Pig carcass tail lesions: associations with record keeping and farm performance parameters

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Record keeping

- Advisory services aim to improve farm productivity

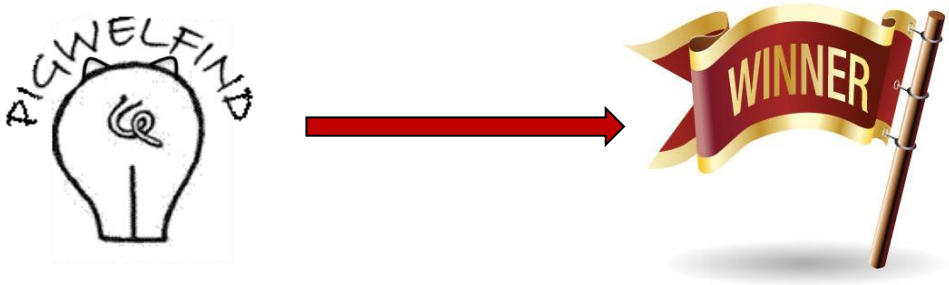
- Record keeping is essential
  - Sign of good farm management

- Different producer perspectives on record keeping
  - *'Necessary for future planning' vs 'necessary chore'*

(Doye et al., 2000; Krug et al., 2015; McCutcheon & Glover, 2014)

Record keeping and welfare

- Potential relationship with animal welfare
- Intact, uninjured tail at slaughter is the gold standard

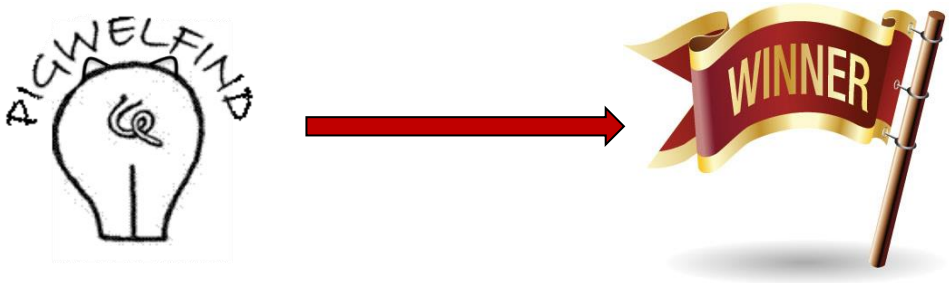


- Tail biting
  - Associated with reduced performance in pigs
  - More common on farms that are less well managed

(Krug et al., 2015; McCutcheon & Glover, 2014; Doye et al., 2000; FAWC, 2009; ESFA, 2012; Sinisalo et al., 2012; Zonderland et al., 2010; Walker & Bilkei , 2006; Kritas & Morrison, 2007; Harley et al., 2014, Moinard et al., 2003)

Record keeping and tail lesions

Investigate association between record keeping through an advisory service and carcass tail lesions



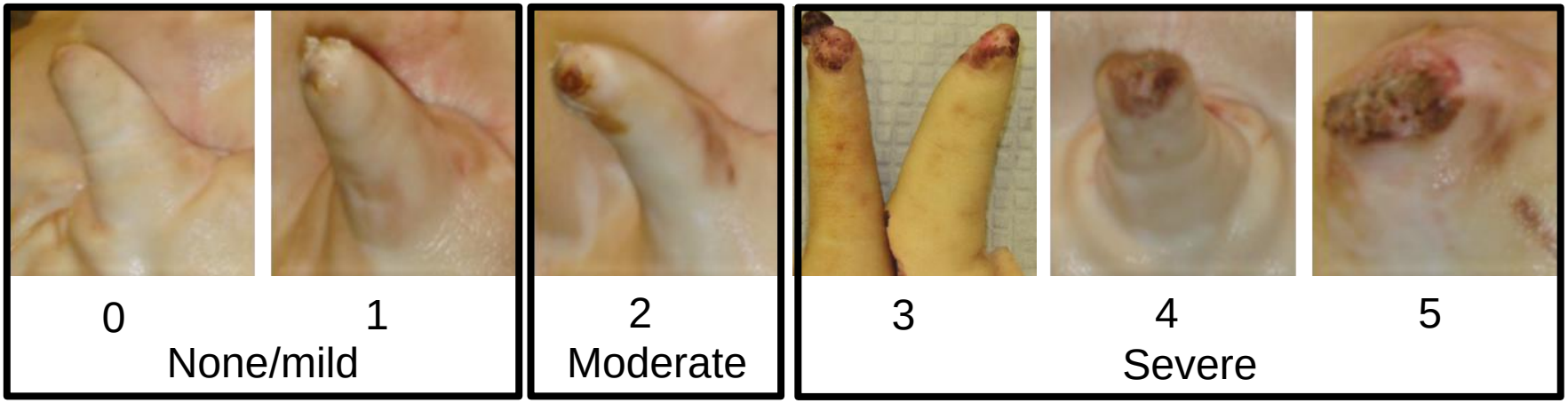
Investigate associations between carcass tail lesions and production parameters in record keeping herds

(FAWC, 2009; ESFA, 2012; Smulders et al., 2006; Devitt et al., 2014; Benard et al, 2014)

Material and methods

- 2 abattoir visited over 7 days (June – July 2014)

- For each carcass recorded:
  - Tail lesion score



  - Sex
  - Herd number

(Harley et al., 2012; Kritas and Morrison, 2007)

Statistical analysis

- 13,133 pigs, 73 batches, 61 farms

- Teagasc advisory service: eProfit Monitor (ePM)

	# Herds	# Batches	# Pigs
ePM herd	23	27	5,207
No ePM herd	38	46	7,926

- Prevalence of tail lesion outcomes calculated

- Generalized linear mixed models (PROC GLIMMIX) for associations between record keeping and tail lesions

Statistical analysis

- ePM: 21/23 gave permission to access records
  - Performance data Jan – July 2014 pulled
    - Useable data: 14 herds, 17 batches, 4,635 pigs

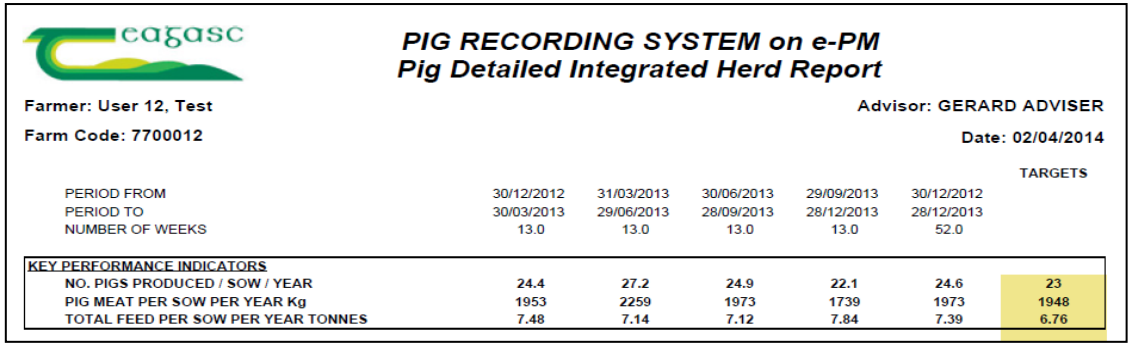
- Associations with farm productivity
  - Mean tail lesion score calculated for each herd
  - Spearman rank correlations between tail lesion prevalence and production parameters

Record keeping and tail lesions

	ePM record keeping		
	Yes	No	P-value
Tail lesions (%)			
None/mild	80.1±0.55	66.2±0.53	< 0.001
Moderate	17.0±0.52	30.6±0.52	< 0.001
Severe	2.8±0.23	3.3±0.20	> 0.05

Record keeping and tail lesions

- Better management as indicated by record keeping
  - Producer perspective / farming style



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PIG RECORDING SYSTEM on e-PM
Pig Detailed Integrated Herd Report

Farmer: User 12, Test
Advisor: GERARD ADVISER
Farm Code: 7700012
Date: 02/04/2014

						TARGETS
PERIOD FROM	30/12/2012	31/03/2013	30/06/2013	29/09/2013	30/12/2012	
PERIOD TO	30/03/2013	29/06/2013	28/09/2013	28/12/2013	28/12/2013	
NUMBER OF WEEKS	13.0	13.0	13.0	13.0	52.0	
KEY PERFORMANCE INDICATORS						
NO. PIGS PRODUCED / SOW / YEAR	24.4	27.2	24.9	22.1	24.6	23
PIG MEAT PER SOW PER YEAR Kg	1953	2259	1973	1739	1973	1948
TOTAL FEED PER SOW PER YEAR TONNES	7.48	7.14	7.12	7.84	7.39	6.76

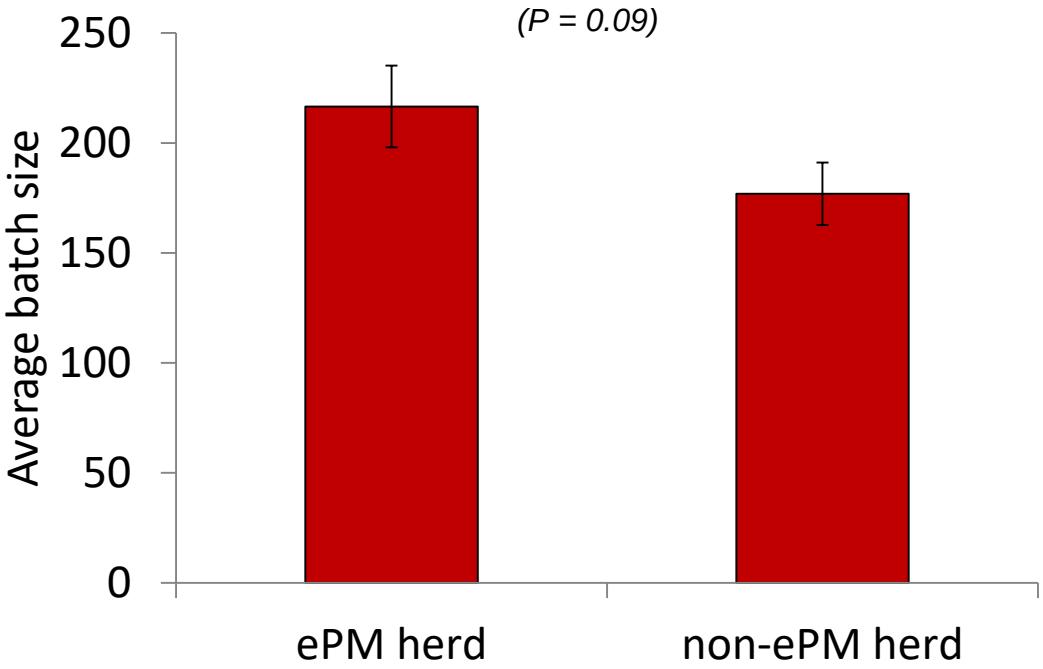
  - Monitoring and advice to improve productivity

→ indirectly reduces tail biting (e.g. reduce stocking rate)

(Moinard et al., 2003; Benard et al., 2014; Taylor et al., 2012; Verstegen and Huirne, 2001; Doye et al., 2000)

Record keeping and tail lesions

- Underlying differences ePM/non-ePM herds not known



- Higher batch size ≈ higher herd size
  - Prevalence of tail lesions influenced by herd size?

(Moinard et al., 2003; Benard et al., 2014; Taylor et al., 2012; Verstegen and Huirne, 2001; Doye et al., 2000)

Record keeping and tail lesions

- Average herd size
- Litters/sow/yr
- Farrowing rate
- Born alive/lit
- tality
- #pigs prod/sow/yr
- Pigmeat prod/sow/ yr
- Age at sale
- #finishing days
- Average live wgt sold
- Feed cost/kg dead wgt

Relationship between tail lesions and production indicators on a farm level?

*weaner-sale, weaners, finishers

Record keeping and tail lesions

- Tail lesions associated with productivity at farm level

Production parameter	TL score	% Severe tail lesions
Weaning to sale – average daily gain (g)	NS	-0.54*
Weaner – weight at sale/transfer (kg)	-0.63*	NS
Finisher – No. finishing days	0.52†	NS
Finisher – average daily gain (g)	NS	-0.48†
Finisher – average liveweight sold (kg)	NS	-0.61†

(Moinard et al., 2003; Benard et al., 2014; Taylor et al., 2012; Verstegen and Huirne, 2001; Doye et al., 2000)

Conclusions

Record keeping is associated with lower risk of carcass tail lesions

Carcass tail lesions are associated with characteristics of general farm productivity

Further research needed to identify differences in farmers' motivation / presence of risk factors for tail biting

Advisory services inform general health and welfare management plans and could so help reduce risk of tail biting

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