Development of ante and post mortem meat inspection of pigs as a welfare diagnostic tool

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Project context

- Suboptimal housing and management are associated with poor welfare
- To maintain high standards of animal welfare costs money but...
  ... there are serious financial costs with poor welfare
- Function of meat inspection: to reduce risks to public health
- However...
  ... valuable information from animal health and welfare could contribute:
    → to reduced losses
    → to improve pig welfare on-farm
Background

2010 Study
Herd-level data on tail biting and carcass condemnation, association and resulting financial losses

- 6 factories visited: over 36000 pigs inspected
- Tail lesion scored according to severity
- Condemnations were assessed from abattoir data

- 99% of inspected pigs were tail-docked
- 58% had detectable tail lesions (1.03% severe)
- Abscessation and arthritis = main causes of carcass condemnation
- Huge variation between factories and between ROI and NI
• 16% were affected by severe loin bruising
• 44% were affected by hind limb bursitis
• 72.6% had detectable tail lesions (2.5% were severe)
• 3.3% carcasses were trimmed and 2.5% carcasses were condemned (abscesses=main cause)
• Males more affected than females

Strong relationship between tail lesion score & CC outcome
## Financial implications of carcass condemnations (CC)

### Table 1. Weight (kg) and associated financial cost (€) of CC and trimmings

<table>
<thead>
<tr>
<th>No. carcasses affected</th>
<th>Weight (kg)</th>
<th>Cost (€/pig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire condemned</td>
<td>14</td>
<td>977.62</td>
</tr>
<tr>
<td>Partial condemned</td>
<td>71</td>
<td>911.53</td>
</tr>
<tr>
<td>Trimmings</td>
<td>113</td>
<td>329.84</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>194</strong></td>
<td><strong>2218.99</strong></td>
</tr>
</tbody>
</table>

1. estimated average weight = 69.83 kg (from “2010 Study”)

2. 4 carcasses were both trimmed and condemned

3. using current Irish pigmeat prices/kg (€1.70/kg as on 02/10/13)
Impact of tail score on carcass weight

Estimated reduction in carcass weight = 1180 kg
or € 0.59/study pig
Combined with CC (€1.10/pig) = € 1.69/pig

The Irish Agriculture and Food Development Authority
PIGWELFIND

- Acronym for ‘Pig Welfare Indicators’ (or ‘Finding Pigs Well’!)
- DAFM Research Stimulus Fund
- Collaborative team of researchers
- Overall objective:

To develop ante and post mortem MI as a pig welfare diagnostic tool
Tasks

• Task 1 - Literature Review & Stakeholder Interviews
• Task 2 - Farm focused studies
• Task 3 - Factory focused studies
• Task 4 - Protocol for extended on-line slaughter check
• Task 5 - Cost/benefit analysis
• Task 6 - Implementation and dissemination
Task 2 - Farm focused studies

Two consecutive studies underway at Hillsborough NI

Study 1
Determination of degree to which measures taken at slaughter reflect lifetime welfare of the pig

Study 2
Identification of on-farm risk factors associated with carcass condemnations and downgradings
Task 3 - Factory focused studies

Two studies

Study 1
Effect of mixing prior to transport on sexual behaviour, skin lesions and carcass quality of slaughter pigs

Study 2
Financial implications associated with trimming of loin bruises for pigmeat processors
Conclusions

- Tail biting has an underestimated economic impact on the profitability of pig farming
- Information from MI could help to inform herd health and welfare management plans
- There is a need for an automated system
- PIGWELFIND project will provide the data to validate this approach
- Contribute to improve the profitability and the welfare
Acknowledgements

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