

PRRS Outbreak Management with Interrupted farrowing

2026 Carthage Annual Swine Conference

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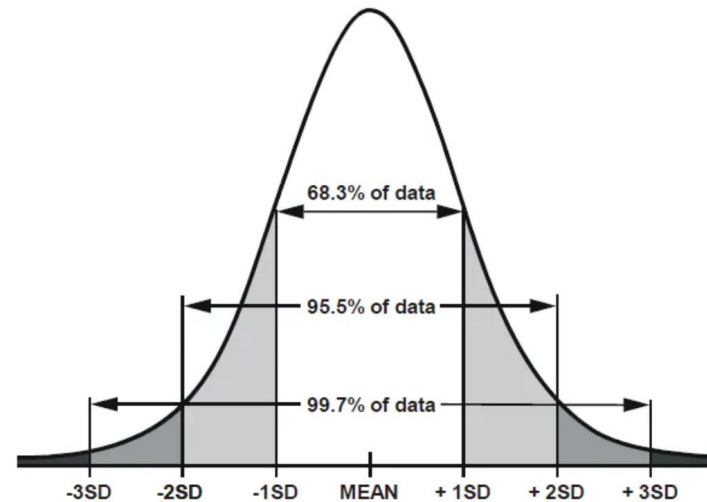


Topics

- PRRS assumptions
- Fetal infection dynamics
- Productivity assumptions
- Scenario analysis
- Can Interrupted farrowing help with TTLP?
 - Clinical case scenarios: 4 farms

PRRS assumptions

- Baby pigs are PRRS mutation factories
 - Are unborn piglets also PRRS mutation factories?
- High mutation rates allow PRRS to persist on a farm
 - Can a sow carry a mutant from her piglets back into the Breeding barn?
 - Could this be why these closures are exceeding 300 days?
- Sequence homology
 - 1 pig vs 1,000 pigs
 - How to reduce the odds?



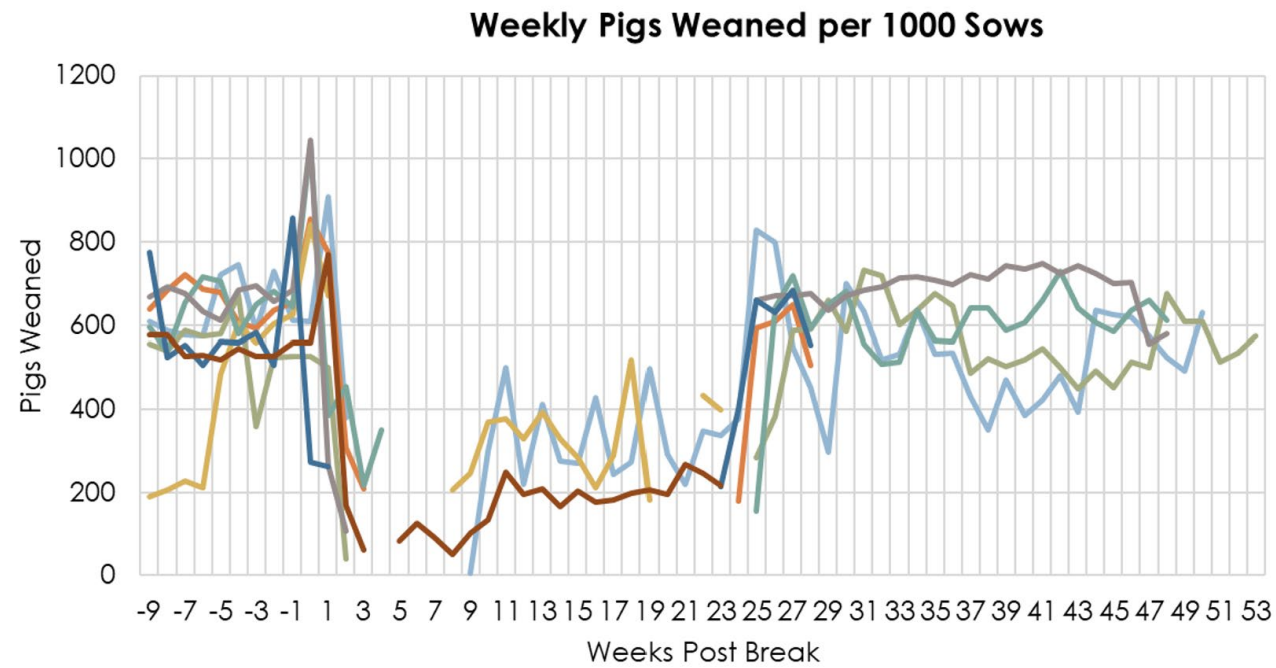
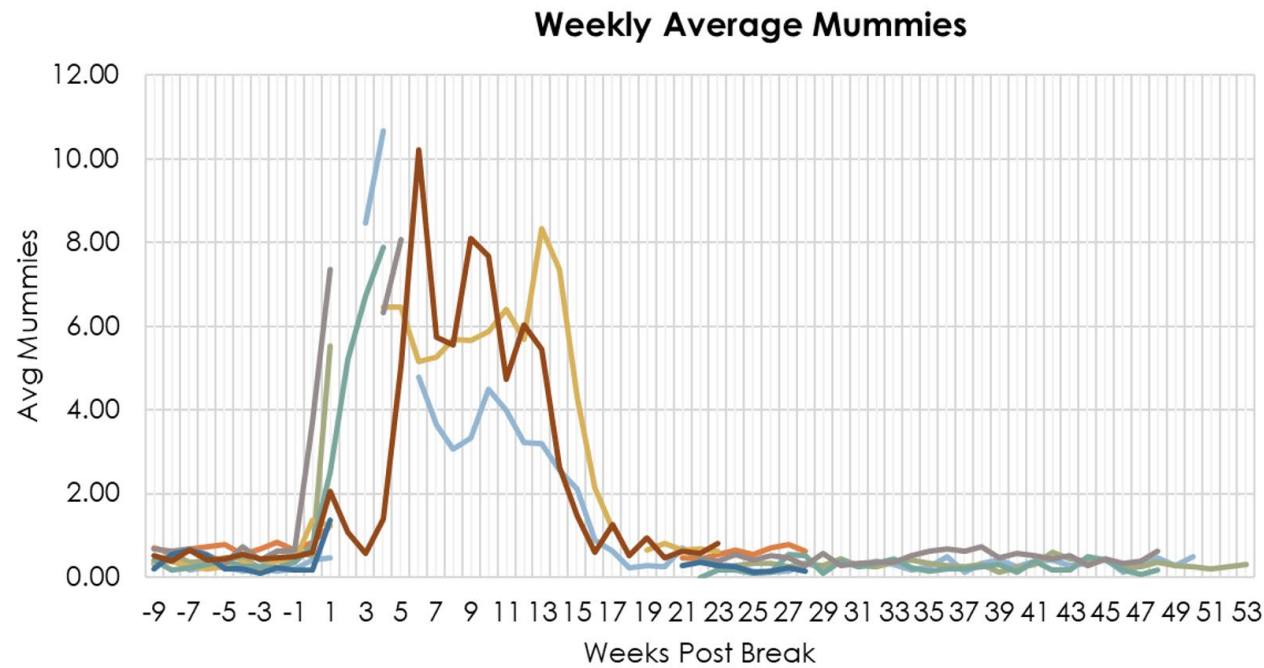


Fetal infection dynamics

- ~60-70 days gestation presumed
 - Shorter has been documented...this work is 20+ years old
- Are there differences in PRRS strain fetal persistence?
 - Sow serum clearance time?
 - Virus load at mating?
 - Viral tissue affinity?
- I wish we knew this....and it was repeatable
- Is long shedding really long shedding, or is it re-exposure of escape mutants?



Productivity Assumptions



Productivity assumptions

- TTBP may not tell to correct story
 - Pigs that die in the nursery are not the goal
 - Pigs fit enough to survive 6-8 weeks in nursery can have a “normal” finishing mortality
- Nursery mortality

2024-2025 PRRS break analysis
11/14/2025

	Pre-break Baseline	Post-break 0-3 months	3-6 months	6-9 months	9-12 months
	1.2%	36.9%	21.4%	1.6%	1.1%
	0.8%	47.1%			
	2.9%	28.8%	7.0%		
	2.1%	33.7%	6.1%		
	4.7%	44.2%	50.0%		
	1.5%	37.7%	16.9%	4.0%	
Average	2.2%	38.1%	20.3%	2.8%	1.1%



Considerations for shortening Time to negative

- Abort immediately?
 - 2-4 groups? Test-farrow?
 - These groups will likely be 70-90% PWM and >50% mortality in nursery
 - Does Depopulating farrowing early reduce the number of mutants going back to Gestation barn to re-expose sows?
- Wait to start breeding again?
 - 4 weeks?
 - Better litter size than breeding early in break
 - Larger open pool on back end of closure when inventory is lower
 - Delays the number of sows with fetuses in 60-70 day fetal infection period
 - Value in creating a window to depopulate farrowing?
- Test boars after 100 days?
- If bringing in gilts, 150lbs+ only?

Scenario analysis



	Weeks Post-break																																	Farm size
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	39	1,000	sows	
Scenario: Keep farrowing and weaning																																		
Pigs weaned	600	900	0	0	50	100	100	200	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	600	600	600	600	600	600			
Nursery Mort	25%	75%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	3%	3%	3%	3%	3%			
Feeder pigs produced/week	450	225	0	0	31	62	62	124	186	186	186	186	186	186	240	240	240	240	240	240	240	240	240	240	240	480	480	582	582	582	582			
Cumulative feeder pigs produced	450	675	675	675	706	768	830	954	1,140	1,326	1,512	1,698	1,884	2,070	2,310	2,550	2,790	3,030	3,270	3,510	3,750	3,990	4,230	4,470	4,710	5,190	5,670	6,252	6,834	7,416	13,236	13,236		
Scenario: Abort 4 weeks, keep breeding																																		
Pigs weaned	600	900	0	0	0	0	100	200	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	600	600	600	600	600	600			
Nursery Mort	25%	75%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	3%	3%	3%	3%	3%			
Feeder pigs produced/week	450	225	0	0	0	0	62	124	186	186	186	186	186	186	240	240	240	240	240	240	240	240	240	240	240	480	480	582	582	582	582			
Cumulative feeder pigs produced	450	675	675	675	675	675	737	861	1,047	1,233	1,419	1,605	1,791	1,977	2,217	2,457	2,697	2,937	3,177	3,417	3,657	3,897	4,137	4,377	4,617	5,097	5,577	6,159	6,741	7,323	13,143	13,143		
Scenario: Abort 4 weeks, stop breed 4 weeks																																		
Pigs weaned	600	900	0	0	0	0	100	200	300	300	300	300	300	300	300	300	300	300	300	300	300	0	0	0	300	600	600	600	600	600	600			
Nursery Mort	25%	75%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	3%	3%	3%	3%	3%			
Feeder pigs produced/week	450	225	0	0	0	0	62	124	186	186	186	186	186	186	240	240	240	240	240	240	240	0	0	0	240	480	480	582	582	582	582			
Cumulative feeder pigs produced	450	675	675	675	675	675	737	861	1,047	1,233	1,419	1,605	1,791	1,977	2,217	2,457	2,697	2,937	3,177	3,417	3,657	3,657	3,657	3,657	3,897	4,377	4,857	5,439	6,021	6,603	12,423	12,423		
Scenario: Abort all, start breeding 4 weeks after break																																		
Pigs weaned	600	900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	300	600	600	600	600	600			
Nursery Mort	25%	75%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	3%	3%	3%	3%	3%			
Feeder pigs produced/week	450	225	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	240	480	480	582	582	582	582			
Cumulative feeder pigs produced	450	675	675	675	675	675	675	675	675	675	675	675	675	675	675	675	675	675	675	675	675	675	675	675	675	915	1,395	1,875	2,457	3,039	3,621	9,441	9,441	

Model: 39 week cumulative feeder pigs produced per 1,000 sow spaces

1. Keep farrowing and weaning 13,236
2. Abort 4 weeks, keep breeding 13,143 (93 less)
3. Abort 4 weeks, stop breeding 4 weeks 12,243 (813 less)
4. Abort all, stop breeding 4 weeks 9,441 (3,795 less)



Farm #1: Abort all groups

- 2,200 sows
 - Recently purchased. Commensal Strep/GPS from several sources
 - Broke with PRRS 1-3-4 L1C.5
 - Depopulated and repopulated with the best P1-3 sows from a 7,500 sow farm that broke with PRRS the same week
 - Highest productivity sows selected with equal P1-P3 parity structure
 - Serum therapy 8 days post-diagnosis
 - All sows aborted and HNS over next 8 weeks
 - Sows moved into farm 19 days after serum
 - Breeding began 20 days after serum
 - Farrowing started 137 days after serum
 - **The farm NEVER farrowed a positive pig**



Farm #2: Abort all groups

- 2,400 sows
 - Depopulated/Repopulated from previous PRRS break 12 months prior
 - Serum therapy 9 days after diagnosis L1C.5.32
 - All sows aborted and HNS over next 8 weeks
 - Breeding began 29 days after serum
 - Farrowing started 144 days after serum
 - **The farm NEVER farrowed a positive pig...**
 - Until they broke with a new strain again 1 day before weaning these negative pigs
 - Break started in Gestation barn, pigs remained negative for ~ 2 weeks
 - **L1C.5, 94.8% Homologous to original break**



Farm #3: Abort all groups

- 6,000 sows
 - Multiplication farm, GPs & GCPs
 - Serum therapy 2 days after diagnosis 1-12-2 L1H.18
 - All sows aborted and HNS over next 8 weeks
 - Breeding began 36 days after serum
 - Farrowing started 151 days after serum
 - First room negative
 - 2nd room 1 positive litter. Unable to sequence. Euthanized sow & piglets
 - 13th room 1 positive litter. 99.8% homologous. Euthanized sow & piglets
 - All tongue tips fluids from dead pigs >14 days of age remain negative, including both of these rooms

Fetal transmission timing attempt

- Which would we expect to be a better indicator of fetus status?
 - TOSC?
 - Blood?
- 60 sows from 1st breed group blood tested:
 - At mating
 - ~28 days pregnancy
 - ~35 days pregnancy
- Positives at any time point were aborted at ~90 days of pregnancy
 - Fetuses tested for PRRS



Results Farm #3

- 7 positive sows, never twice
- Fetuses all negative!
- 2 sows farrowed 14 days early
 - Sows TOSC negative
- 2 sows farrowed 7 days early
 - Piglets euthanized (PRRS negative serum)
 - Sows TOSC negative
- 2 positive litters on Processing fluids
 - Euthanized sow and piglets
- Tongue tips on dead pigs >14 days remain negative

Parity	Mating	~28 days	~35 days	Feti collected @ ~90 days
1	Neg	Neg	Neg	
2	Neg	Neg	Neg	
3	Neg	Neg	Neg	
4	Neg	Neg	Neg	
5	Neg	Neg	Neg	
6	Pos	Neg	Neg	NIP
7	Neg	Neg	Neg	
8	Pos	Neg	Neg	Neg
9	Neg	Neg	Neg	
10	Neg	Neg	Neg	
11	Neg	Neg	Neg	
12	Neg	Neg	Neg	
13	Neg	Neg	Neg	
14	Neg	Neg	Neg	
15	Neg	Neg	Neg	
16	Neg	Neg	Neg	
17	Neg	Neg	Neg	
18	Neg	Neg	Neg	
19	Neg	Neg	Neg	
20	Neg	Pos	Neg	Neg
21	Neg	Neg	Neg	
22	Neg	Neg	Neg	
23	Neg	Neg	Neg	
24	Neg	Neg	Neg	
25	Neg	Neg	Neg	
26	Neg	Neg	Neg	
27	Neg	Neg	Neg	
28	Neg	Neg	Neg	
29	Neg	Neg	Neg	
30	Neg	Neg	Neg	
31	Neg	Neg	Neg	
32	Neg	Neg	Neg	
33	Neg	Neg	Neg	
34	Neg	Neg	Neg	
35	Neg	Neg	Neg	
36	Neg	Neg	Neg	
37	Neg	Neg	Neg	
38	Neg	Neg	Neg	
39	Neg	Neg	Neg	
40	Neg	Neg	Neg	
41	Neg	Neg	Neg	
42	Neg	Neg	Neg	
43	Neg	Neg	Neg	
44	Neg	Neg	Neg	
45	Neg	Neg	Neg	
46	Neg	Neg	Neg	
47	Neg	Neg	Neg	
48	Neg	Neg	Neg	
49	Neg	Neg	Neg	
50	Neg	Neg	Neg	
51	Neg	Neg	Neg	
52	Neg	Neg	Neg	
53	Neg	Neg	Neg	
54	Neg	Neg	Neg	
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58	Neg	Neg	Neg	
59	Neg	Neg	Neg	
60	Neg	Neg	Neg	
61	Neg	Neg	Neg	
62	Neg	Neg	Neg	
63	Neg	Neg	Neg	
64	Neg	Neg	Neg	
65	Neg	Neg	Neg	
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67	Neg	Neg	Neg	
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77	Neg	Neg	Neg	
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79	Neg	Neg	Neg	
80	Neg	Neg	Neg	
81	Neg	Neg	Neg	
82	Neg	Neg	Neg	
83	Neg	Neg	Neg	
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89	Neg	Neg	Neg	
90	Neg	Neg	Neg	
91	Neg	Neg	Neg	
92	Neg	Neg	Neg	
93	Neg	Neg	Neg	
94	Neg	Neg	Neg	
95	Neg	Neg	Neg	
96	Neg	Neg	Neg	
97	Neg	Neg	Neg	
98	Neg	Neg	Neg	
99	Neg	Neg	Neg	
100	Neg	Neg	Neg	

Positive
Processing fluid
Sequence
Negative

Results Farm #3



- Currently 230 days onto closure
- Farrowing began 14 weeks ago
 - 12 positive processing fluid pools
 - Found 9 positive litters...euthanized sow and litter
 - 2 positive tongue tips on pigs >14 days of age
- Pigs do well clinically in nursery
- Does having purebred sows vs F1 sows allow longer shedding?
 - Meishan boars 20x more likely to test positive >140 days than other boar lines (Mainquist-Whigham, 2026)



Farm #4: Abort 4 groups, wait 4 weeks to breed

- 7,500 sows
 - 4 closest to farrow groups aborted after diagnosis 1-4-4 L1C.5
 - Serum therapy 9 days after diagnosis
 - Breeding began 30 days after serum, only on sows with HNS or >25 days from abortion
 - No live pigs on farm ~ 10 days before farrowing resumed
 - **Processing fluids from last 4 rooms farrowed positive (8/8, ct 23.8-30.7)**
 - Farrowing started 151 days after serum
 - First 18 days negative
 - 1 positive litter. 98.6% Homologous, original. Euthanized sow & piglets
 - 1 positive litter. Euthanized sow & piglets
 - All tongue tips fluids from dead pigs >14 days of age remained negative

Farm #4: Abort 4 groups, wait 4 weeks to breed

8/12/2026		First diagnosis of 1-4-4 L1C.5			12/2/2025	Nursery mortality
Week	Date		Exposure date		Closure day	
52	12/20/2025		Stopped breeding 12/7-1/9/26	No farrowing 12/10-1/2/26	9	
1	12/27/2025		Stopped breeding 12/7-1/9/26	No farrowing 12/10-1/2/26	16	
2	1/3/2026	Started farrowing again	Stopped breeding 12/7-1/9/26		23	
3	1/10/2026	Started breeding again			30	
4	1/17/2026				37	
5	1/24/2026				44	
6	1/31/2026				51	23.6%
7	2/7/2026				58	
8	2/14/2026			Processing fluid 3/3 positive; 27.8 mean ct	65	26.6%
9	2/21/2026				72	
10	2/28/2026				79	16.2%
11	3/7/2026				86	
12	3/14/2026				93	
13	3/21/2026				100	14.5%
14	3/28/2026	No farrowing 4/1-5/5/26	1 boar positive	Processing fluid 5/5 positive; 25.8 mean ct	107	
15	4/4/2026	No farrowing 4/1-5/5/26		Processing fluid 3/3 positive; 26.1 mean ct	114	
16	4/11/2026	No farrowing 4/1-5/5/26			121	8.4%
17	4/18/2026	No farrowing 4/1-5/5/26	Last pigs weaned 4/20/26		128	
18	4/25/2026	No farrowing 4/1-5/5/26			135	
19	5/2/2026	No farrowing 4/1-5/5/26	Farrowing starts again 5/4/26		142	
20	5/9/2026			Processing fluid 8/8 negative	149	
21	5/16/2026			Processing fluid 5/5 negative	156	
22	5/23/2026	Wean pigs again 5/26/26	3/3 Tongue tips negative	Processing fluid 5/5 negative	163	2.4%
23	5/30/2026			Processing fluid 2/3 positive; 34.1 mean ct	170	
24	6/6/2026		6/6 Tongue tips negative	Processing fluid 26/26 negative	177	3.8%
25	6/13/2026			Processing fluid 34/34 negative	184	
26	6/20/2026			Processing fluid 36/36 negative	191	4.3%
27	6/27/2026			Processing fluid 3/26 positive; 29.8 mean ct	198	
28	7/4/2026			Processing fluid 38/38 negative	205	2.4%
29	7/11/2026			Processing fluid 30/30 negative	212	
30	7/18/2026			Processing fluid 25/25 negative	219	
31	7/25/2026			Processing fluid 5/5 negative	226	
32	8/1/2026			Processing fluid 12/12 negative	233	
33	8/8/2026			Processing fluid 10/10 negative	240	
34	8/15/2026		1/1 Tongue tips negative	Processing fluid 36/36 negative	247	



Tips

- Move sows into farrowing to abort
 - Allows good observation, especially if housed in Gestation pens
- Do not breed a sow on 1st heat after abortion
- Sows respond poorly to Lutalyse. Sometimes require 3 shots
- Collect processing fluids by row within a room to make it easier to find a positive litter in the pool if necessary
- Test boars
 - Limit Nose-to-Nose boar contact
 - A negative boar today could harbor a mutant tomorrow



Thank you!



Questions?

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