Lameness and limb lesions in replacement gilts on a commercial farm

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Introduction In a 1998 survey removals due to lameness in 1st parity gilts were over 30% and surpassed culling for reproductive failure in this parity class (Boyle *et al.,* 1998). Evidence from other countries indicates that culling rates for lameness are still unacceptably high in the early parities. Anecdotal evidence indicates that housing and management of replacement gilts is sub-standard on many farms and this may predispose them to lameness. The objective of this study was to determine the prevalence of lameness and limb lesions in replacement gilts on entry to the breeding herd and at service on a commercial farm.

Materials and methods Over six months 112 gilts were inspected in the gilt accommodation within 3 days of entry (ENTR) to a 1000 sow herd and within one week of service (SERV). P2 back-fat thickness was determined by ultrasound and flank to flank dimensions were measured. Injuries caused by fighting at 12 locations on the body were scored from 0 to 5 according to severity. The locomotion ability of each animal was scored according to Main *et al.* (2000) where score 1 = shortened stride; 2 = uneven posture/limp; 3 = reluctance to bear weight on one limb; 4 = limb elevated and 5 = non-ambulatory. Wounds and bursitis on the limbs were also recorded. All gilts in four pens of between 25 and 30 animals were inspected. They were fed a wet diet twice daily from two long troughs in a concrete slatted area and had free access to a large unbedded, solid concrete area for lying. Data were analysed using SAS by the Chi-square or Mann-Whitney test as appropriate.

Results ENTR data were collected from 112 gilts and SERV data were available for 89 of these. However some gilts were transferred to gestation stalls immediately after service which precluded locomotion scoring. The mean (+SD) back-fat depth at ENTR was 9.9mm (1.86) and at SERV was 16.8mm (2.99). The corresponding figures for flank to flank dimensions were 79.3mm (3.04) and 91.7mm (7.72). There was a reduction in the fight lesion score between ENTR and SERV [median (minimum-maximum)] [19 (1-36) *vs.* 4 (0-34); $P<0.001$) reflecting establishment of the dominance hierarchy following re-mixing of gilts on arrival. Nevertheless while 100% of gilts were affected by fight lesions at ENTR, 91% of gilts were still affected by fight lesions at the SERV inspection which could reflect the competitive feeding arrangement. This could also explain the high proportion (31.9%) of gilts with locomotion scores >1 at the SERV inspection (Table 1) as fighting on slats is a major risk factor for lameness. Although only two gilts received locomotion scores of 3 and none received scores greater than 3, the scale of the increase between ENTR and SERV ($P<0.001$) in the proportion of gilts with scores of 1 and 2 is a welfare concern. While it is not possible to determine whether low scores are associated with pain they reflect abnormal weight bearing and are thus likely to be associated with a biological cost because of the increased strain placed on the locomotion system (KilBride *et al.,* 2009). As bursitis is chronic in nature the high proportion of animals affected by this lesion to the fore and particularly the hind limbs (Table 1) on entry to the herd suggests that they were kept on unbedded or minimally bedded solid or slatted concrete at the breeding unit.

Table 1 Percentage [number affected/number inspected] of gilts affected by different locomotion scores, at least one bursa to the limbs and at least one wound anywhere on the body at each inspection

	Entry (ENTR)	Service (SERV)	P
Locomotion Score			
1	8.9 [10/112]	39.1 [27/69]	0.001
>1	7.1 [8/112]	31.9 [22/69]	0.001
Forelimb Bursa	8.9 [10/112]	9.0 [8/89]	n.s.
Hind Limb Bursa	40.2 [45/112]	42.7 [38/89]	n.s.
Wounds	10.7 [12/112]	9.0 [8/89]	n.s.

Conclusions KilBride *et al.* (2009) found an association between bursitis and other limb lesions and abnormal locomotion although it is not clear whether this is because limb lesions cause discomfort or because lame pigs spend more time lying and this increases the risk of limb lesions developing. In any case, the high prevalence of gilts with lesions to the limbs and showing abnormal locomotion helps to explain why so many animals are culled for lameness in the early parities. These findings indicate that measures to reduce culling for lameness in breeding stock should be directed towards the young replacement animals. These measures should include minimising aggression associated with re-mixing and feeding but most importantly protecting gilts feet and limbs from the concrete floor either by the use of bedding or cushioned flooring such as slat mats. The advent of group housing in 2013 means that the adaptation capabilities of gilts entering the breeding herd will be more severely challenged making it even more important that they are sound at the start of their productive lives.

References

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