Suckling Pig Diarrhea

2024 Carthage Swine Conference

Dr. Elise Toohill

CARTHAGE VETERINARY SERVICE

Suckling Pig Diarrhea

- Define the Problem
- Tools in Our Toolbox
  - Reduce Exposure to Pathogens
  - Improve Immune Protection
  - Piglet Treatment

Define The Problem

- Potential Endemic Pathogens
  - Rotavirus A, B and C
  - *Clostridium perfringens*
  - Ecoli
  - Coccidia
  - Sapovirus
  - Salmonella
  - *Clostridioides difficile*

Define The Problem

- Clinical signs, history, gross lesions…
- Submit Diagnostics to Identify What You Are Dealing With
  - Fecal swabs/feces

PCR - Porcine sapovirus genogroup III

Animal ID	Specimen	ct / Result	Comment
Pig 1, Tube #1	Feces	20.1 / Positive	
Pig 2, Tube #2	Feces	15.5 / Positive	
Pig 3, Tube #3	Feces	16.1 / Positive	

PCR - Porcine rotavirus Applied Biosystems

Animal ID	Specimen	Target Agents	Ct / Result	Comment
Pig 1, Tube #1	Feces	Rotavirus group A	28.2 / Positive	
		Rotavirus group B	>=36 / Negative	
		Rotavirus group C	>=36 / Negative	
Pig 2, Tube #2	Feces	Rotavirus group A	33.8 / Positive	
		Rotavirus group B	>=36 / Negative	
		Rotavirus group C	>=36 / Negative	
Pig 3, Tube #3	Feces	Rotavirus group A	26.2 / Positive	
		Rotavirus group B	>=36 / Negative	
		Rotavirus group C	>=36 / Negative	

Parasitology

Iowa State Parasitology Lab does not maintain an AAVLD accreditation or ISO accreditation.

Fecal Flotation

Animal ID	Specimen	Organism	Result	Comment
Pig 1, Tube #1	Feces	No parasites found	None observed	
Pig 2, Tube #2	Feces	Cystoisospora	Low numbers observed	
Pig 3, Tube #3	Feces	No parasites found	None observed	

Necropsy

Diagnostic Pathology Interpretation - Individual

Animal ID	Specimen	Slides	Comment
Pig 1	Assorted	6	

Bacteriology

Culture Summary

Animal ID	Specimen	Enrichment	Growth	Organism	Comment
Pig 1, Tube #1	Colon		Moderate	Smooth/mucoid Escherichia coli	
Pig 1, Tube #1	Intestine		High	Smooth/mucoid Escherichia coli	
Pig 2, Tube #2	Colon		High	Clostridium perfringens	
Pig 2, Tube #2	Intestine		High	Clostridium perfringens	
Pig 2, Tube #2	Intestine		High	Escherichia coli - hemolytic (smooth)	
Pig 3, Tube #3	Colon		Few	Clostridium perfringens	
Pig 3, Tube #3	Intestine		Low	Smooth/mucoid Escherichia coli	

Define The Problem

- Submit Diagnostics to Identify What You Are Dealing With
  - Fecal swabs/feces
  - Fresh and fixed tissue

History:
Two-week-old pigs reported with diarrhea.

Gross Pathology:
Creamy pale white contents present in the colon.

Histopathology:
Pig 1
- Small intestine
  - Diffusely, there is severe shortening and lateral fusion of villi. Enterocytes are severely attenuated or vacuolated.
- Colon: unremarkable

Pig 2
- Small intestine
  - Segmentally, there is mild to moderate shortening and lateral fusion of villi. Enterocytes in the upper third of the villi are multifocally vacuolated and contain rare coccidian organisms in their cytoplasm.
- Colon: unremarkable

Pig 3
- Small intestine: similar to pig 2 but no coccidian organisms
- Colon: unremarkable

Ancillary Diagnostic Tests:
Completed results appear below

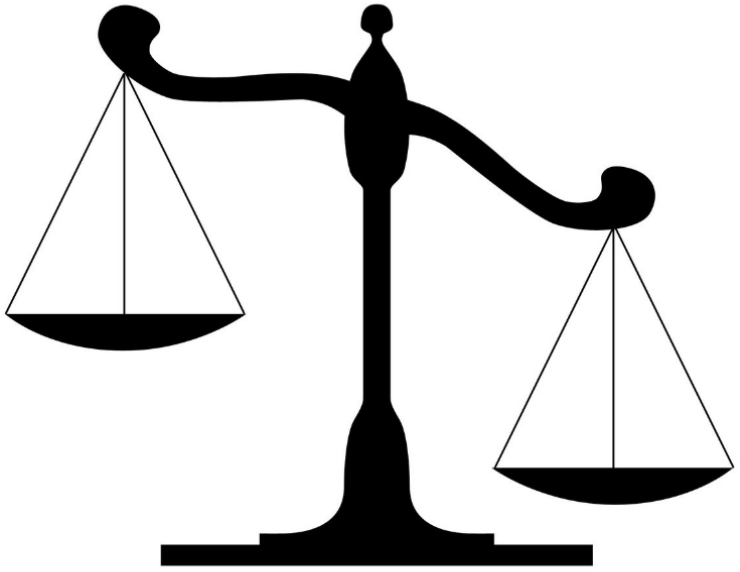
Laboratory Diagnosis:
- Atrophic enteritis, segmental to diffuse, mild to severe: sapovirus
- Mild enteric coccidiosis (pig 2)

Comments:
- All pigs have lesions of viral enteritis, which are more severe in pig 1. Rotavirus has been detected in all pigs in moderate to high Ct, and sapovirus has been detected in moderate to low Cts. Sapovirus is likely contributing to lesions more at this point in time, but a contributing of rotavirus is not ruled out (IHC available upon request).
- Lesions of enteric coccidiosis are observed in pig 2.
- Please call if questions or additional testing is desired?

Define The Problem

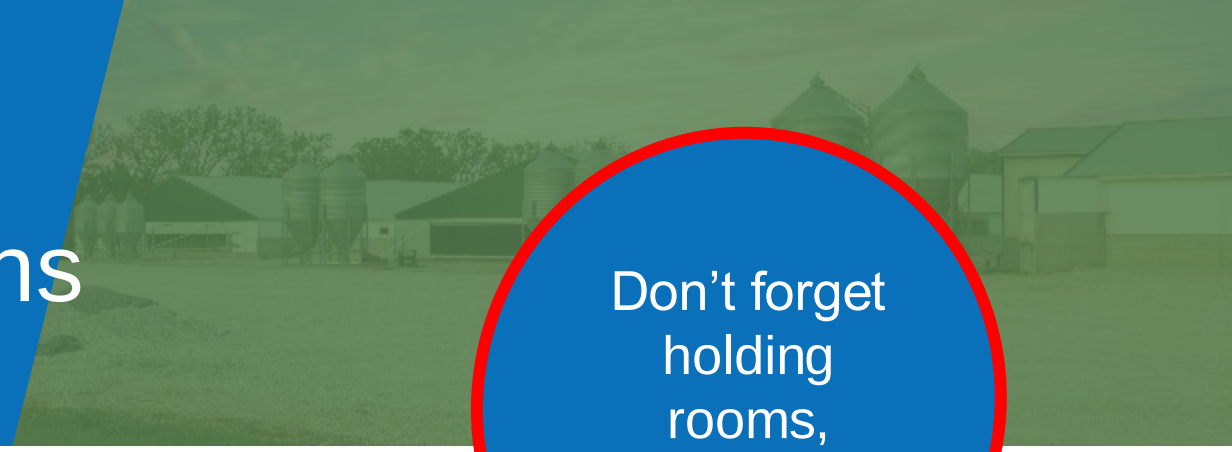
- Investigate Potential Root Causes

Pigs Resistance to Disease + Environmental Stressors



Exposure to Pathogens

Tools in Our Toolbox
*Reduce Exposure to Pathogens



Don’t forget holding rooms, nurseries and chutes!!!

- Sanitation! Sanitation! Sanitation!
  - Farrowing Room Washing and Disinfection
    - Inspect for cleanliness, pull dividers
    - Hot water
    - Use minimum of 1 detergent, consider soaking rooms
    - Use minimum of 1 disinfectant + bleach if coccidia is concern – consider white wash
    - Get room DRY before loading - AIAO
  - Hallway washing and disinfecting
    - Wash hallway following any sow or pig movement AND before loading due to farrow sows
  - Boot Washing and Disinfection
    - Wash boots coming out of gestation/GDU and going into farrowing
    - Consider boot baths with wet or dry disinfectant

Tools in Our Toolbox
*Reduce Exposure to Pathogens

- Prevent Spread of Pathogens Between Litters
  - Avoid stepping in crates
  - Disinfect boots between rooms
  - Wear gloves when handling piglets, change between litters
  - Focus on sanitation at time of processing - consider washable/disposable apron
  - Process and treat scour litters last

Tools in Our Toolbox
*Improve Immune Protection

- Gilt Acclimation and Vaccination

- Prefarrow Vaccination
  - Killed vaccines – commercial, autogenous
  - RNA particle vaccines

- Prefarrow Natural Planned Exposure (feedback)
  - What are you feeding back?
  - Quantity, frequency, timing all can be important factors

Tools in Our Toolbox
*Improve Immune Protection

- Colostrum Intake
  - First 12 hours from MOM – check for full belly prior to any cross-fostering
  - Split suckle
  - Get sow eating/drinking ASAP and keep her lactating
    - IgA antibodies continue to be transmitted until weaning and disruption in milk intake can lead to scours
- Prevent Environmental Stressors/Triggers
  - Proper farrowing room set-up (mats, heat lamps, dry, etc)
  - 95-100 degrees in the piglets microenvironment
  - Reduce draft/chilling – room low temperatures and inlet positioning

Tools in Our Toolbox
*Piglet Treatment

- Antibiotics for Bacterial Pathogens
  - Gentamycin, spectinomycin, tylosin, ceftiofur most common
  - Susceptibility testing can be important/helpful
- Competitive Inhibition Vaccines for Ecoli
  - Oral drench, udder spray, gel
  - Timing and dose – depends on K88 vs F18 and time of exposure/clinical signs
- Antiprotozoal for Coccidia

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Thank You

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