Never Stop Improving

Production Drivers on Sow Retention

PIC Benchmarking Meeting

March 2022

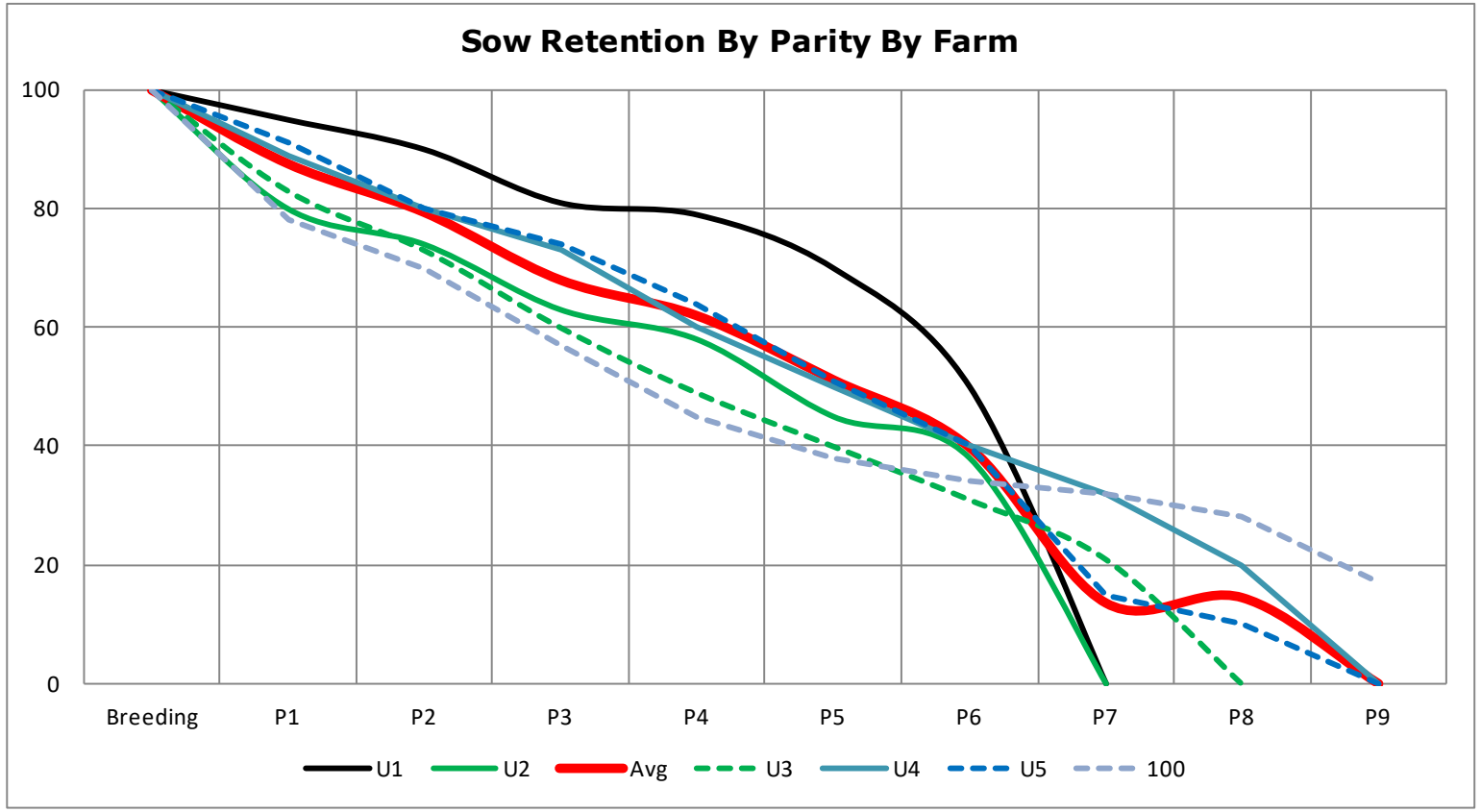
Introduction

Importance of good Sow Retention

- Sow Removal (culling and mortality), direct effect on sow Replacement rate and Retention rate. ***"The RRR love triangle"***
- Linked to production efficiency; FR, LSY, PSY, breeding and farrowing targets, pigs flow and throughput.
- Low sow retention (high removal), increases economics loses.
- High sow removal impact on staff, managers and owner's frustrations.
- High variation in the Industry and organizations.

Introduction

Sow Retention Variation



81% versus **58%** retention to P3, within the same organization.

Production Drivers on Sow Retention

- Gilt Selection
- Gilt Preparation and Management
- Herd Body Condition
- Husbandry Practices and Individual Sow Care
- Parity Structure
- Culling Protocols

Introduction

Targets for commercial farms

Indicator	Target	Intervention Level
Annual sow mortality	5%	≥8%
Annual culling rate	45%	≥55%
Average age at removal (parities)	5.0	≤3.5
Sow Lifetime Performance (pigs weaned lifetime)	60	≤42
Retention rate by parity 3	75%	≤65%

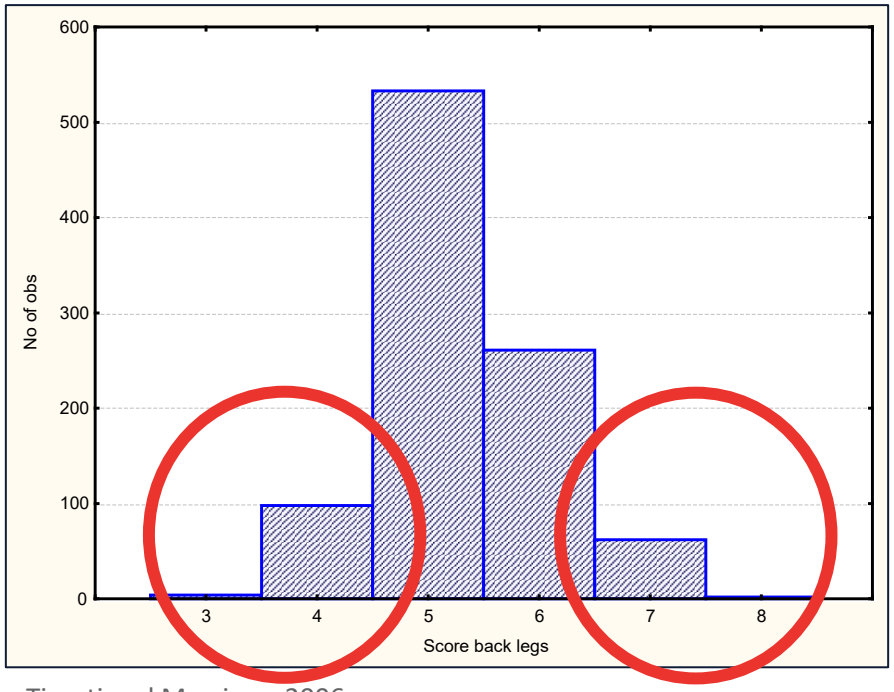
Expected performance is between the target and the intervention level.

Gilt Selection

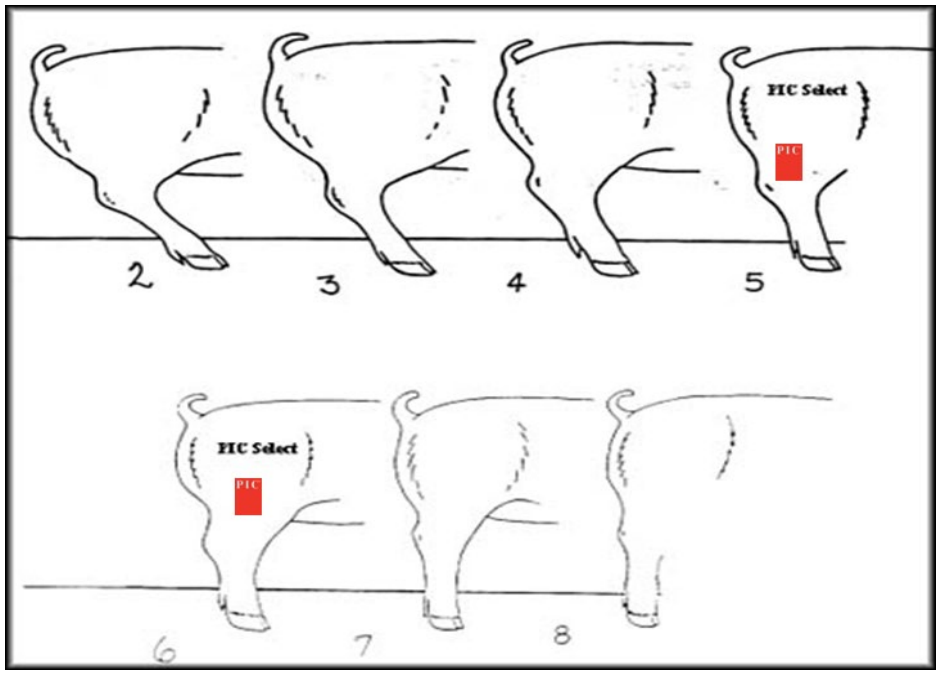
Gilt Selection

Phenotypic selection; legs, feet quality, hoof integrity and body structure.

- 20% of gilts could be found with unwanted leg scored (2, 3, 7, 8)



Tiranti and Morrison, 2006.



Gilt Selection

Good front and rear leg structure are essential to support the weight over the lifetime and to walk from one section to the next.

Acceptable Front Legs

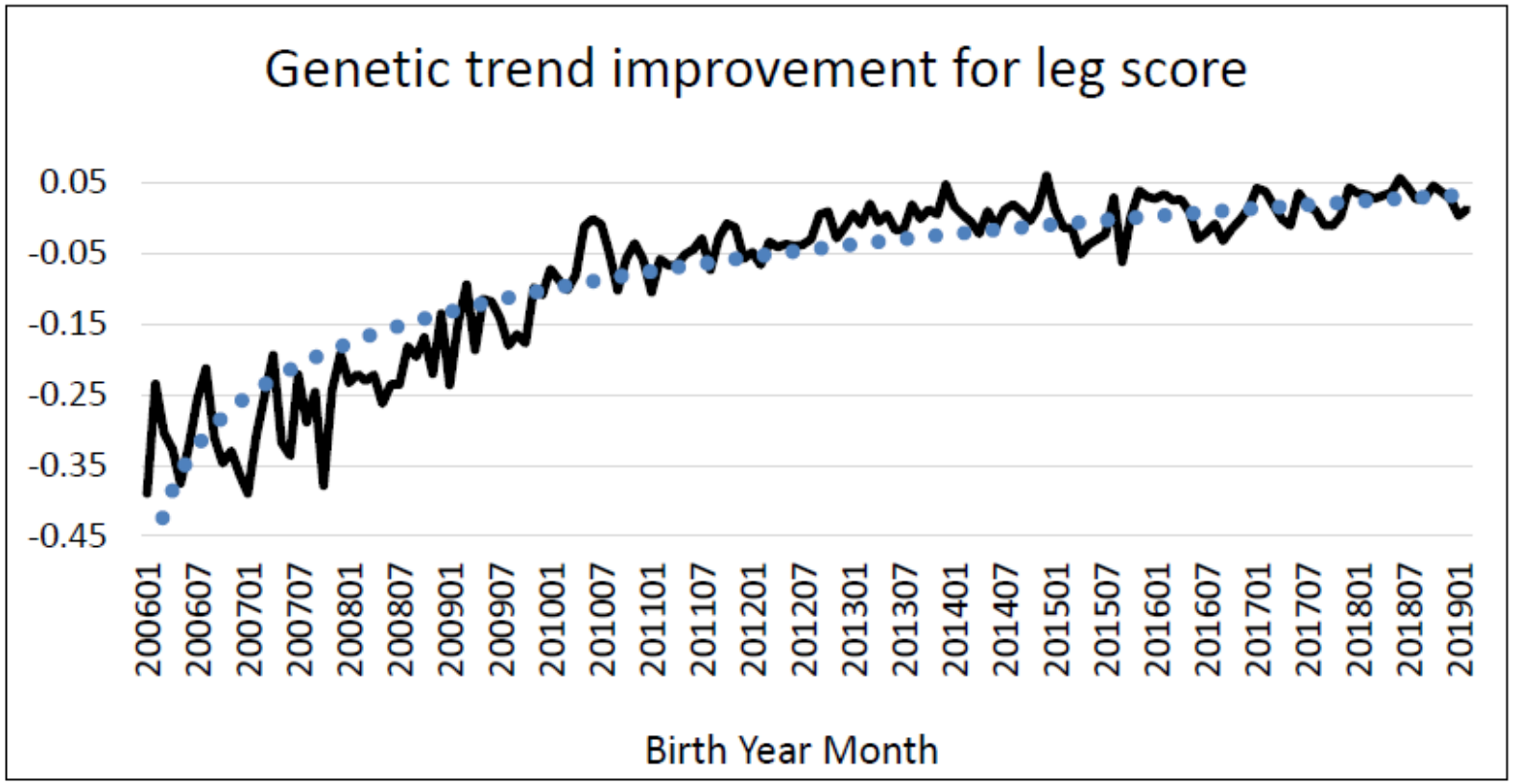
Acceptable Rear Legs

Gilt Selection

Do Not Select

Gilt Selection

PIC select for good quality legs



Source: PIC Global Product Development, unpublished

Gilt Selection

2/3 of the reported sow deaths up to P2 are related to lameness or leg problems

Main drivers of poor gilt selection detected on the field:

- Lack of gilt availability to perform selection
- Lack of staff/trained staff to perform selection
- Short term pressure to meet breeding target
- Excess of selected gilts to cover inefficiencies on farm
- System expansion without prior solid planning

Gilt Preparation and Management

Gilt Preparation and Management

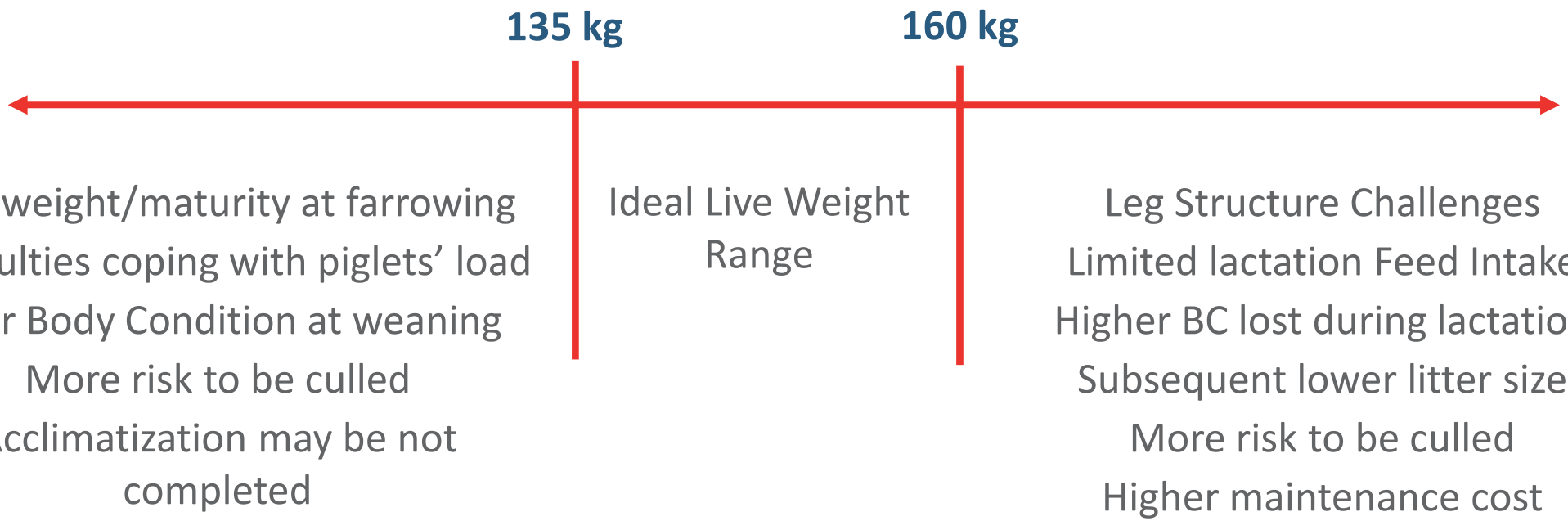
First Services Key Indicators for Eligibility

- **>90% of gilts bred within 135 to 160 kg live on First Service.**
- At the 2nd or 3rd HNS.
- Within 30 to 33 weeks of age.
- 4 weeks after last veterinary intervention – Vaccines / feedback / acclimation.
- Age at PUBERTY; <27 weeks of age.

- Do you know how much your gilts did weight last week?
- The average weight of last month?
- Variation on weight?

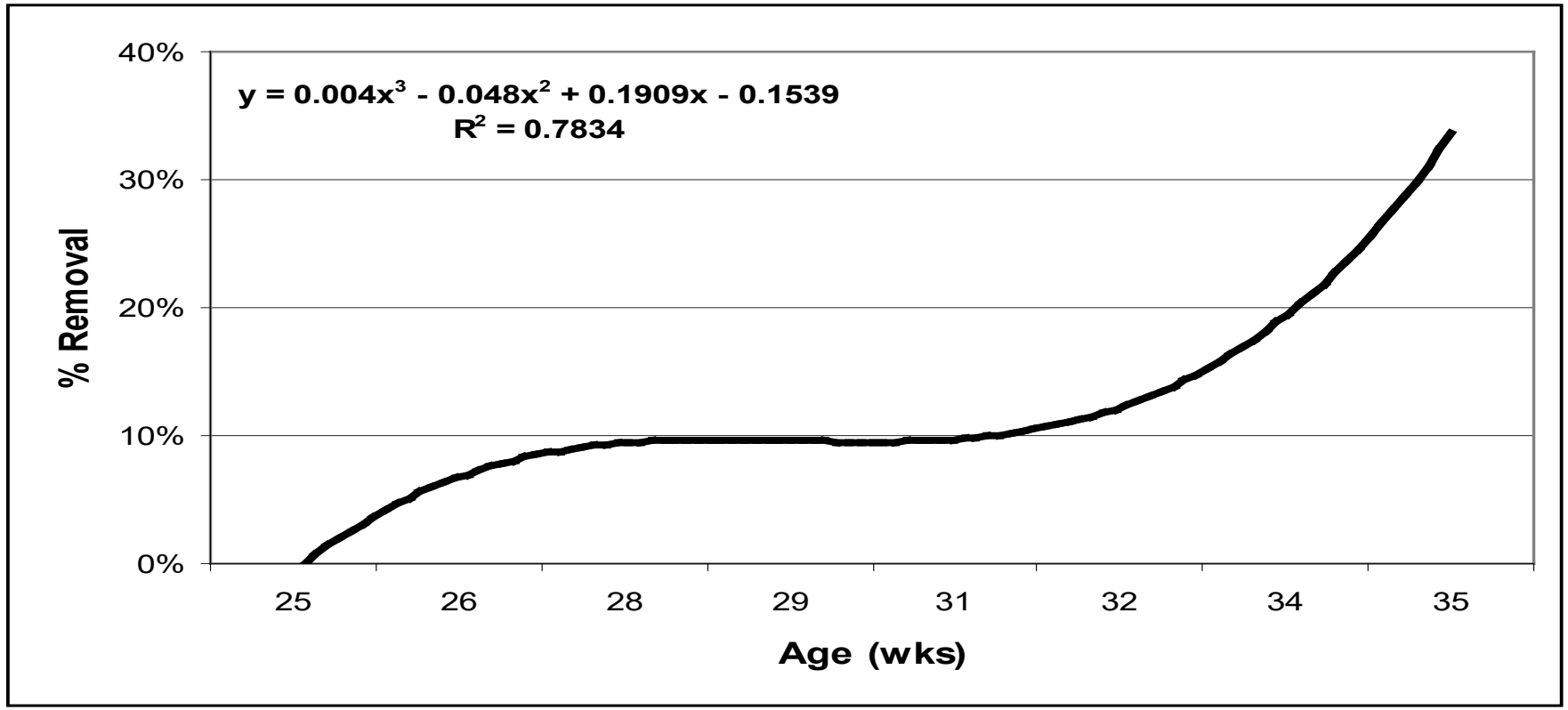
Gilt Preparation and Management

First Services Key Indicators for Eligibility



Gilt Preparation and Management

Removal rate is affected by the age/weight at 1st service



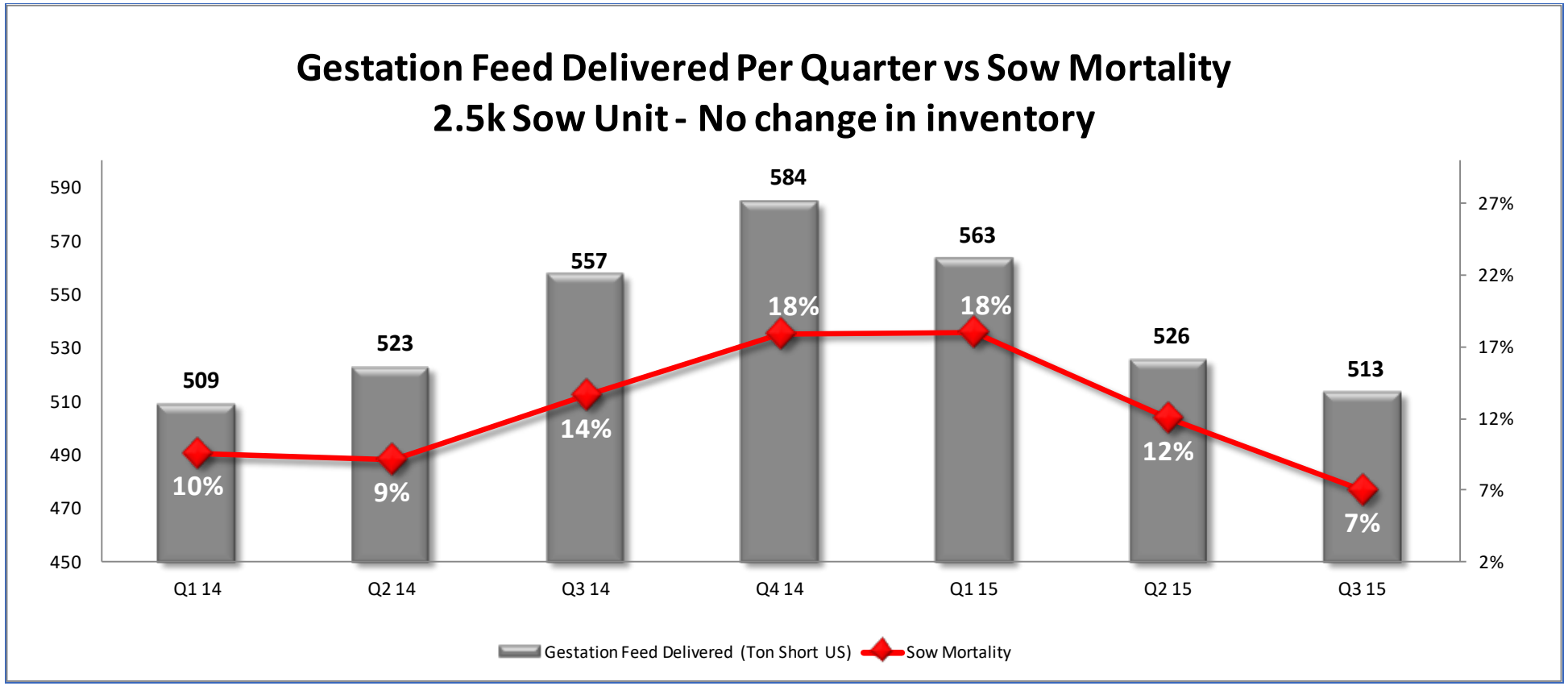
Removal rate tend to be higher after 34-35 weeks of age at 1st service.

Source: Pinilla & Leczniescki (2010), Manitoba Swine Seminar.

Herd Body Condition

Herd Body Condition

Over conditioned herd poses bigger challenges for sows



Herd Body Condition

Targets

None THIN at farrowing

As many IDEAL as possible

85% to 90% at farrowing

None FAT at weaning

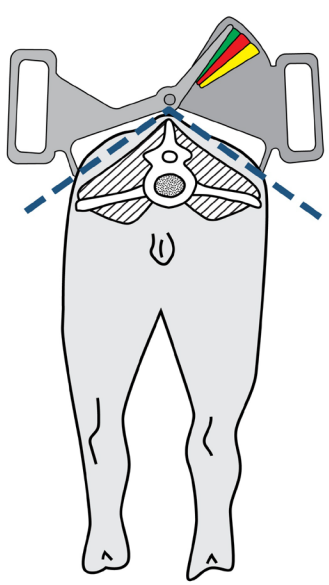
Herd Body Condition

BC and feed usage management

- Start with the right gilts – At least 90% of them within 135-160 kg.
- Annual sow feed usage – 1000 kg/feed per sow per year mark.
    - Lactation: 380 kg / Weaning-Mating: 70 kg / Gestation: 550 kg
- Full feeding sows from farrowing to breeding
- Avoid bump feeding in late gestation if sows are in Ideal condition.
- Assess body condition at breeding, 30, 60 and 90d of gestation.
- If that is hard, at least at weaning/breeding, 30 days and farrowing.
- Don’t try to adjust BC of the herd during early and late gestation – below requirement risk.
- Sow caliper is a useful and practical complementary tool.

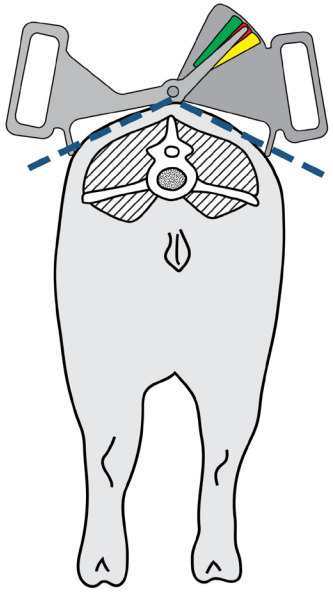
Herd Body Condition

- Developed by Knauer and Baitinger (2015) – North Carolina State University.
- It quantifies the angularity of a top-line of the sow.
- Based on the findings by Edmonson et al. (1989) that proposed that as an animal's back loses fat and muscle it becomes more angular.



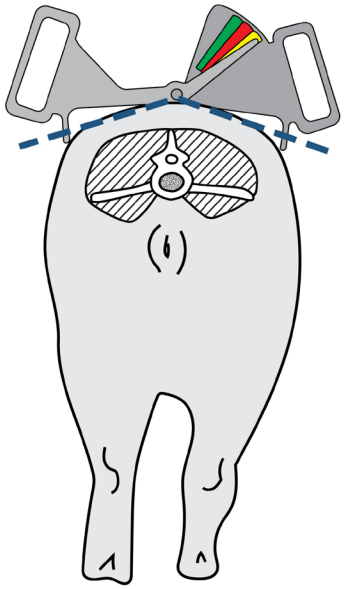
THIN

None at farrowing



IDEAL

As many as possible



FAT

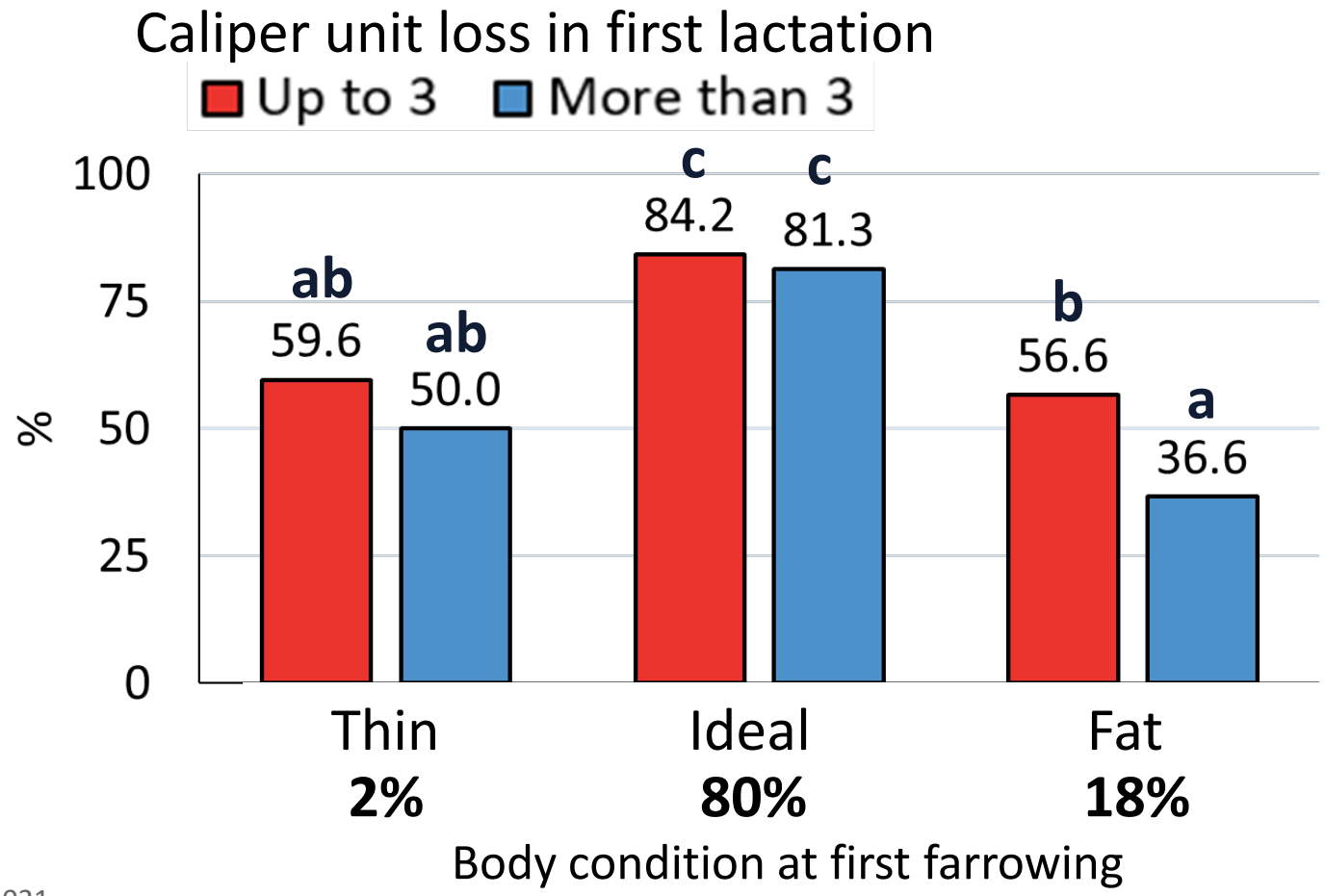
None at weaning

It replaces the subjective Visual Body Condition Scoring

Adapted from Huerta et al., 2021

Herd Body Condition

Association between caliper measurements and retention up to 3rd parity



Huerta et al., 2021
Data from 4500 sows measured from parity 1 to 6
In collaboration with Technical Services of UVESA Spain

Husbandry Practices and Individual Sow Care

Husbandry and Sow Care

Directly related with staff

- Sow mortality is related to animal husbandry, and animal husbandry depends on people's experience with livestock.
- Common to see lack of individual sow care care in start-ups farms and understaffed farms, and/or inexperienced people.
- Negative impact may take months to years to overcome.

Husbandry and Sow Care

Start from the basic and keep it simple

- Daily check of water and feed availability; every pen, every crate.
- Walk the pens. From the alleyway is not good enough.
- Assess the environment; ventilation, temp, humidity.
- Sheds and pens; attention to floors, fences, feeders, roof.
- Preventative maintenance; ventilation fans, ESF feeders, corridors, air compressors, controllers, etc.
- Test emergency component; Curt-O-Matic, alarms, generators.
- Take actions when a problem is found.

Husbandry and Sow Care

Sow Care Sequential Steps

Daily Observation → Identification → Take note and decision → Action ICU/treatment → Follow up

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Husbandry and Sow Care

If a Sow needs attention:

- Separate from the group to a different location. Individual crate/ICU
- Secure, low stress, non-slippery floor, clean and dry.
- Consider temporary rubber mats to softener the surface.
- Off-feed sows: take temp and start a proper treatment.
- Check for risk of retained piglets.
- Treat post-farrowing fever.
- Water and feed available.
- Enrichment if dynamic grouping (hospital pens).

Husbandry and Sow Care

Husbandry and Sow Care

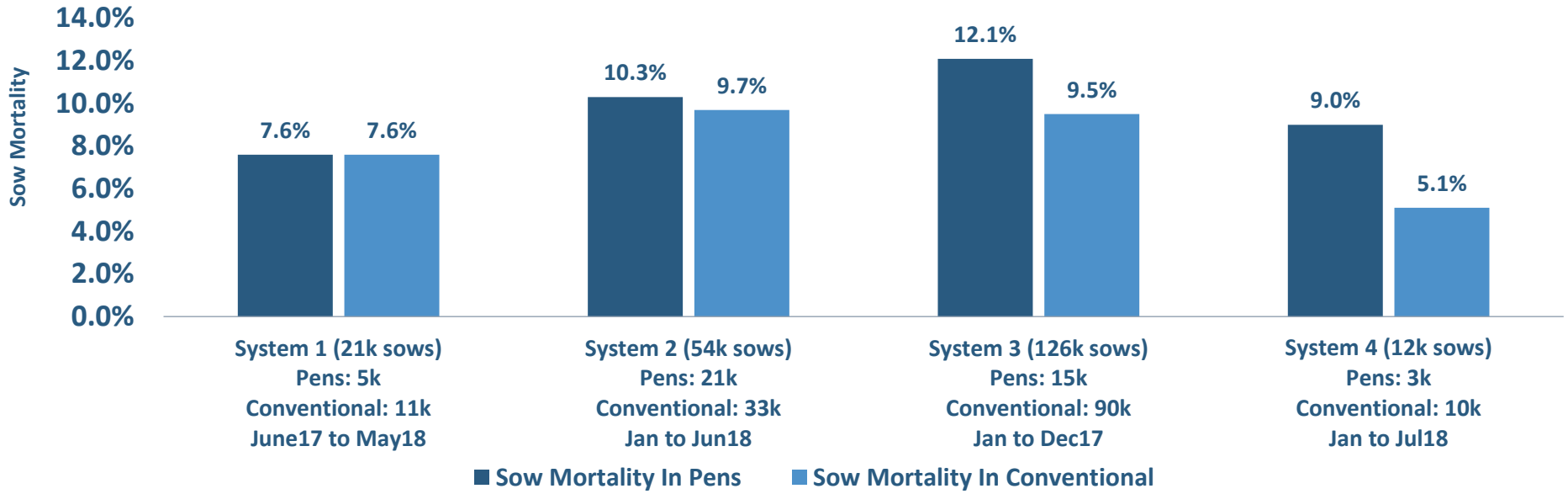
Challenges

Good husbandry talent is in short supply

- Demographic changes
- High labor turn-over
- Ever growing sows per worker ratio
- Farm layout/flow not always help
- Labour is drained by other industries
- Cultural differences and language barrier

Husbandry and Sow Care

Are good husbandry practices more relevant than different production systems?



Group housing farms, ESF in particular, may not necessarily cause higher sow mortality *per se*, but it is less forgiving.

PIC, 2018.

Husbandry and Sow Care

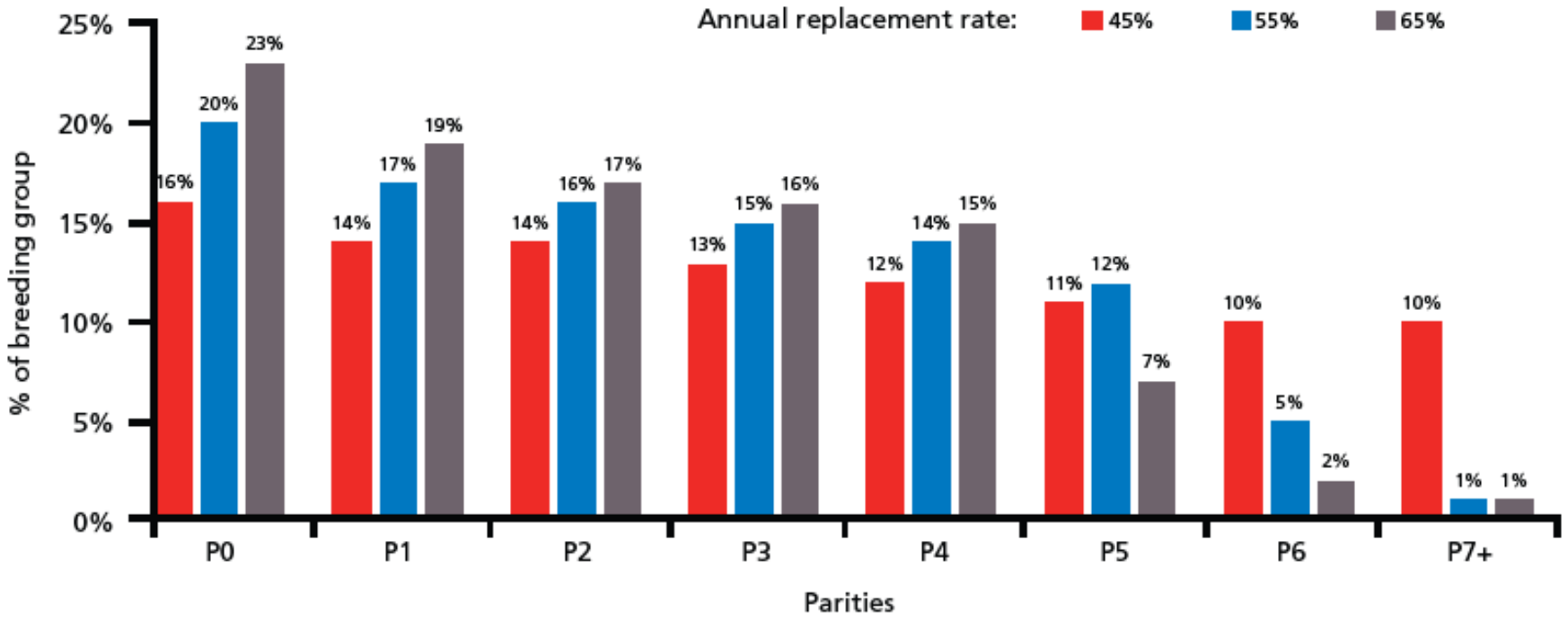
ESF System – Either you train your gilts, or you babysit them

- A gilt not well trained, will not make it too far once is grouped.
- Will face starvation, emaciation, lower litter size or reproductive lost.
- If they don't learn, they must be culled – high economic lost.
- For a 2500 sow farm, 30 gilts/week with 50% RR:
  - 1 Full worker
  - It takes 3-5 days get the gilts go through – best case scenario
  - Some gilts will need enforcement during the second week
  - Every week a new group

Parity Structure

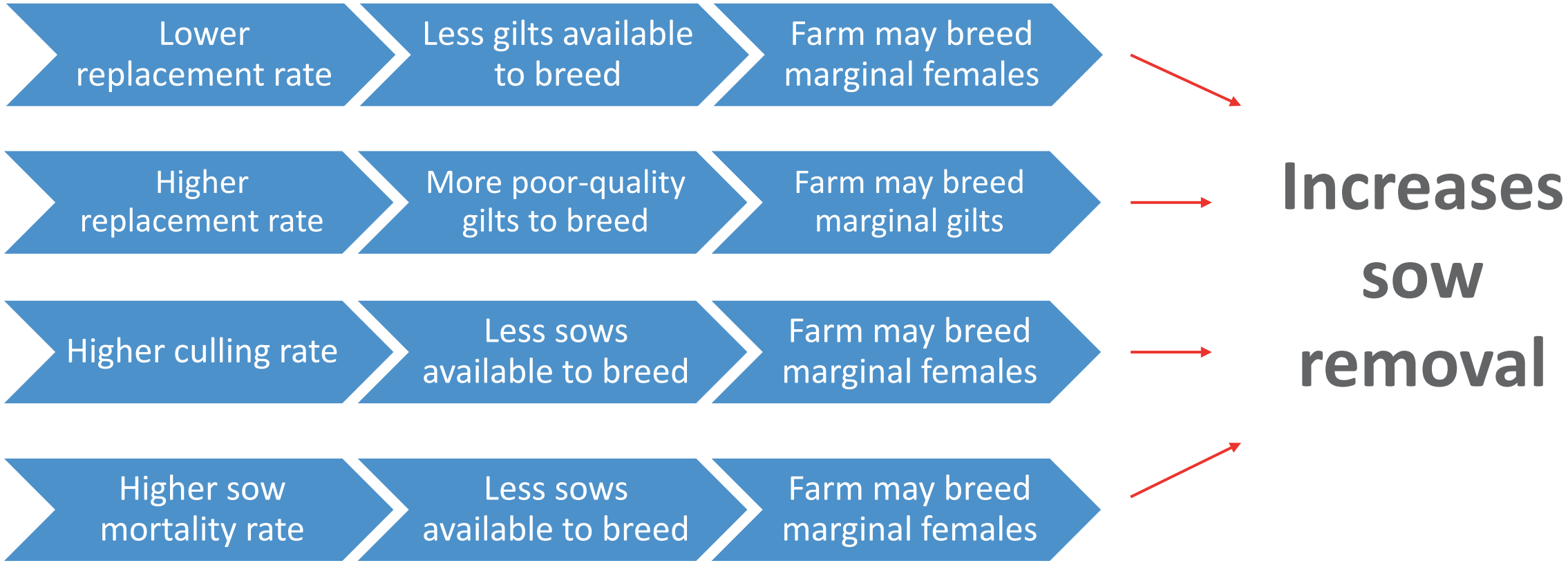
Parity Structure

- Balance of the parity structure is a combination of replacement rate, culling rate and sow mortality.
- Instability in one of the components may force the farm to breed marginal sows, increasing the chances to take sow mortality up.



Parity Structure

Unbalance Replacement Rate and effects on Removal Rate



Culling Protocols

Culling Strategy

Goals

- To reduce prevalence of marginal and low productive sows in the farm.
- Proactively avoid animal welf repercussions.
- Maintain a stabl wnile optimizing f iance.
- Cap ge value.

Stable and constant gilt pool entry to the farm

Culling Strategy

Guidelines

Problem	Type of Culling	Target (45%)
Old Sows – Parity 7 (+) Low performing sows – (<20 TB last 2 litters, < farm ave.)	Voluntary	<30 %
1x Return + Poor condition / Old 2x Return (Neg PC) Discharges (Abnormal purulent disc.) Aborts and NIPs Severe Mastitis Lame at breeding / not recovered Gilts – No heat after 6 weeks of boar exposure Sows – No heat after 4 weeks of weaning Extreme Body condition not recovered	Involuntary	Repro: <10% Sound: <5%

Take Home Messages

Take Home Messages

- A good retention rate start with good foundations
- Extreme BC sows are a risk – it's our decision
- Culling is a good tool, but don't overuse it.
- Good husbandry practices are not silver bullets, but highly relevant at every stage of production.
- Individual sow care is, in many cases, a forgotten element that need reinforcement.

Thank you very much