



 Never Stop Improving

Preparation for Farrowing and Neonatal Pig Care

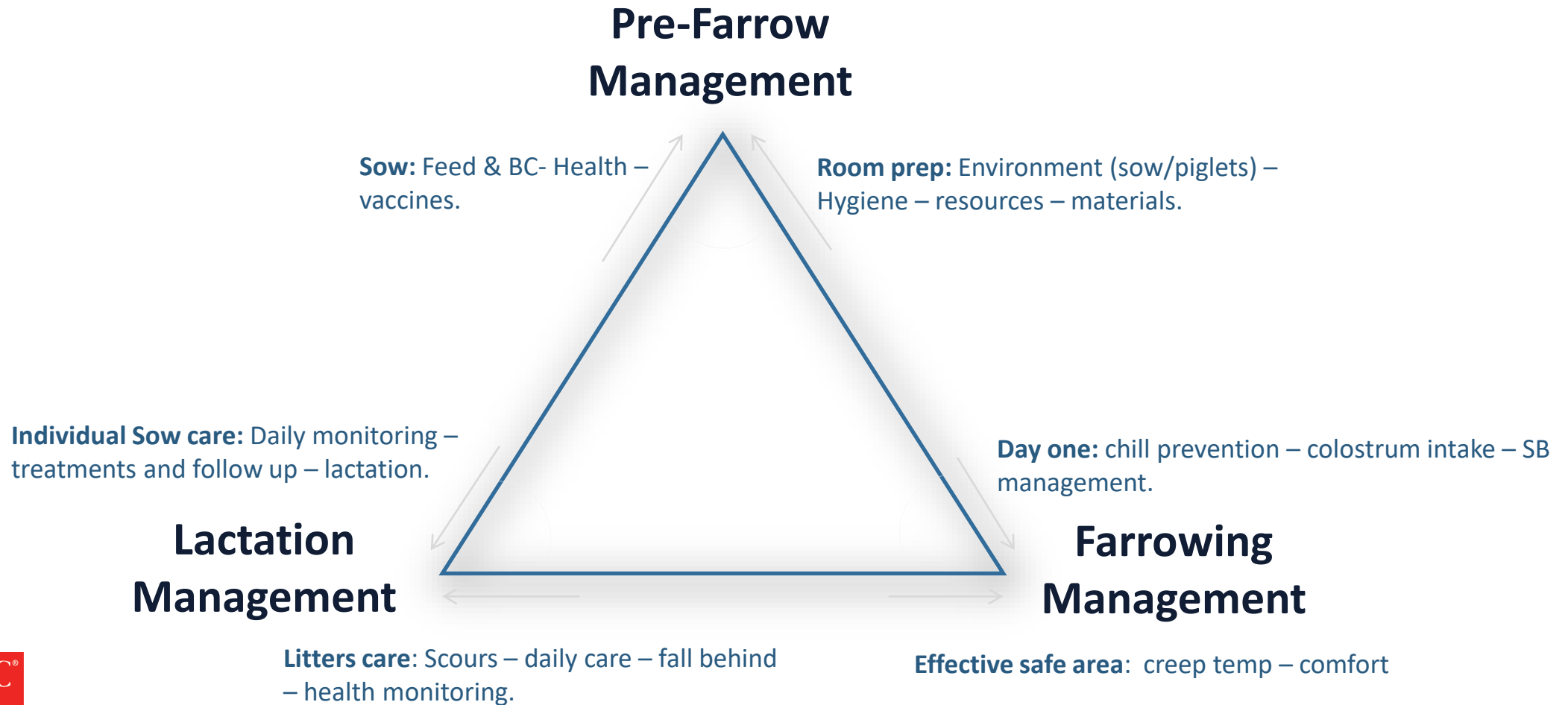
PIC Benchmarking

May 2021

 PIC[®]

Three Strategic Areas

Piglet throughput and survivability



Pre-Farrow Management

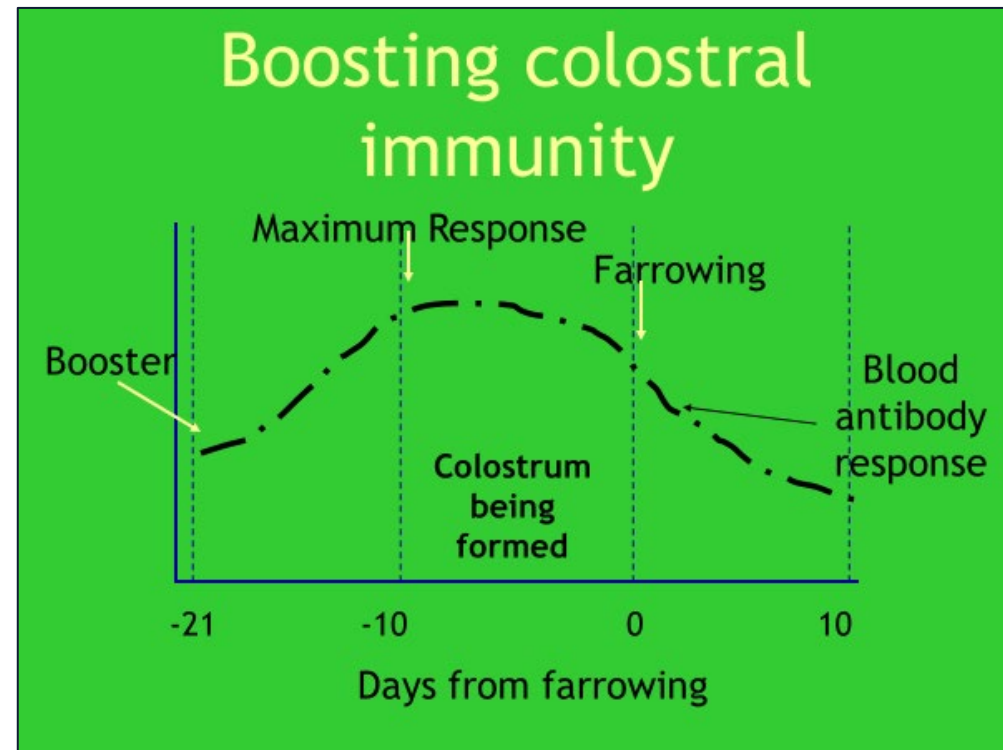
Good quality sows, wean more and better pigs

- Herd health – Vaccination program / Culling strategy / RR / Parity structure
- Individual health status – Feet health / Lameness
- Feeding management and sow body condition (BC) – Our decision
- Room preparation – Room temp / Creep area temp / Hygiene / Water / Feed / Obstetric materials.
- Comfort of sows and piglets – Environment / stress-free

Sows Health

Preparation starts well before sows are ready to farrow

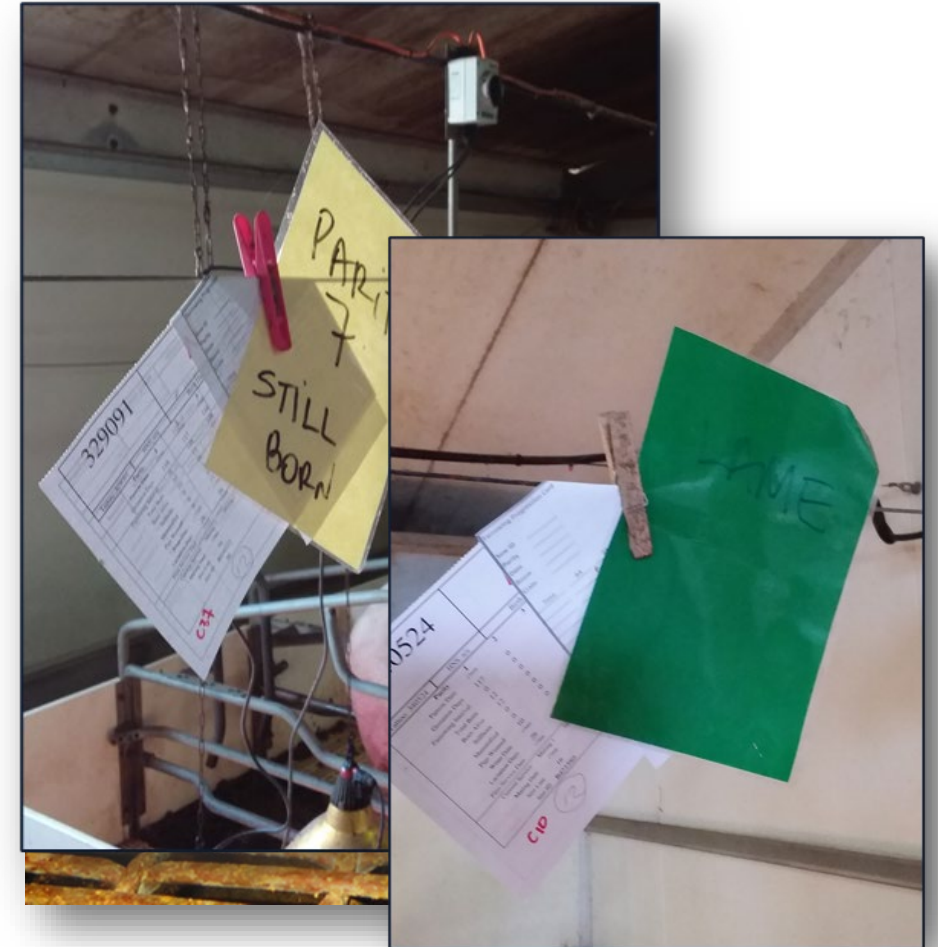
- Should start checking out the sows at least 4-6 weeks prior to farrowing
 - Udder congestion / Oedema
 - Mastitis
 - Trouble farrowing
- Vaccination against:
 - E.coli
 - Leptospirosis?
 - Parvovirus?
 - Erysipelas?
 - Feedback?
 - Autogenous Vaccines?



Individual Health Status

Preparation starts well before sows are ready to farrow

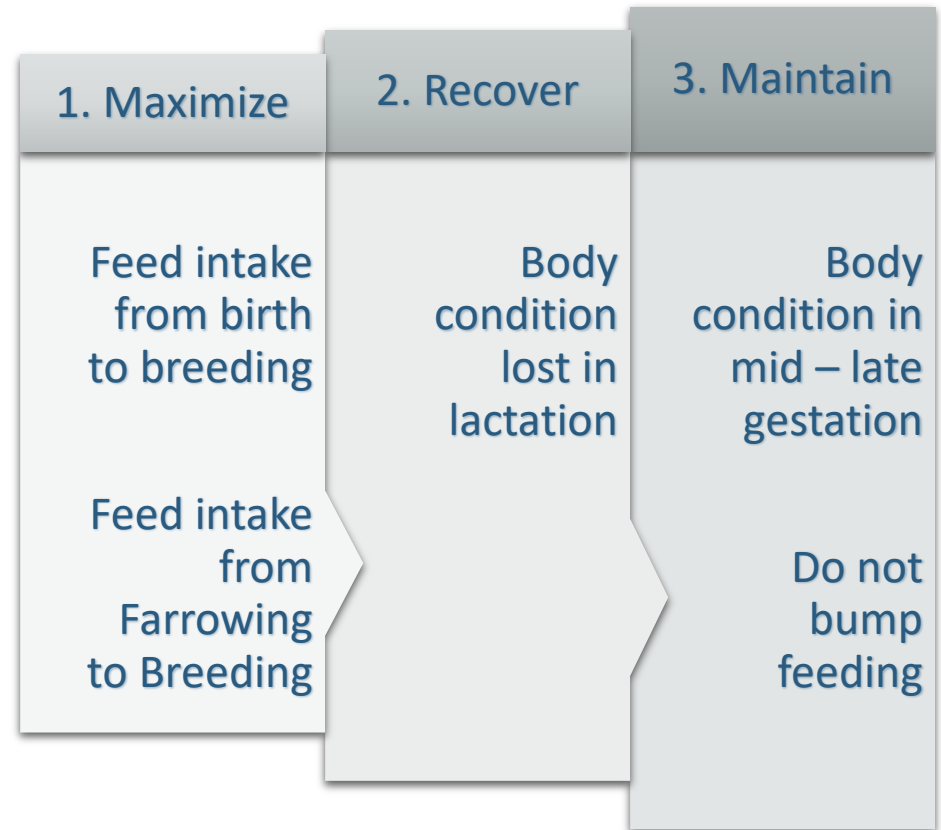
- Identify sows with any issue that can compromise farrowing performance.
 - Monitor and treat them.
 - Be prepared to early wean them to save the litter.
 - **Be prepared to assist them during farrowing.**
- Control excessive hooves overgrowth (if possible).
 - Trimming
 - In young parities (< P4?)
 - Part of our culling strategy.



Feeding Management and Sow BC

Goals and 3 Main Principles

- Three goals for **Ideal sows**:
 - 80% at weaning
 - 85% by day 30 after breeding (preg-check)
 - **90% at farrowing**
- The lack of one or more, will makes our job harder.
- One difference between high performance farms vs. average, is the quality of the sow they **decide** to work with.



Feeding Management and Sow BC

How body condition impacts performance?

Either FAT or THIN sows, will jeopardize farm performance at any production stage.



- **FAT sows:**

- Poor colostrum yield
- Lower milk production
- Higher SBs
- Higher laid-on (PWM)
- Higher removal rate
- Lower lactation feed intake
- Less pigs weaned

- **THIN sows:**

- Poor milk production
- Higher removal rate
- Welfare issue
- Lower reproductive performance

Nutrition and feeding during gestation

Late Gestation

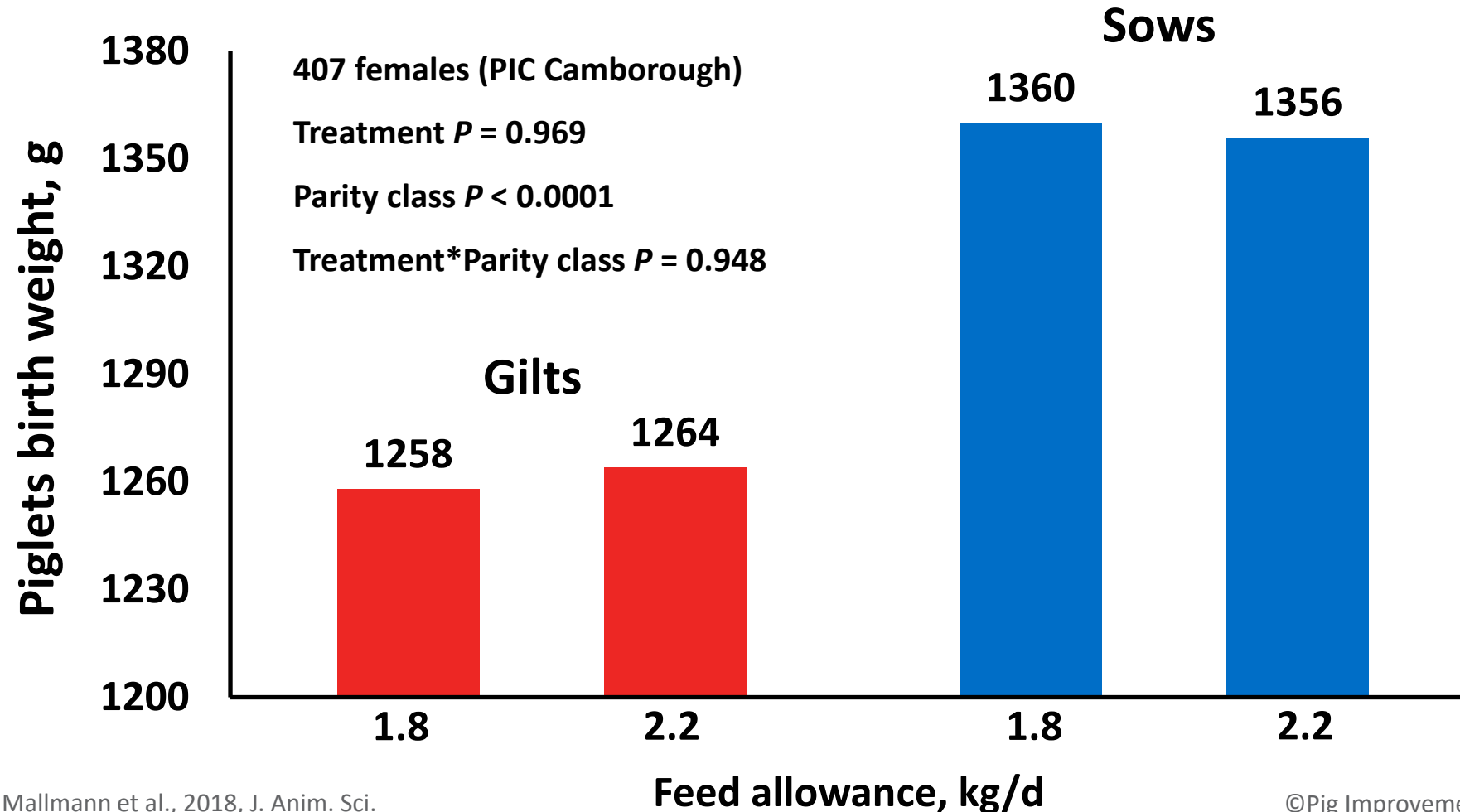
Descriptive summary of bump-feeding experiments for PIC sows

REFERENCE	START, DAY OF GESTATION	LITTERS PER TREATMENT	TOTAL BORN	CONTROL,		INCREASED FEED INTAKE,		CHANGES DUE TO EXTRA FEED	
				Mcal ME/d	g SID Lys/d	Mcal ME/d	g SID Lys/d	BW GAIN per kg OF EXTRA DAILY FEED, kg	PIGLET BIRTH CHANGE, g
Shelton et al. 2009	90	32	12.4	7.9	11.9	11.4	19.9	4.9	-109
Soto et al. 2011	100	51	12.9	7.9	11.2	13.9	19.5	NR	-69
Gonçalves et al. 2015	90	181	15.1	5.9	10.7	8.9	10.7	9.0	47
Gonçalves et al. 2015	90	181	15.3	5.9	20.0	8.9	20.0	10.8	19
Greiner et al. 2016	95	128	14.7	5.9	9.0	8.8	14.0	7.1	-40
Mallmann et al., 2018	90	221	15.4	5.9	11.7	7.2	14.3	9.0	-4
Average	---	---	14.3	6.6	12.4	9.9 (50%)	16.4 (32%)	8.9	-1.3
Standard deviation	---	---	1.3	1.0	3.9	2.4	3.9	1.6	44.2

Nutrition and feeding during gestation

Late Gestation

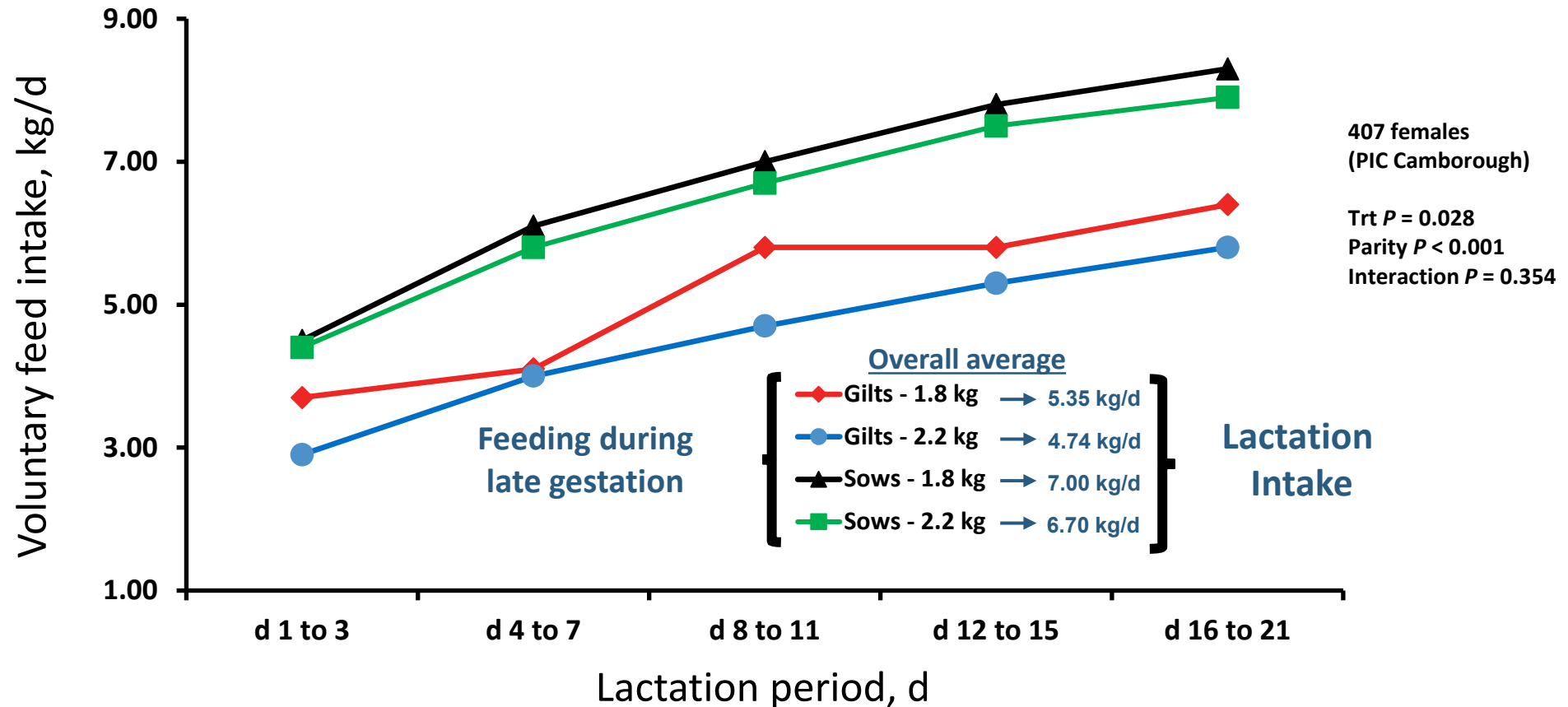
Bump feeding from d 90 of gestation
didn't improve piglet birth weight for PIC gilts or sows



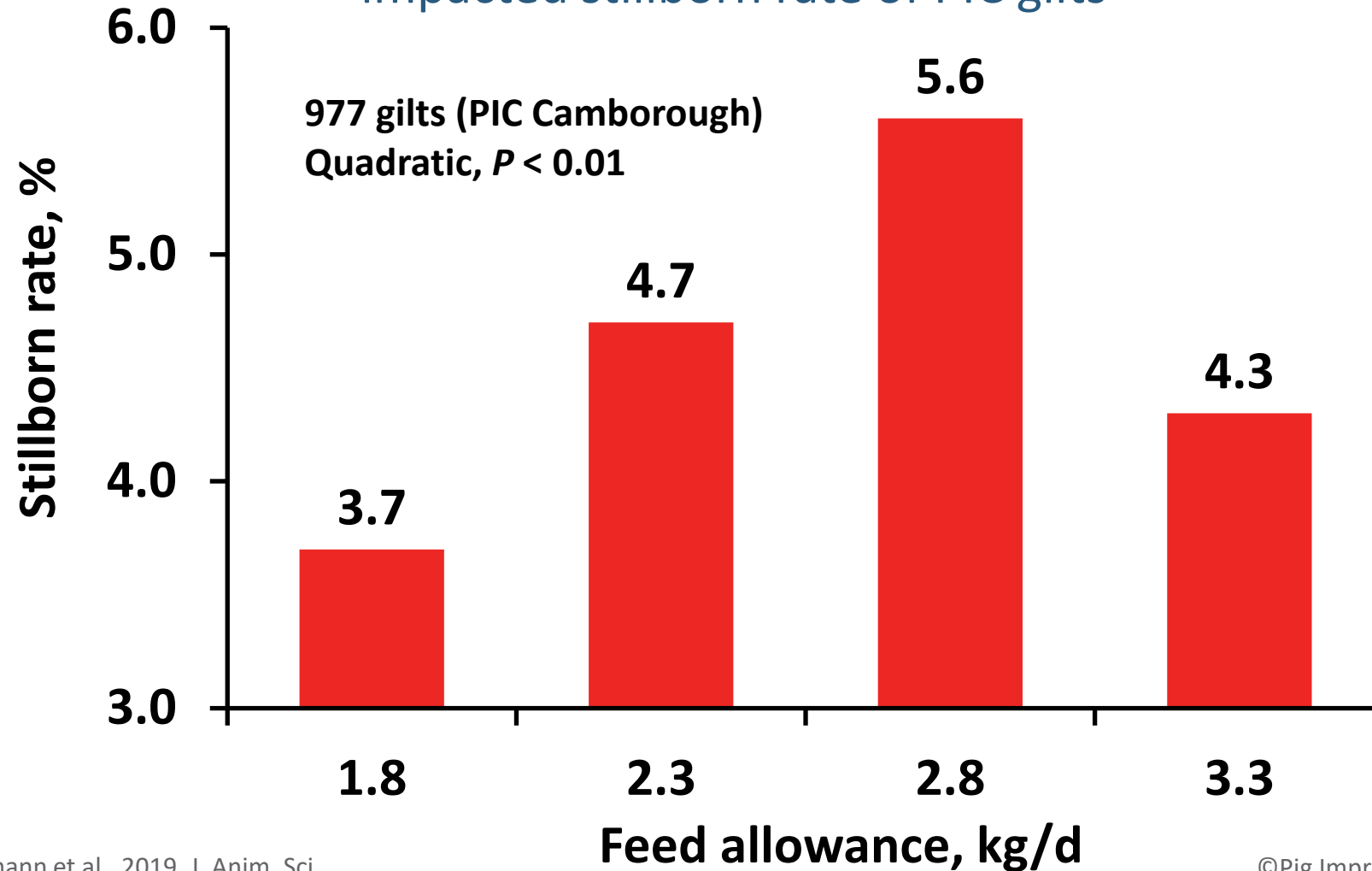
Nutrition and feeding during gestation

Late Gestation

Bump feeding from d 90 of gestation may compromise lactation voluntary feed intake



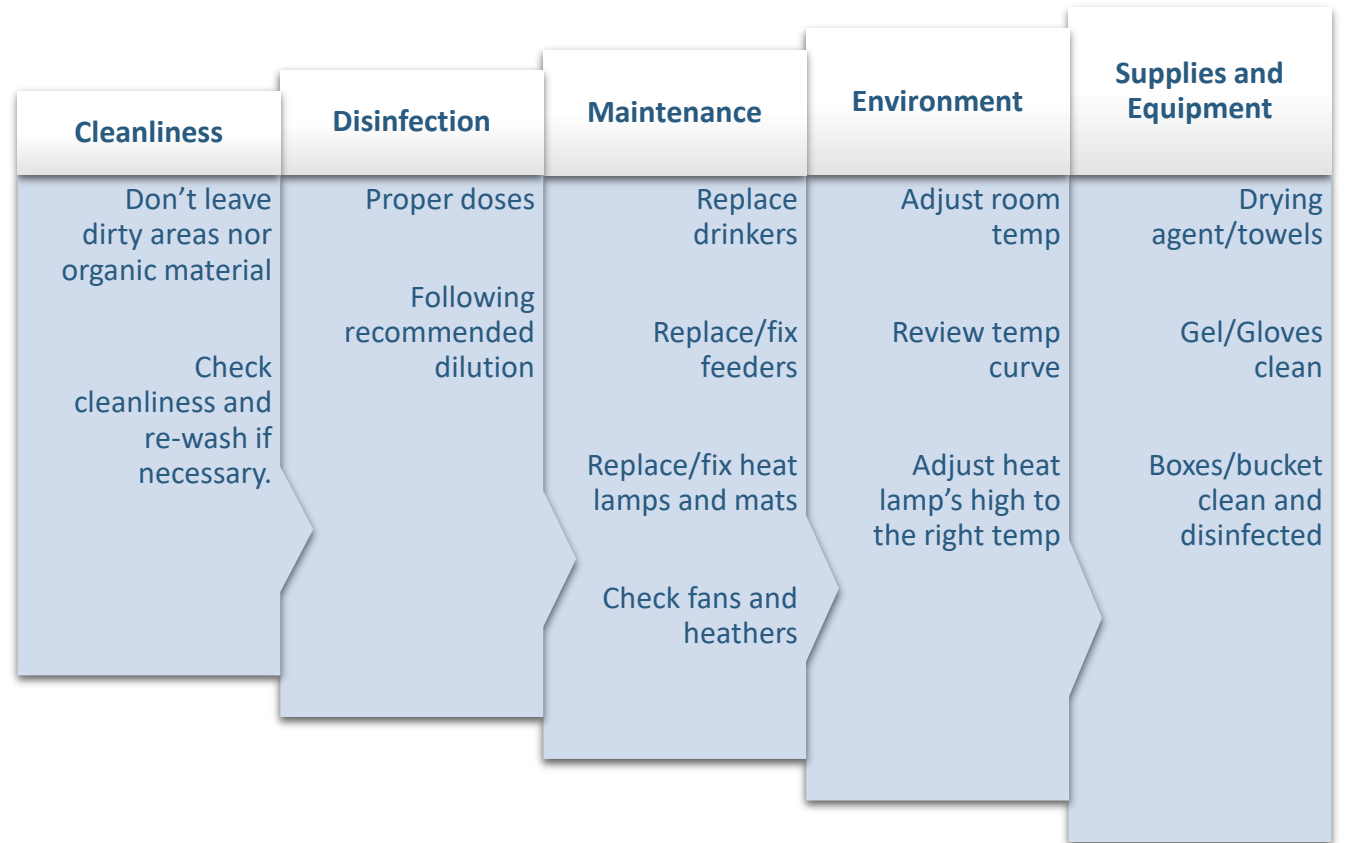
Bump feeding from d 90 of gestation impacted stillborn rate of PIC gilts



Room Preparation

Planning and supervision

- The ultimate responsibility would lie with the Managers...
- However, it's a whole team work.
- Starting with "the right foot" is essential.



Room Preparation

Temperature Requirements

Sows

- 20/18°C pre/post farrowing

Piglets

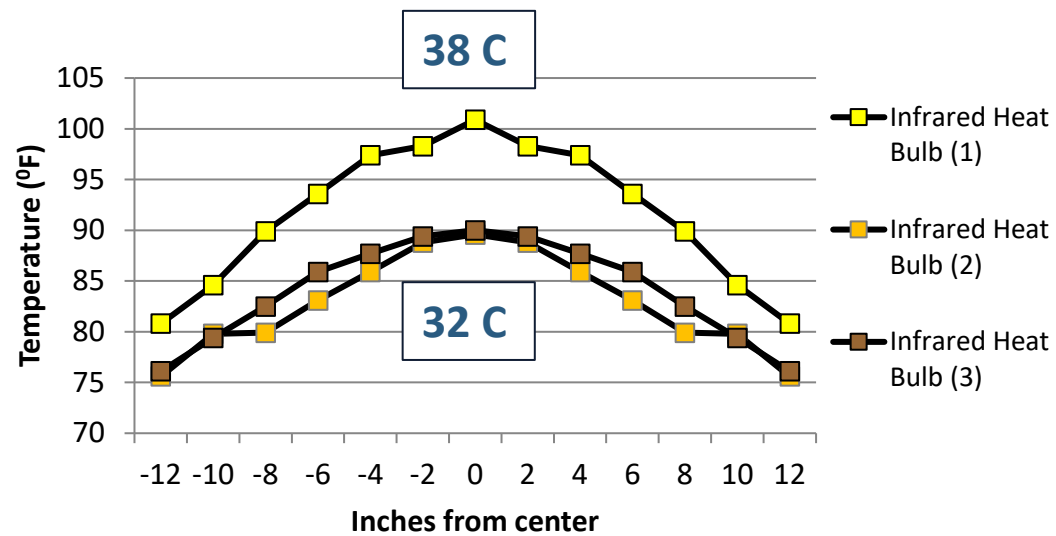
- 30-36°C first 48 hours
- 30-32°C rest of first week
- 28-30°C second week
- 26-28°C third week
- 24-26°C fourth week



Room Preparation

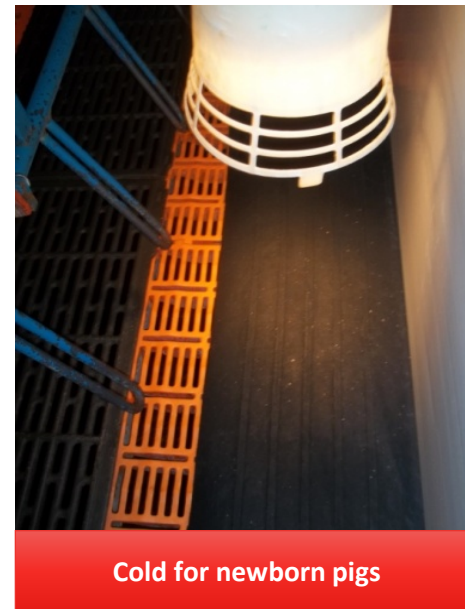
Creep Area Management

- Heat lamp's globes cleanliness should be part of the room preparation.

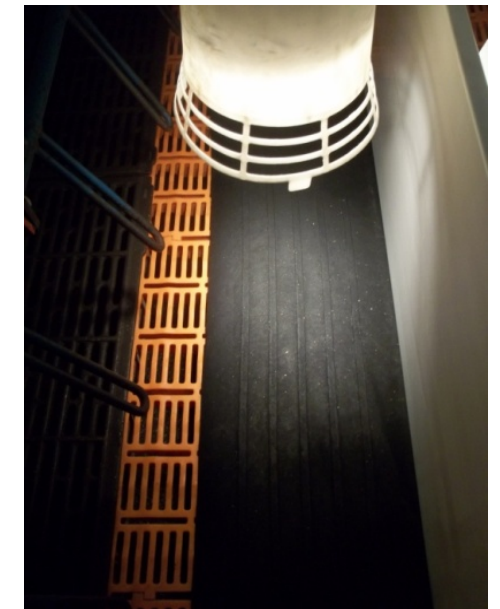


(1) New; (2) A little dirty; (3) More dirty

Mat's Temperature 30.5 C



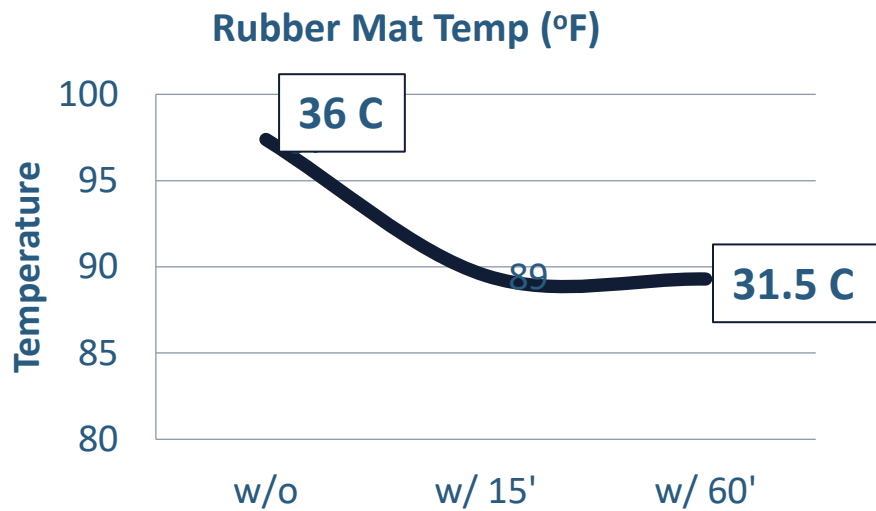
Mat's Temperature 36.7 C



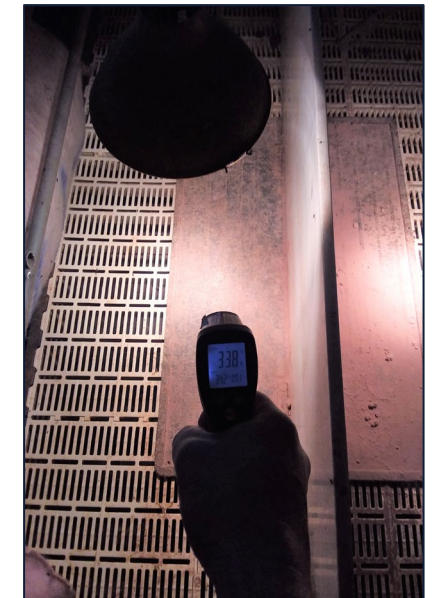
Room Preparation

Creep Area Management

- Avoid spreading powder over a rubber mat. It reduces the mat's temperature by 4-6 C degrees.



With powder:
28.2 C



Without
powder: 33.8 C

Wrapping Up Pre-Farrow Management

Our 1st Strategy

- Good quality, prepared and managed sows, will wean more pigs.
- A well-prepared room will help to receive newly born piglets, increasing survivability when we are not on the farm, and will make our job easier.
- We have tools that allow us to be objective and follow guidelines.
- We may consider using powder only for drying piglets and/or wet mats.

Farrowing Management

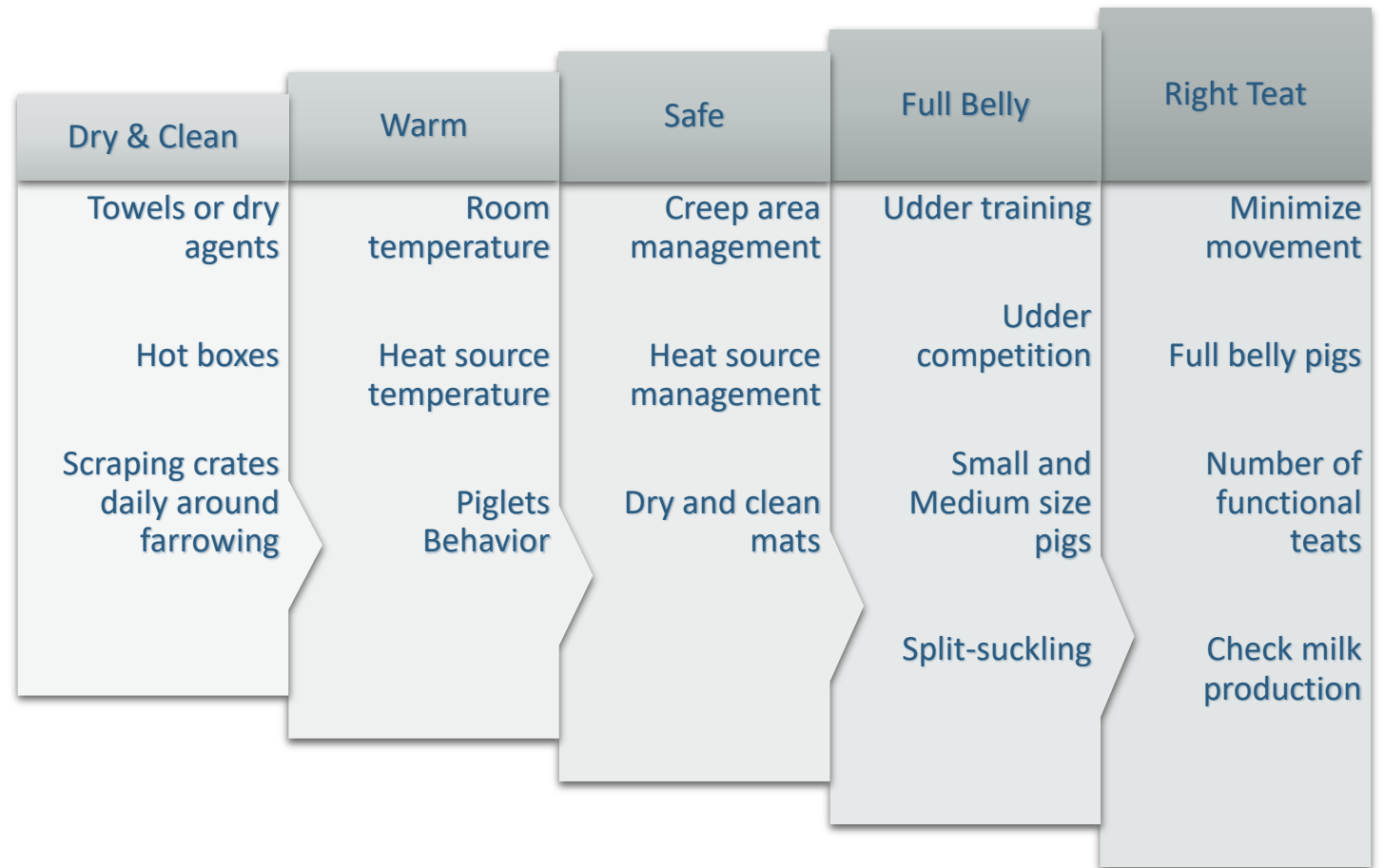
Our intervention is critical

- Early pig care – Start with farrowing room preparation
- Objectives every day of the year – The “Big Five” during Day One Care
- First 2 hours of the day – Sows in trouble / Chilling prevention / Colostrum
- Monitoring sows and assisting on time – Will help to increase BA, decrease SB

Day One Pig Care

The “Big Five”

- Better to do basic things extraordinarily well, than extraordinary things not well done.
- The combination of all of five, is powerful. The lack on one or more, makes our job a fruitless process



Day One Pig Care

First two hour of the day

- Priorities, first thing in the morning:
 - Identify sows in trouble.
 - Dry off piglets.
 - Mark empty bellies. Focus in medium/small pigs.
 - Quick access to colostrum. Udder training.



Day One Pig Care

First two hour of the day – Identify sows with problems

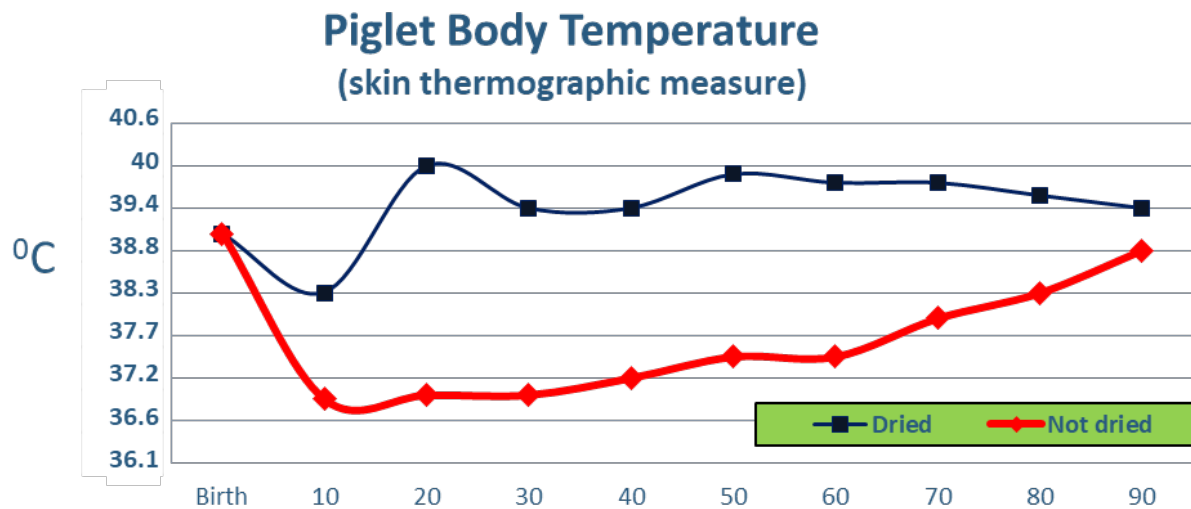
- Check birth canal if:
 - Still Born on the floor.
 - Piglets dried, no after-birth.
 - Sign of dystocia. Contraction and no results – sow with bloodshot eyes.
 - Some piglets covered in foetal faeces (meconium).
 - More than 30 minutes delay between piglets.
 - Sow very agitated or distressed.



Day One Pig Care

Chilling Prevention

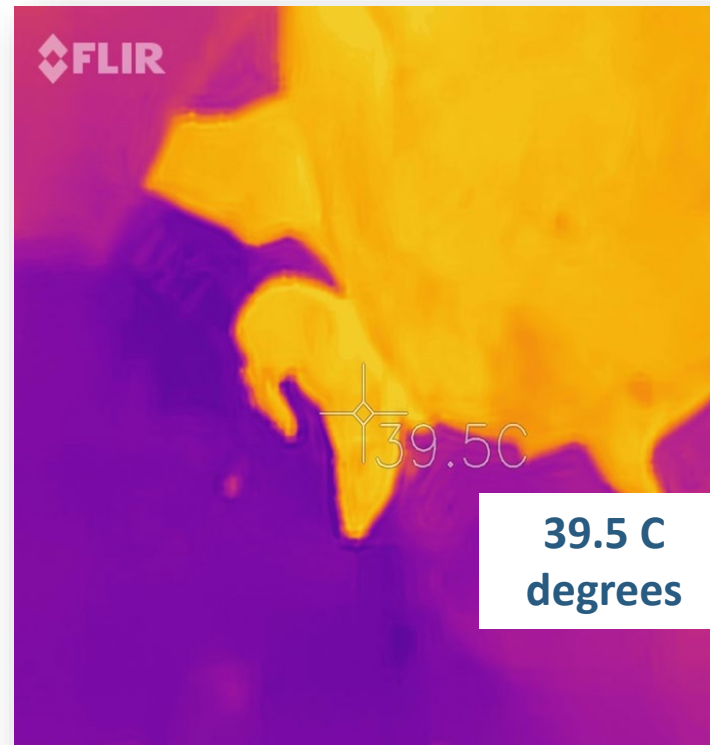
- It takes only 20 sec per pig.
- Use towels (fabric or paper), dryer powder, bentonite, paper, sawdust, woodchips, hot boxes...
- Dry all piglets off during the day, but also all wet piglets born overnight, found in early morning.



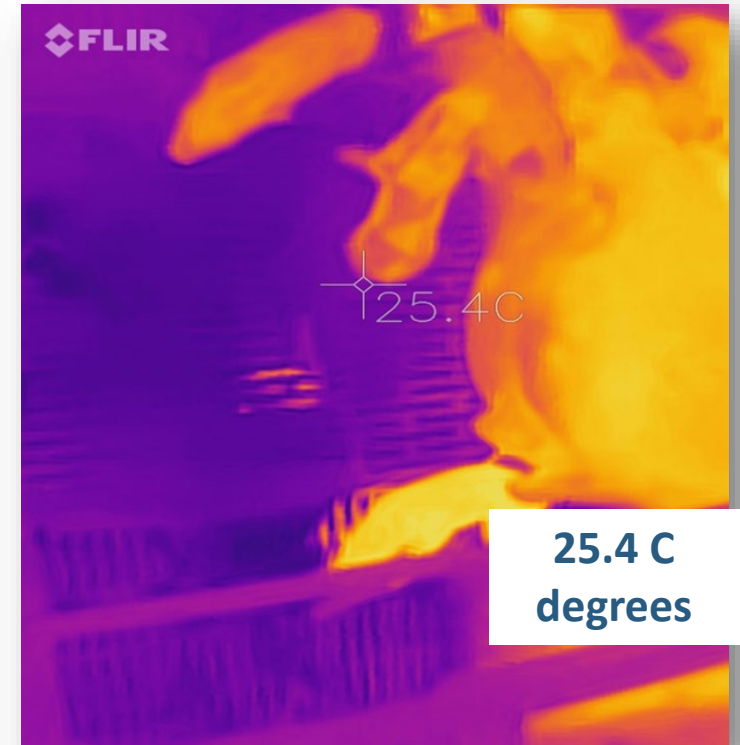
What the eye can't see



Focus before farrowing
1. Temperature
2. Mat placement



Newborn pigs
beyond the heat halo



10 min, lost temperature
Tough surrounding

And the pigs will tell us how they feel...



Day One Pig Care

First two hours of the day – Quick access to Colostrum

- Identify and mark empty belly pigs.
- Follow up them every 20-30 min.
- Whole team care, not only “day one person”
- When under competition, identifying the best strategy:
 - Split suckling
 - Strategic Fostering



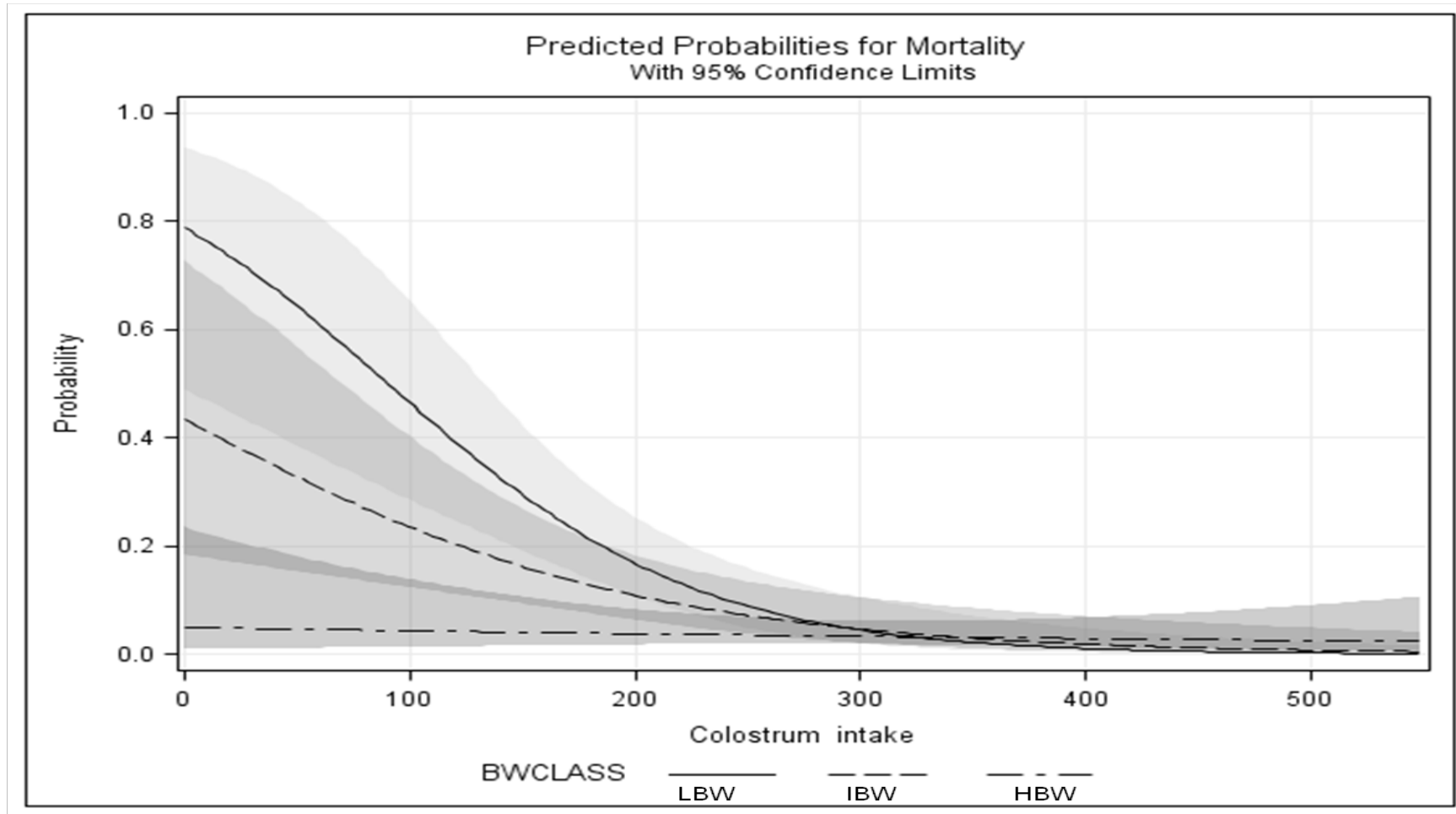
Colostrum

- Supplies 60% of energy required for heat production.
- First external source of energy.
- Also stimulates development of brain, skeletal muscle, heart muscle and reproductive organs.
- Help to develop microbiota for a robust gastrointestinal tract, improving performance pre and post weaning.
- Provides protective antibodies against infections.

In summary, an important source of nutrients, a potential growth stimulator, provides passive immunity and has long term effect.

Colostrum Intake

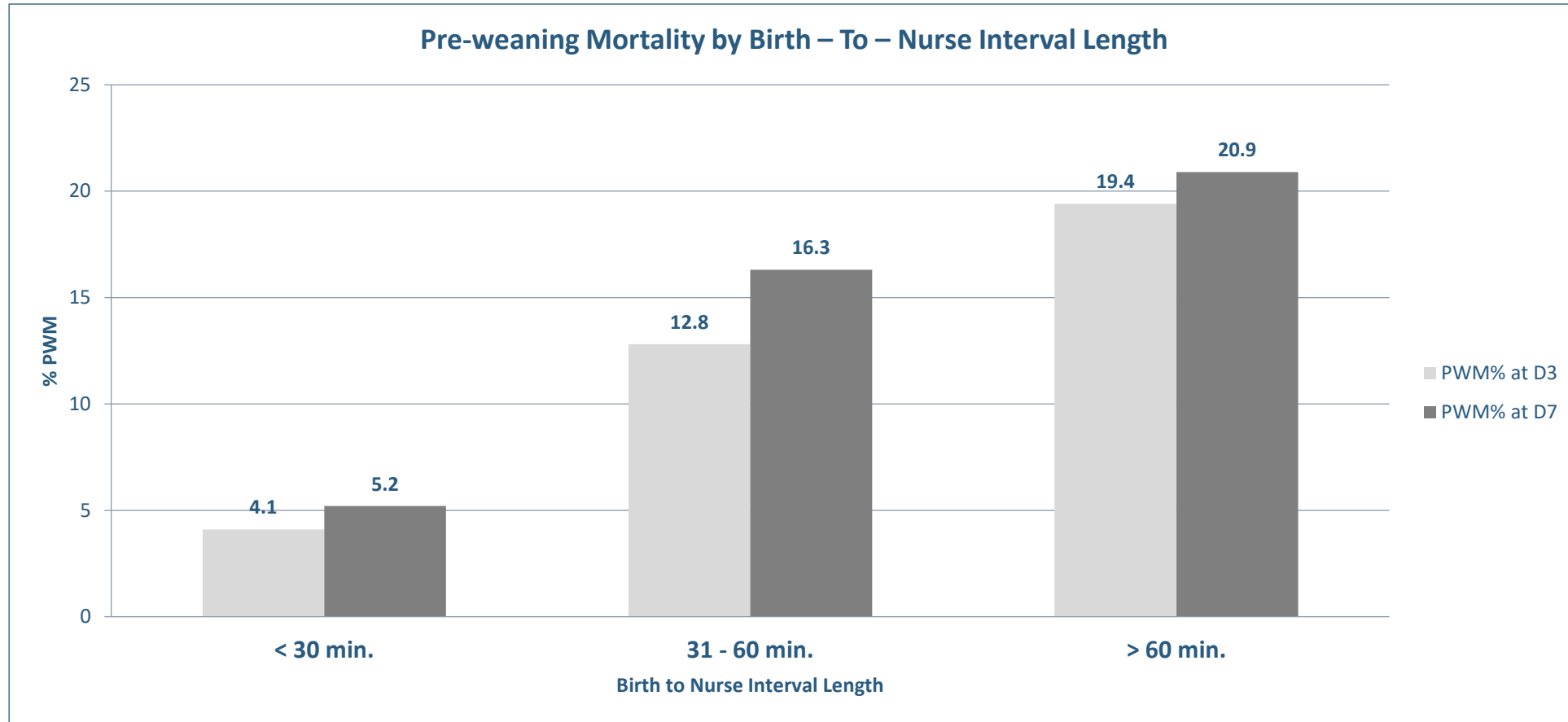
Impact on Mortality



- A runt needs >250 cc on day 1.

Colostrum Intake

Impact on Mortality



Day One Pig Care

Targeting the right piglets

- Not every pig responded the same way.
- Pigs < 0.9 kg and > 1.4 kg: small differences in PWM.
- Pigs between 0.9 to 1.4 kg, big difference: 35% of PWM reduction in this group (P<0.001)

1,000 piglets born according to the farm protocols (not help) vs 1,000 pigs that were born from monitored farrowing and were dried off and udder trained.



Monitoring and Assisting Sows

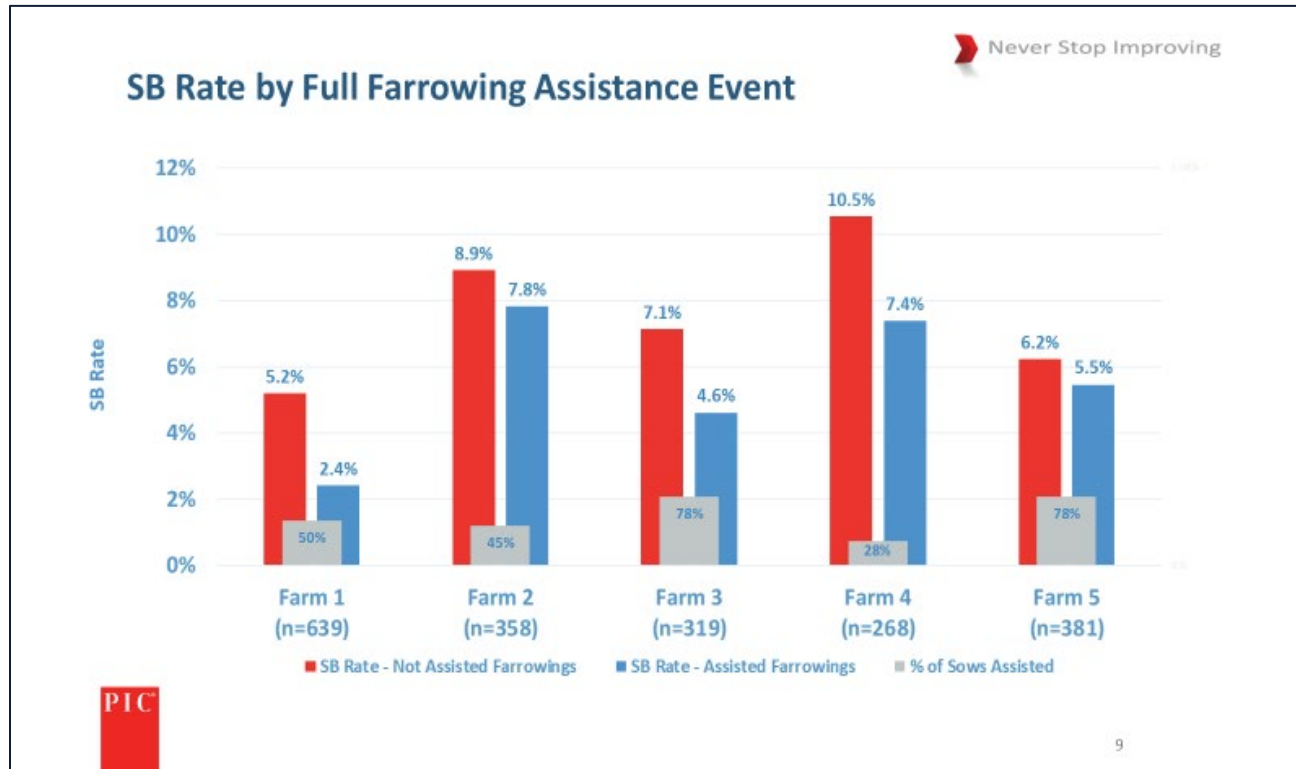
Part of Day One and SB Management

- What is it? Being present every **15 to 20 minutes** while the sow is farrowing.
- The goal? Being able to attend properly and in timely manner, **>90% of litters** when we are in the farm.
- The challenge is how to do it consistently.
 - Labor distribution - Not all days are the same.
 - Labor - Not all people qualify for that job.
 - Monitoring, chilling prevention and quick access to colostrum.
- Alleyways free, cleaning crates, all obstetric materials ready.
- Record everything; BA, SB, Mm, Deaths, Oxy, Assist.



Monitoring and Assisting Sows

Strong Impact in Survivability and Farm Performance



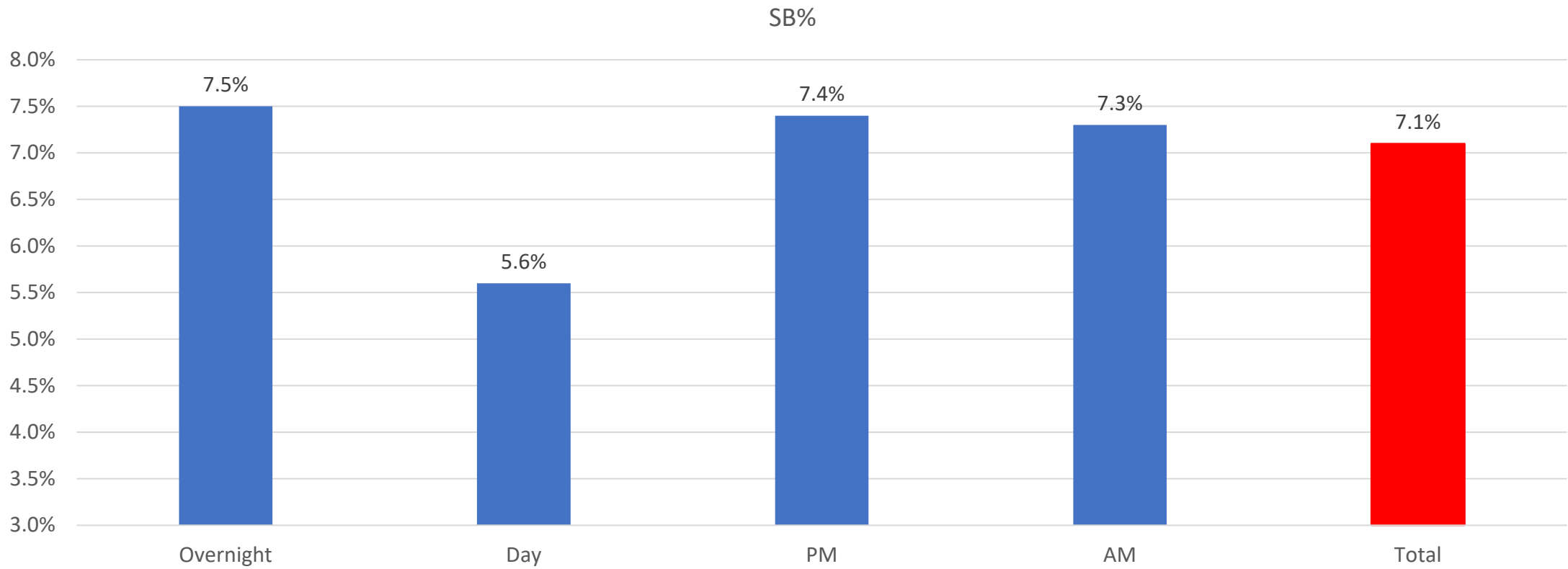
Labor Intensity	Target	Intervention Level
24/7 Farrowing assistance	< 2.5%	> 4%
Daytime Farrowing Assistance	< 4.5%	> 6%
No Farrowing Assistance	< 6%	> 7.5%

Assisting sows, improve SB rate

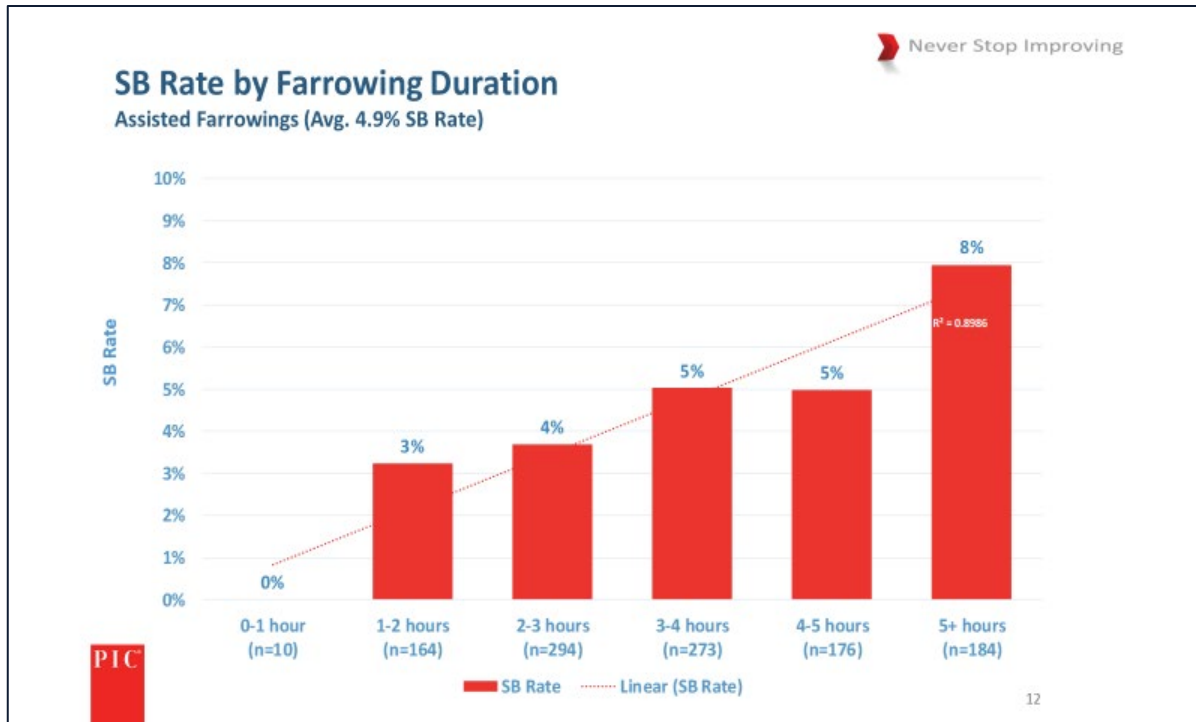


Decoding Farrowing Process

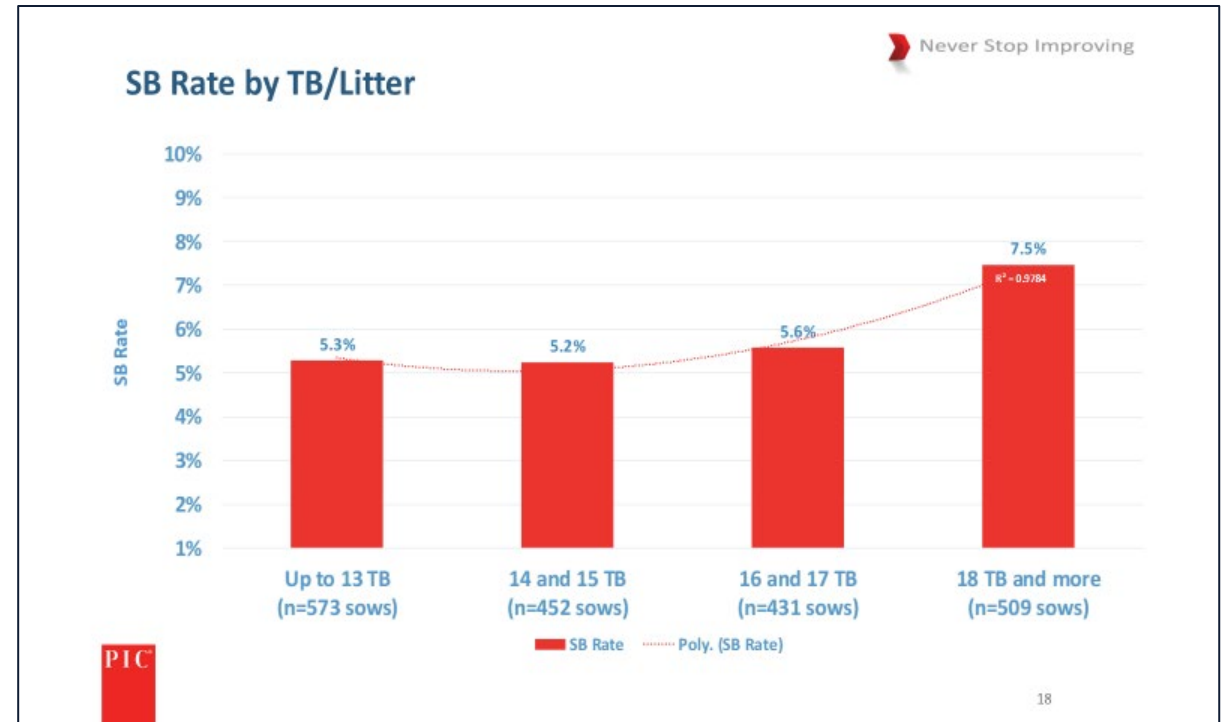
Stillbirth rate by farrowing occurrence



SB Rate by Farrowing Duration



SB rate increase after 3 hrs. of farrowing

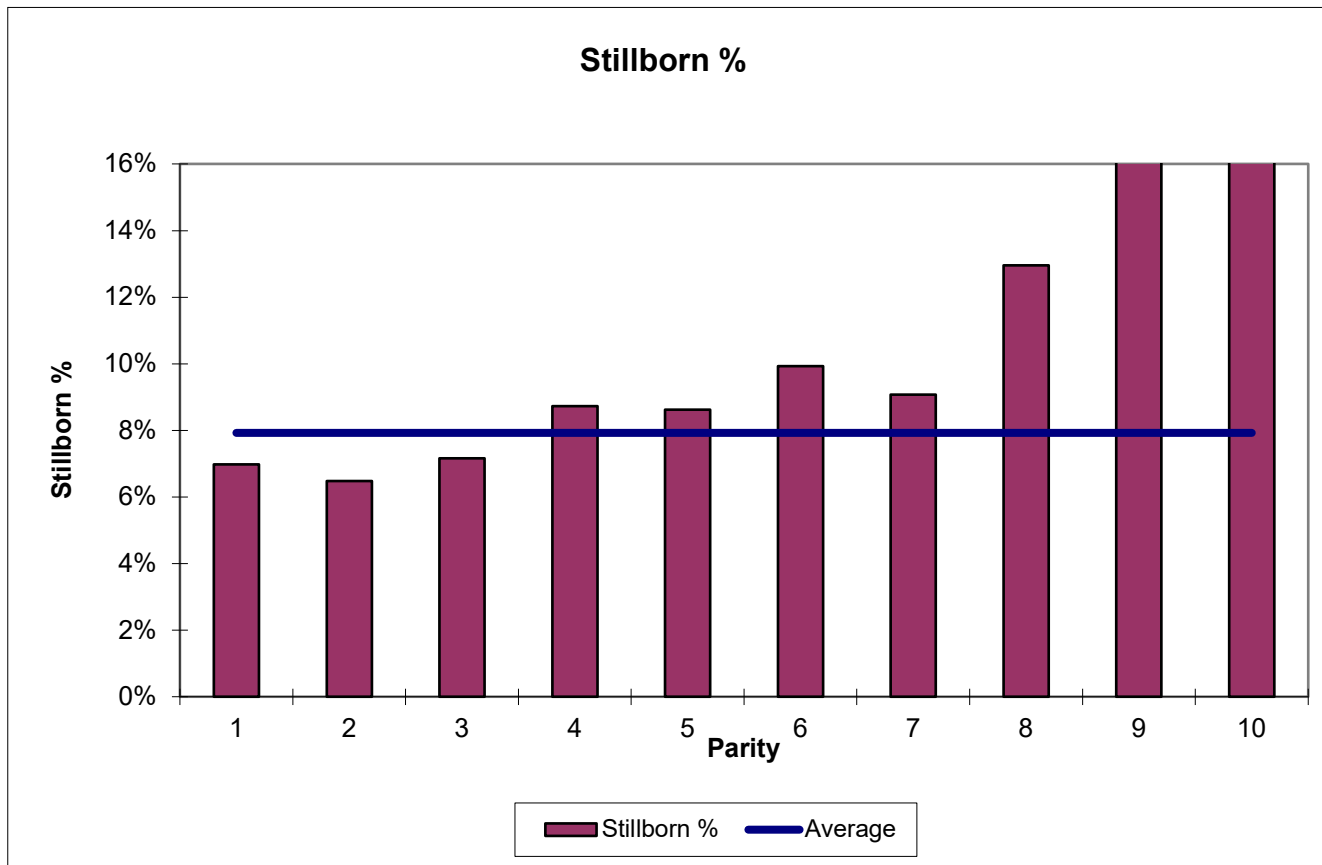


SB rate increase in higher litter size



- Can we speedup the farrowing process?
- When we need to monitoring closer?

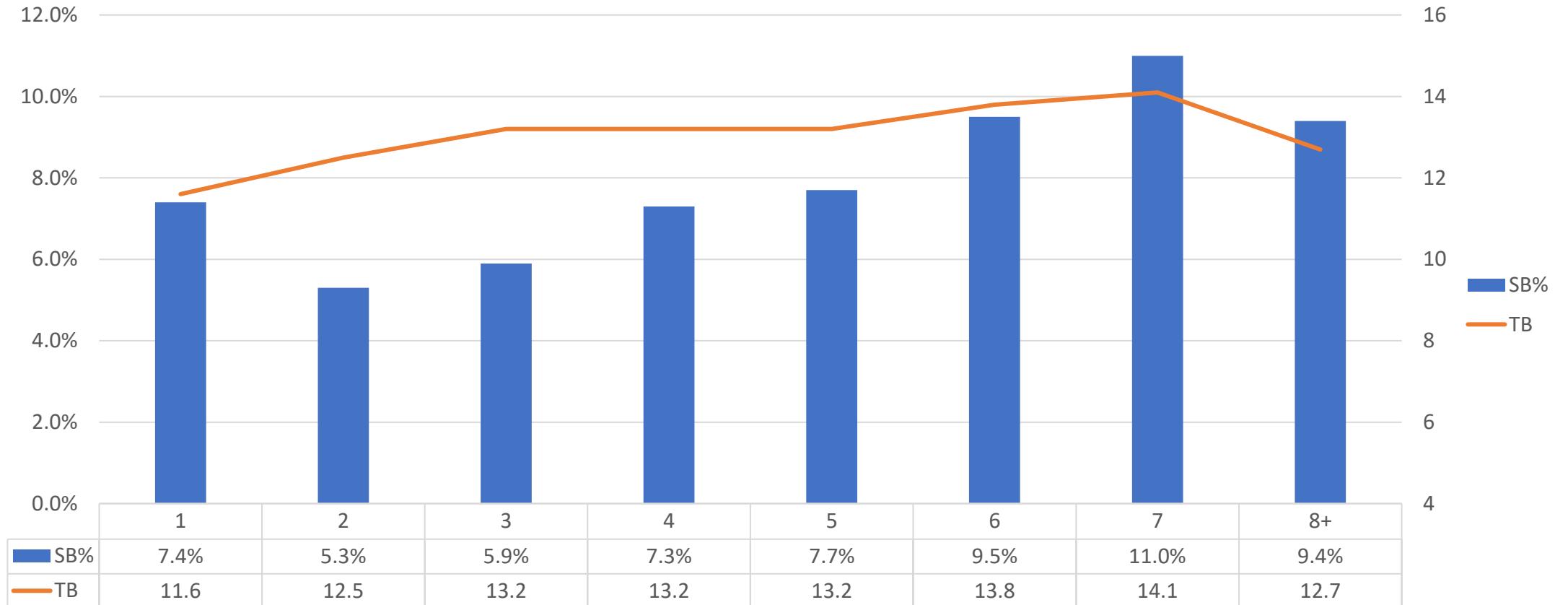
SB Rate by parity



- High SB rate = P4+
- Higher SB rate = P6+
- Dramatically higher = P8+

- Older sows
 - Higher litter size
 - Longer farrowing duration
 - Higher SB (and PWM...)
 - Wean less pigs

SB Rate by parity



Wrapping Up Farrowing Management

Our 2nd Strategy

- Our intervention is crucial. Don't forget the big five.
- Priorities; first 2 hrs. of the day is for urgent chores, then, the important ones.
- Temperature on the mats are guidelines, not a rule. Good for room preparation.
- Colostrum, Colostrum, Colostrum...
- Monitoring sows and decrease SB, similar economic impact than reduce PWM.
- Not all the sows are equal, not all required the same attention. We can work smarter, rather than harder.

Lactation Management

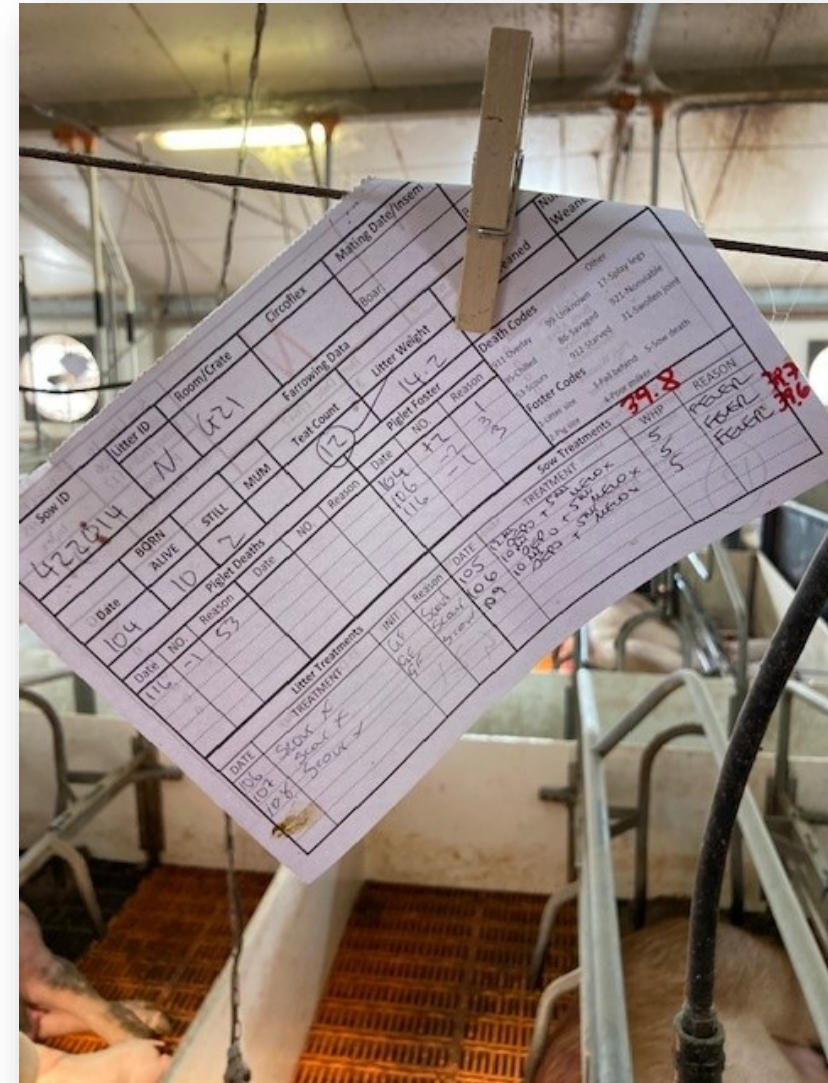
Still 3+ weeks to go

- Daily inspection and care.
- Sow health status after farrowing; Mastitis, hard udders, MMA (farrowing fever),
Off-feed sows, not milk letdown.
- Safety area (creep area) management.
- Fall behind management.
- Lactation feed intake and water availability.
- Labor allocation and consistency – beyond any good protocol.

Sow Care

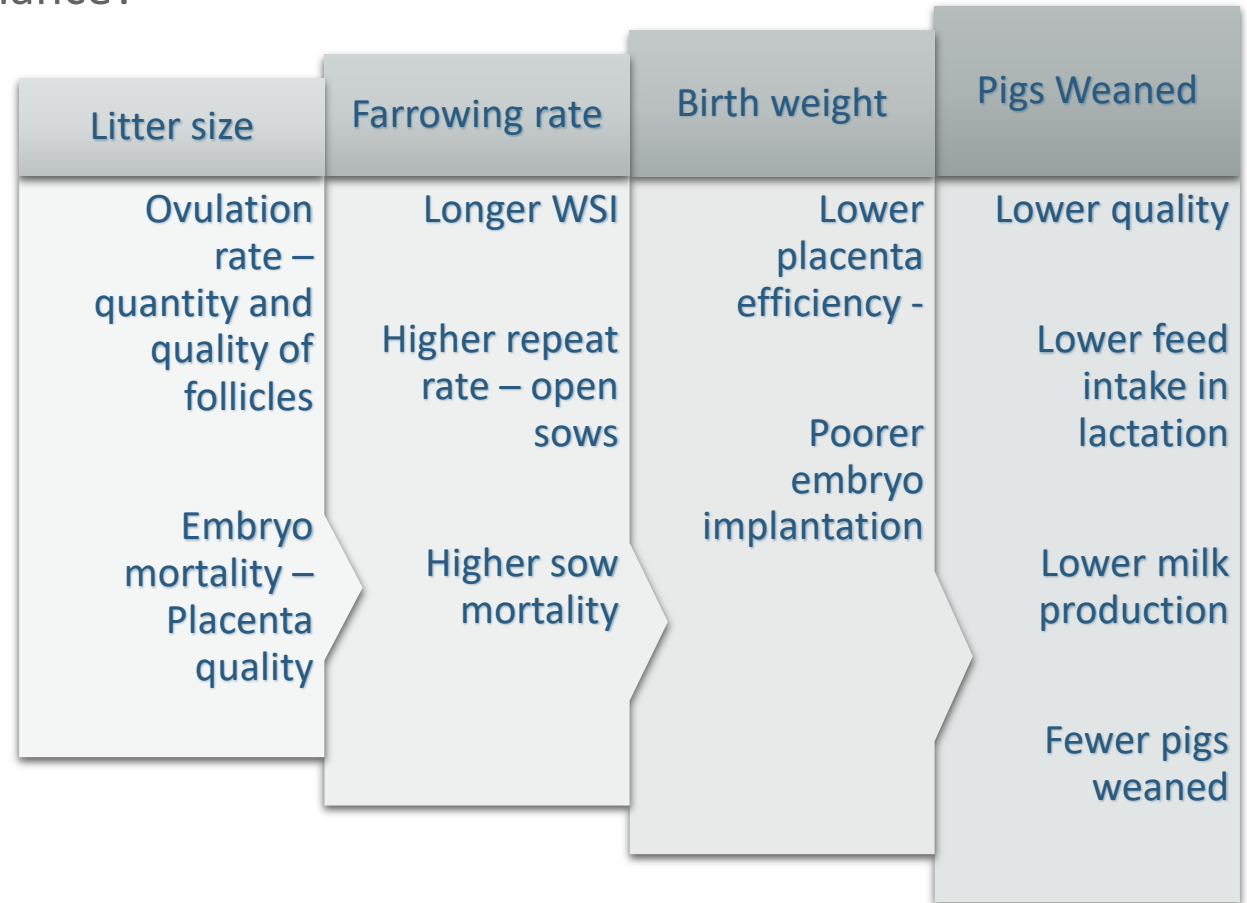
The must do actions

- Daily inspection - sow care is everyone responsibility, at all times.
- Check rectal body temperature the day after farrow - It takes <20 seconds.
>39.5 = fever = treatment.
- Write it down on the sow card.
 - Temp 24 hours after farrowing.
 - Off-feed sows.
 - Mastitis.
 - Scours.



Feeding Management

How Lactation feed intake impacts performance?



Water Intake

The must do actions

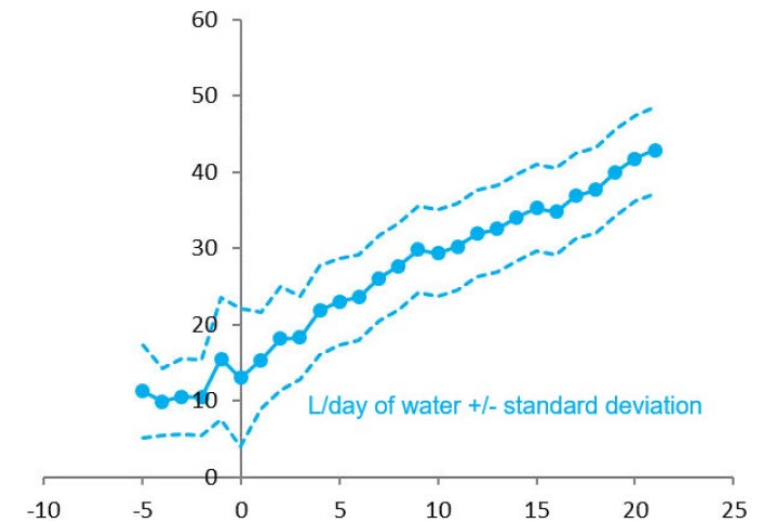
- **A must** - Check water nipples and replace/adjust the ones that don't work properly before loading the room.
- **Flow** - If we cannot fill-up a cup of a spray can in **5 seconds**, we may have a problem. (1.5 to 2.0 ltr/min)
- **Nipples** in the right orientation and high.
- Water intake, highly correlated with feed intake, milk production, ADG and also lower PWM.



Water Intake

The must do actions

- Make sure all sows know how/where to drink:
 - Toppings on water nipples (e.g. peanut butter...)
 - Piece of paper
 - Teach them
- Stand them up every day, twice a day to stimulate their voluntary feed/water intake
- Clean feeders daily and monitor intake
- Check for constipation – 10% max.



Labor Allocation

- Not every day is the same, neither every hour.
- Unexpected things happens almost every day.
- Managers and head sections, are key pieces on setting this right.
 - Organization.
 - Postponing urgent chores, will jeopardize outcome.
 - PWM control strategies, won't go far without the full commitment of all.
 - No protocol will work, without the commitment of the leading team.

Prioritize resources and necessary labor workforce, promoting good management practices, simple but solid, will be a determinant of success.

Final Messages

- Decreasing pre-weaning mortality can and should be worked with day-one care measures, as an **immediate-short term impact**.
- **The combination** of farrowing room preparation, day-one care, subsequent care of the litters and sows, feeding strategies, gilts selection and culling plan, will allow a **permanent and long-term sustainable impact in piglets survivability**.
- *“If we don’t plan, we are planning to fail”* – We can plan to improve survivability.

Three Strategic Areas

Piglet throughput and cost of production



Individual Sow care:
treatments and follow

Lact
Manag

on – colostrum intake – SB

g
ent

mp – comfort

– health monitoring.

