

Practitioner perspective when faced with PEDv

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Swine Veterinary Services

June 6, 2013

Swine Veterinary Services

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PEDv

Porcine Epidemic Diarrhea Virus

1. Is not Zoonotic
2. Does not affect people and
3. Is not a food safety concern
4. Is not a new disease
5. PEDv looks like TGEv



Three Things:

1. PEDv in a Sow Farm
2. PEDv in a Nursery
3. PEDv in a Finisher



Message – Timeline & People

- ▶ My Clients
- ▶ ISU Veterinary Diagnostic Lab
 - Drs. Rodger Main & Greg Stevenson
- ▶ Dr. Joe Connor
- ▶ AASV – Tom, Harry & Sue
- ▶ MN Veterinary Diagnostic Lab
 - Dr. Jim Collins
- ▶ Several Colleagues with Clinically infected farms
- ▶ Dr. Brett Marsh & Indiana Vets
- ▶ Dr. Larry Rueff & Dr. Dennis Villani

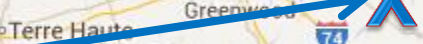
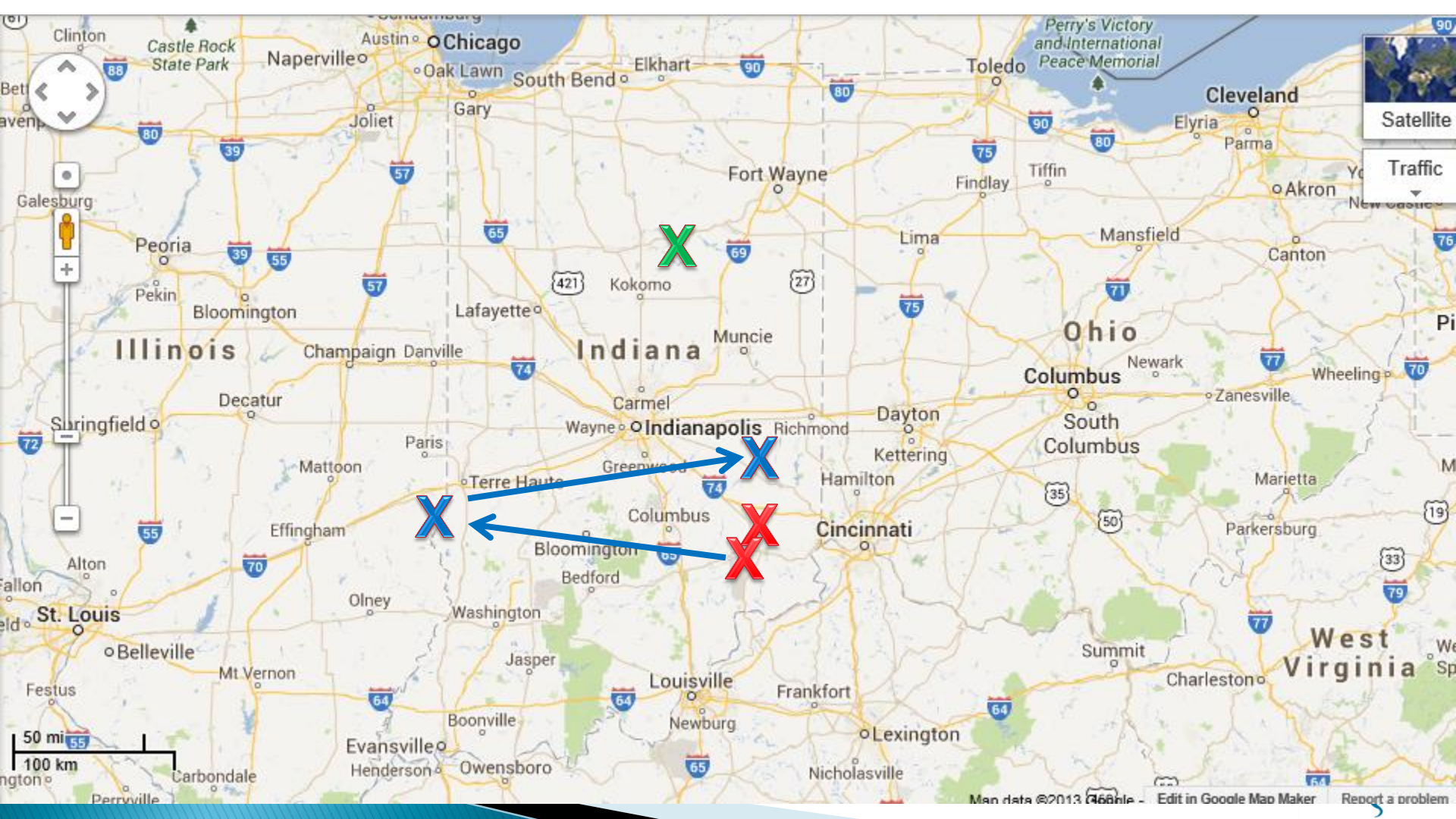
Part 1 – PEDv Timeline – May 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28	29	30	1	2	3	4
5 1 st Phone Call	6 1 st Indiana – Sow Farm	7 2 nd Indiana – Sow	8	9	10	11
12	13	14	15	16 NVSL Announces PEDv	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1

Sunday, May 5, 2013 – Day 1

- ▶ I received a call from my client saying that their 6,000 sow unit had sows in one room of their eight gestation barns with sows with diarrhea and vomiting.
- ▶ There was some looseness being seen in the piglets starting on Saturday. (especially after day 10)





Called the Wean Pig Buyers

- ▶ Let them know we had TGEv concerns
- ▶ They said ship the pigs
- ▶ In a crisis – Communicate
 - The right things
 - The right people
 - Right away
 - Let them decide what they want to do







Finishing

1

2

3

4

5

6

7

8

Farrowing

Nursery

Office

Monday, May 6, 2013 – Gestation – Day 2

- ▶ On a herd visit to the 6,000 sow
- ▶ Sows in gestation room 8 profusely scouring and vomiting.
- ▶ The scours are so watery that we couldn't use a spoon to collect samples.
- ▶ We had to use paper towels to blot feces off the slats. Scours are dark green to brown.





Monday, May 6, 2013 – Farrowing

– Day 2

- ▶ Pigs up to 3 days
 - E.coli epidemic scour with about 10% of litters affected.
- ▶ By days 7 to 14 days of age 50% of the pigs are scouring.
 - Pigs are lying on top of the sow covered with brown blotches of dried scour material all over them.

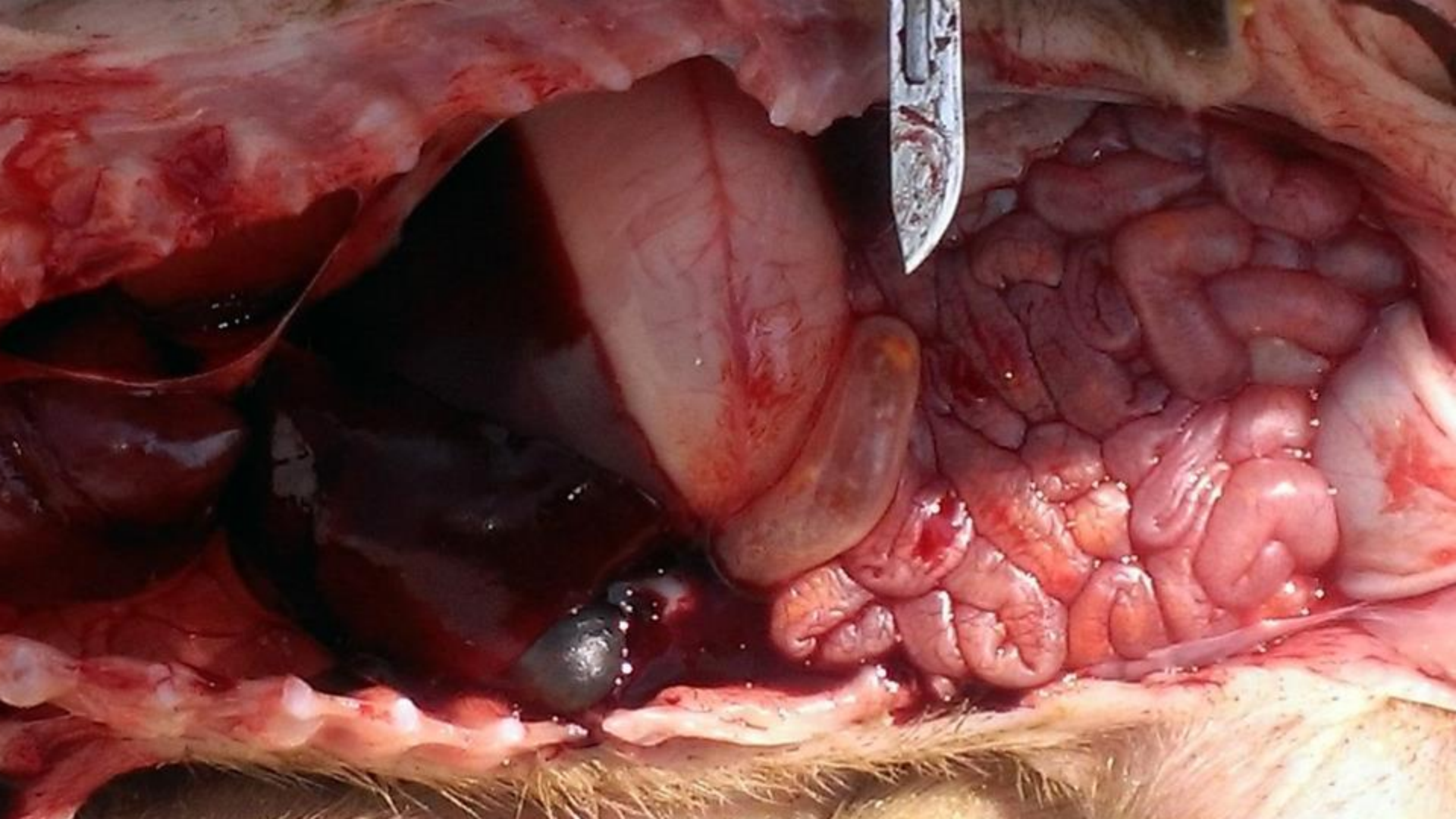


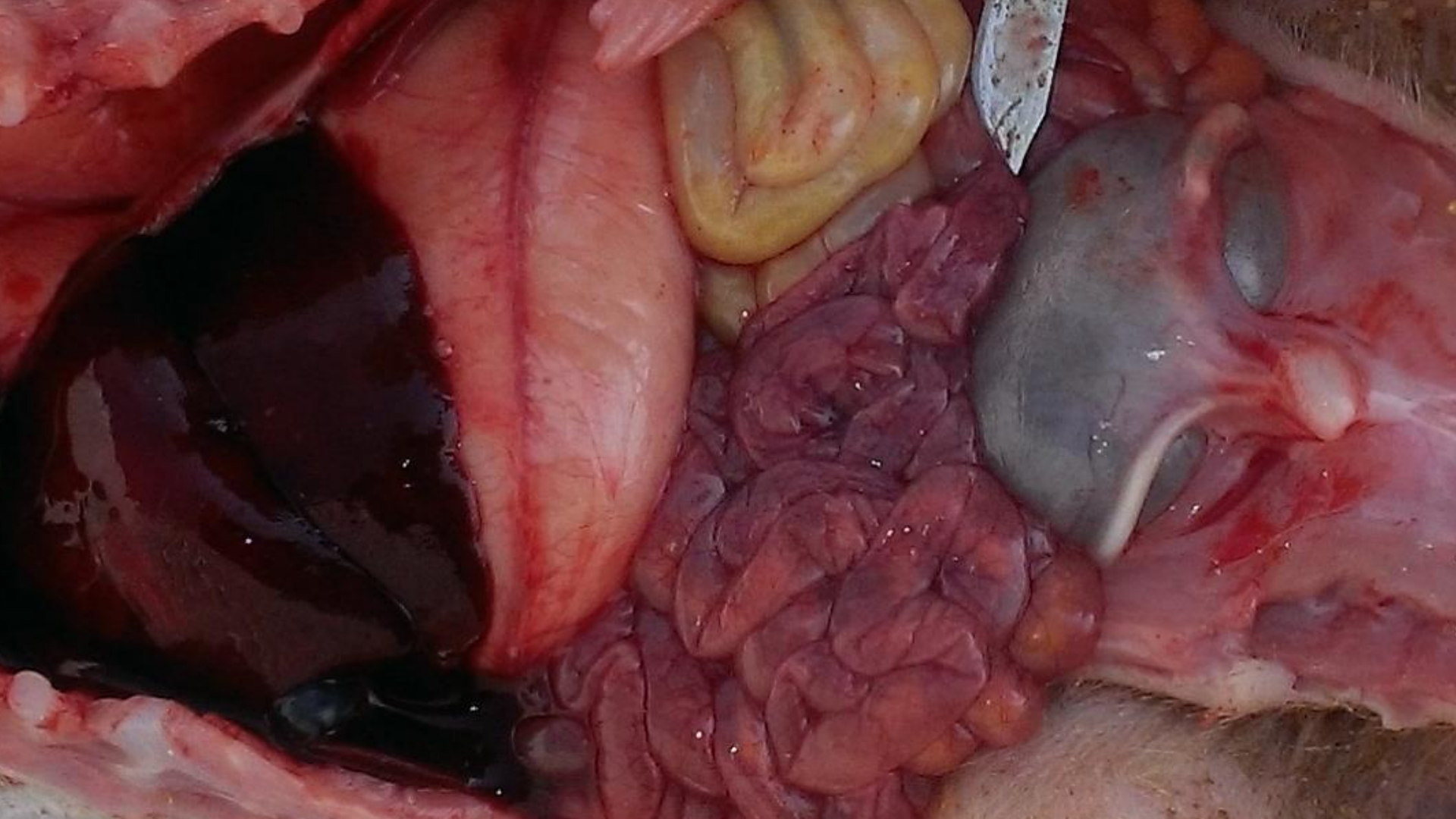
Part 1 – PEDv in a Sow Farm







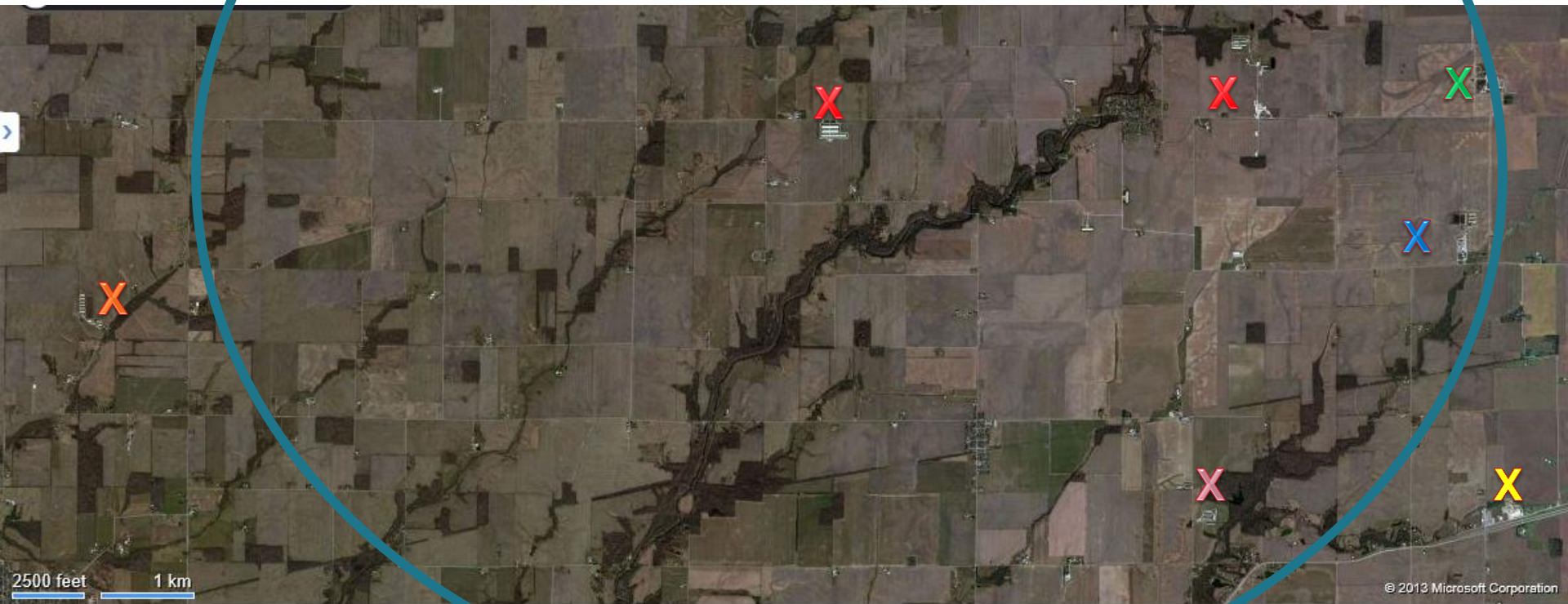




Feedback was implemented



Neighborhood - 5 miles - 8 km



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Neighbors were notified

- ▶ 5 systems in a 5 mile radius
- ▶ Farm owner called the other Farm owners
- ▶ I called their Veterinarians & production leads
- ▶ Told them we had TGEv
- ▶ Back at the farm – Weaned as Many pigs as we could down to 10 days of age







Truck Wash

Supplies

Office

Feed Mill

Nursery for Gilts



Old Farrowing

Gestation

New Farrowing

Culls

Farm Office

Gilt Gestation

Tuesday, May 7, 2013

- ▶ A 3,600 sow unit in the same 15,000 sow flow has clinical signs of TGEv
- ▶ Broke in two of the smaller farrowing rooms in pigs that are about to be weaned



Wednesday, May 8, 2013

- ▶ Feedback was implemented at the 3,600 sow unit.
- ▶ This afternoon results for TGEv PCR came back **negative** on the 6,000 sow unit.
- ▶ Called lab and asked if they would verify



PEDv



Thursday, May 9, 2013 – Day 5

- ▶ IHC results for TGEv came back **negative** from the 6,000 sow unit.
- ▶ PCR results were **negative** for TGEv from the 3,600 sow unit.
- ▶ I contacted Dr. Rodger Main from Iowa State University to make him aware of my concern along with Dr. Greg Stevenson



Dr. Rodger Main

- ▶ You think I have a problem?
- ▶ You are the 3rd Vet to Call in a week
- ▶ 1st called about a case from April 29th
- ▶ Positive controls are reacting on TGEv – PCR
- ▶ SDSU say they are PCR negative for TGEv
- ▶ Sending them to NVSL
- ▶ What could it be?



Friday, May 10, 2013

- ▶ April 29th case came back positive on EM for coronavirus at NVSL
- ▶ Dr. Stevenson – next week – gene banking process



Friday, May 10, 2013 – continued

- ▶ Press release & Phone call to all the neighbors & their veterinarians alerting them to the concern of TGEv or other coronaviruses including PED.
- ▶ Watch your bio–security and disinfection procedures.
- ▶ Indiana State Veterinarian – Dr. Bret Marsh
- ▶ Dr. Joe Connor



Wednesday, May 15, 2013

- ▶ Dr. Joe Connor – system with 4 sow farms with clinical TGEv
- ▶ Negative for TGEv at U of MN
- ▶ He alerted Dr. Jim Collins
- ▶ Dr. Rodger Main – 10 pigs from each farm – ½ to ISU & ½ to MN



Thursday, May 16, 2013

- ▶ Dr. Joe Connor – sending in those tissues
- ▶ Dr. Jim Collins who Dr. Connor had already let know that I had tissues coming that way
- ▶ Dr. Harry Snelson – AASV
- ▶ Dr. Sue Schulteis to let her know and reached out to Dr. Harry Snelson



Thursday, May 16, 2013 – cont.

- ▶ Samples taken from 6000 sow. Samples labeled 1 – 10.
- ▶ Samples taken from 3600 sow. Samples labeled 11 – 20.
- ▶ **Dr. Brett Marsh called from the state board of animal health and confirmed that we had PEDv at the 3600 sow unit.**
- ▶ He updated me on the teleconference he had with ISU and NVSL

Friday, May 17, 2013

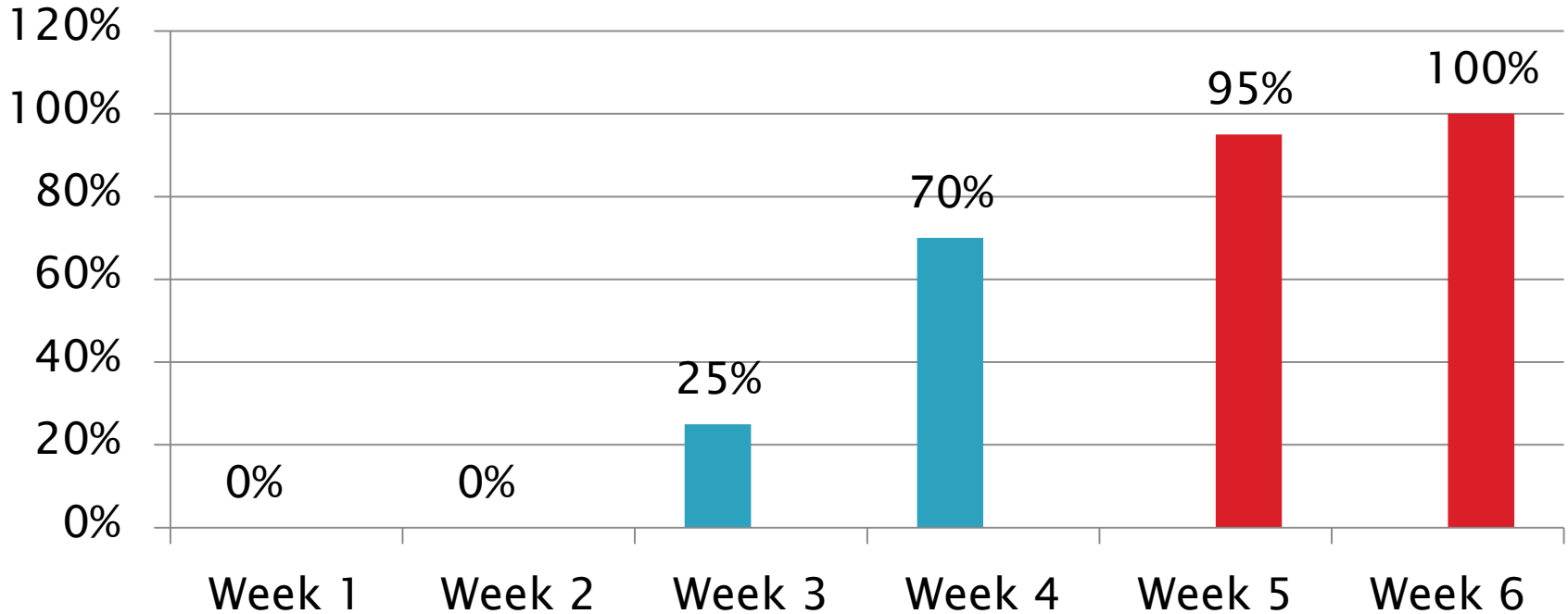
- ▶ Dr. Joe Connor organizes a conference call with all willing veterinarians with confirmed cases or cases of “TGEv” that have tested negative and are awaiting confirmation.
- ▶ Positive Cases at that time:
 - 4-29-13- 2,400 sows in North Central Iowa
 - 4-29-13 – confirmed case 400 sow batch farrowing
 - 5-?-13 – confirmed case 900 sows
 - 5-6-13 – 10,000 sows in Southeastern Indiana
 - 5-13-13 – 22,000 sows in Colorado

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12	13	14	15 Dr. Joe Connor calls back	16 NVSL Announces PEDv	17 Alert& Connor	18
19	20 AASV Ano Web	21	22	23 AASV CC & Feed	24 Feed – neg	25
26	27	28	29	30	31 AASV Epi–Sur	1



Percent Survivability to Day 7

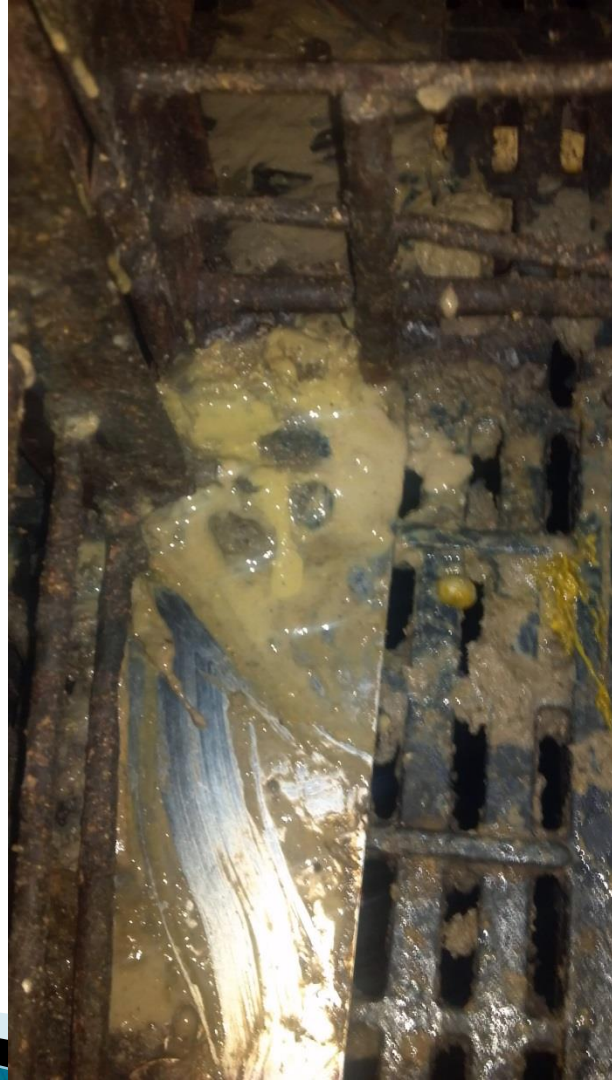


Part 2 – PEDv in a Nursery











PEDv in a nursery

- ▶ Not much clinical signs.
- ▶ Pigs were PRRS positive and rough to start.
- ▶ Each week kept getting better
- ▶ noticed a grey scour like rotavirus.
- ▶ Lab confirming rotavirus.
- ▶ Sometimes it was Rota A, sometimes A & B, and sometimes an oddball Salmonella



PEDv confirmed

- ▶ Put them on Neo in the water for 5 days for the Salmonella
- ▶ did “just fine”
- ▶ Diagnosis “Severe atrophic enteritis groups A/B rotavirus”
- ▶ Asked local vet to request PEDv
- ▶ PEDv confirmed



PEDv in Nursery & Finishing

- ▶ by Dr. Amber Stricker
- ▶ Suidae Health and Production



PEDv in 3-4 wk old pigs

Started to scour 3 days post-placement. 10-12% fallouts, decreased activity. Grower reported pretty normal feed consumption. PRRS negative.

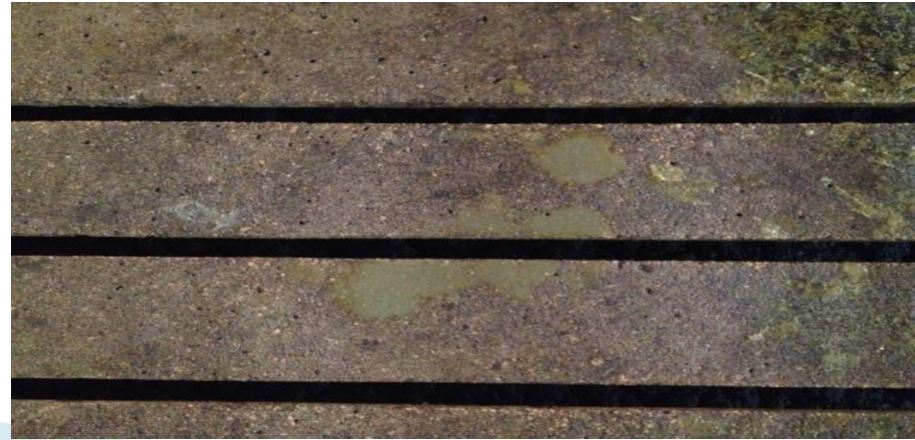




Formed stool right next to
loose stool.



Range in color and
consistency. Similar to that
seen with rotavirus vs.
TGEv. In this case.



Necropsy of 3-4 wk old PEDv pigs

Intestines appeared darker at first glance. Gas-filled and thin-walled. Enlarged mesenteric lymph nodes.



Finishing History

- ▶ Continuous flow site with 3 – 1200 head WTM barns.
- ▶ Just finished marketing out of the south barn on 5/28 using a dirty truck.
- ▶ Started placing wean pigs in the middle barn the previous Thurs. (5/23) and Monday (5/27).



Finishing History – continued

- ▶ Previously healthy 12 week old pigs in the north barn with less than 1% death loss.
- ▶ Middle barn started scouring 3 days after first fill followed shortly by the north barn.
- ▶ Interesting how the north barn pigs nearest the barn entry door were worse than the pigs on the opposite side of the barn
- ▶ indicating it had started closest to the door where the caretaker enters and was working its way back.



Porcine Epidemic Diarrhea Virus

5.30.13

PRRS (16 Ct) and PEDv
co-infection in 12 wk old
pigs. Rapid onset, 5% fall-
out.



12 wks old PEDv pigs



Good activity. Feed intake normal per grower. Water consumption slightly down.



Stools very loose and watery.
Several pigs vomiting after
walking pens and stirring them
up.



Necropsy of 12 wk old pigs



No obvious gross-lesions other than thin-walled somewhat gas filled intestines. Some enlargement of mesenteric lymph nodes.

Part 4 – Biosecurity

- ▶ Being Aware of Clinical signs
- ▶ Don't be a vector
- ▶ Don't track it around
- ▶ Pigs
- ▶ Manure
- ▶ Trucks
- ▶ People
- ▶ Supplies
- ▶ County Fairs







PEDV Positive Cases ascertained from the VDL's (ISU, KSU, SDSU, & UMN)

² Number of Premises Testing Positive for PEDV via PCR or IHC

Week Received @ VDL	¹ Total Number of Diagnostic Case Submissions Testing Positive for PEDV via PCR or IHC	Farm Type				By State																													
		Total	Sow	Growing Pig	?	AR	CO	GA	IA	IL	IN	KS	KY	MI	MN	MO	MS	NE	NC	ND	OH	OK	PA	SC	SD	TN	TX	UT	VA	WI	WY	?			
4/1/2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/8/2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/15/2013	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/22/2013	1	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/29/2013	9	6	1	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/6/2013	16	13	4	7	2	0	1	0	8	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/13/2013	10	9	5	3	1	0	1	0	4	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5/20/2013	44	43	7	33	3	0	5	0	25	0	2	0	0	0	7	1	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
5/27/2013	33	30	7	22	1	0	0	0	22	1	1	0	0	1	3	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
6/3/2013	46	44	12	29	3	1	0	0	20	0	0	2	0	2	1	0	0	0	0	0	0	12	3	0	0	0	0	0	0	0	0	0	0	0	3
Total	161	147	36	101	10	1	7	0	84	1	7	2	0	3	16	2	0	0	0	0	4	13	3	0	1	0	0	0	0	0	0	0	0	3	

¹ Diagnostic Case Submission data is most robust, readily queryable, and refers to each individual case submitted to a VDL.

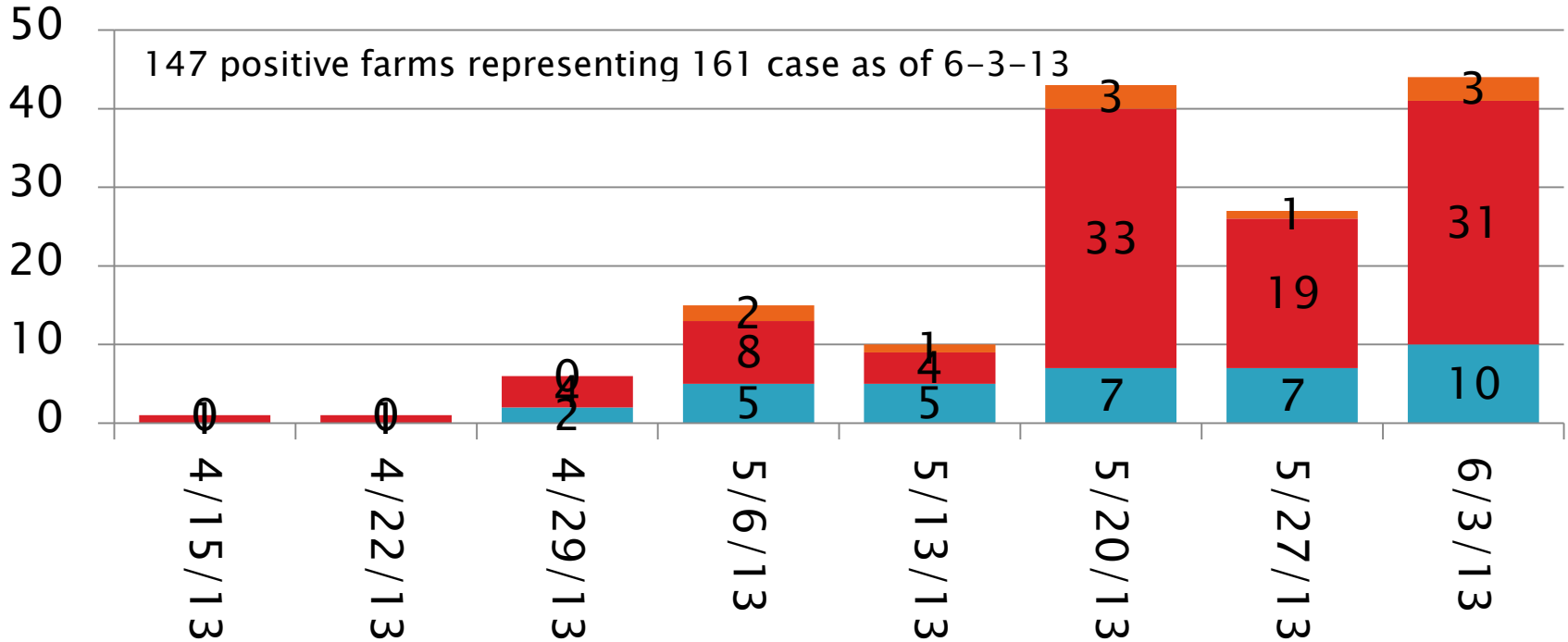
² Premise level data is more challenging to collate and can be somewhat subjective due lack of premise-specific identifiers commonly available on VDL submissions. However, the attached summary should be reasonably accurate due to efforts to appropriately classify each diagnostic case submission.

Last Updated 6-14-13 @ 9am KM

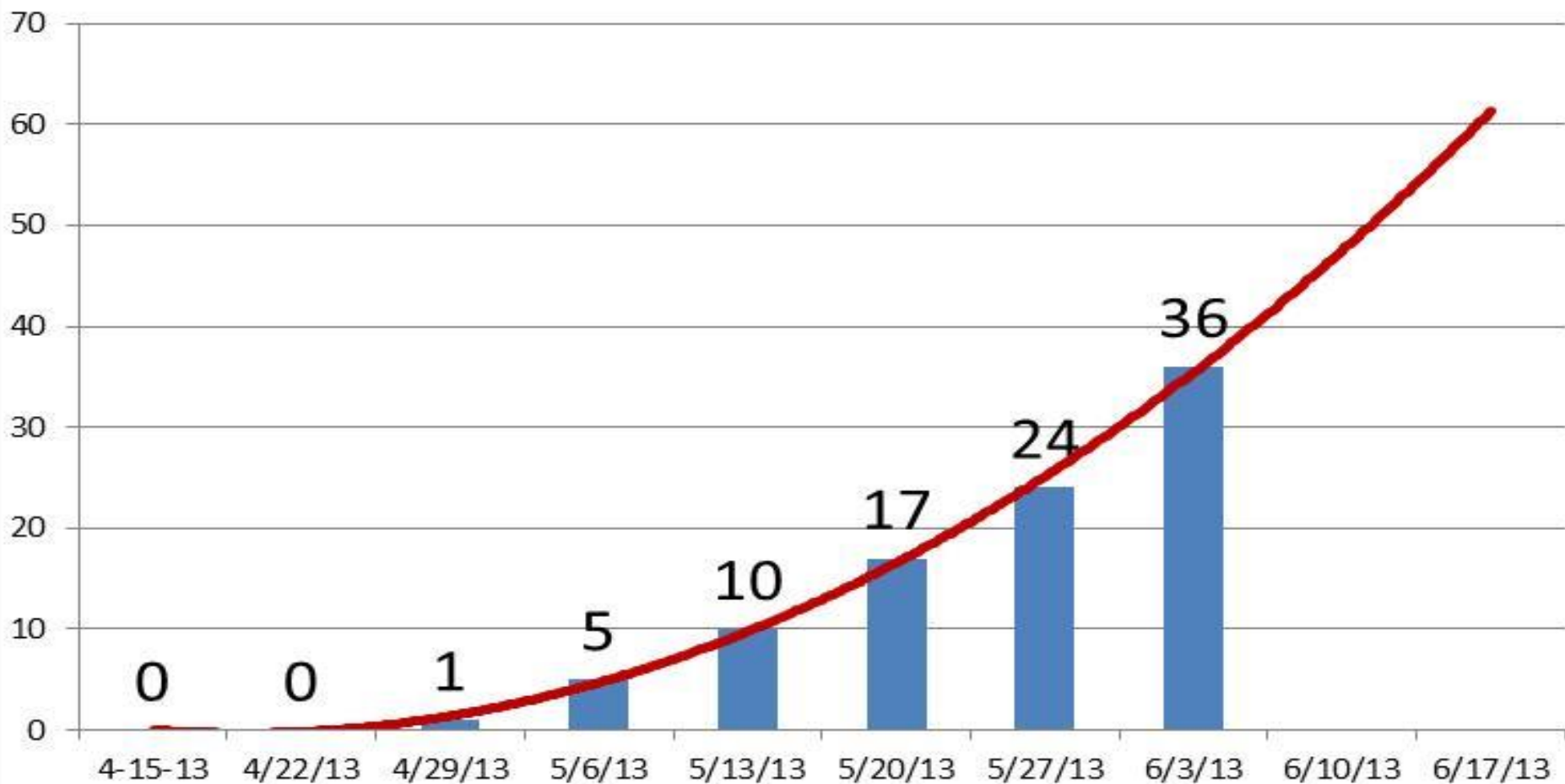


PEDv Positive Cases ascertained from the VDL's (ISU, KSU, SDSU & UMN)

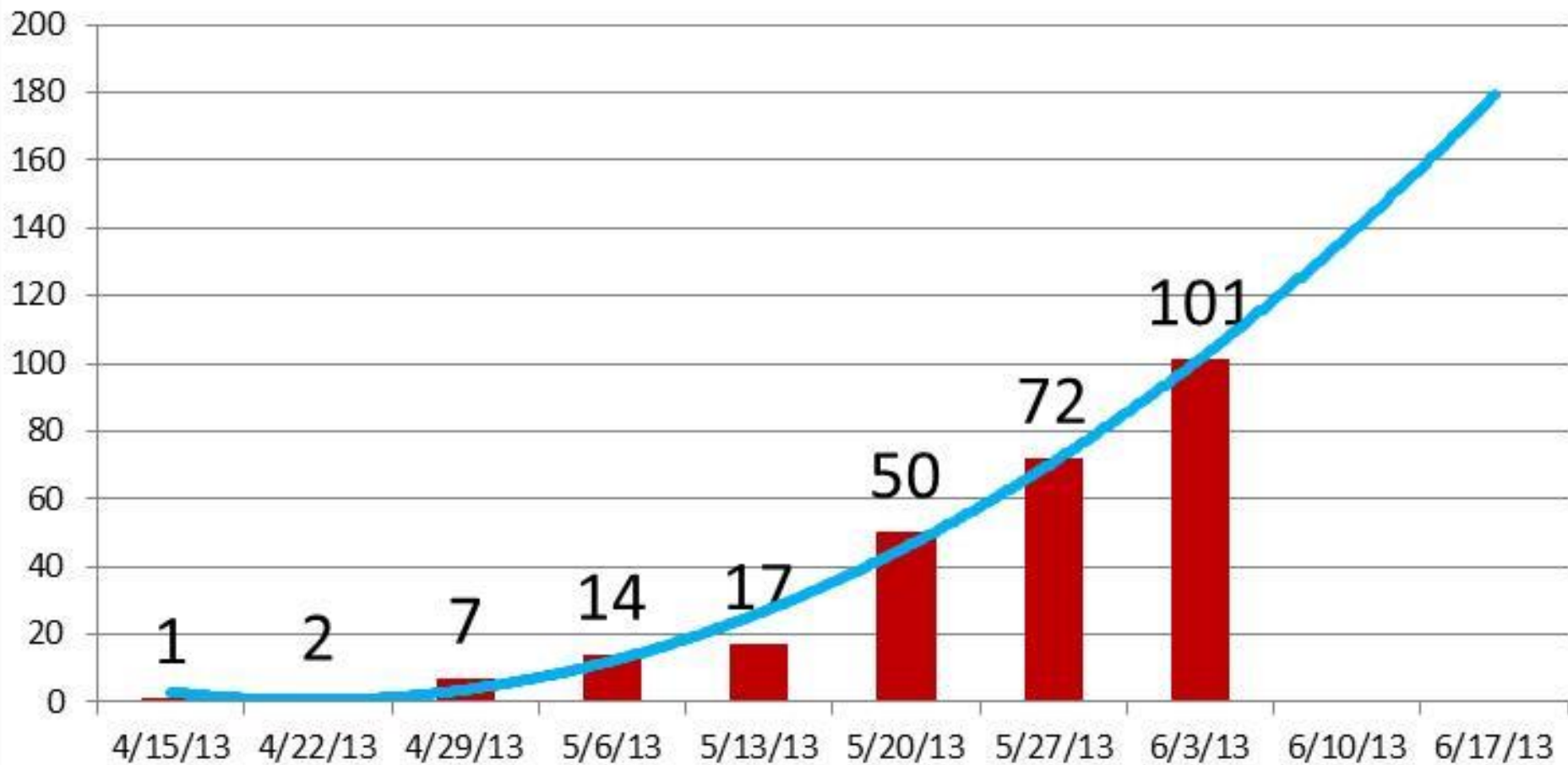
■ Sow ■ Growing Pig ■ Unknown



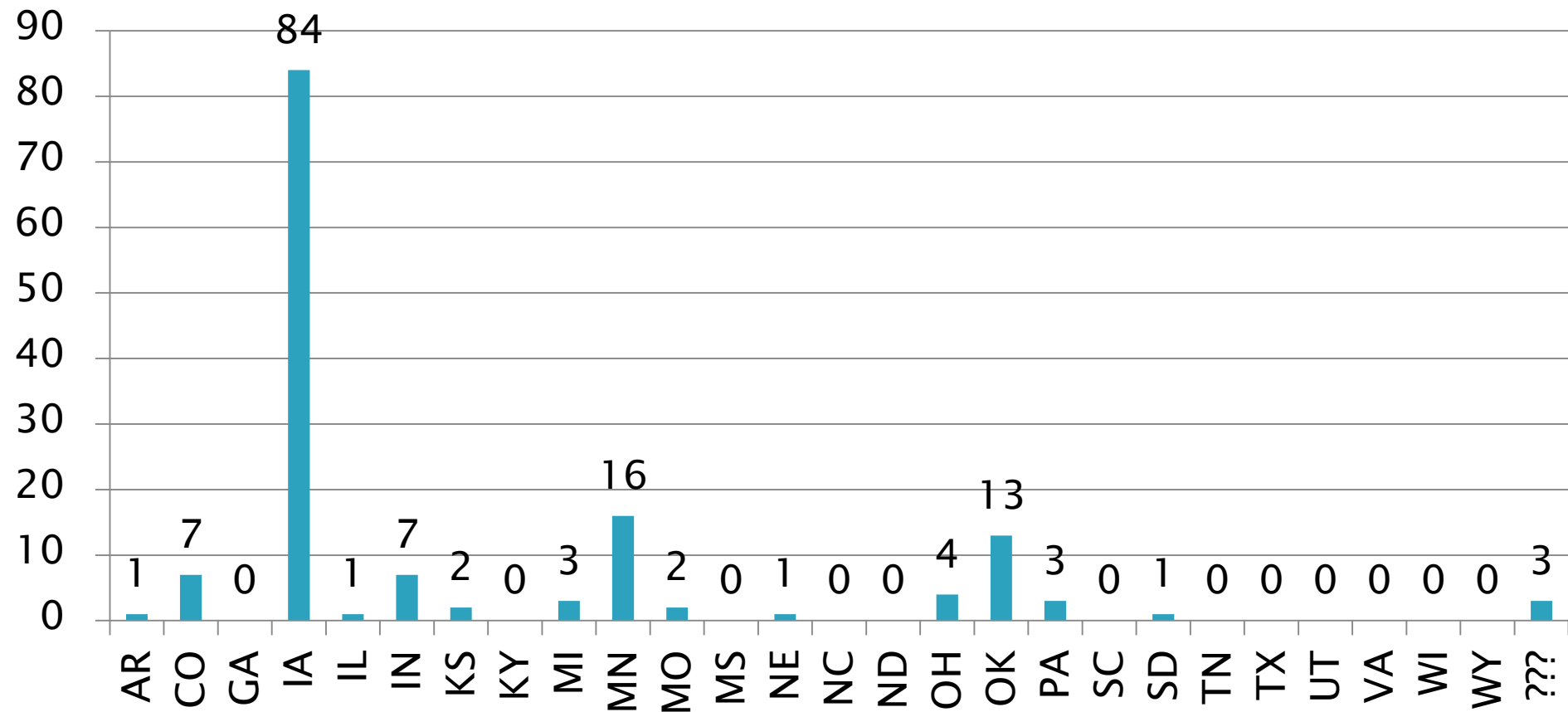
Cumulative Sow Cases of PEDv



Cumulative Growing Pig Cases of PEDV



PEDv Cases by State



PEDv

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Thanks to:

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- ▶ ISU Veterinary Diagnostic Lab
 - Drs. Rodger Main, Greg Stevenson & Darin Madsen
- ▶ MN Veterinary Diagnostic Lab
 - Drs. Jim Collins & Albert Rovira
- ▶ Dr. Larry Rueff & Dr. Dennis Villani
- ▶ Dr. Joe Connor
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Thanks for
Your Time!

