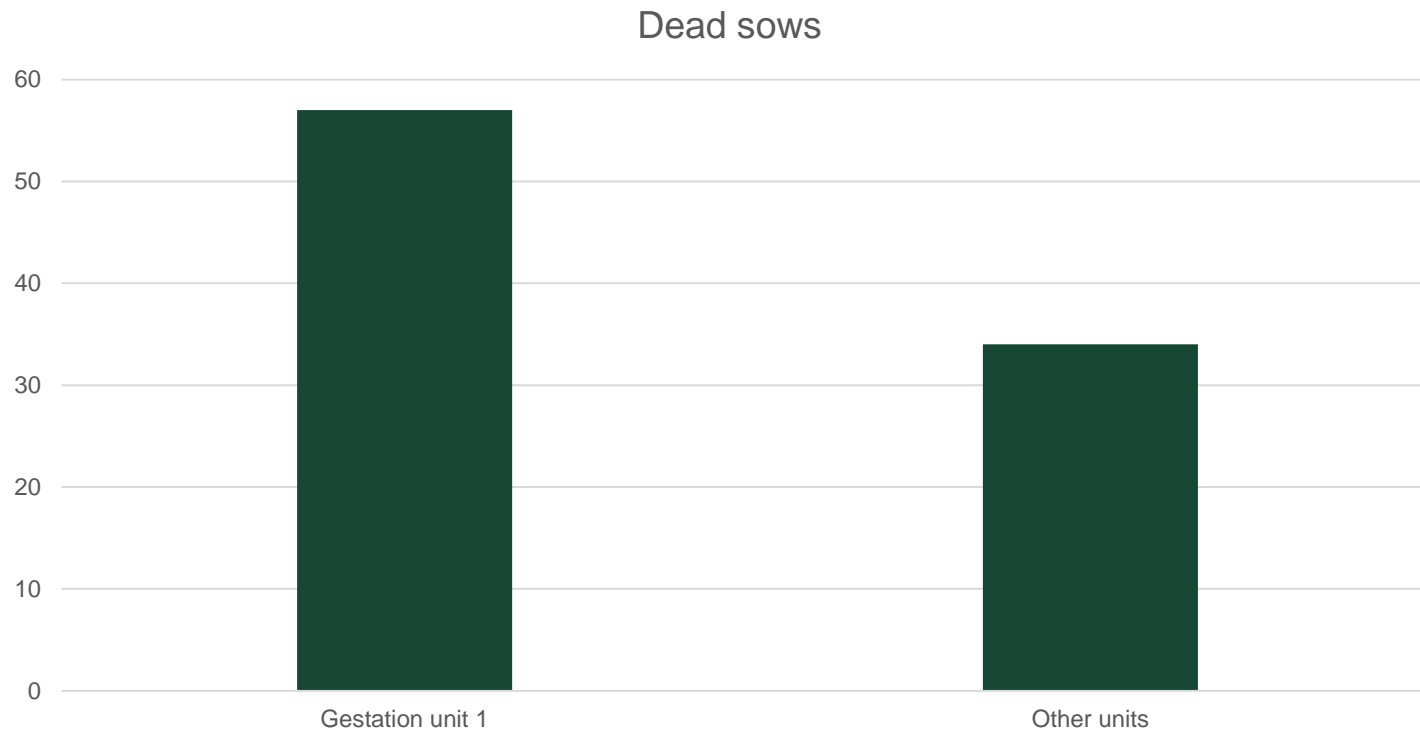
Breeding unit



Gestation units

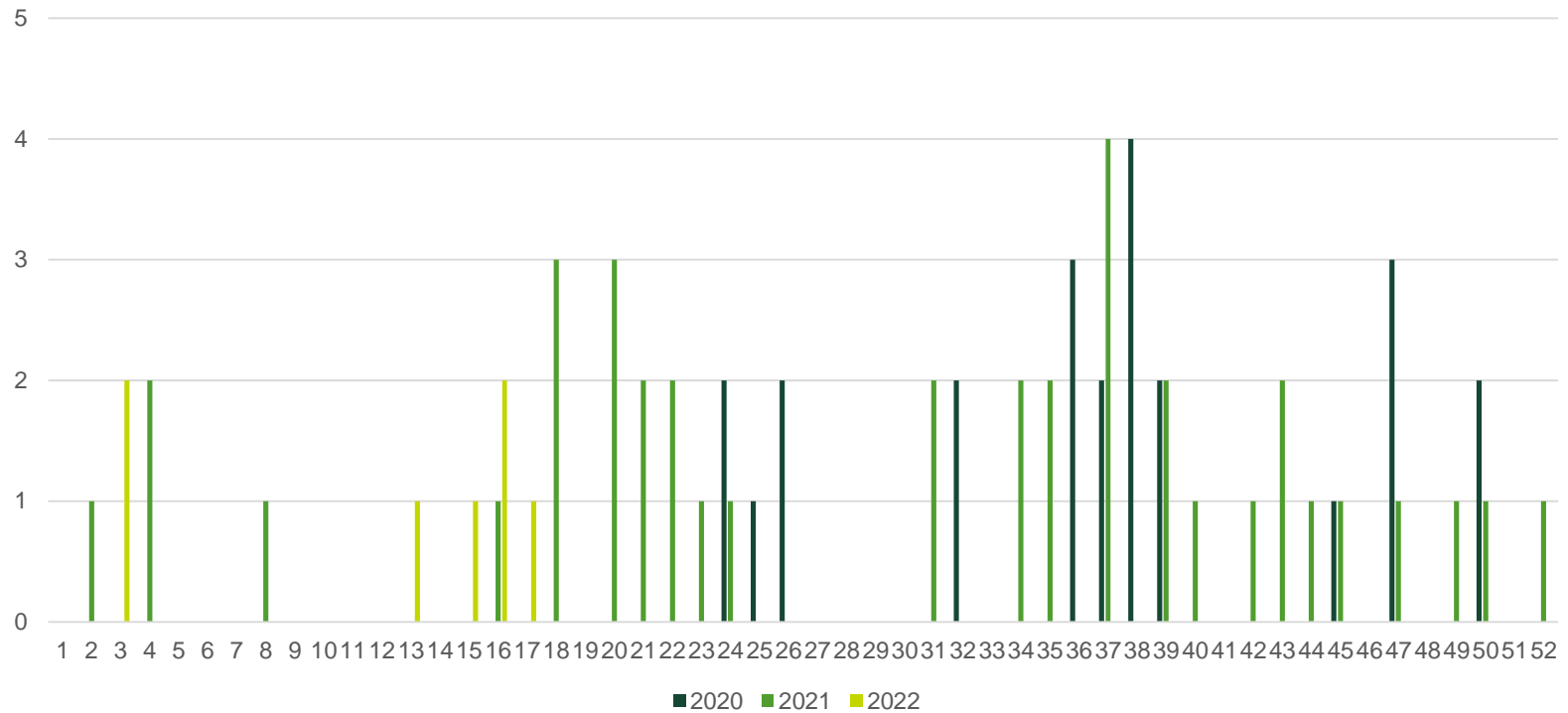


Herd investigation - records



Herd investigation - records

Sudden deaths weekly



Mortality among Swedish sows

Sow mortality on average 2 %

Removal rate is on average 50% (34-66%)

- Slaughtered 85,2 %
- Euthanized 10,5 %
- Found dead 4,3 %

Engblom, 2004



Mortality in this herd

Sow mortality 10%, now 15%

Removal rate 50%

- Slaughtered 41 %
- Euthanized 27 %
- Found dead 32 %



Herd investigation – Gestation unit

- The dead sows are of all ages in the group (2-9 parity)
- Days in the unit before death 5 – 199



Interventions

- Cleaned the feed lines
- Fixed the floor around the feeding station
- Extra straw
- Installed magnetic filter in the feed line



Further investigations

- One feeding station occasionally continue feeding and allows the sows to eat large amounts
- Occasionally the feeding station stops without sending an alarm to the farmer
- Necropsies - 20 sows – perforation/rupture of the proximal colon and acute peritonitis.
- Histology – autolysis
- Camera surveillance



Discussion

- The herd has a high sow mortality
- Low suspicion of infection since the high mortality only occur in one unit
- Peak in September –new cereals?
- Deaths in cluster – suspect rapid progression
- Additional diagnostics/measurements
- Lower mortality at the moment –farmer assumes that the problem has disappeared



Discussion -Litterature

- Perforation or rupture?
- Secondary finding
- Feeding station
- Stercoral perforation –possible cause? (Gekas &Shuster 1981)
- Constipation (Berger et al. 1961)

- Overeating whey (McCausland & Southgate 1980)
 - Whey deliveries
 - Agrisys programme



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Thanks for your kind attention

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Question?
or
Suggestions?

