Effect of removal of antibiotics from the diet on welfare and health indicators of weaner pigs

A. Diana¹,², E.G. Manzanilla¹, R. Vial¹, N. Leonard², K. O’Driscoll¹, L. Boyle¹

¹ Pig Development Department, Teagasc, Animal & Grassland Research & Innovation Centre, Moorepark, Fermoy, Co. Cork;
² School of Veterinary Medicine, University College Dublin, Belfield, Dublin 4

alessia.diana@teagasc.ie
Introduction

• Overreliance on medication to prevent illnesses in animal production (De Bryine et al., 2014)

Practice no longer sustainable

Risk of antibiotic resistance (ABR)

can concern for human health
dangerous consequences for livestock

lack of effective medication to treat illnesses
Introduction

- High antibiotic (AB) use in pig production (Burch, 2012)
- AB often seen as the only solution for disease problems in weaned pigs (Bengtsson & Greko, 2014)

Weaning = major stressor (health and welfare challenges)

In-feed administration most common route (Callens et al., 2012)
Aim

To quantify the effects on skin lesions related to welfare and health indicators of weaner pigs of removing AB from the feed and replacing with targeted parenteral AB treatments.
Material & Methods

70 pigs sorted into 2 groups of 35 weaners with similar body weight (BW: 10.6 ± 0.7kg)

6 weeks \rightarrow 6 replicates

Total of 420 pigs

Sulfadiazine-Trimethoprim 14.4 mg/Kg BW

6 AB

6 NO
70 pigs sorted into 2 groups of 35 weaners with similar body weight (BW: 10.6 ± 0.7kg)

6 weeks → 6 replicates

Total of 420 pigs

weighed

Material & Methods

weighed tagged

10x 10x
Material & Methods

after 4 weeks and 4 days

✓ moved into 2\textsuperscript{nd} stage
✓ each group split into 2 pens (5 focal pigs/pen)

Weekly recording

\textbf{Group level}
Health deviations (HD)

✓ Hernia, scouring, pumping, ear and tail wounds, neurological disorders etc.

✓ No. coughs (COU) and sneezes (SN) per 5 min period

\textbf{Focal pig level}
Body, tail, ear and flank lesions
Material & Methods

Welfare lesions

Body lesions (0-6 at 11 locations)  Tail lesions (0-5)  Ear lesions (0-3)  Flank lesions (0-3)

Data were analysed using SAS 9.3
Results
Number of coughs/pen/week in 2^{nd} stage weaners with (AB) and without (NO) in-feed antibiotics

![Graph showing the comparison between No. of coughs/pen/week with and without in-feed antibiotics during the 2nd stage. The legend indicates P<0.01, with NO in blue and AB in red. The graph shows a significant difference between the two groups.]

COU 1^{st} stage  SN 1^{st} and 2^{nd} stage  HD 1^{st} and 2^{nd} stage  NS
Influence of in-feed antibiotics (AB) or no in-feed antibiotics (NO) on body lesion scores

Body lesion scores

1st stage

2nd stage

P=0.09

P=0.06

P=0.09
Discussion

1. Pigs with AB in their feed = Coughing \[ \uparrow \] in 2\textsuperscript{nd} stage - ?

2. Pigs without AB in their feed = \[ \downarrow \] Body lesions
   \[ \downarrow \] reduced growth rates
   \[ \downarrow \] reduced aggressive behaviours
   \[ \downarrow \] reduced competition for food?
Conclusion

Removal of in-feed antibiotics from the diets of weaner pigs had minimal effects on indicators of health and welfare.
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