Prevalence and risk factors for limb and claw lesions and lameness in young sows

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Lameness and culling of young sows

- Irish sow culling rate increasing (0.7-1.0% p.a.), 50% (PigSys, 2014)
- Locomotory disorders are an important cause of culling
- c. 10% of sows culled for issues relating to lameness (Dewey et al., 1993; Boyle et al., 1998; Engblom et al., 2007)
- Sows culled for infertility etc. may also be lame!
- Culling for lameness and traumatic injuries is high in the early parities (Boyle et al., 1998; Engblom et al. 2007)
- Significant economic and welfare implications

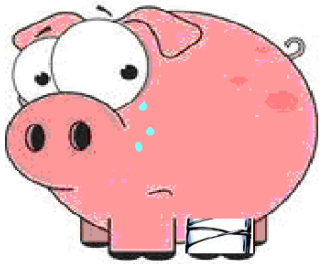
Lesions and lameness in sows

- Relationship between limb & claw lesions & lameness (Smith, 1988; Bonde et al., 2004; KilBride et al., 2009; Calderón Díaz et al., 2013)
- Risk factors for lesions and lameness: flooring, group size, stocking density, genetics, parity, growth rate etc.
- Lameness higher in group than individual housing systems (Calderon Diaz., 2013)
- Slatted flooring is a major risk factor (KilBride et al., 2009)
- Lameness prevalence in group housing systems : 5 to 17% in England, 6 to 10% in Belgium and 8.8% in Finland (Heinonen et al., 2006; KilBride et al., 2009; Pluym et al., 2011; Pluym et al., 2013; Willgert et al., 2014)

Objective

To determine the prevalence of and risk factors for limb and claw lesions and lameness in replacement and pregnant gilts on Irish farms

Cross-sectional survey



- 68 pig farms surveyed in 2012 (24% of Irish farms)
- Integrated farms with +100 sows only
- Part of a larger study (+10,000 pigs inspected at all stages)
- Animal based measurements (lesions, lameness, BCS etc.)
- Resource based measurements (floor, feeder, pen, SD etc.)
- +200 questions on management (genetics, nutrition etc.)
- 1 pen of replacement gilts and 1 pen or 10 stalls of pregnant gilts randomly selected
- All inspected if ≤ 10 gilts/pen and 10 gilts inspected if >10/pen

Measurements

Locomotory ability scored as per Main et al., 2000:

0 = Normal

1 = Pig appears stiff

} Non-lame

2 = Shortened stride

3 = No weight bearing on affected limb

4 = Affected limb elevated off floor

5 = Pig does not move

} Lame (as per Kilbride et al., 2009)

Limb lesions

(0-3)

Claw lesions

(0/1)

Data Analysis

- All data entered into Microsoft access database
- Prevalence calculated for each lesion

$$\frac{\text{No. of pigs with lesion score} \geq 1}{\text{No. of pigs examined}}$$

- Prevalence calculated for lameness

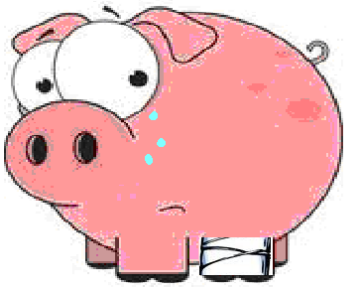
$$\frac{\text{No. of pigs with lameness score} \geq 2}{\text{No. of pigs inspected}}$$

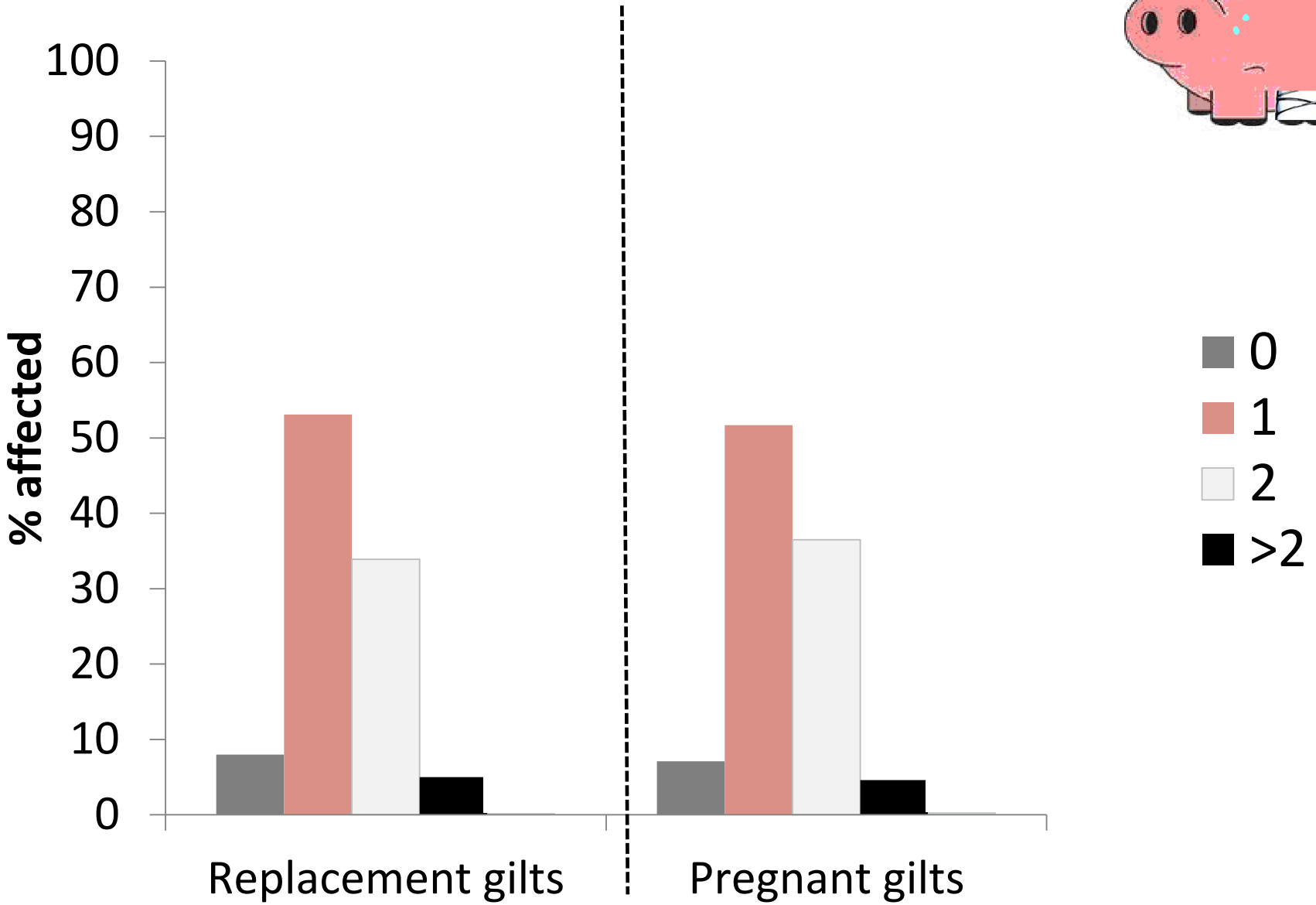
- Data were analysed using regression analysis in MLwiN 2.27

Results

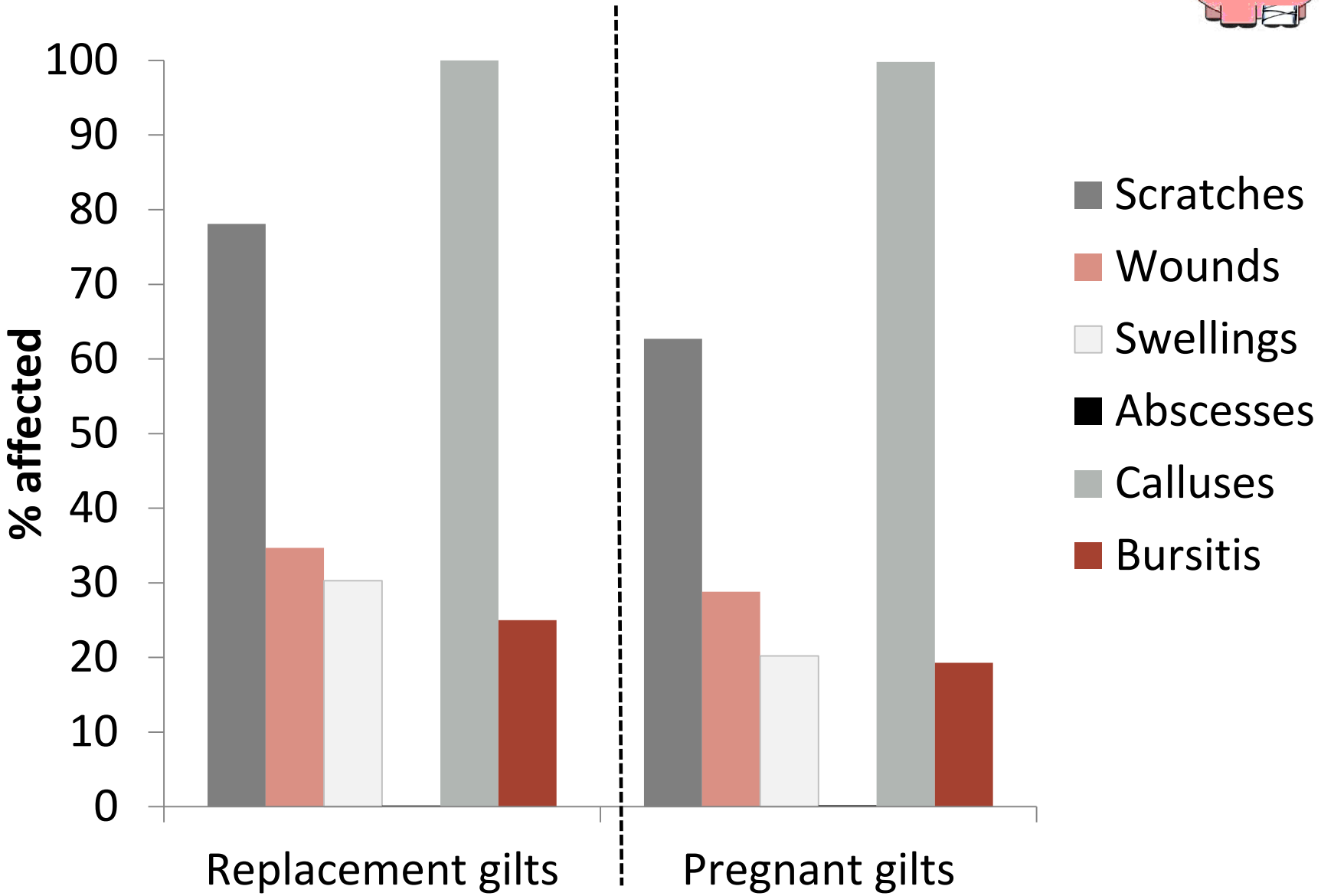
	Gilt status	
	Replacement	Pregnant
No. farms	64	68
No. animals inspected	525	518
No. in groups	525	337
No. in stalls	0	181
% on fully slatted floors	47.8%	54.8%
% on partially slatted	45.3%	44.4%
% on solid floors	6.9%	0.8%

Prevalence of lameness

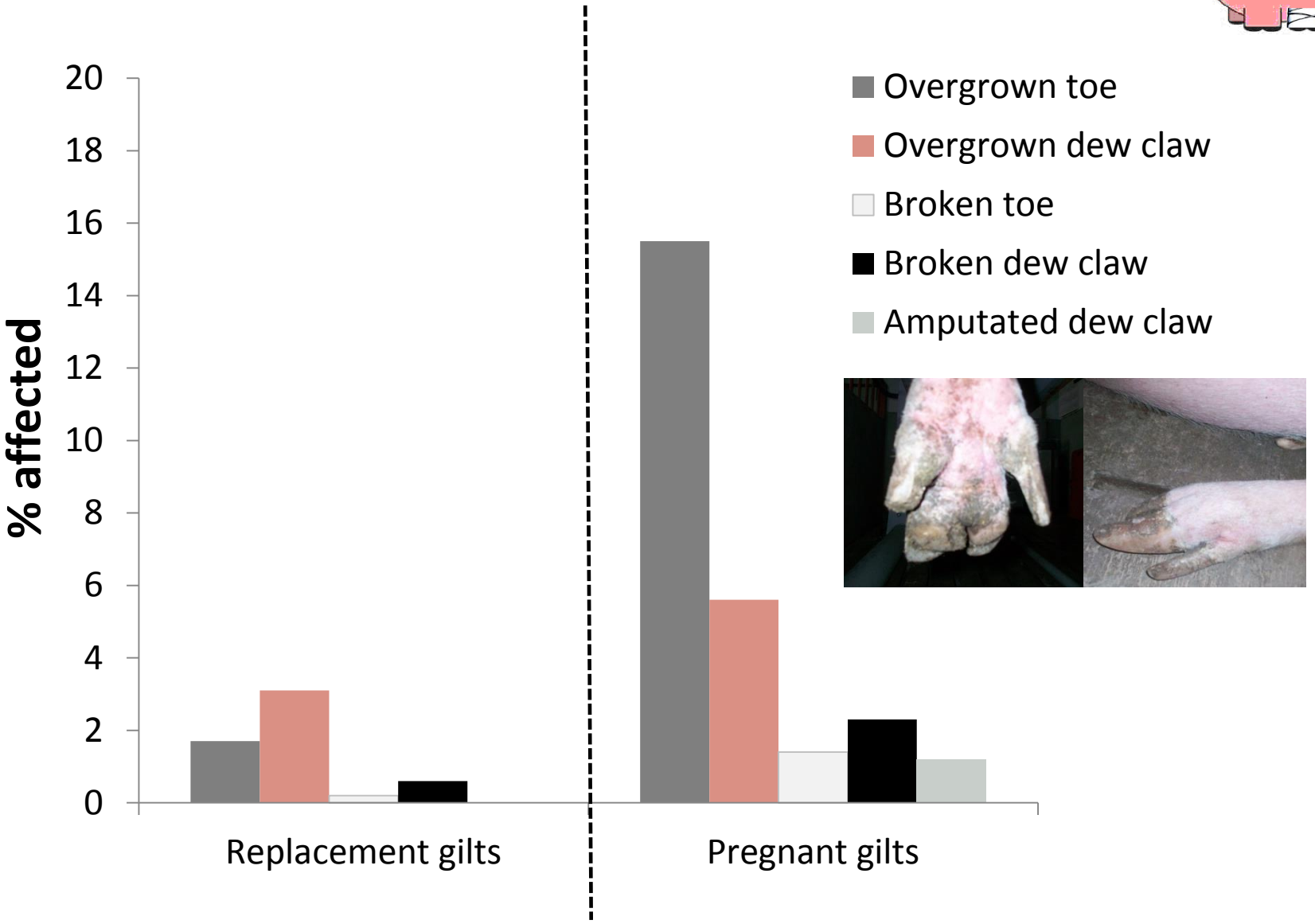




Prevalence of limb lesions in gilts

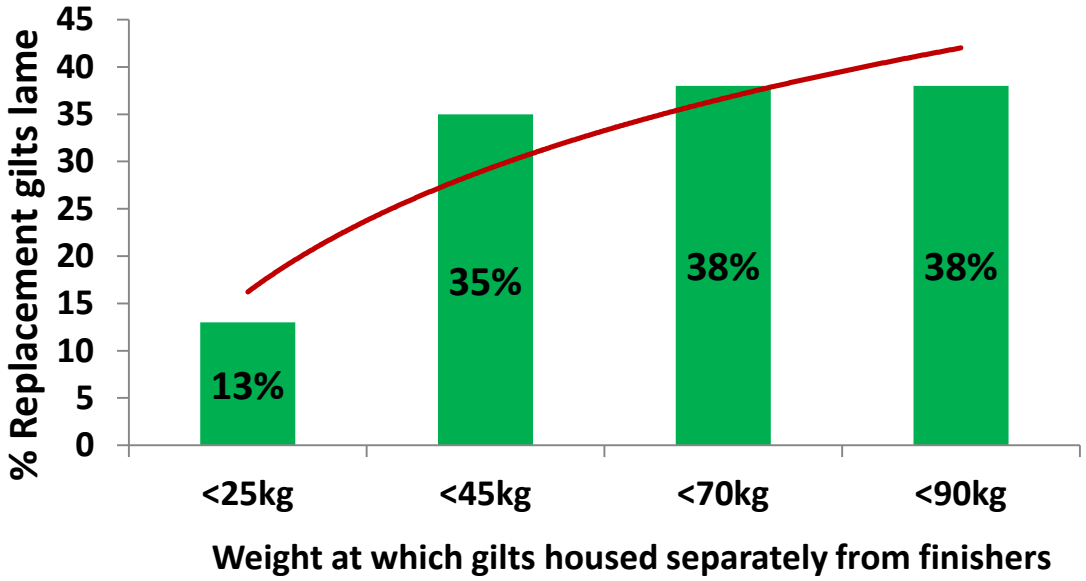


Prevalence of claw lesions in gilts



Risk factors for lameness, limb and claw lesions in gilts

- Higher risk of lameness in group (48.1%) compared to individual (30.4%) housing systems (OR 3.66, CI 1.23 – 3.66)
- Higher risk of swellings to the limbs in replacement gilts separated from finisher stock at weights of >90kg compared with those separated at <50 kg (OR 3.1, CI 1.6-7.7)



Discussion

- No risk factors associated with flooring identified - uniformity of flooring across all farms
- High usage of slatted flooring linked to high prevalence of limb lesions and lameness – sow welfare concern
- Exacerbated by group housing
- Higher prevalence compared to other countries?
  → inclusion of score 2 as lame
- Housing/feeding replacement gilts same as terminal stock is a risk factor for limb lesions and potentially lameness

Conclusions

- High levels of limb lesions and lameness in young sows is related to the widespread use of slatted flooring and poses a concern for sow welfare and sow longevity
- Preferential treatment of replacement gilts could help address this problem

Any Questions ?