

**Smithfield.** *Good food. Responsibly.®*

**“Day 1 Pig Care: Less is Best,  
or is That Just BS”**

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Director Production Research  
Smithfield Foods

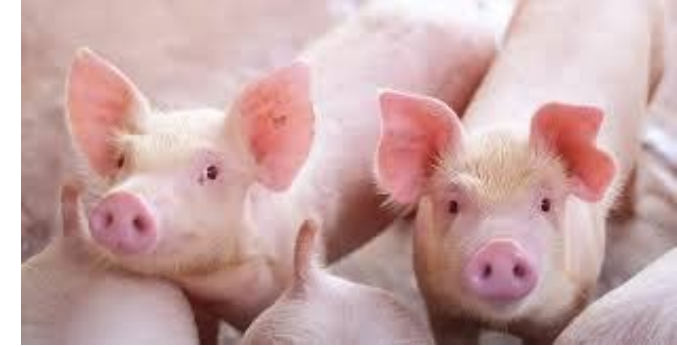
# Dr. Ashley DeDecker

- Raised in Illinois on 3<sup>rd</sup> generation family pig and grain farm
- B.S. Southern Illinois University (2006)
  - Animal Science, Production
- Ph.D. University of Illinois (2011)
  - Environmental Physiology and Well-being: sow housing
- Smithfield Hog Production (2011-present)
  - Senior Director of Research & Extension



# Smithfield Research vision and mission:

Provide exceptional interdisciplinary research and innovative services to support Smithfield Hog Production for maximum economic impact



Fosters a culture of scientific excellence, encouraging creativity, critical thinking, and a commitment to rigorous, evidence-based research



Conducts unbiased, high quality, high integrity research to improve the business



Identify and prioritize emerging trends, technologies, and scientific advancements



Promotes a supportive and collaborative culture with hog production



Establishes relationships with industry experts to ensure a competitive advantage

# What are tasks associated with Day 1 Pig Care?

Sleeving  
sows

**Drying  
pigs**

Warming  
pigs

Help  
piglets  
suckle

Newborn pig  
care

Oxytocin  
for milk  
let down

Data recording

Iron injection

Keep crate  
dry and  
warm

Clean feeders

Heat sources

Sow care and  
condition

**Timely  
euthanasia**

Farrowing room  
temperature

Sow feed and  
water

Cross-foster

**Split suckling**

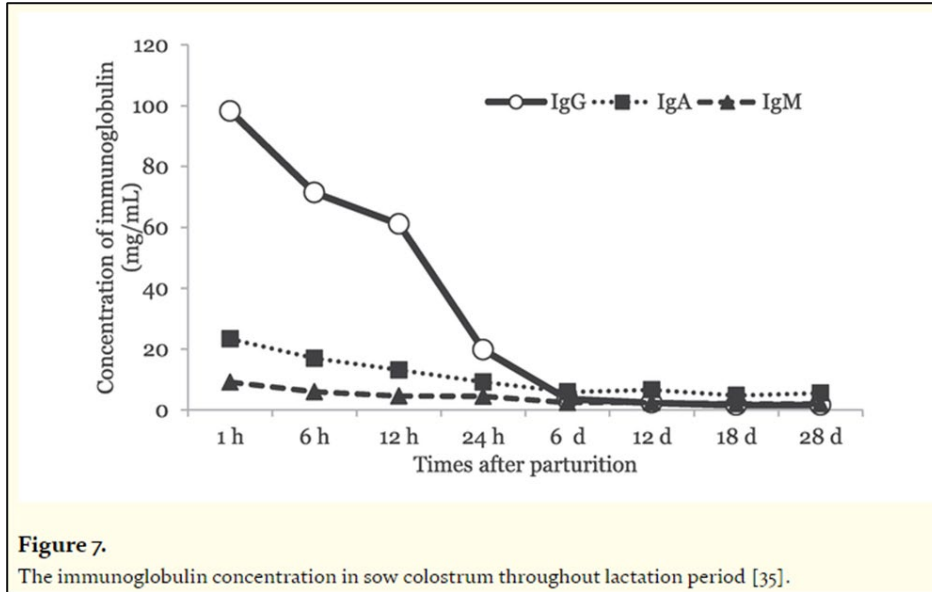
# What is Day 1 pig care???

## Smithfield Swine Vine

Responsibilities of a farrowing  
monitor in Smithfield

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# Timing of these tasks are CRITICAL!



	Hours of optimal colostrum availability and day 1 pig care tasks associated with colostrum																												
	-4	-3	-2	-1	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
Colostrum availability	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Optimal time to split suckle				Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
Optimal time to encourage suckling																													
Optimal time to cross-foster pigs off																													

## Split suckling

# What is split suckling and why do we do it?

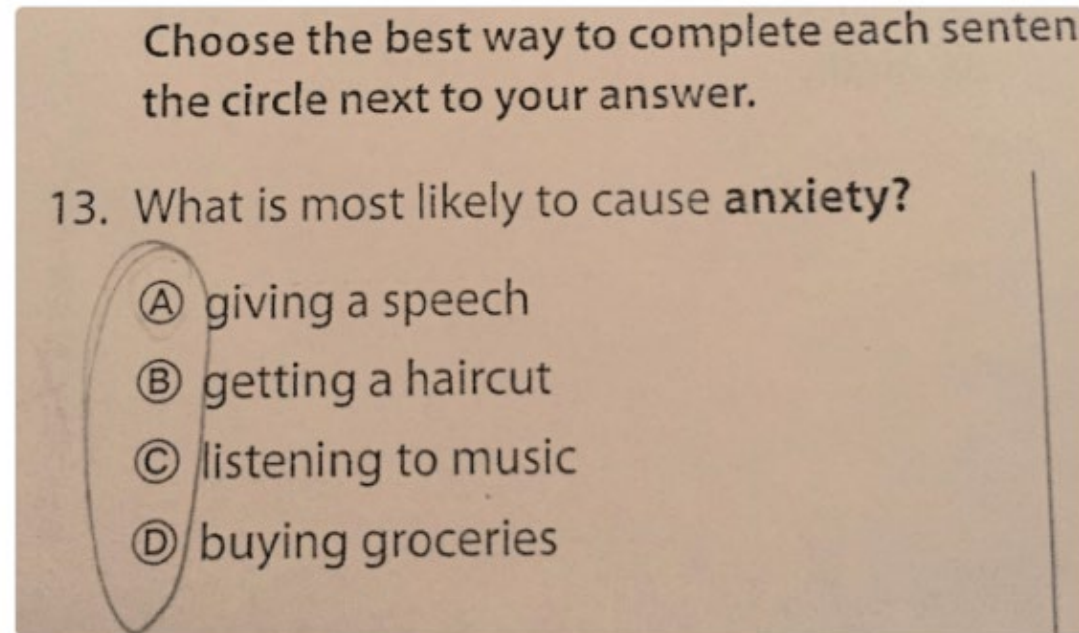


**ceeks**  
@70Ceeks



Following

nailed it



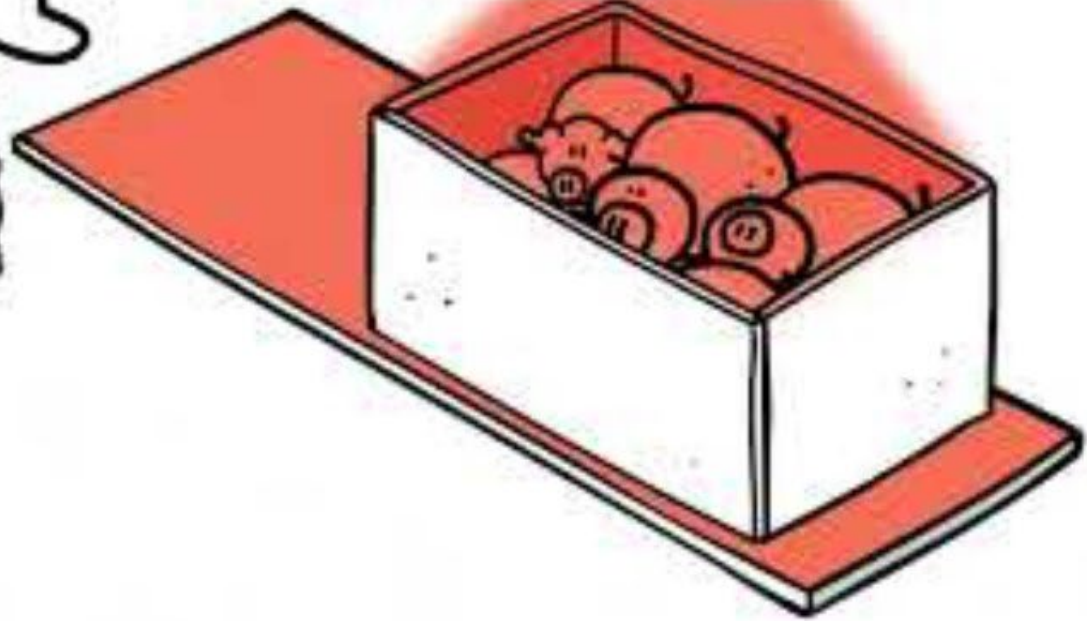
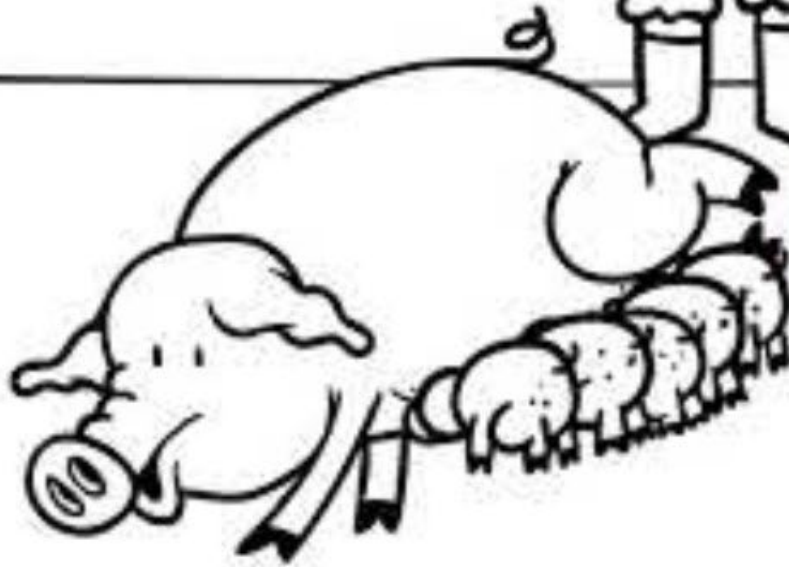
RETWEETS  
**2,134**

LIKES  
**3,891**





1h



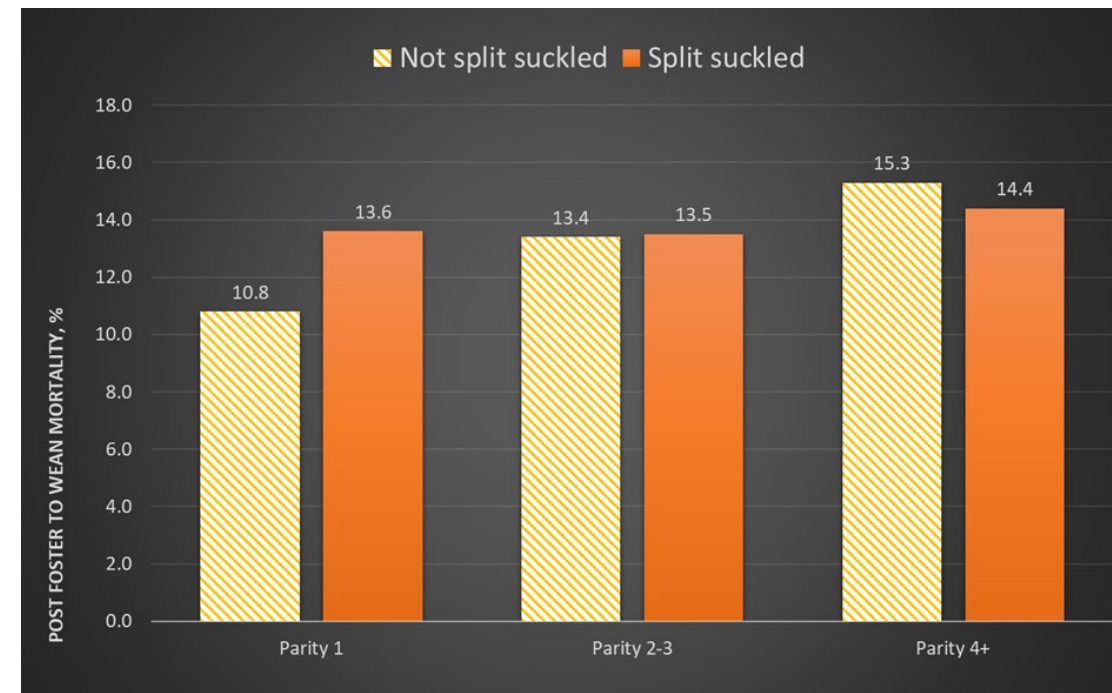
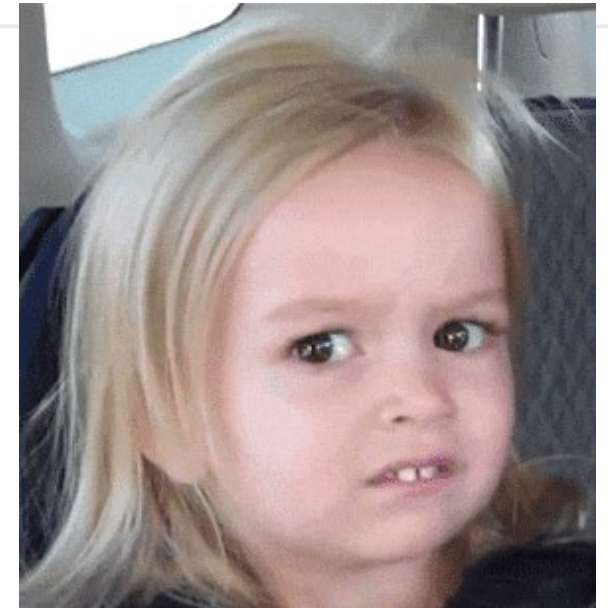
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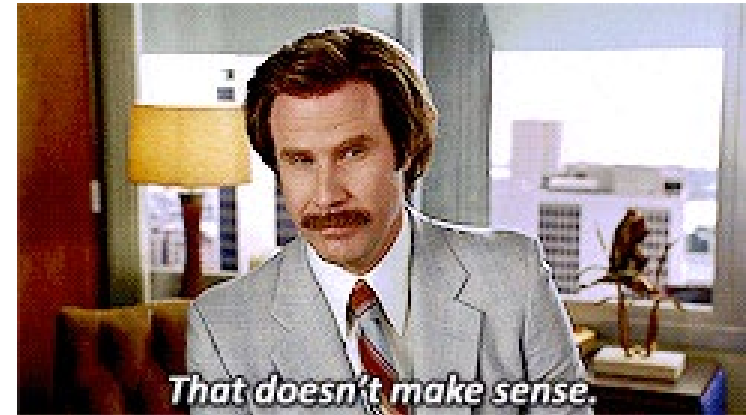
# What do we know about split suckling?

- Why do we split suckle?
  - Increase colostrum intake for smaller pigs or pigs born later in the litter to improve survival
    - Pig drying and/or warming separate task
  - It's been a common practice for 15+ years
- 2 trials conducted in Smithfield 2023 showing no benefit from split suckling



# Quest to understand history of split suckling

1. Lots of science showing that split suckling increases small piglet temperature and immunoglobins (colostrum) → assuming improved survival
2. What does the science say about split suckling on piglet survival or gain?
  - 12 published scientific articles from 1985 to 2023
    - 2 showed positive impact (PWM)
    - 2 showed negative impact (PWM or pig weight gain)
    - 8 showed NO impact on PWM or pig weight gain



3. Why did this become an industry wide practice?

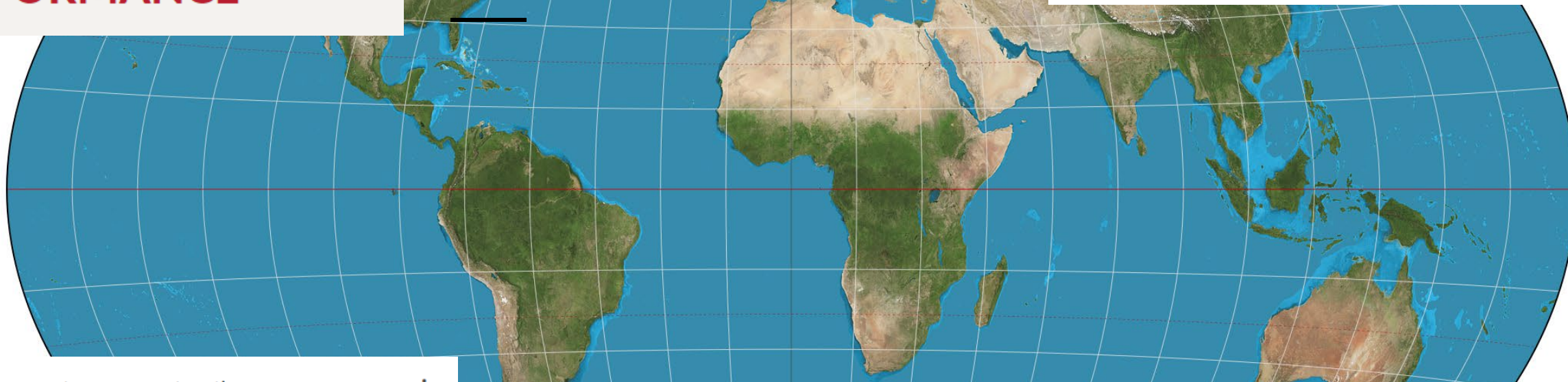
Increased productivity

## DANBRED'S 5 TIPS FOR WEANING HEALTHY PIGLETS WITH HIGH PERFORMANCE



# DanBred Hybrid

DanBred Hybrid has an even temper and excellent mothering abilities as well as a good longevity. The breed produces large viable litters of robust pigs, which grow fast and have a high feed efficiency all the way to slaughter, and when crossed with **DanBred Duroc**, the offspring will inherit all these traits as well as an excellent meat quality.



Setting up correct management routines

+

Success in managing hyper prolific sows

-

Success in managing hyper prolific sows like the DanBred Hybrid is especially centred around the careful management of the new born piglets; quick access to the udder and to colostrum as well as keeping the piglets warm and dry are key focus areas. Strategies such as split suckling and feeding colostrum can also help ensure piglet health and growth at the important early stage of their lives.

## Highly prolific sow

## 2. Ensure enough colostrum for all newborns

Make sure the piglets get enough colostrum at the first day after farrowing by using split suckling or split milking. The right time to carry this out is after the sow finishes eating, and she has laid down. By waiting until she is full and settled, you ensure that she is more likely to relax and feed her piglets.

# One final attempt to prove split suckling is valuable...

- Objectives:

- Determine if split suckling litters improves litter or piglet survival or ADG
  - Identify which litters or piglets benefit from split suckling

- Treatment

- Control: Litters don't get split suckled
- Treatment: Litters get split suckled following the SOP

- Sample size

- 200 litters/treatment for mortality
  - Piglet survival – Using a PWM of 15.9% (average number of pig deaths/average born alive) with a 2% decrease for the split suckling treatment = 2536 piglets/treatment, or ~173 litters/treatment



# What did we measure?

- Sow ID, genetics, parity, BCS, and functional teat count
- Farrowing room
- Farrowing crate
- Date and time of end of farrowing
  - Which pigs were first 8 born (yes/no)
- Confirm split suckle protocol followed (yes/no) and time stamp of start and stop of process
  - Record which pig ID's were isolated during split suckle
- Date and time of Oxytocin injection
- Date and time of cross-fostering
  - Pig ID's that were moved and sow moved to (on trial)
- Litter traits
  - Total born
  - NBA (# of pigs at allotment) tagging
  - Litter weight at tagging
  - Stillborn
  - Mummies
  - Start (once litter is set after cross-fostering)
  - Number weaned on d18
  - Litter weight at D18
  - Pig counts to determine # alive per litter at birth (afterbirth/NBA), day 1 (post cross-foster/start), day 5, day 12, day 18
  - # of teat seeking piglet movements from start of farrow – 24 hr post AB
- Individual pig traits (birth to wean)
  - Pig ID's at birth (tagged when afterbirth)
  - Pig ID's that were isolated during split suckle
  - Pig ID's at oxytocin injection or 4-12 hrs post ab
  - Pig ID's at start (post cross-foster)
  - Pig ID's at time of death (tagged– day 18)
    - Did pig die (yes/no)
    - Record time of death on day 0 mortalities
      - Collect ear tags
      - Date of death
      - Record reason of death
- Individual pig weights
  - Pig weights taken at tagging
  - Pig weights taken at d18

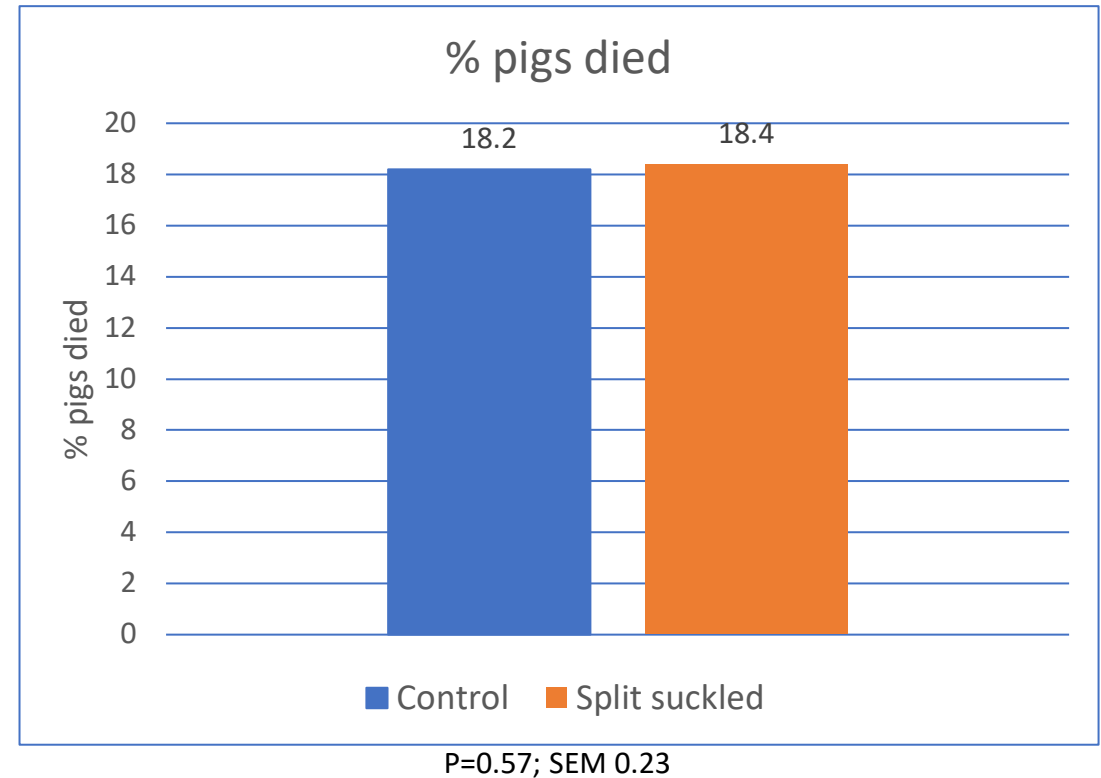
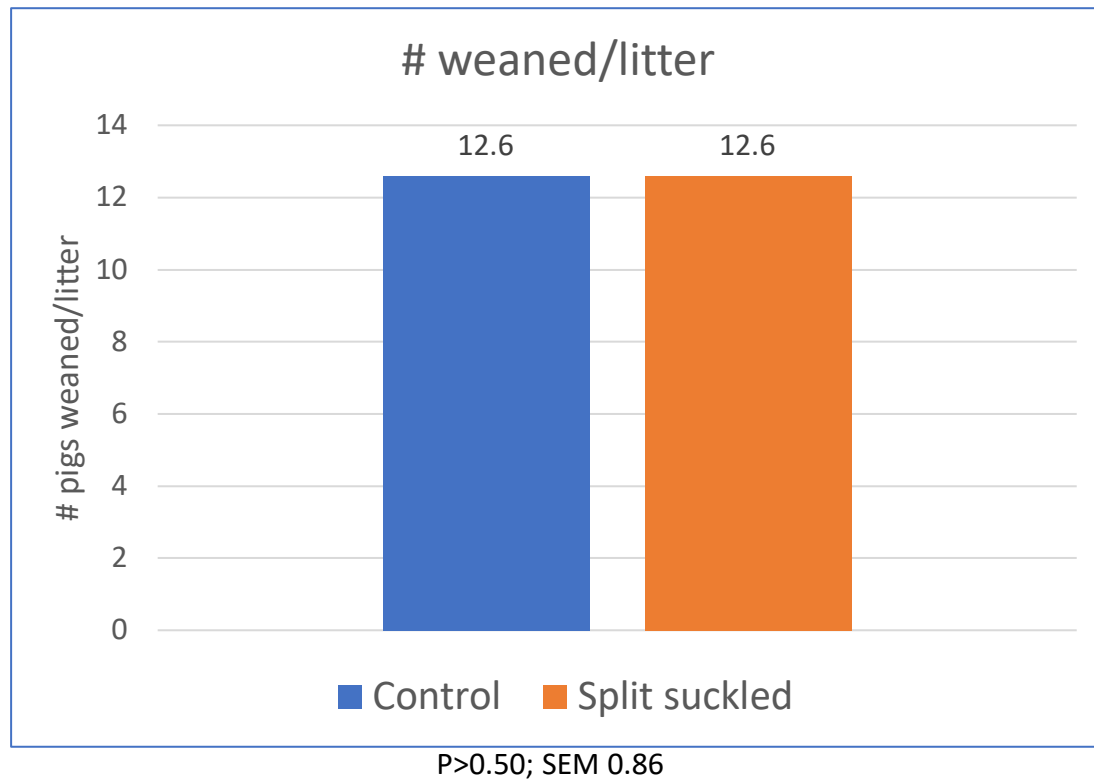
Effect of split suckling on litter performance.

Item.	Treatment		SEM	P -value
	Control	Split Suckle		
Number of sows/litters	207	209	-	-
Sow characteristics				
Parity	4.9	5.0	0.23	0.32
Body condition score	1.9	2.0	0.09	0.37
Afterbirth to oxytocin, h	6.3	6.5	2.04	0.54
Functional teats	14.4	14.3	0.26	0.54
Litter weight, lbs				
Birth	46.3 <sup>b</sup>	48.3 <sup>a</sup>	1.73	0.02
Day 18	152.1	150.1	3.14	0.76
Average daily gain	5.94	5.80	0.139	0.62
Average piglet weight, lbs				
Birth	3.27 <sup>x</sup>	3.34 <sup>y</sup>	0.104	0.07
Day 18	12.38	12.24	0.139	0.48
Average daily gain	0.507	0.500	0.0077	0.48

1) Does split suckling improve litter or pig ADG?

No

# Does split suckling improve piglet survival???? NO





# Does split suckling impact small or large pigs? YES, hurts the larger pigs

- When litters were split suckled it doubled the mortality of the largest pigs
  - These were the pigs most likely isolated in the tote

Effect of split suckling and litter size on piglet growth and mortality.

Item.	Treatment		SEM	<i>P</i> -value
	Control	Split Suckle		T x B
Number of piglets at litter set	2302	2392	-	-
Proportion died (Set to day 18)	0.086	0.107	0.0082	0.01
< 2.75 lbs	0.225	0.199	0.0183	-
2.75-3.75 lbs	0.070	0.079	0.0086	-
> 3.75 lbs	<b>0.025<sup>b</sup></b>	<b>0.049<sup>a</sup></b>	0.0078	-

# Does split suckling help the later born pigs? NO

- When litters were split suckled the later born piglets weighed 0.35 lbs less than litters not split suckled

Effect of split suckling and birth order on piglet growth and mortality.

Item.	Treatment		SEM	<i>P</i> -value
	Control	Split Suckle		T x B
Number of piglets born alive	3197	3228	-	-
Day 18 pig weight, lbs	12.10	11.98	0.299	0.001
First 8	11.93	12.04	0.302	-
<b>LaterBorn</b>	<b>12.27<sup>a</sup></b>	<b>11.92<sup>b</sup></b>	0.304	-
Average daily gain	0.497	0.489	0.0161	0.002
First 8	0.487	0.493	0.0163	-
<b>LaterBorn</b>	<b>0.506<sup>a</sup></b>	<b>0.486<sup>b</sup></b>	0.0165	-

# Are larger litters benefiting from split suckling?

No, split suckling larger litters did not improve piglet survival or ADG

Effect of split suckling and litter size on piglet growth and mortality.

Item.	Treatment			Litter size			P-value		
	Control	Split Suckle	SEM	≤ 15	> 15	SEM	T	PT	T x PT
Died to day 18 <sup>1</sup>	0.194	0.190	0.0118	0.167	0.220	0.0118	0.65	<0.0001	0.73
≤ 15	0.171	0.164	0.0117	-	-	-	0.57	-	-
> 15	0.220	0.220	0.0165	-	-	-	0.99	-	-

# Did the highest risk piglets benefit from split suckling?



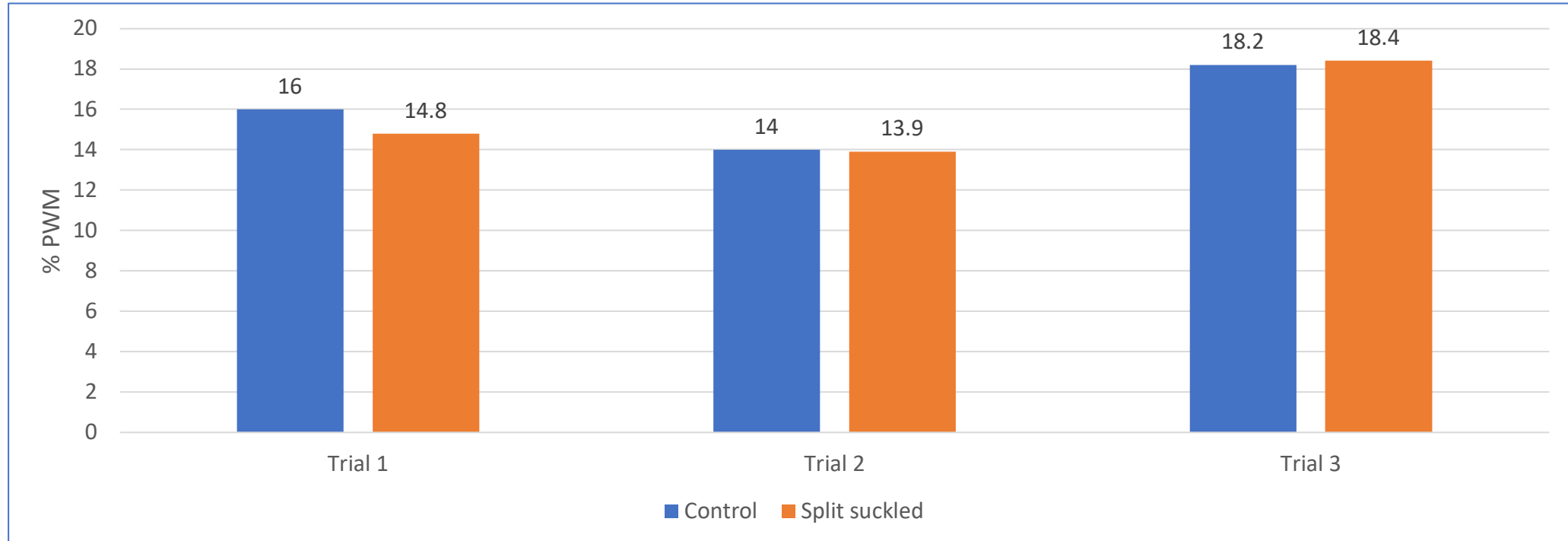
- If any pig is to benefit from split suckling it is high risk pigs
  - Later born, small (<3 lbs), born in large litters, with less functional teats and then allowed to suckle uninterrupted
- No dramatic benefit from split suckling high risk pigs
  - *Need larger sample size*

Effect of split suckling on piglet growth and mortality in high-risk piglets

Item.	Treatment		SEM	P -value
	Control	Split Suckle		
Number of piglets at litter set	228	219	-	-
Proportion of piglets born alive				
Died birth to litter set	0.099	0.068	0.026	0.24
Proportion of piglets at litter set that died				
Set to day 18	0.198	0.212	0.033	0.75
Piglet weight, lbs				
Birth	2.41	2.43	0.047	0.23
Day 18	10.70	10.61	0.237	0.75
Average daily gain	0.457	0.454	0.0139	0.81

High risk = Not in the box for split-suckling, not in first 8 born, alive at tagging and weighing < 3 lbs at birth, with 15+ piglets per litter tagged and < 15 functional teats

### 3 Smithfield trials resulting in NO benefit in survival or growth of litters that were split suckled



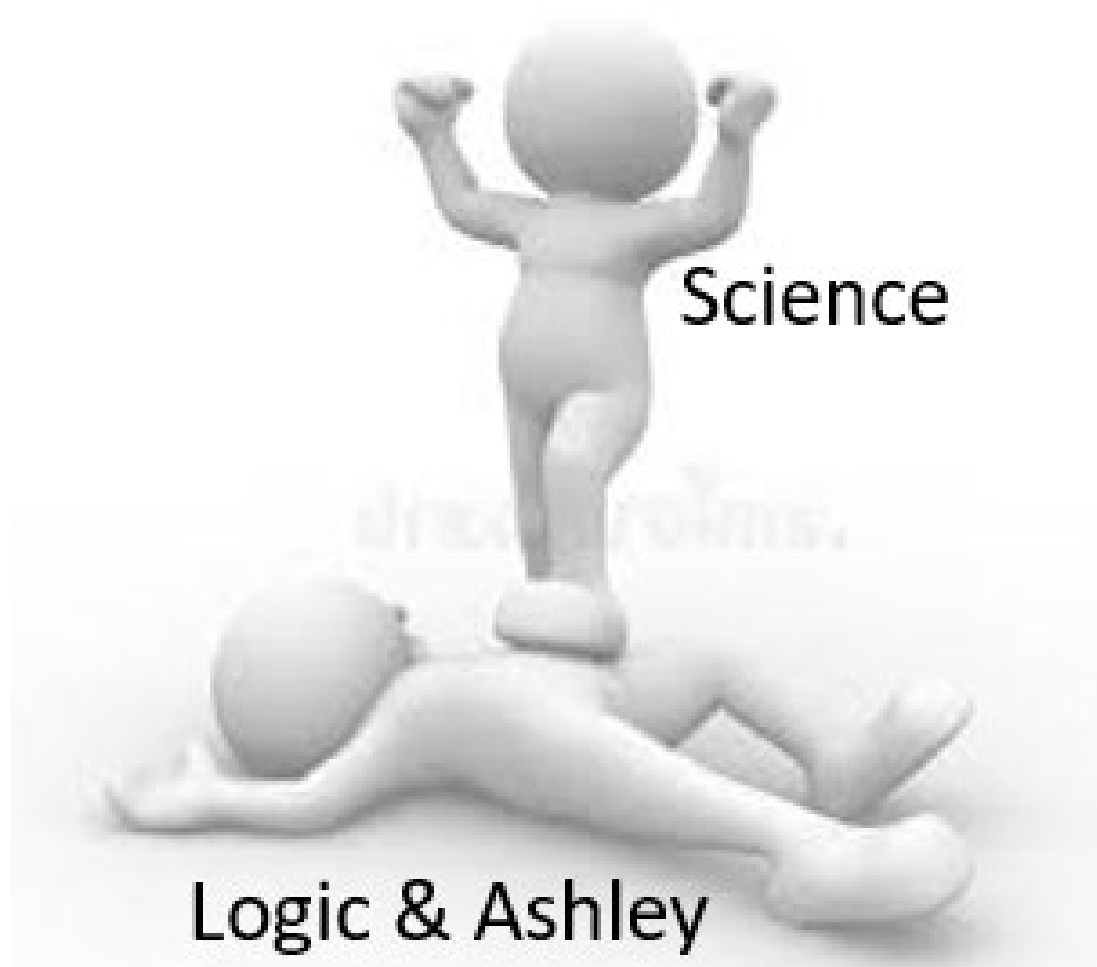
12 scientific articles from 1985 to 2023;

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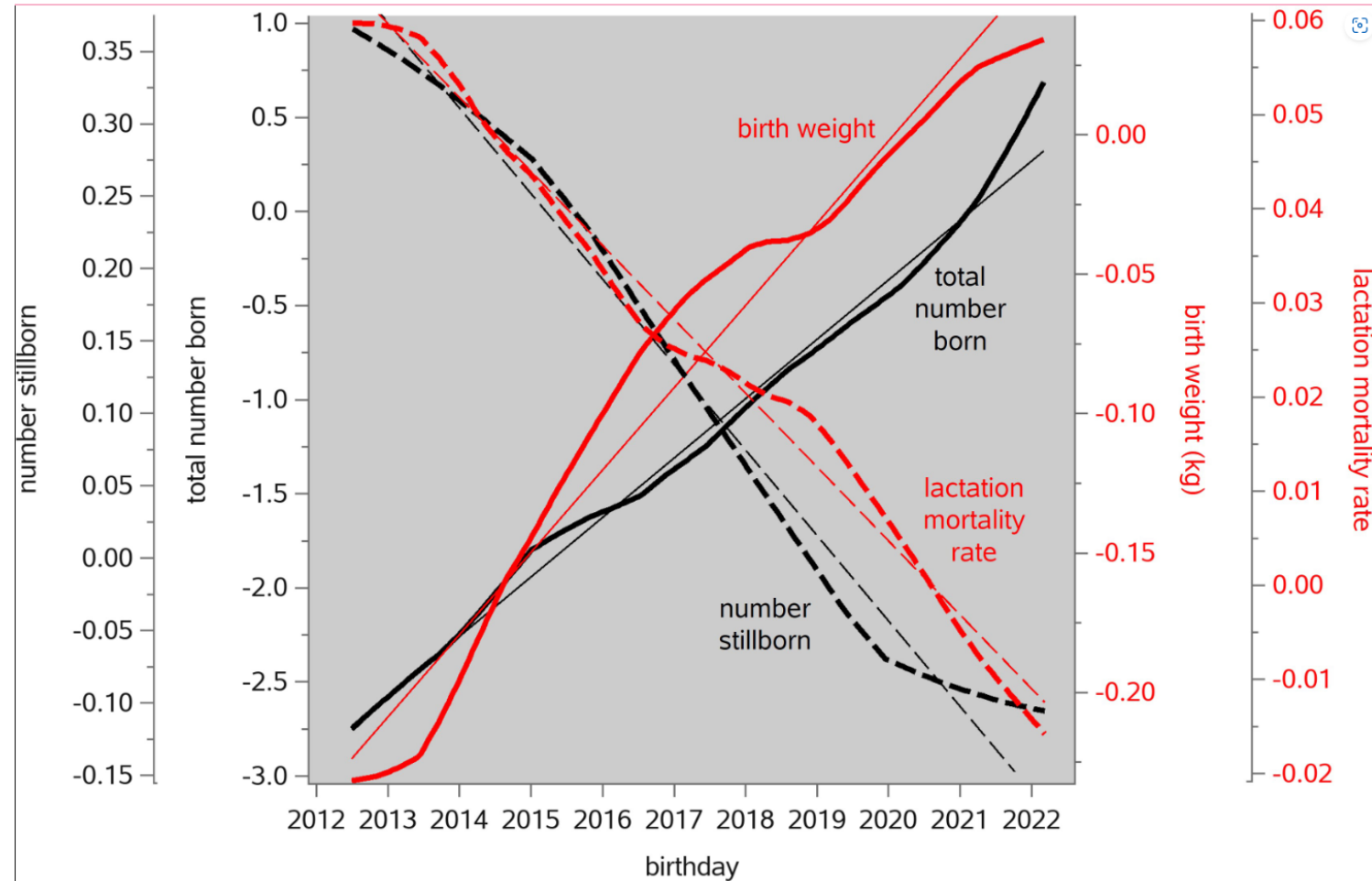
8 showed NO impact on PWM or pig weight gain

# How can this be?



# So many advancements since split suckling started

- Why do we split suckle?
  - Increase colostrum intake for smaller pigs or pigs born later in the litter to improve survival
- Genetics
  - Birth weight
  - Functional teats
- Nutrition
- Management



Frontiers | Genetic and phenotypic time trends of litter size, piglet mortality, and birth weight in pigs (frontiersin.org)

**Today's sow is producing heavier pigs (3.3 lbs) and can raise them**

## Day 1 pig care: less is best, or is that just BS???



**Less is NOT best,  
but focus on what  
brings success**



# So what Day 1 tasks are worth the effort?

Sleeving  
sows

**Drying  
pigs**

Warming  
pigs

Help  
piglets  
suckle

Newborn pig  
care

Oxytocin  
for milk  
let down

Data recording

Keep crate  
dry and  
warm

Clean feeders

Iron injection

Heat sources

**Timely  
euthanasia**

Farrowing room  
temperature

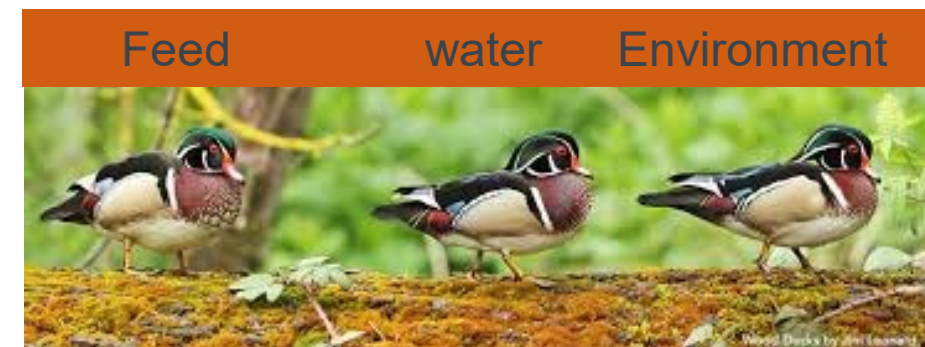
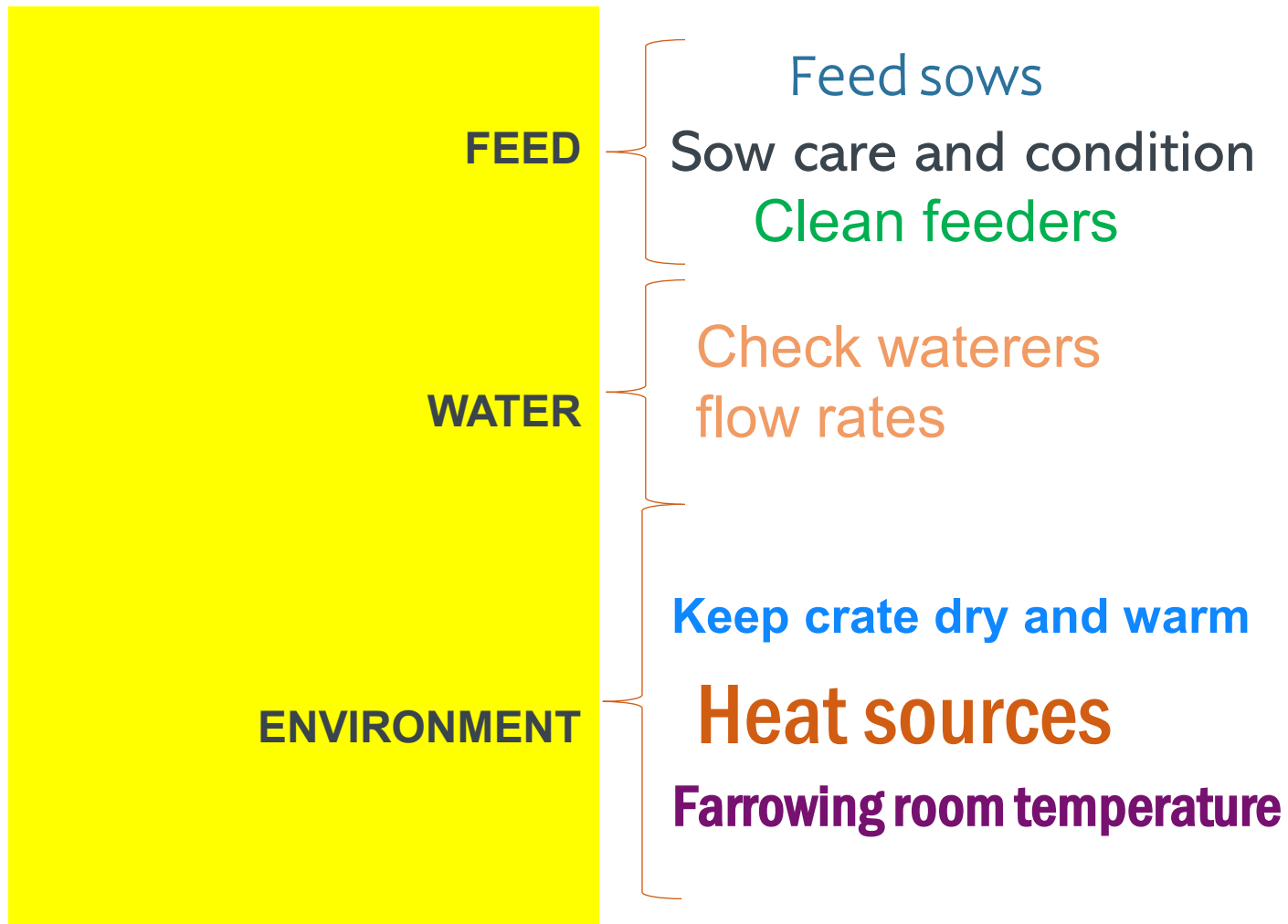
Sow care and  
condition

Sow feed and  
water

Cross-foster

**Split suckling**

# Focus on the basics of Animal care as PRIMARY CARE





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Thank you for  
your time!!



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