

# Outline

Why gilts are important?

Complexities of gilt integration

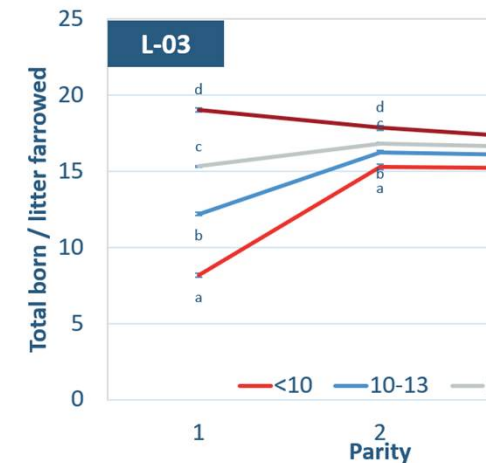
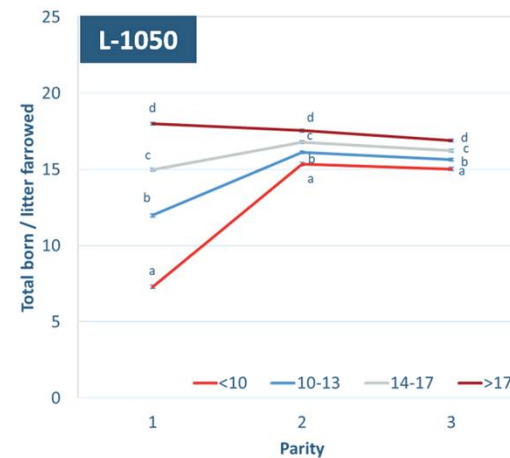
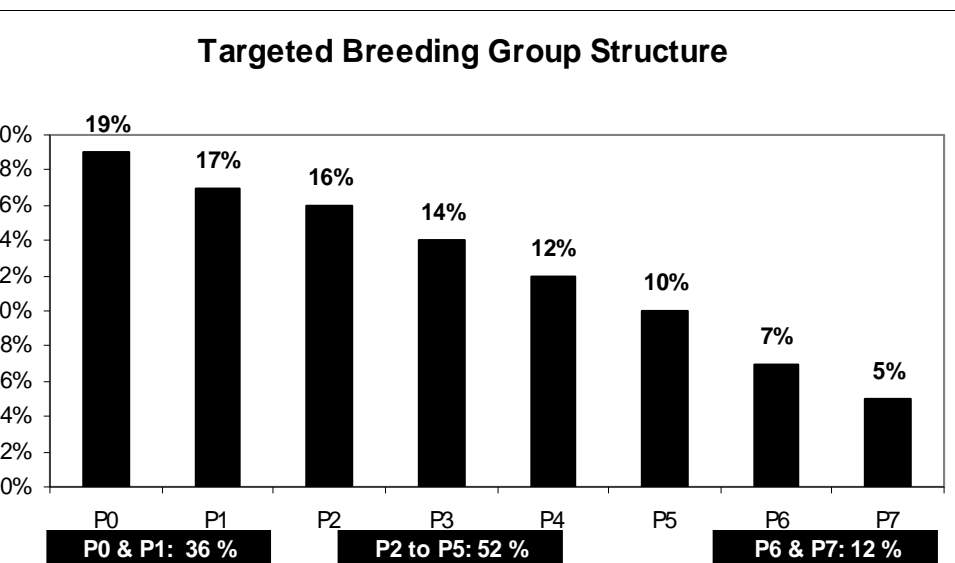
Different phases of gilt integration

Gilt eligibility requirements



# Why Gilts Are Important?

- Gilts are the foundation; they can impact overall herd performance
- Largest % of breed group
- Litter size at P1 can define lifetime litter size
- A successful gilt program will contribute to a higher sow retention



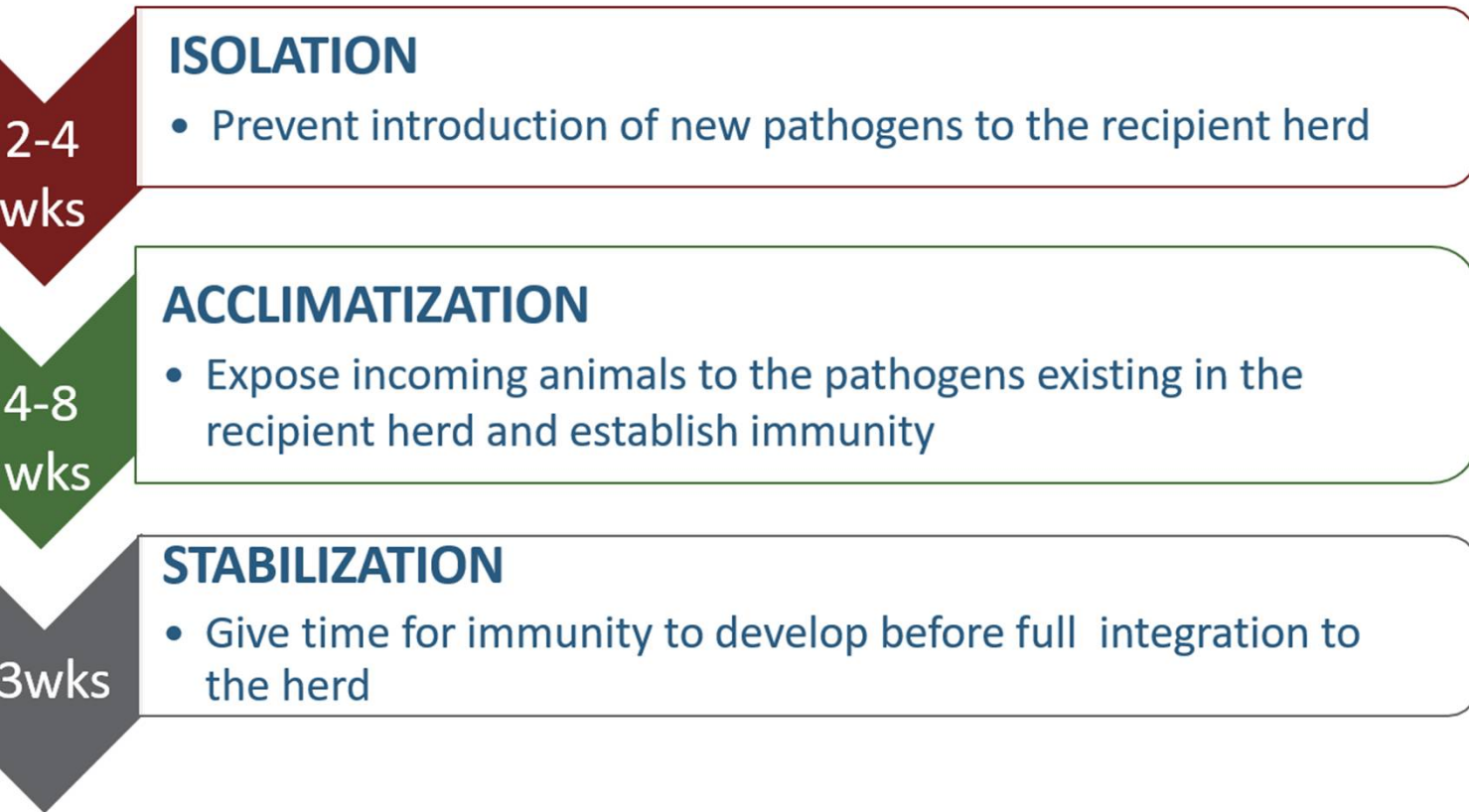
**Good gilts tend to be consistently good sows  
A big part of SLP is played in P1**

# Gilt Integration

- Gilt replacement rates can range from 20% to 60% annually
- Introduction of replacement gilts has the potential to disturb the health of recipient herd
- Careful planning and implementation of gilt integration is crucial to prevent health issues
  - Know the health status of both the source farm and the recipient herd
- Consists isolation, acclimatization, and stabilization



# Gilt Integration



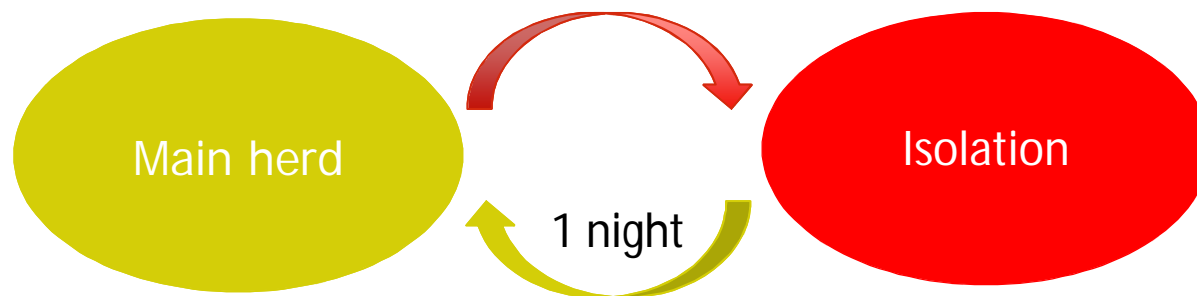
# Complex Dynamics

Process	Isolation	Acclimatization & Stabilization	
Phase	Surveillance	Exposure	Recovery
Goal	<i>Avoid disease introduction</i>	<i>Maximize immunity</i>	<i>Minimize shedding</i>
Quarantine ( <i>facility/process</i> )	+++	-	-
Site location	+++	-	-
Source health status	+++	++	+
On-site vs. off-site GDU	++	+++	++
GDU flow (AIAO vs CF)	++	+++	++
Frequency of introduction	-	+++	+++
Recipient health status	-	++	+++
Age of introduction	-	++	+++

GDU: gilt development unit  
AIAO: all in – all out  
CF: continuous flow

# Isolation

- Non-negotiable step; gilts should be isolated for 2-4 weeks
- Facility/site location - separated from the main herd ( $\geq 300\text{m}$  away)
  - Separate shower-in/out facility
  - Dedicated tools/clothes
- Vet-to-Vet communication
- All-in-All-out (AI/AO) flow
- Accommodation – capacity, temperature, ventilation, etc
- People flow



# Acclimatization

Combination of:

## **Vaccination**

- May start 1 week after arrival
- Vaccination program should be in accordance with the health status of the source and recipient herd

## **I. Natural exposure**

- a. Direct contact with live animals
- b. Feedback

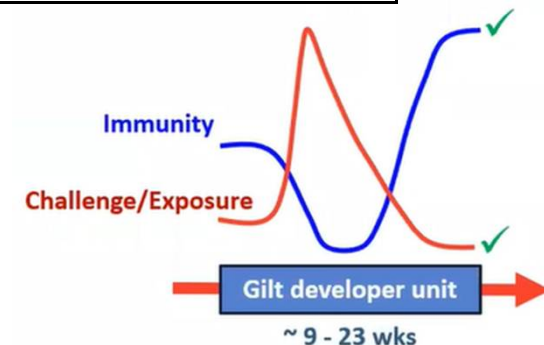


# Acclimatization

## Natural exposure

- **Direct contact with live animals**
  - Non-cycling/culled gilts, P1/P2 or nursery pigs
  - General recommendation: 1:20
  - Take in account the transmission rate for each disease

Disease	R estimate	Source
IAV	10.4	Allerson et al, 2012
PRRSV	2.6	Charpin et al, 2012
M. hyopneumoniae	1.16	Meyns et al, 2004
PCV2	5.9	Andraud et al, 2009





# Acclimatization

## Natural exposure

- **Feedback**

- Gilts should not receive feedback earlier than 20wks of age and not within 3wks prior breeding; may start 2 weeks after arrival
- Feedback materials:
  - feces from P1/P2 litters in the farrowing rooms
  - diarrhea material from crates and intestinal tracts from acute mortalities
  - fresh chopped placenta/mummies
- Material should be put into the pens 2-3x/wk for 3 weeks
- Use of fecal materials is not recommended in farms with swine dysentery



## Feed Back/Exposure Materials

Disease	Feces from Suckling Piglets	Ropes – Oral Fluid	Placenta, Sb, etc.
APP			
Bordetella /Pasteurella			
Clostridia			
<i>E. Coli</i>			
Teschovirus			
<i>G. parasuis</i>			
Mycoplasma			
Parvovirus			
PCV2			
PRRSv			
Rotavirus			
TGE PED (when present)			

# How to acclimate replacement gilts for current pathogens in recipient farms?

Exposure method	Examples
Feedback	Parvovirus, PED, TGE, Rotavirus, other diarrheal agents, PED/TGE (when present)
Seeder/Infected pigs	Mycoplasma hyopneumoniae, other Mycoplasmas, Pasteurella
Vaccination	PRRSv, PCV2, SIV, PLE, APP, HCV, PRV, Mycoplasma hyopneumoniae, etc.

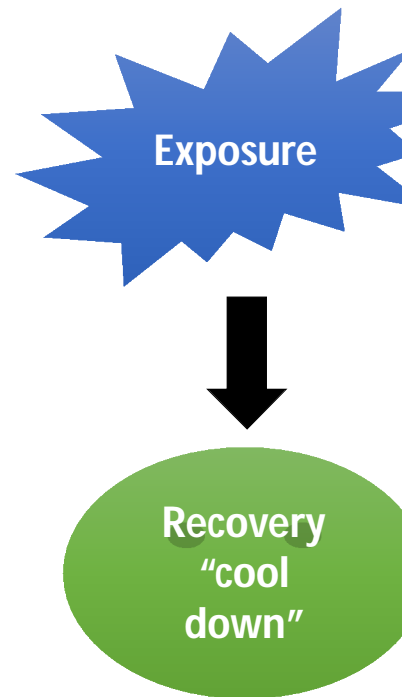


## Oral Fluid

- Cotton rope, 1.5-2.0cm diam
- 1 rope:20 animals
- 20-30 minutes

## STABILIZATION or “COOLING DOWN”

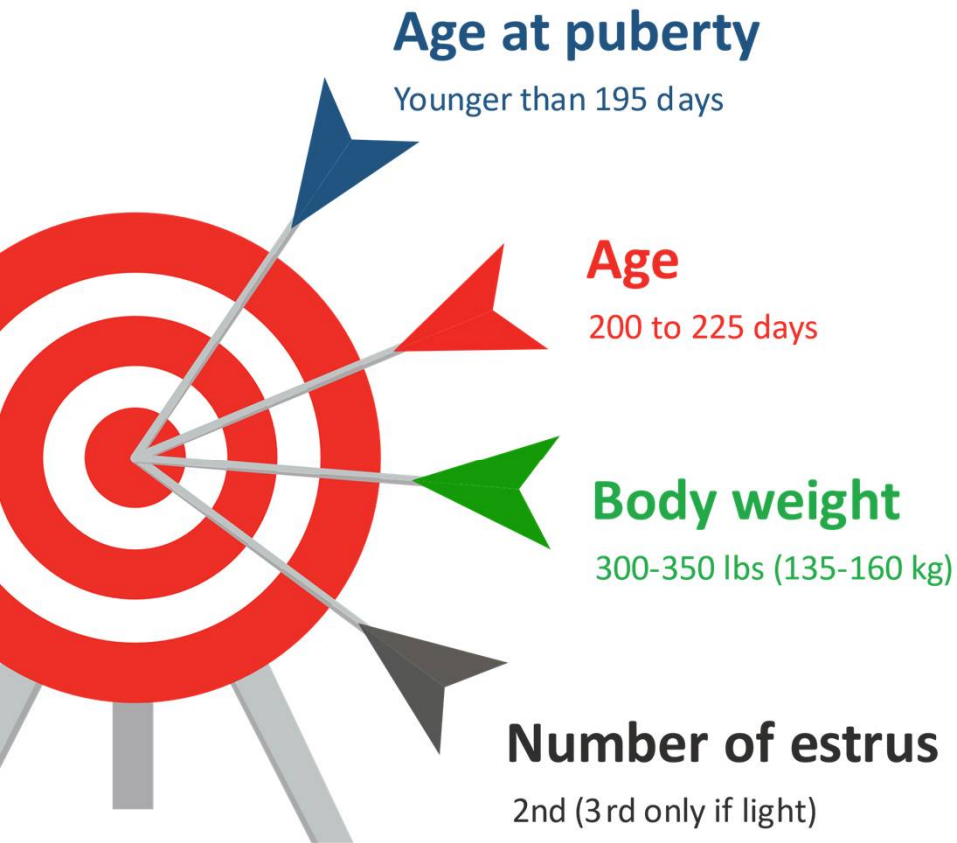
- Incoming animals should no longer be shedding pathogens when they enter the main herd
- Gilts need 3 weeks after exposure to develop immunity
- Stop feedback, harvest culls and/or young animals



### Crate Break

- Individual stalling of gilts for  $\geq 16$  days and full feed prior first breeding

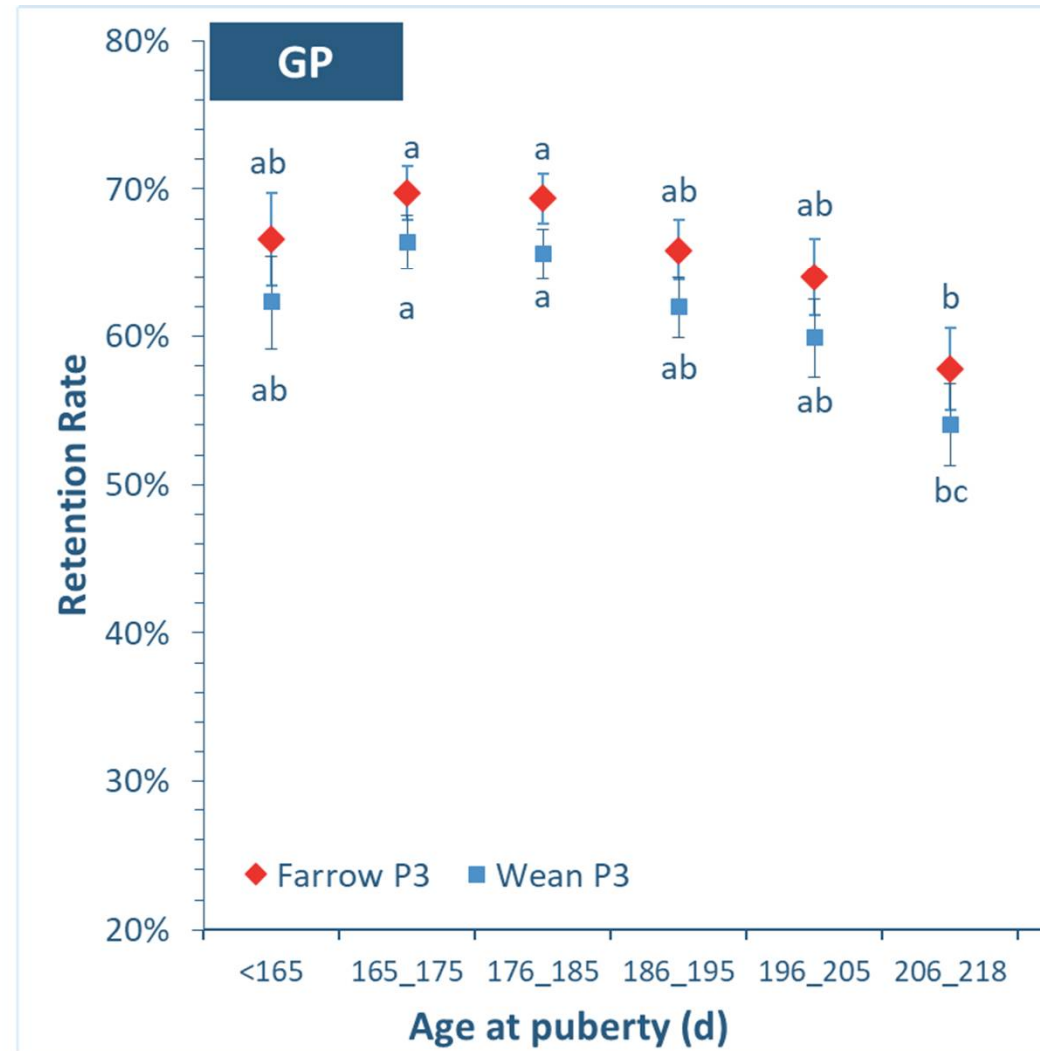
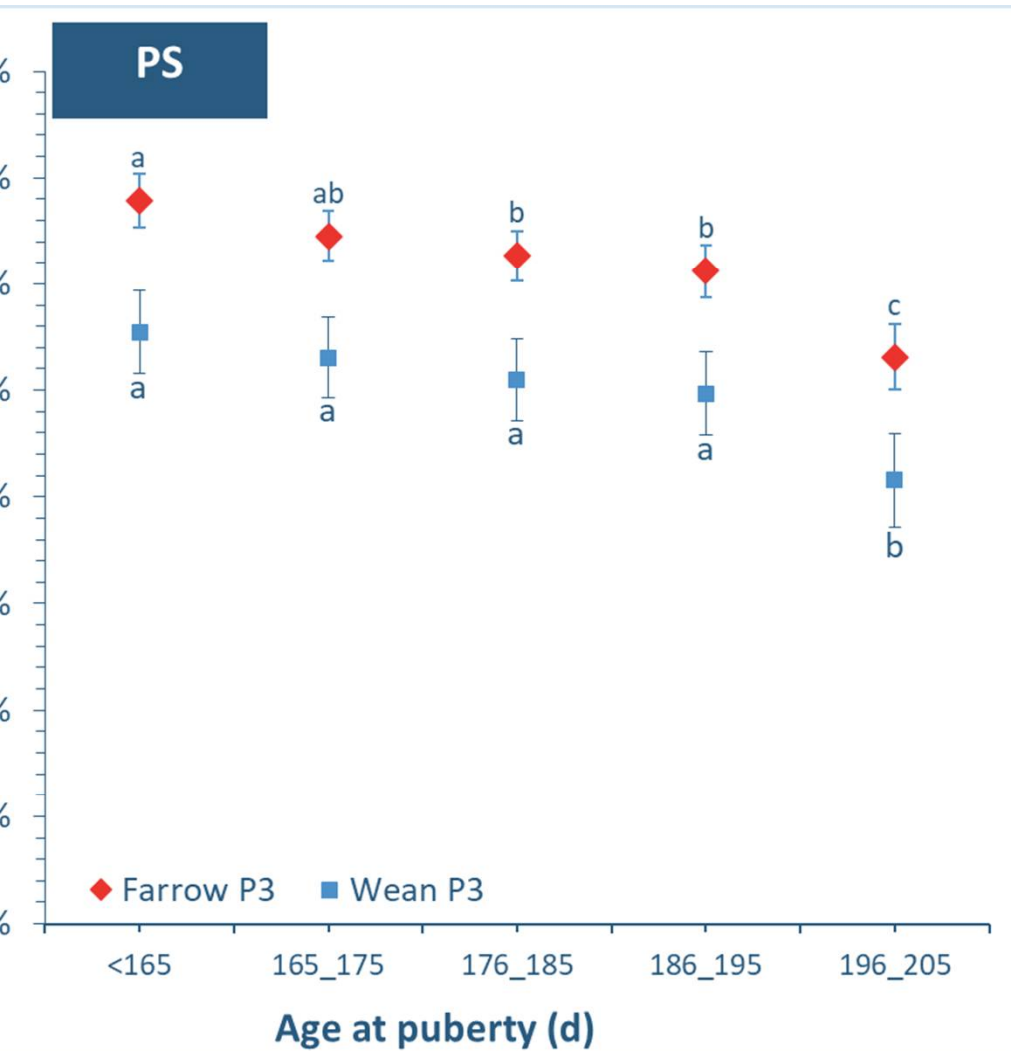
# Gilt Eligibility



1. Age at first breeding: 200 to 225 days.
2. Body weight at first breeding: 135 to 160 kg
3. # of recorded estrus at first breeding: 2
4. Age at puberty: < 195 days

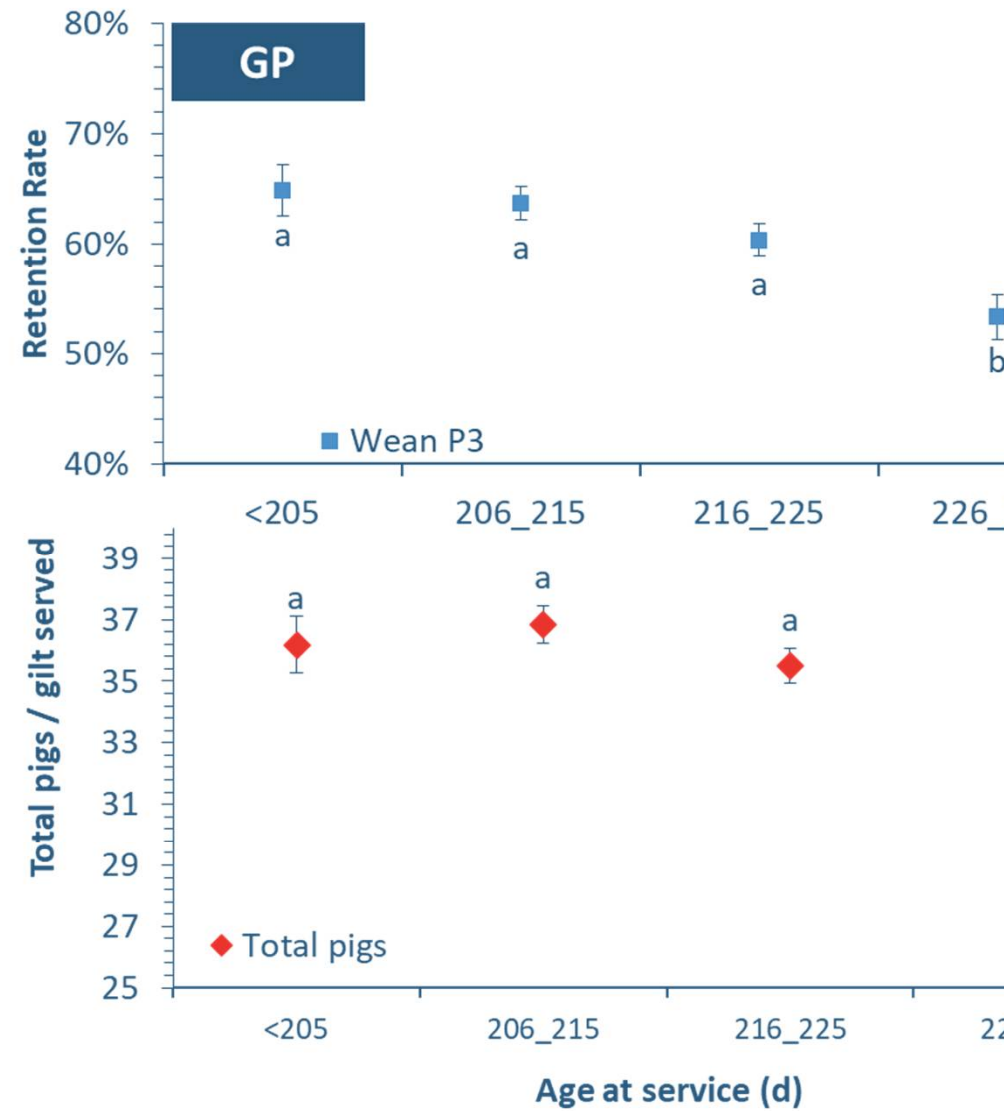
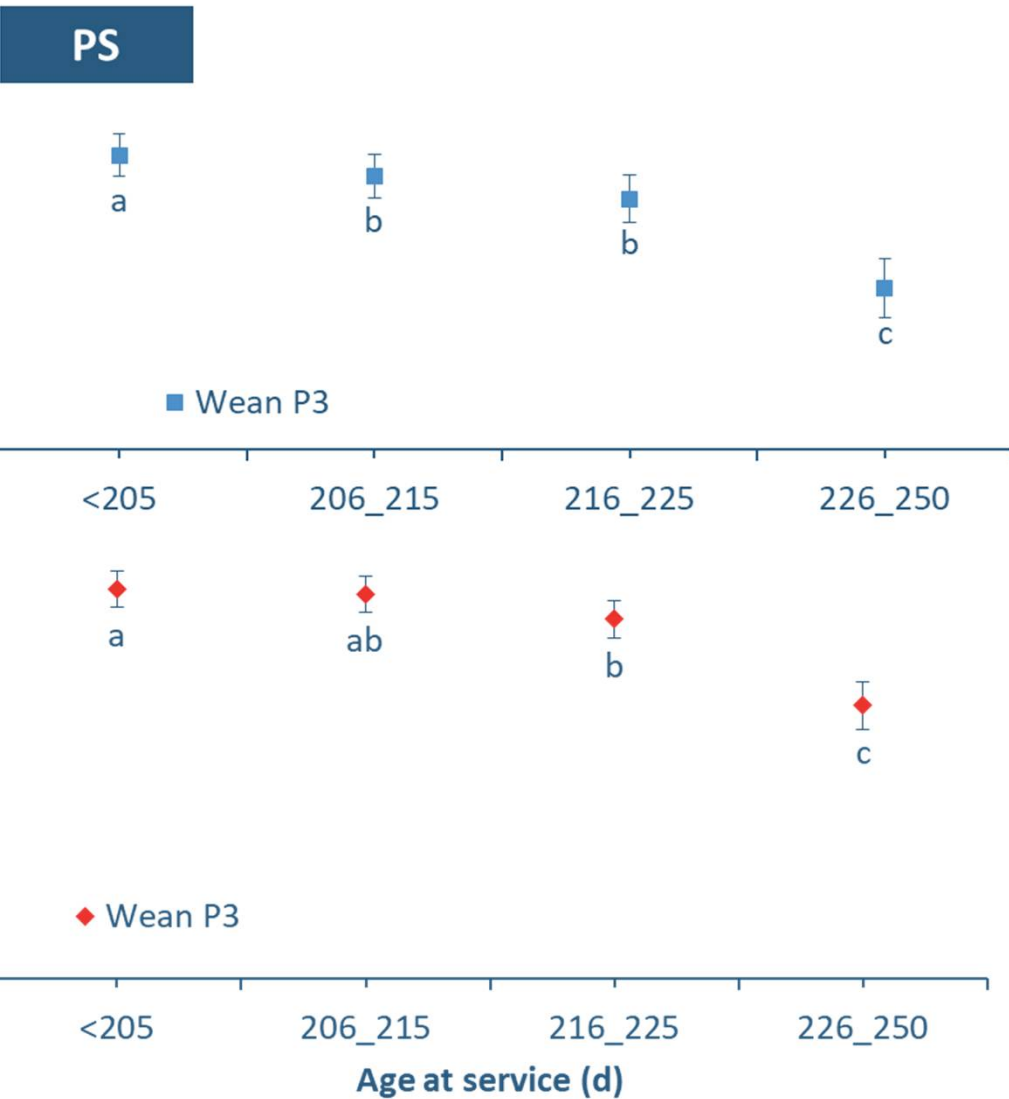
- Gilts bred within the box target: >85%.
- Additionally: selected against structural issues, defects and 3 effective weeks since last vaccination and arrival to farm.

# Age @ Puberty and Retention to P3



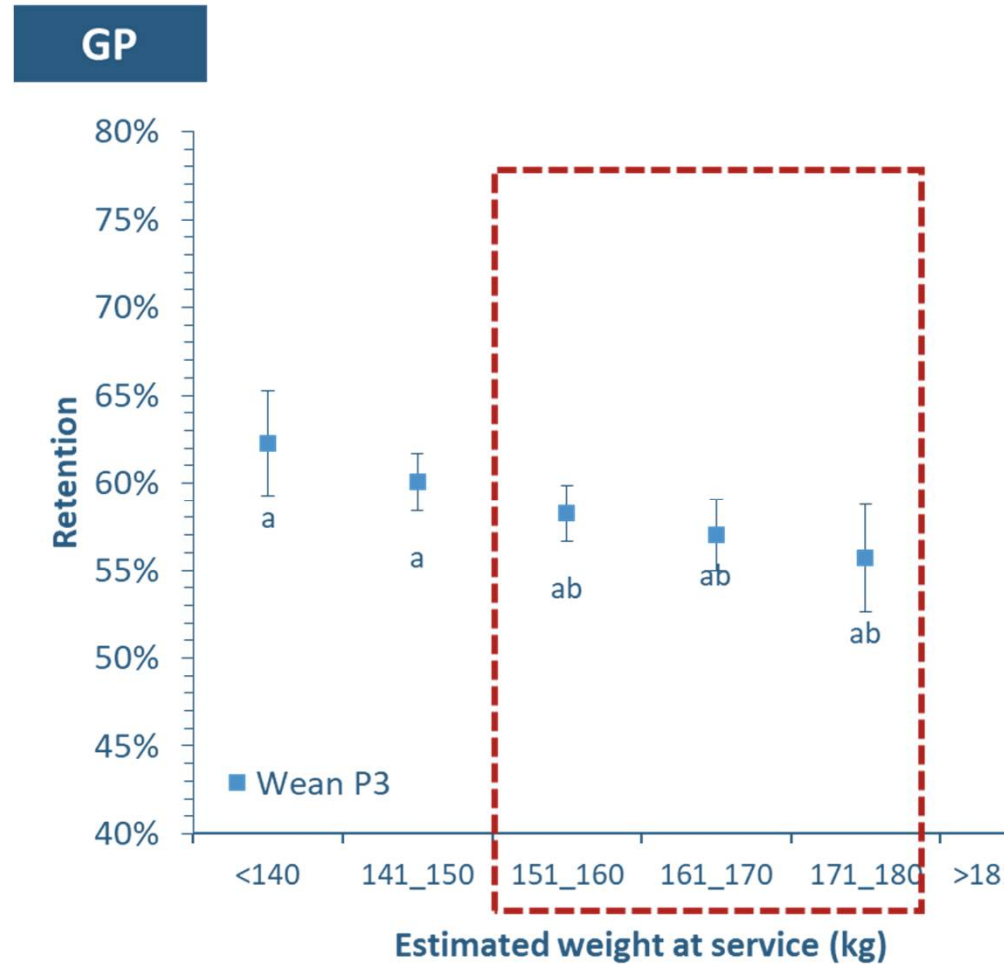
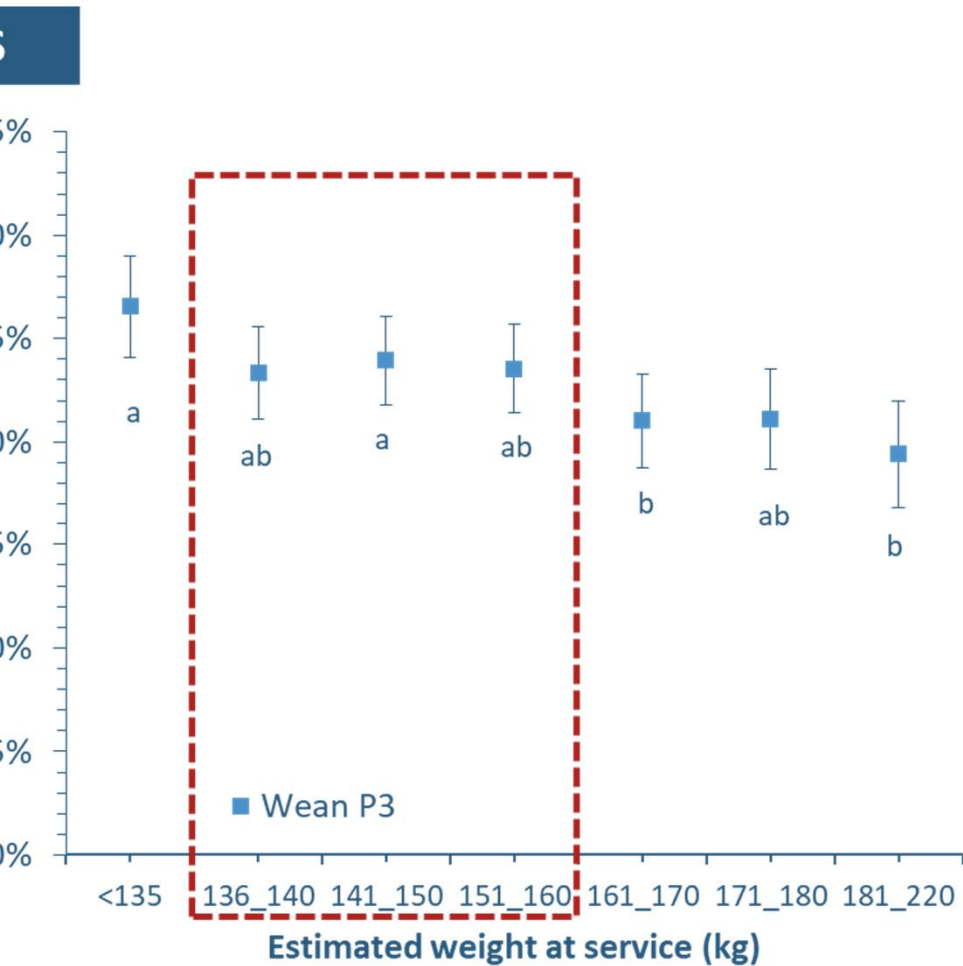
PS Gilts >195 days of at first detected estrus have decreased retention to parity 3 (farrowed and weaned)  
GP Gilts >205 days of at first detected estrus have lower retention to P3 than gilts than gilts <185 days

# Age @ First Service and Retention and Total Pigs to P3



Gilts > 225 days of age at service have a decreased retention to 3<sup>rd</sup> parity, lower lifetime performance and piglets carry a higher cost of production

# Body Weight @ 1st Service and Retention to P3

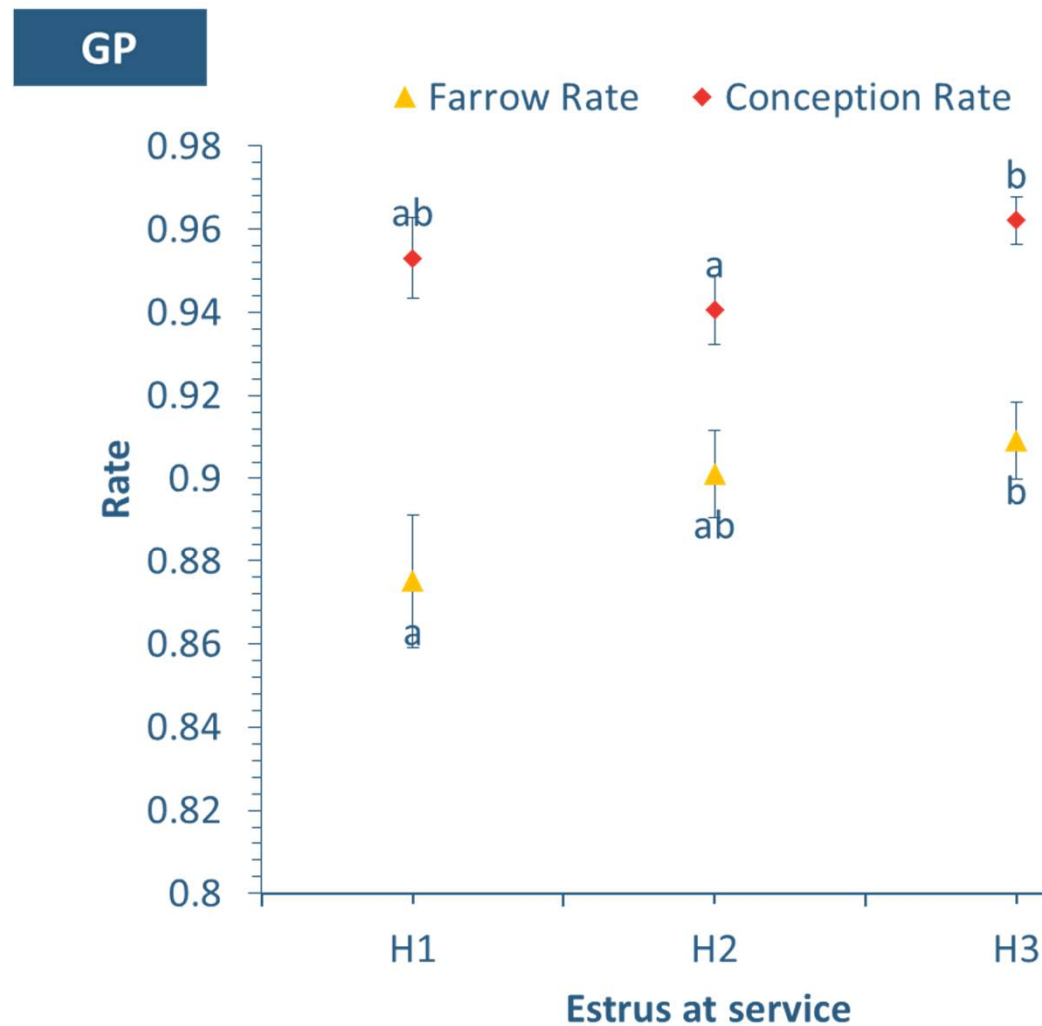
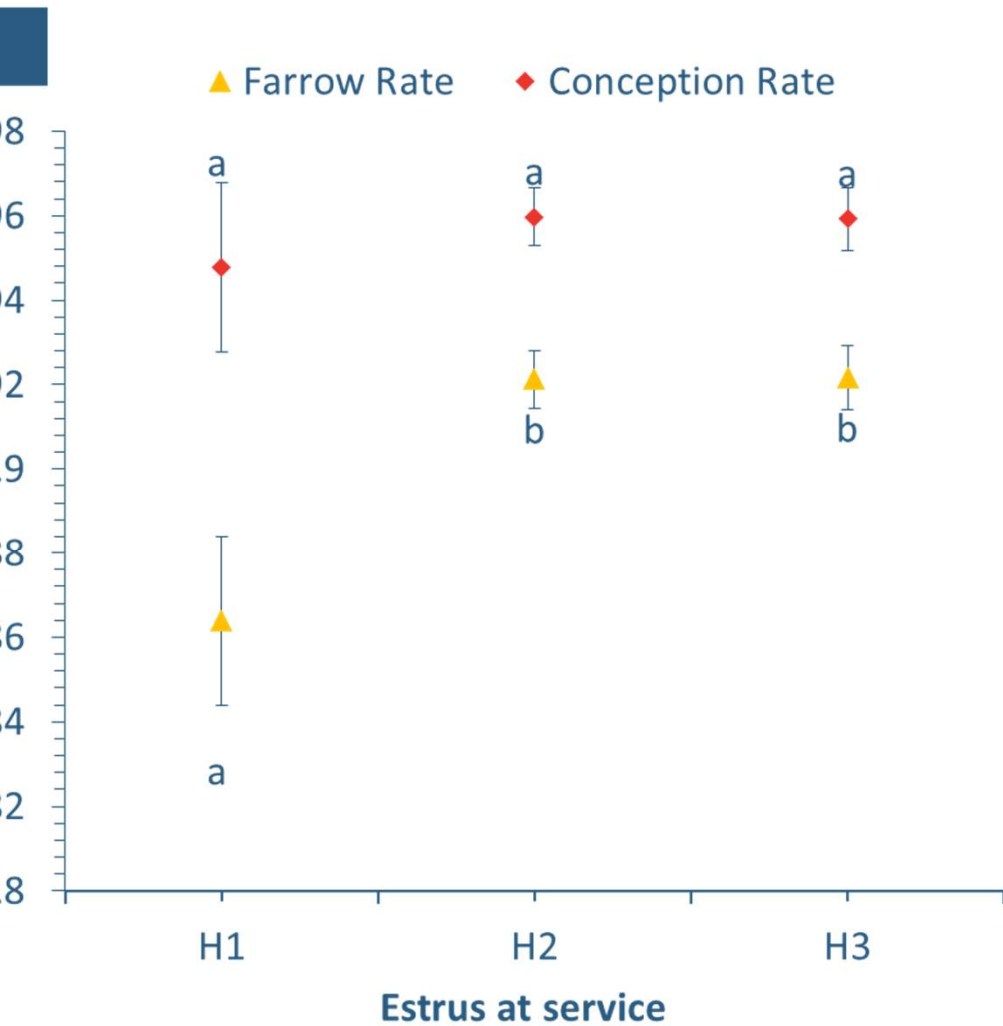


PS Gilts bred >160 kg had lower retention to P3

GP Gilts bred >180 kg had lower retention to weaning at P3 than gilts bred <150 kg

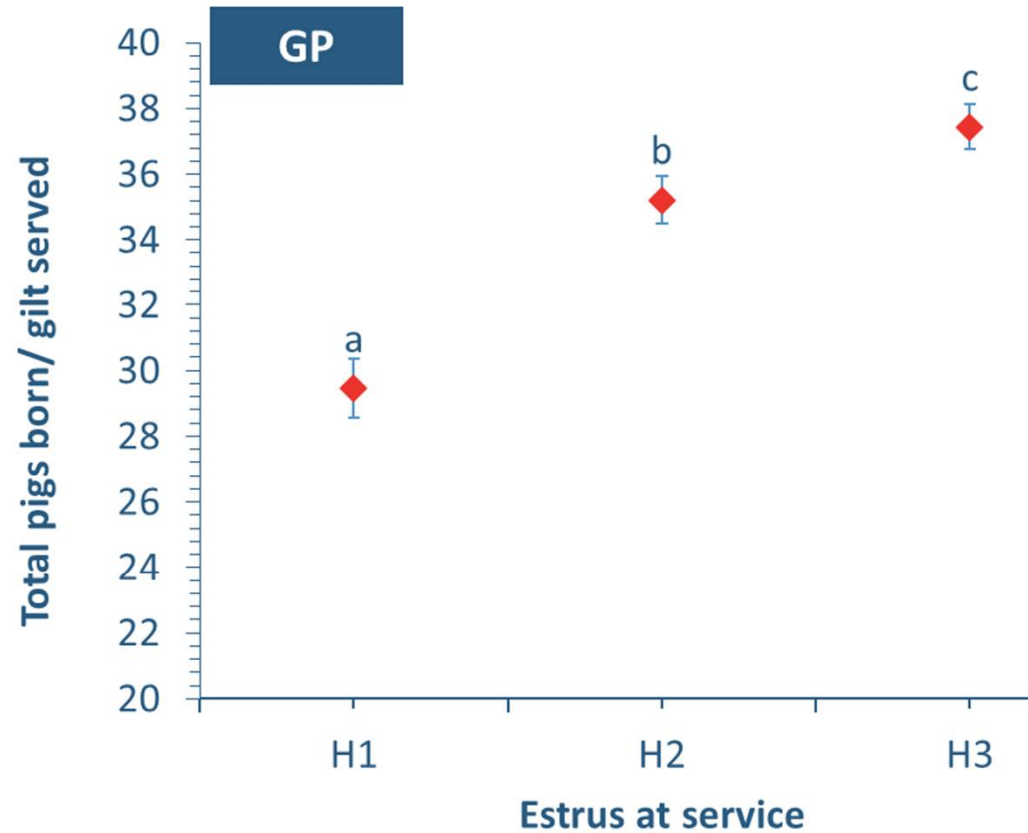
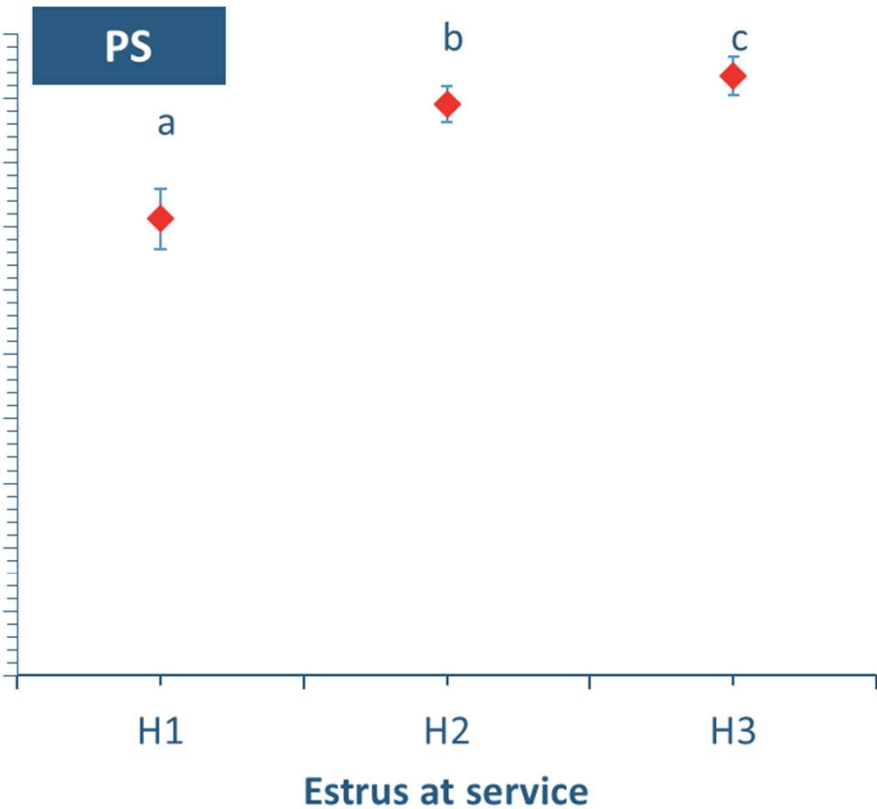


# Estrus @ 1st Service and Conception/Farrow Rate



Breed at 2<sup>nd</sup> or 3<sup>rd</sup> detected heat

# Estrus @ 1st Service and Total Born to P3



Breed at 2<sup>nd</sup> or 3<sup>rd</sup> detected heat – improvement in total number of pigs born over 3 parities.

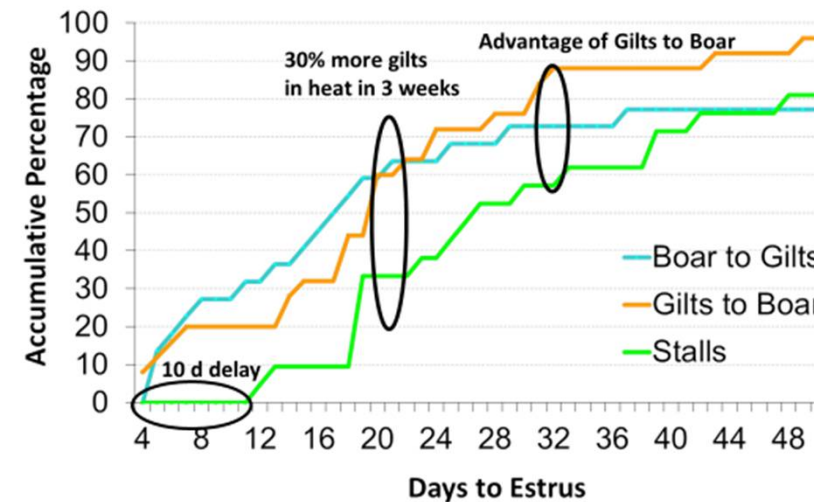
# Targets for Gilts

A Successful Gilt Program	
P1 KPIs	Target
% non-responder after 4 wks of boar exposure (from 25 wks of age)	< 30%
Gilt utilization (25 weeks to breeding)	> 90%
Retention (from first breeding)	> 75%

- Puberty induction:
  - Boar power
  - Boar exposure
  - Late or non-responders

## Nose-To-Nose Boar Exposure

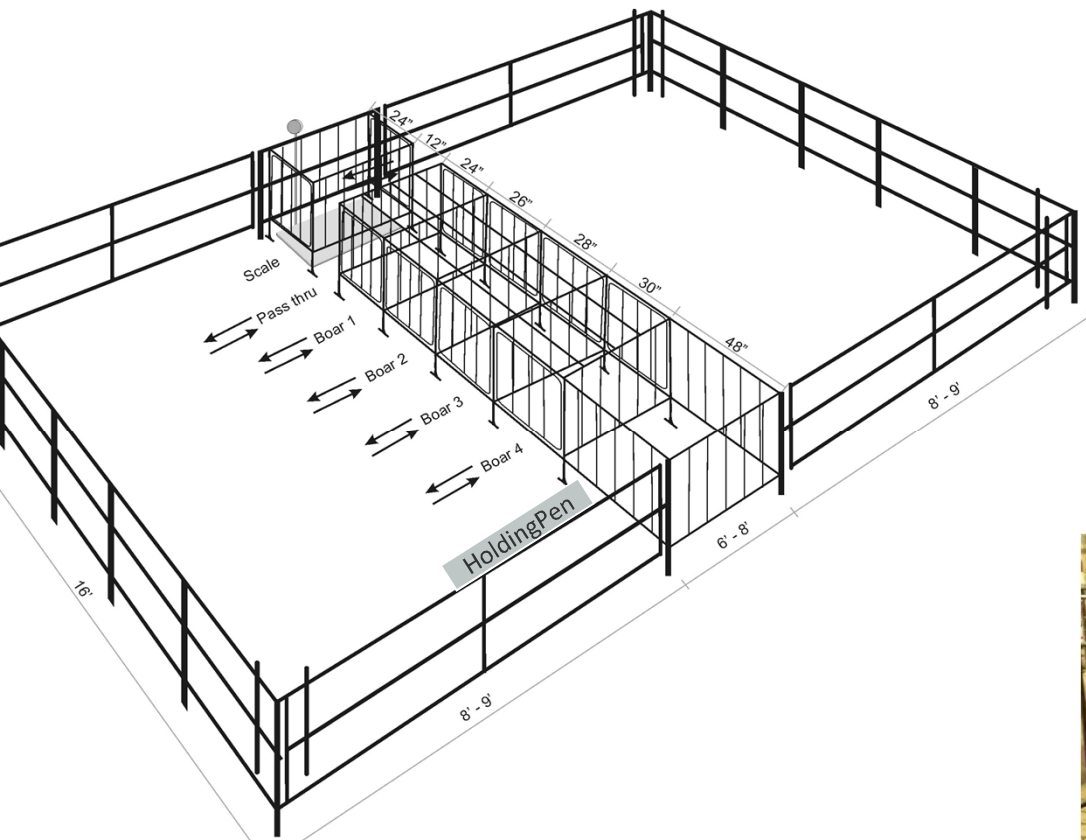
### Direct vs Fenceline Contact



Patterson

**Fenceline contact is not enough.**

# Boar Exposure Area (BEAR)



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## Boar Power Gold Standard

Boars >11 months, with high libido

Boars should not work longer than continuous 60 minutes.

Consider replace 30-40% of the boars annually.

1:200 sows, 1:100 gilts

Make sure different gilt groups have similar chances to get exposed to a fresh boar by switching the order of exposure.

Boars should be placed away from gilts soon to start puberty induction



# Sample of Breeder Integration Program

Age (d)	ACTIVITY		FEEDING PROGRAM
	CLEANING AND DISINFECTION	Week 1 – Cleaning, repairs on the isolation building, loading bay, shower room, staff house, etc. Do rodent control.	
		Week 2 -Isolation facilities should be thoroughly clean, dried, disinfected, downtime for at least 1wk prior arrival; delivery of feeds, farm supplies, shower room and staff house supplies.	
155	PRRS 1		Give oral electrolytes and vitamins as needed starting arrival. Give Gilt Developer Feeds
162	PCV2 + M.hyo.		
169	PRRS 2	Introduction of Feedback (feces, placenta,MM) from Pty 1-2 sows,3x/wk for 3wks(Mix and mash 3 kg. feedback + 20 kg feeds). Give AM feeding only.	Give Gilt Developer feeds starting 60kg LW, up to breeding.
176	PCV2 + M.hyo.	Introduction of live animals (culls, young pigs)	
183	PLE 1	Boar exposure starting 6mos of age: daily up to time of breeding. 10minutes per 10 gilts. Monitor and record heat.	
190	HCV		
197	PRV		
204	PLE 2 + DEWORMING		Gilts are ideally placed in individual stalls 3 weeks before breeding and consuming >3kgs daily up to breeding.
211	REST	Allow 3wks rest from last vaccination before breeding.	
218			
225	Gilts are available and ready for breeding by this time, given at least 135kg BW, with at least 1 HNS		
232			