

Mixing in early pregnancy: effect on potential litter size

By
William van Wettere

Presentation Outline

1. Industry significance
2. Experimental approach
 - Objectives
 - Protocol
3. Expected outcomes

Industry significance

- The problem:
 - Stress (eg housing change such as group-individual or individual-group) in early pregnancy can reduce litter size
 - When in the 1st three weeks of pregnancy is this stress critical?
- The proposed project will
 - Identify when in the 1st three weeks stress reduces litter size
 - This will allow producers to alter management strategies so as to minimise the negative impact of post-mating housing on litter size

Experiment Objectives

- To investigate the effects of re-grouping mated gilts, and the timing of re-grouping, on embryo mortality

Experimental Design 1

- ❑ 96 LW/LR crossbred gilts selected at 18 weeks old
- ❑ Gilts will be allocated to 1 of 4 treatment groups:
housed in groups of 6 (pre-mating groups)
- ❑ At 26 weeks of age, gilts will commence boar exposure
- ❑ Following puberty attainment, regumate will be used to
synchronise the timing of their 2nd oestrous
- ❑ Gilts will receive 2 x AI at their 2nd oestrous
- ❑ After their 2nd AI gilts will be housed according to
treatment

Experimental Design 2

Housing treatments

Treatment	Gilt housing	
	Pre-mating	Post-mating
1 (n=24)	pre-mating groups	individual gilts
2 (n=24)	pre-mating groups	mixed pre-mating groups
3 (n=24)	mixed pre-mating groups	individual gilts
4 (n=24)	individual gilts	individual gilts

Experimental Design 3

- Gilts will be weighed and P2 backfat measured at 18 and 26 weeks of age, at mating and at slaughter
- All gilts will be slaughtered on day 30 gestation
- At slaughter reproductive tracts will be removed, and the following measurements taken;
 - Ovulation rate
 - Embryo number
 - Embryo length and weight
 - Embryo survival

Expected outcomes

The anticipated results should allow SA producers to alter management of post-mated gilts/sows to:

- Minimise the negative effects of post-mating housing on reproductive performance
- Possibly make best use of low-cost group-housing facilities (eg eco-sheds)
- Possibly minimise time spent by gilts/sows in individual stalls (improve public perception)