Managing Porcine Epidemic Diarrhea Virus (PED)
Talk Focus

• Brief review of our advancing knowledge
  – The PED virus in our herds
  – Farm Biosecurity Methods
  – Other biosecurity areas
  – Disease Management

Additional Resources: www.pork.org/pedv
Porcine Epidemic Diarrhea Virus

- A coronavirus similar to TGE virus
- Like TGE - high mortality in suckling piglets (30-100%) “TGE on steroids”
- Never been in the U.S. before
- First observed in England 1971
Porcine Epidemic Diarrhea Virus

- PED is primarily spread by the fecal-oral route
- Incubation is very short: 12-36 hours
- Vomiting and diarrhea in all ages
- PEDV only infects pigs
Differential Diagnosis

• There are other disease agents that can look like PED
  - Viral gastroenteritis – the PED virus looks like Transmissible Gastroenteritis Virus (TGE)
  - Porcine rotavirus groups A and B are also major causes in viral enteric diseases of piglets with similar clinical presentation.
  - Bacterial gastroenteritis – Clostridium spp, E. coli, Salmonella spp, Brachyspira spp, Ileitis
  - Parasitic gastroenteritis – Coccidia, Cryptosporidium, Nematodes.
Bio-Exclusion Considerations

- Pest/Wildlife Control
- Water
- Feed
- Transportation
- Rendering & Culls
- Pig handling equipment
- Supplies & Product Deliveries
- Tools/Equipment
- Clothing, boots, hands – employees and Service
- Aerosol – weather
- Replacements
- Farm Biosecurity
- Employees and Service Supplies & Product Deliveries
“Keep it out” Management

• Biosecurity Challenges
  – Fecal Oral Routes are Numerous
    • Pigs (Isolation of new stock)
    • Pig Trailers & Truck Drivers
      – Rendering, Slaughter, Cull Sows etc.
    • Feed Trucks and Drivers
    • Pig handling equipment – cut boards etc.
    • Employees – hands, shoes, clothing
Keeping it out

– Manure handling equipment and operators
– Service personnel
– Water supply
– Tools
– Supplies
– Any fecal contaminated object that enters the farm and contacts a pig

• Winter weather greatly enhances virus spread
Keeping it out

- Limiting traffic (people and equipment) onto the farm,
- Thoroughly cleaning and disinfecting anything coming onto the farm including personal items
- Enforcing downtime requirements and maintaining a log of visitors
Keeping it out

• Establish practical barriers – “clean/dirty” concept.
  – Load-out & load-in chutes
  – Feed deliveries
  – Service personnel
  – Supply deliveries
  – You if you deliver pigs to slaughter, haul to other sites, and if you visit where other pig people go!!!
Keeping it out

• Taking care when disposing of dead stock particularly if using a communal disposal method
• Isolating newly arriving animals and continuing vet to vet discussions about animal health at the herd of origin. Pre-entry testing For PEDV in the isolation
• Showering into the facility where practical and changing into clean boots and coveralls
• Shower out protects other producers
Keeping it out

• When entering a non-shower facility wash hands or wear disposable gloves and wear site boots and coveralls or new disposables
• Inspect all transport vehicles before they back up to the load-out
• Take extreme caution with boots, clothing, haul trailer, truck, cutting boards and other loading equipment after visiting a slaughter or cull facility
• Avoid visiting where other producers may frequent without biosecurity precautions
Keeping it out

• Require that farm employees shower back in when checking feed bins or check bins before showering at start of the work day
• Proactively plan feed delivery routes
• Ideally, trucks should be able to unload feed without entering site – outside the site fence
• Invoices should be left in mailbox at entry to farm
Keeping it out

• Feed Drivers should keep a log of previous history of deliveries to other farms

• Ask your commercial feed supplier for a copy of their last biosecurity audit
  – Encourage them to develop one
Transport Sanitization

1. Truck wash personnel, and drivers must be held accountable for deviations in standard operation procedures
2. Remove all bedding and visible organic matter during the scrape and flush step
3. Wash with hot water and detergent
4. Disinfect with a field proven disinfectant (antifreeze)
5. Inspect
6. Repeat the wash and disinfection process if necessary
7. Dry or superheat (160° F for 10 minutes)
8. Monitor the process
Disinfectants

- Chlorhexidine Solution
- DC&R
- Virkon S
- ROCCAL-D PLUS
- Tek-Irol
- Synergize
PED Elimination

• First Step has been early weaning off site

• Immediate feedback of infected material to the breeding herd

• Herd closure

• Vaccine???
**PED Elimination**

- If Possible:
  - Add all replacement gilts necessary for a period of four to six months immediately during the feedback exposure period
  - Sentinel animals are best to determine if the virus has been eliminated prior to resumption of replacement flow (introduction of naïve animals)
Feedback protocols are like those for TGEV

• Consist of fecal material and/or the intestinal tracts (viscera) from infected / scouring piglets

• Process the viscera through a garbage disposal/blinder etc. to macerate thoroughly

• Cold water may be used to extend/carry the feedback material
  – The virus is temperature sensitive – hot, or chlorinated water should be avoided
Impact on price of live hogs

“Worst case scenario”

• Assuming a Price Flexibility of 2.37 and a reduction in supply of 7.7%

• Market hog prices would rise by
  
  \[7.7\% \times 2.37 = 18.25\%\]

  (Up $16.42 from $90 to 106.42)

(Source: Dr. Derald Holtkamp)
BIOSECURITY

THINK!!