

monoguthealth
Optimal gut function in monogastric livestock



Effect of creep-feeding on pre-weaning growth of suckling pigs

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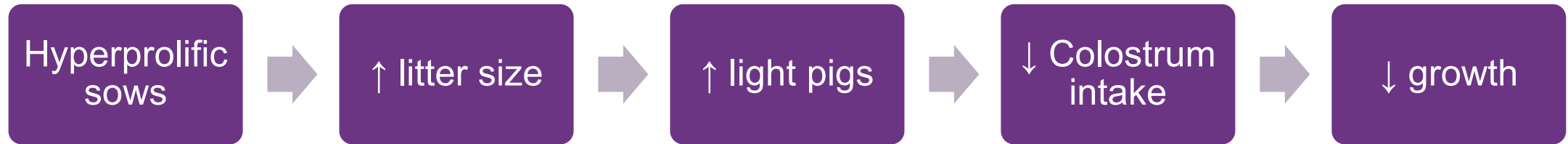
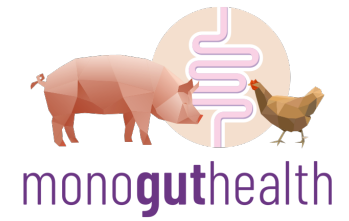
3rd September 2024/EAAP Session 50 (MonoGutHealth)

Abstract No: #2215482



This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 955374.

Introduction

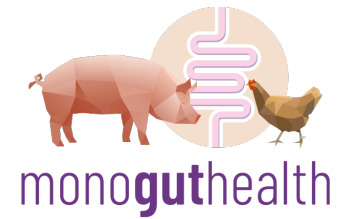


- Weaning weight determines pw growth to slaughter (Collins et al, 2017)
- Creep feeding for ↑ growth and health of piglets born in large litters (Arnaud et al, 2023)
 - Allows the piglet to adapt to ingredients in pw diets & provides supplementary nutrition
- The proportion of CF eaters determines the success of creep feeding (Pluske et al, 2018)

Objective

To determine the effect of creep feeding on pre-weaning piglet growth & if piglets classified as eaters or non-eaters of CF have differing pre-weaning growth

Materials and Methods

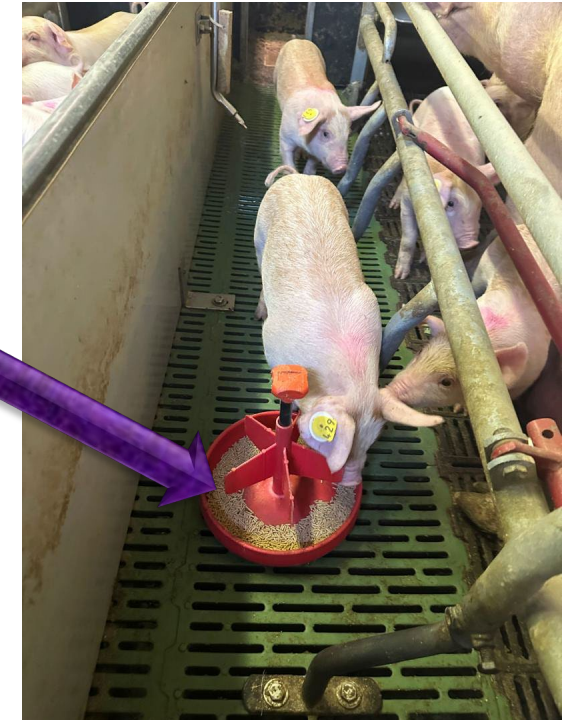


- Conducted at AFBI, Northern Ireland
- 45 sows/litters selected on D12 and randomly assigned to:
 - 1: **Control**: no creep provided (n = 12)
 2. **Pelleted creep feed** (n = 33)
- Commercial creep feed from D12 to weaning (D28)
- Fed from circular plastic creep feeders

Table: Chemical composition of creep feed

Crude protein (%)	18.4
Lysine (%)	1.65
DE (MJ/kg)	16.25

1% Chromic oxide included in creep feed diet from D16 - D24



Materials and Methods

Measurements

- Faecal swabs on D18, 21 & 25
- Sow BW & feed intake
- Individual piglet BW on D12, 19 & 28
- Pre-weaning ADG
- Creep feed disappearance per pig
- Incidence of diarrhoea
- Mortality
- Medication usage



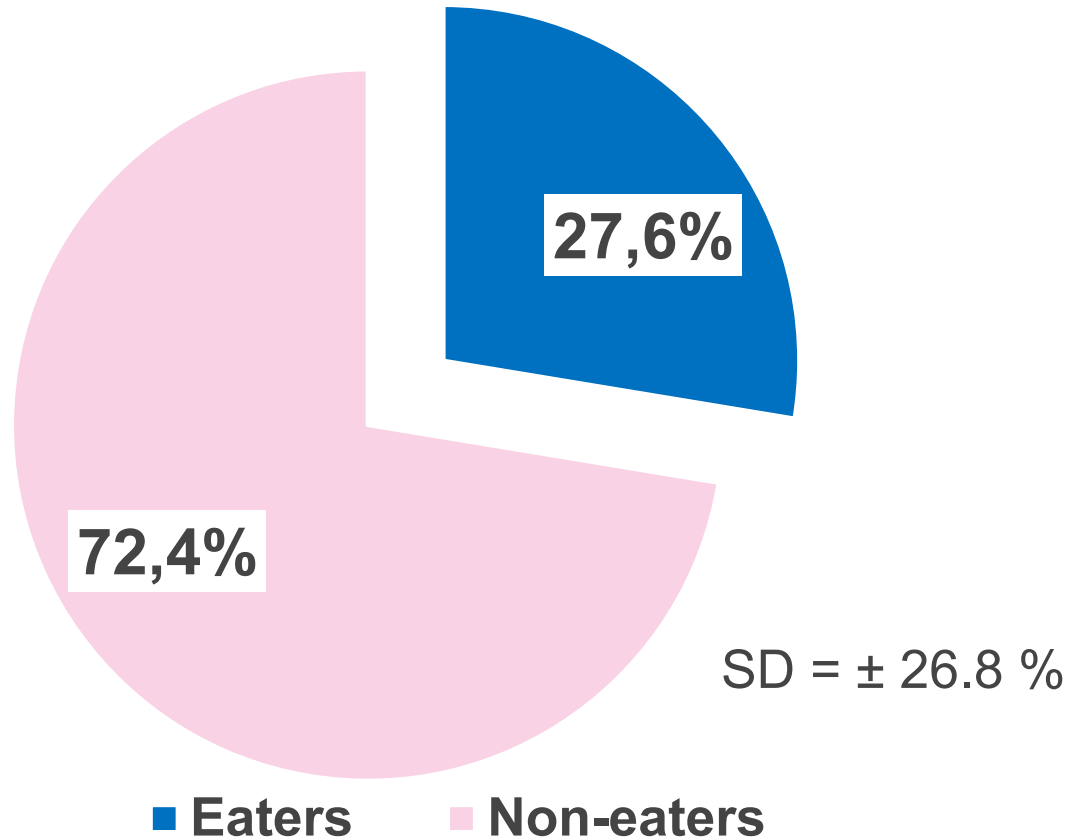
- ≥ 2 green swabs = **Eater**
- ≤ 1 green swab = **Non-eater**

Results

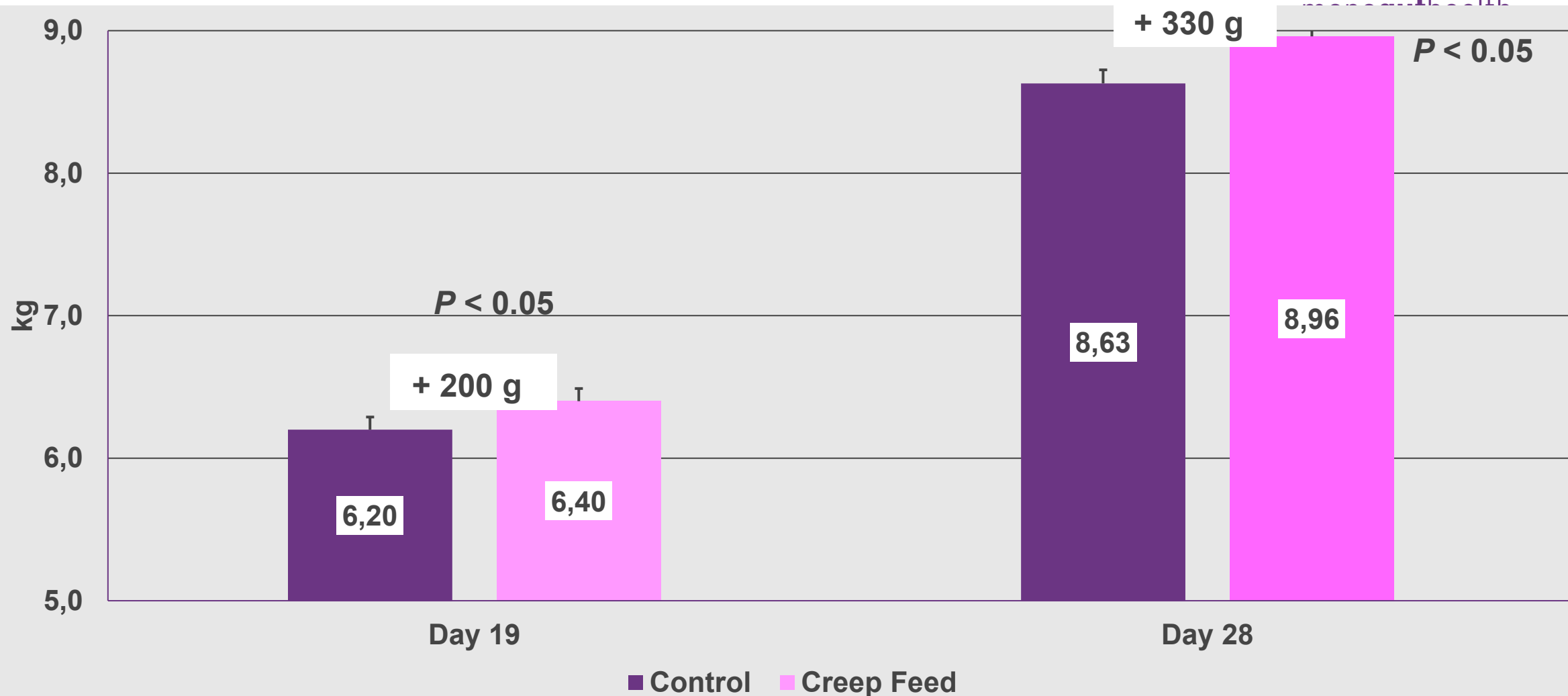
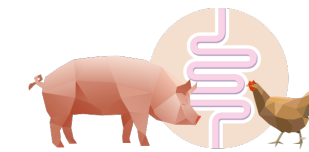
Creep feed disappearance = 227 g/pig

Average creep feed consumption = 2964 g/litter

Proportion of 'Eaters' and 'Non-eaters'



Results – Body weight



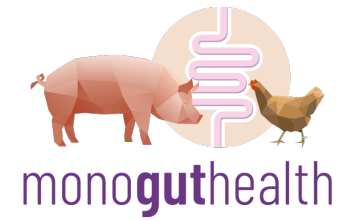
BW of pigs on D12 was used as a covariate in the analysis



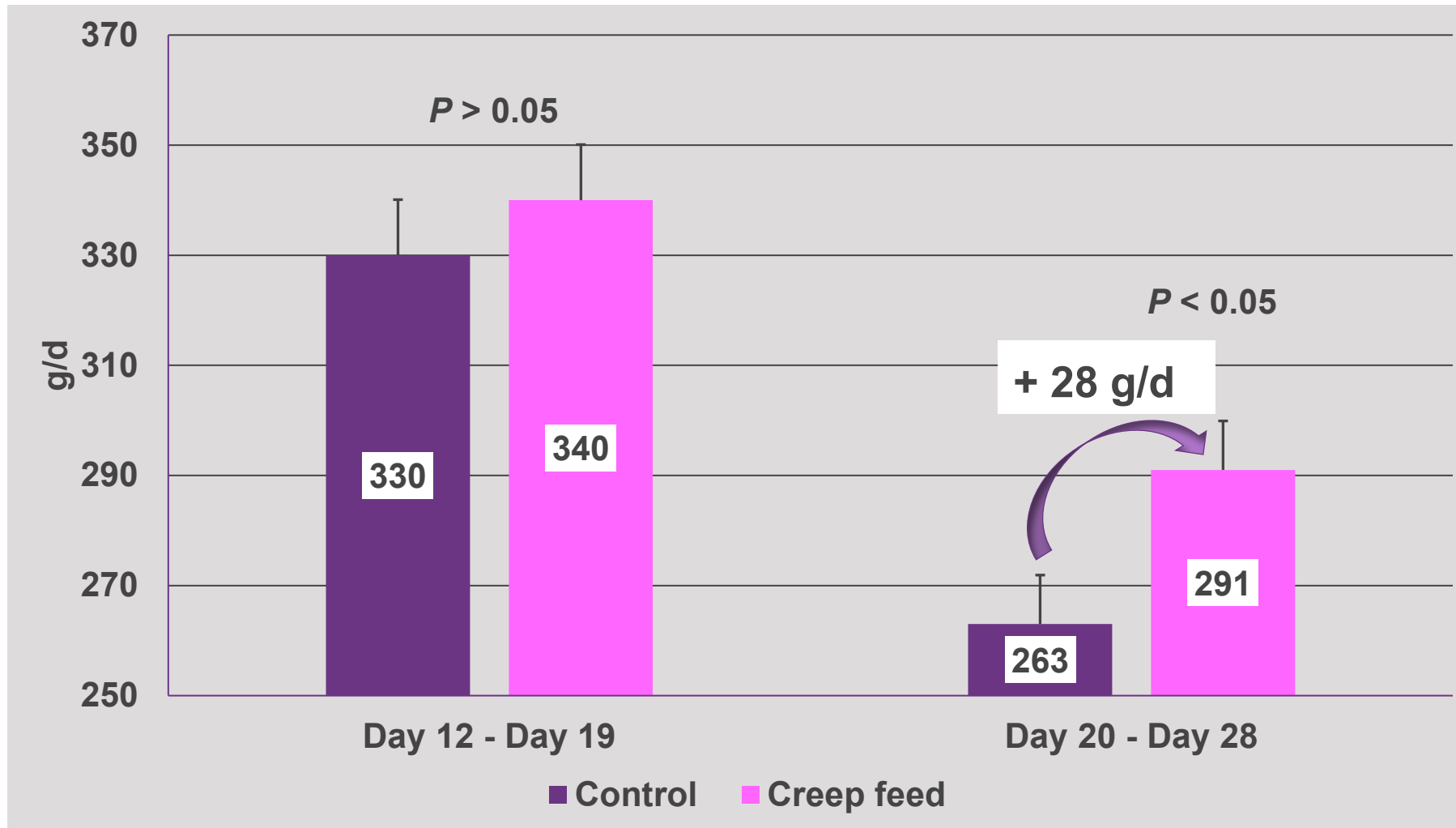
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Results – Average daily gain

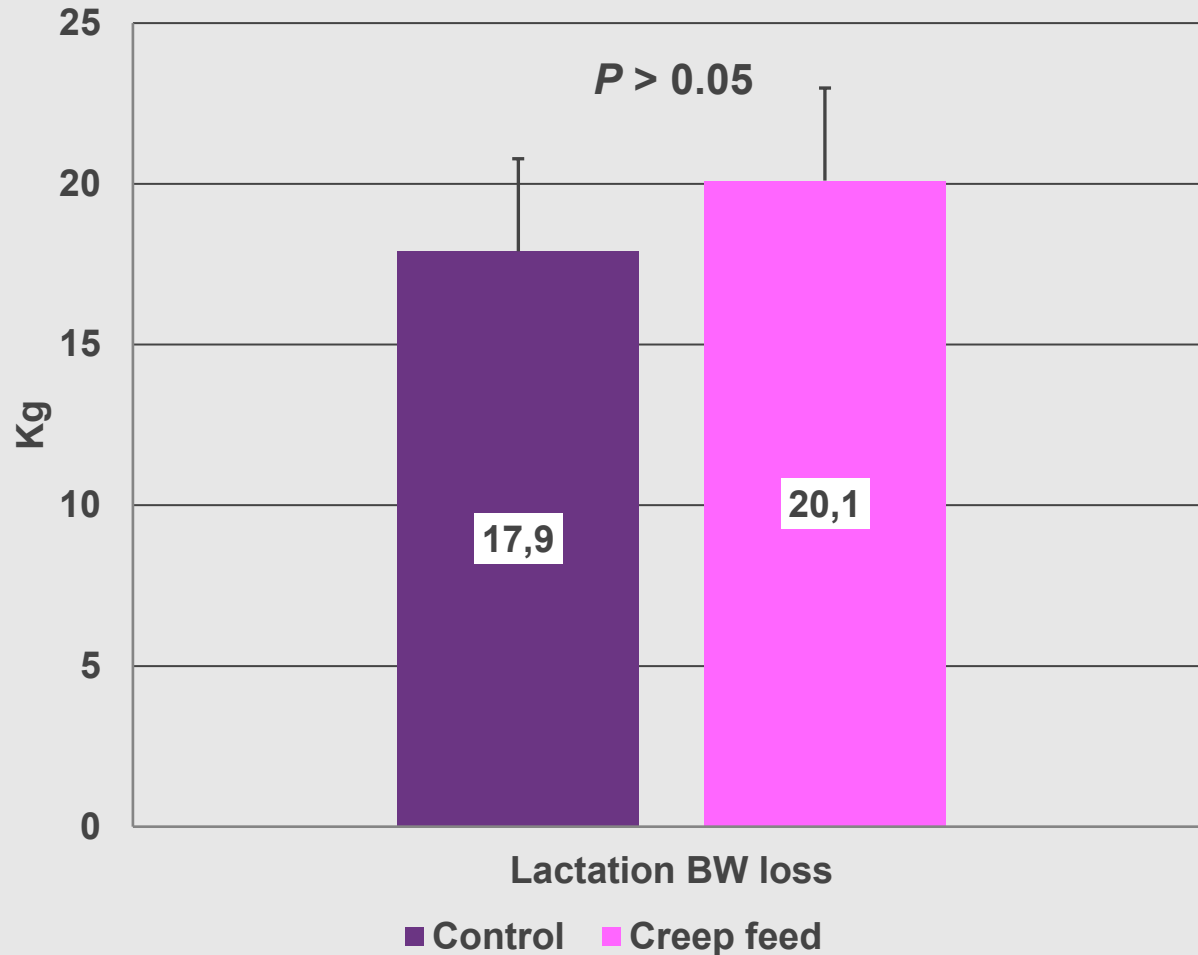


- Improved ADG
at weaning

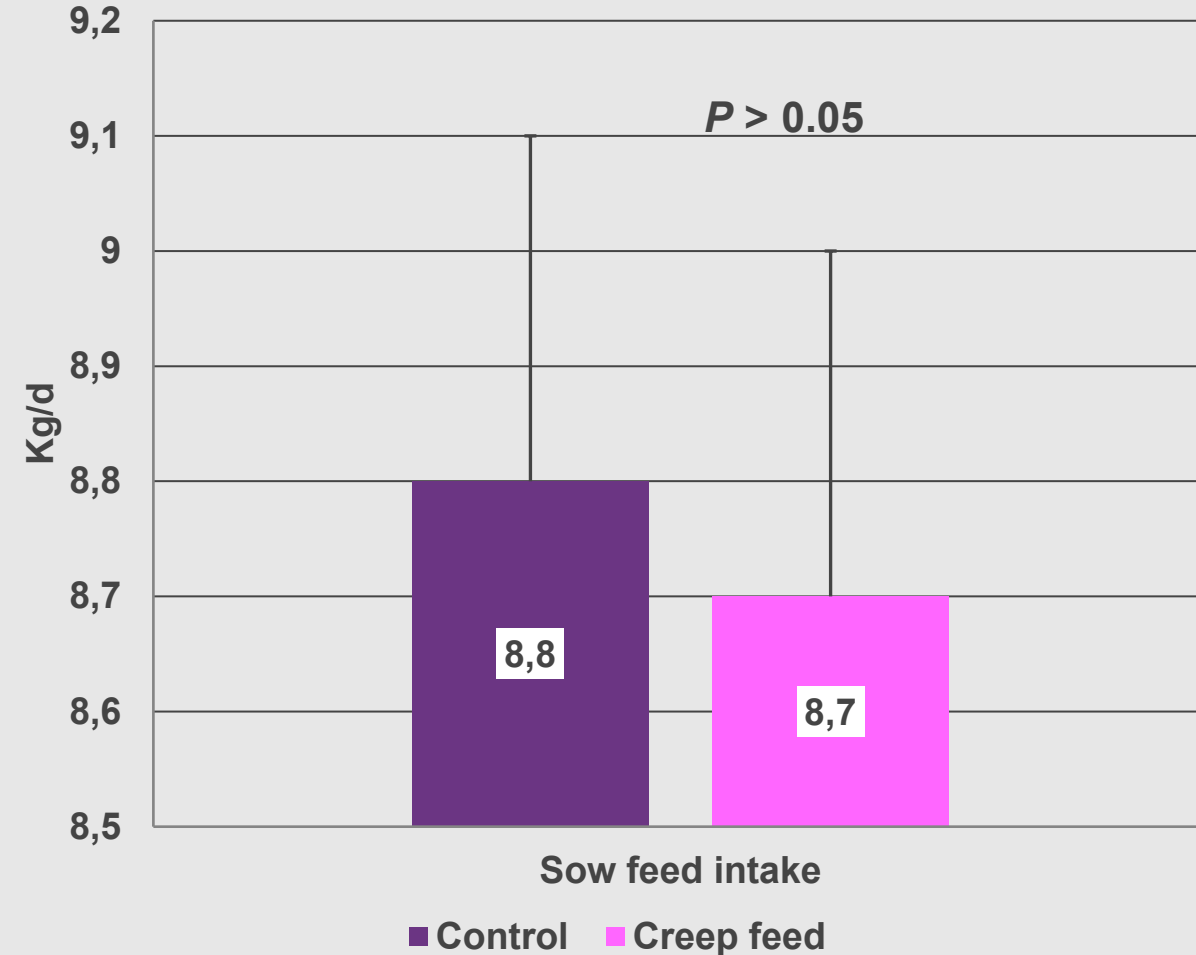


Results – Sow growth performance

Sow BW lactation change



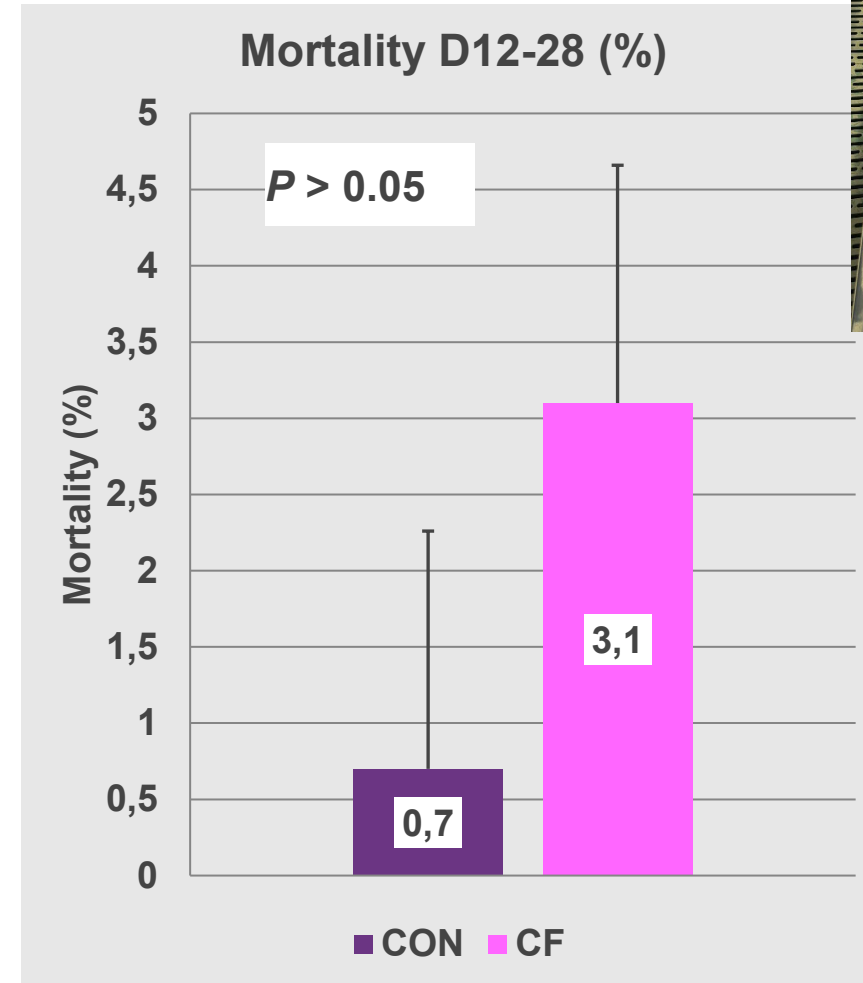
Sow feed intake (D12 – D28)



Results – Health Monitoring

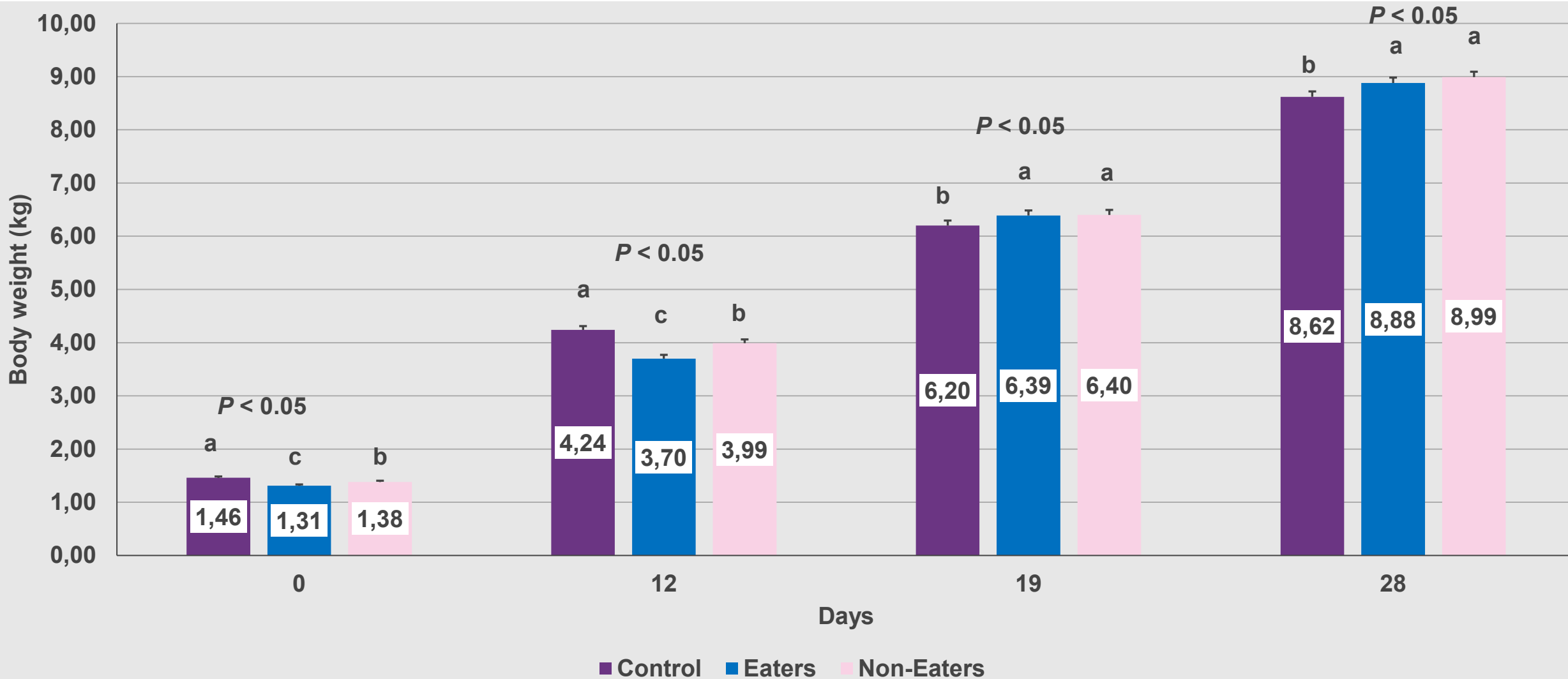
Table: Incidence of pig diarrhoea D15, 21 & 28

Day	Treatment		SEM	<i>P</i>
	CON	CF		
15	0.03	0.09	0.06	0.45
21	0.22	0.07	0.09	0.22
28	0.00	0.12	0.03	0.11
Combined	0.09	0.07	0.04	0.73



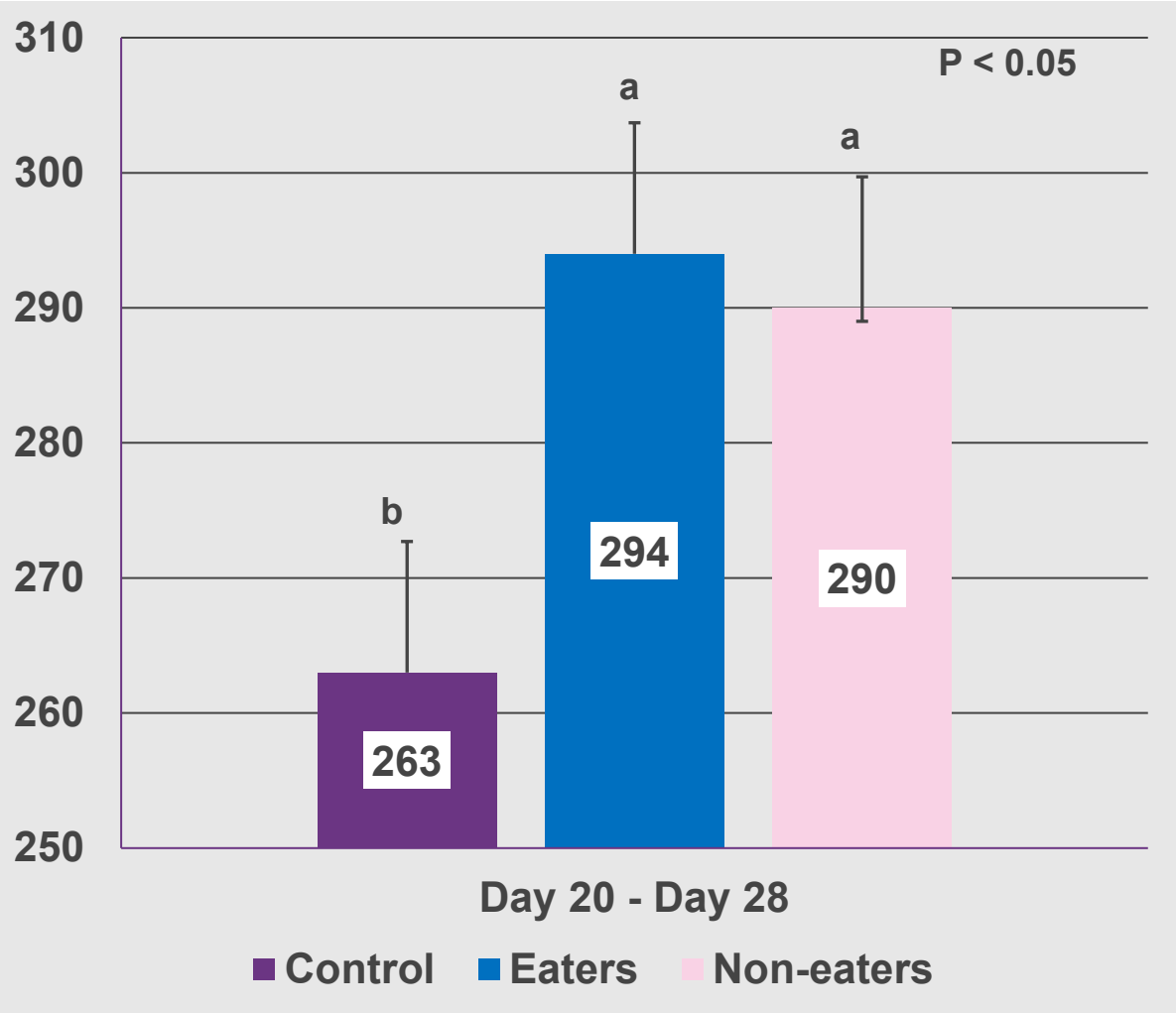
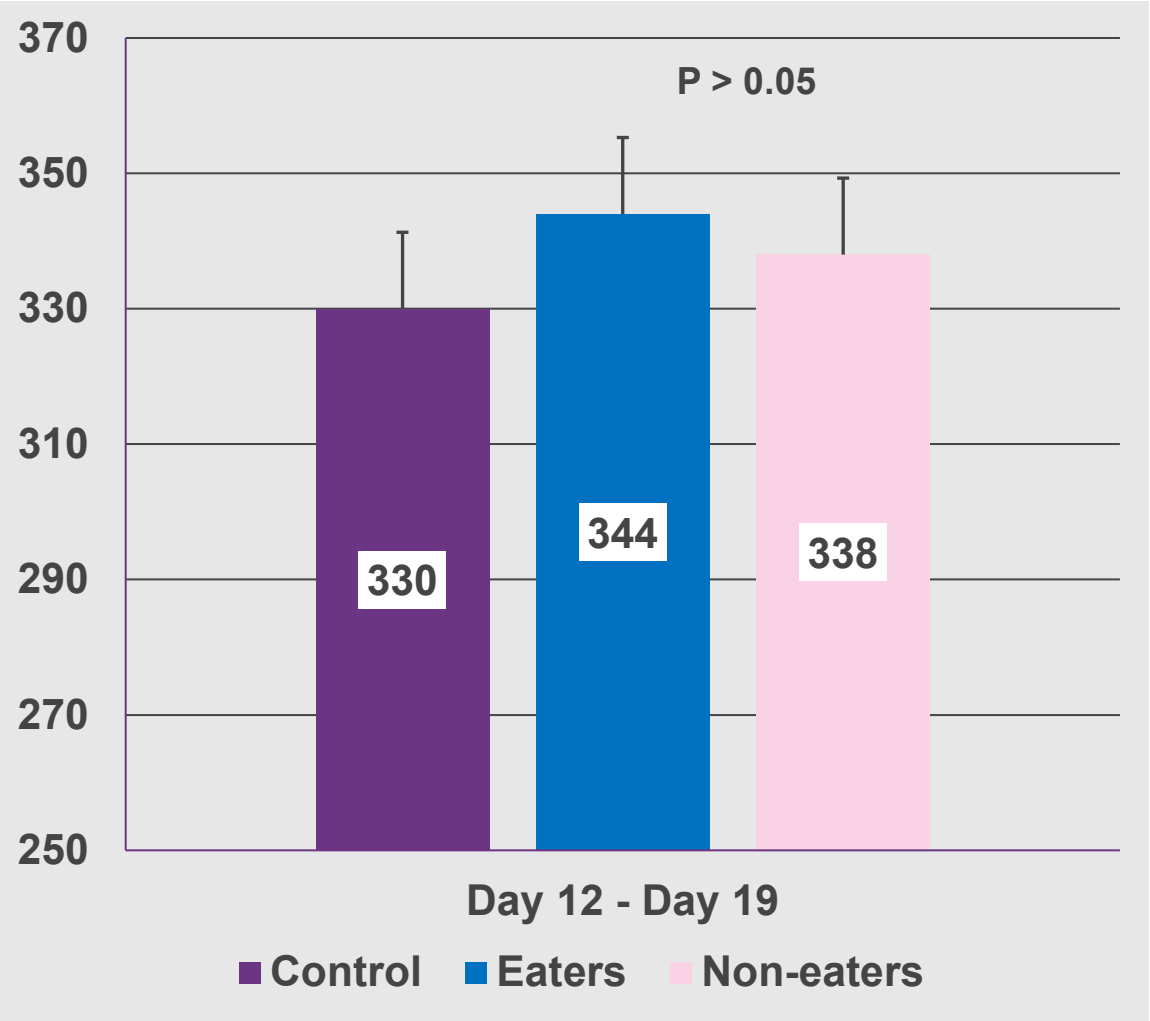
‘No difference on the number of clinical cases of disease and medication usage

Results – Body weight (kg)



a-b-c Bars that do not share a common superscript differ significantly at $P < 0.05$

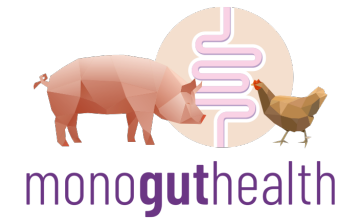
Results – Average daily gain (g/d)



a-b-c Bars that do not share a common superscript differ significantly at $P < 0.05$



Conclusions



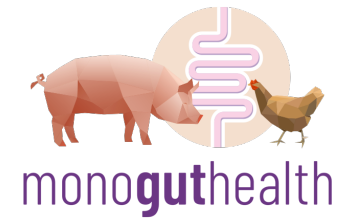
- Low % of Eaters identified in litters offered creep feed (28%)
- Lower than expected creep feed intake (~2.9 kg/litter)
- Creep feeding increased pre-weaning growth
- Eaters and Non-eaters of creep feed had increased WW
- Pigs identified as Eaters at weaning were found to be lighter at birth and D12 compared to Non-eaters of creep feed
- Even Non-eaters benefitted from creep feed provision likely due to reduced competition for maternal milk from Eater litter mates

Future work

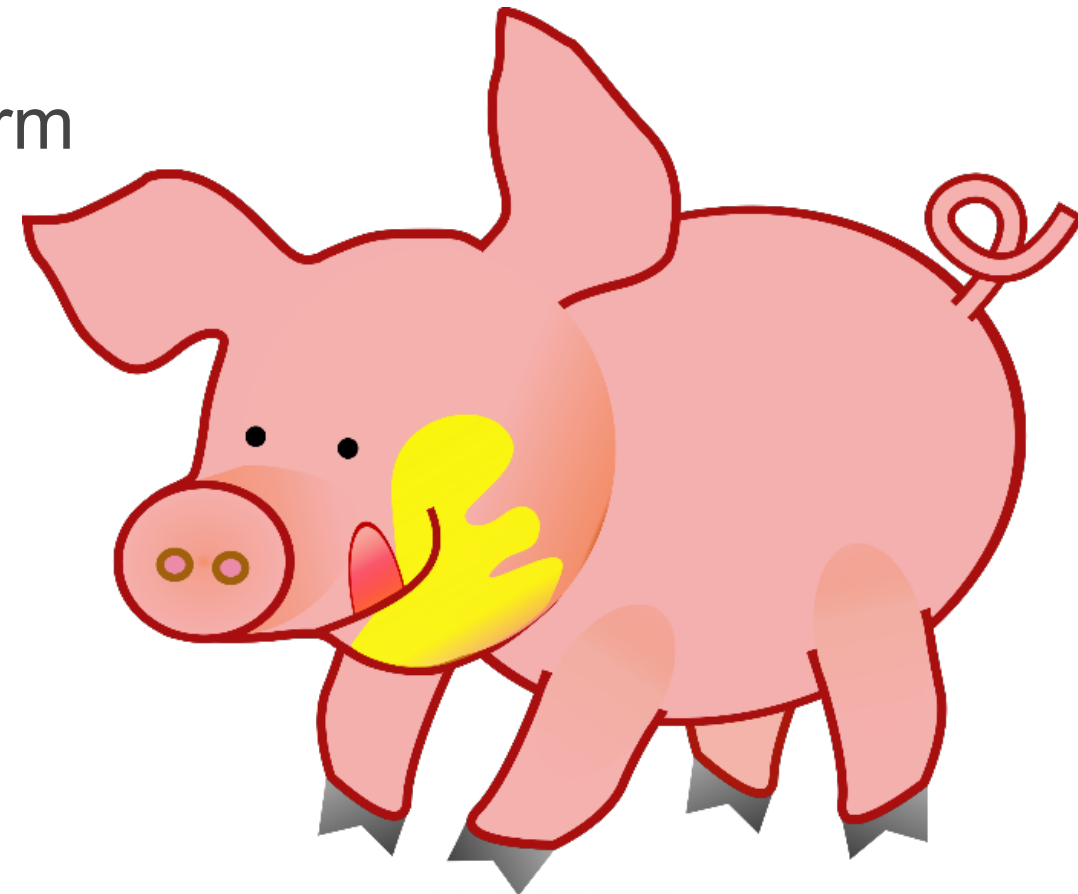
Effect on the gut microbiota pw; Acute-phase protein and oxidative stress parameters pw



Acknowledgments



- Co-authors
- Pauline Lichou
- Declan Armstrong and all AFBI farm staff
- MonoGutHealth
- Department of Agriculture, Environment and Rural Affairs (DAERA) of Northern Ireland



THANK YOU

Do you have any questions?

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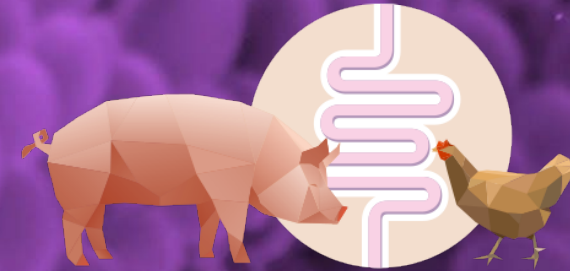
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