Economics of higher health and welfare pig production


*Land Economy, Environment and Society Research Group, SRUC

The 65th Annual Meeting of EAAP
25-29 August 2014
Copenhagen

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Supply chain

- Diseases
- Management
- Housing
- Behaviour

Affecting:
  - Health, Performance
  - Growth, Welfare

Market prices based on consumers’ demand:
- High animal welfare
- Food-safety
- Environmental concerns
- Organic attributes
- Etc.
Background

- Sustainable disease eradication or control
- Sustainable welfare problems elimination
- Economic alternatives
- Commercially viable & feasible
- Measuring and monitoring
- Analytical methods
Three examples

Health score and cost of diseases
- PRRS
- EP

Farrowing systems
- Crate
- Pen
- Designed pen

Tail docking
- System 1
- System 2
- System 3
Herd health score and cost of diseases

- PRRS
- EP
Health score & cost of diseases

Herd Health Score for Breeding Herds

- Number pigs born alive/sow
- Number pigs weaned/sow
- % of returns
- Antimicrobial usage
- Major diseases known to impact sows and piglets

Disease cost calculator for PRRS
Health score & cost of diseases

Herd Health Score for Finishing Herds

- Post-weaning mortality
- Average live weight gains
- % of pigs with respiratory disease signs
- Anti microbial usage
- Major diseases known to impact pig production
- Carcase lesions
- Tail biting prevalence

Disease cost calculator for EP
Impact of PRRS

EMV (£/breeding sow/yr)

% simulations

Healthy, Born alive, Pre.w. mort, Pos.w. mort
Impact of EP

EMV (£/finishing pig/yr)

% simulation

Healthy  mort.

mort & ADG  mort. & ADG & FCR

-100 -50 0 50 100 150
Farrowing systems

- Crate
- Pen
- Designed pen
An alternative

**WC-productivity relationships:**
- Based on scientific evidence
- Limited by data scarcity

- Space
- Substrate
- Temperature
- Labour

**Higher financial performance**

**Reducing total piglet mortality**

**Biological needs of the sow and piglets during nest-building, parturition and lactation phases**
Margin-welfare score

Net margin (£/sow/year)

Farrowing systems

RUN1  RUN2  Welfare score
Tail docking management
Housing systems

• System 1: standard with tail-docking
• System 2: standard with no tail docking, no extra measures
• System 3: enhanced with no tail docking, extra space and straw
Sim.1 (baseline)
Sim.1 (higher uncertainty)
Conclusions

- Diseases and welfare problems need to be tackled at producer level, AND:

- Financial risk of (poor) prevention/control of diseases and management of welfare problems should guide responses, BUT:

- Considerable production system changes and investments (alongside genetic selection) are needed, THEREFORE:

- Collaboration and sharing costs and responsibility between supply chain players is essential.
Acknowledgments

- **RESAS**: This research is funded by Scottish Government’s Rural and Environment Science and Analytical Services Division (RESAS) under Theme 6 ‘Animal/plant health and disease and animal welfare’ (2011-2016).
- **DEFRA**
- **BPEX**
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