

Facing the Challenge: 2022 Zinc Oxide Removal

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Primary Diets

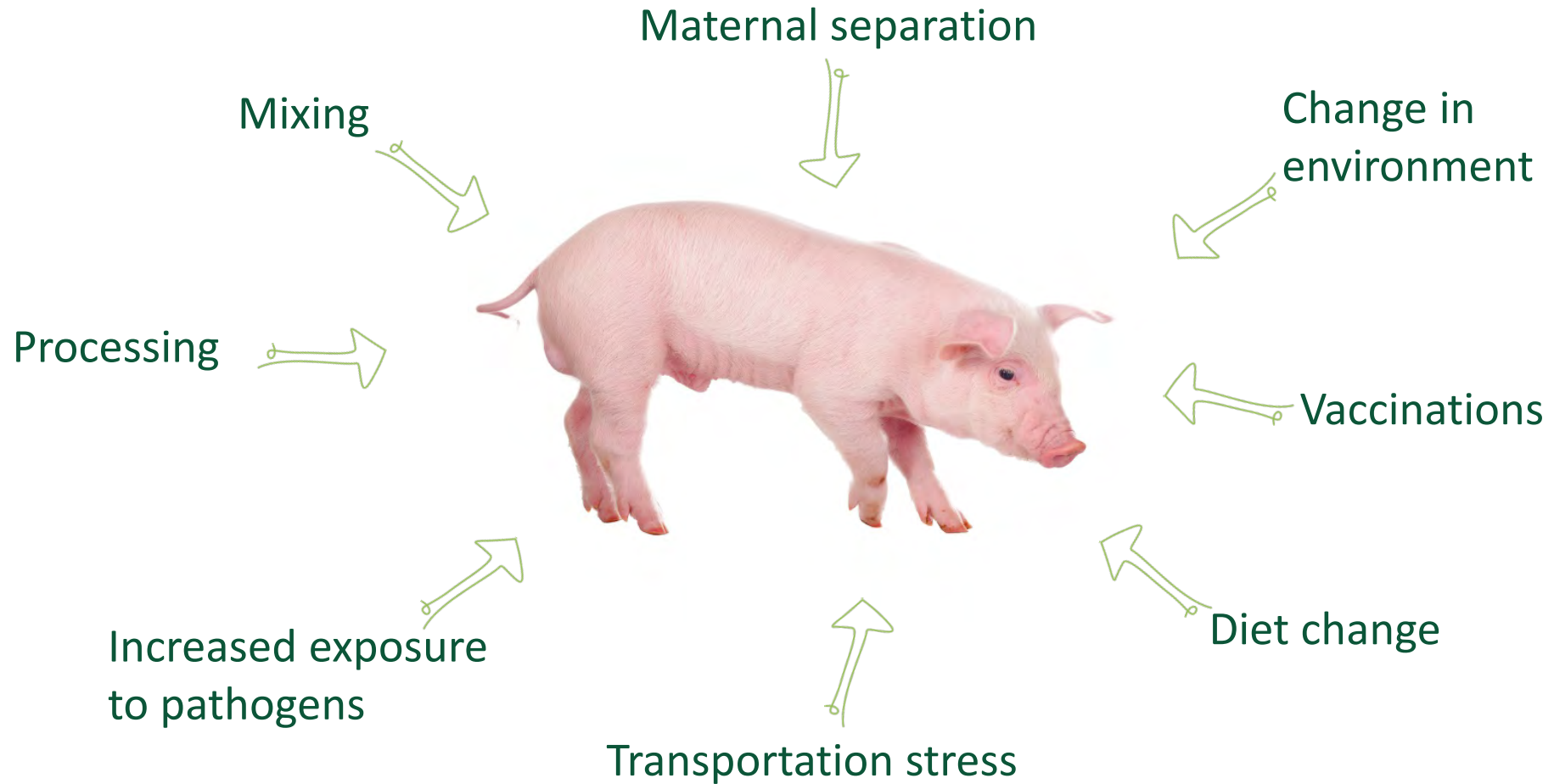


Outline

- What is zinc oxide and why is it used in piglet diets?
- Why and when will its use be banned?
- What are the potential impacts on health and productivity?
- What can we do to approach the challenge?
- Could the challenge become an opportunity?

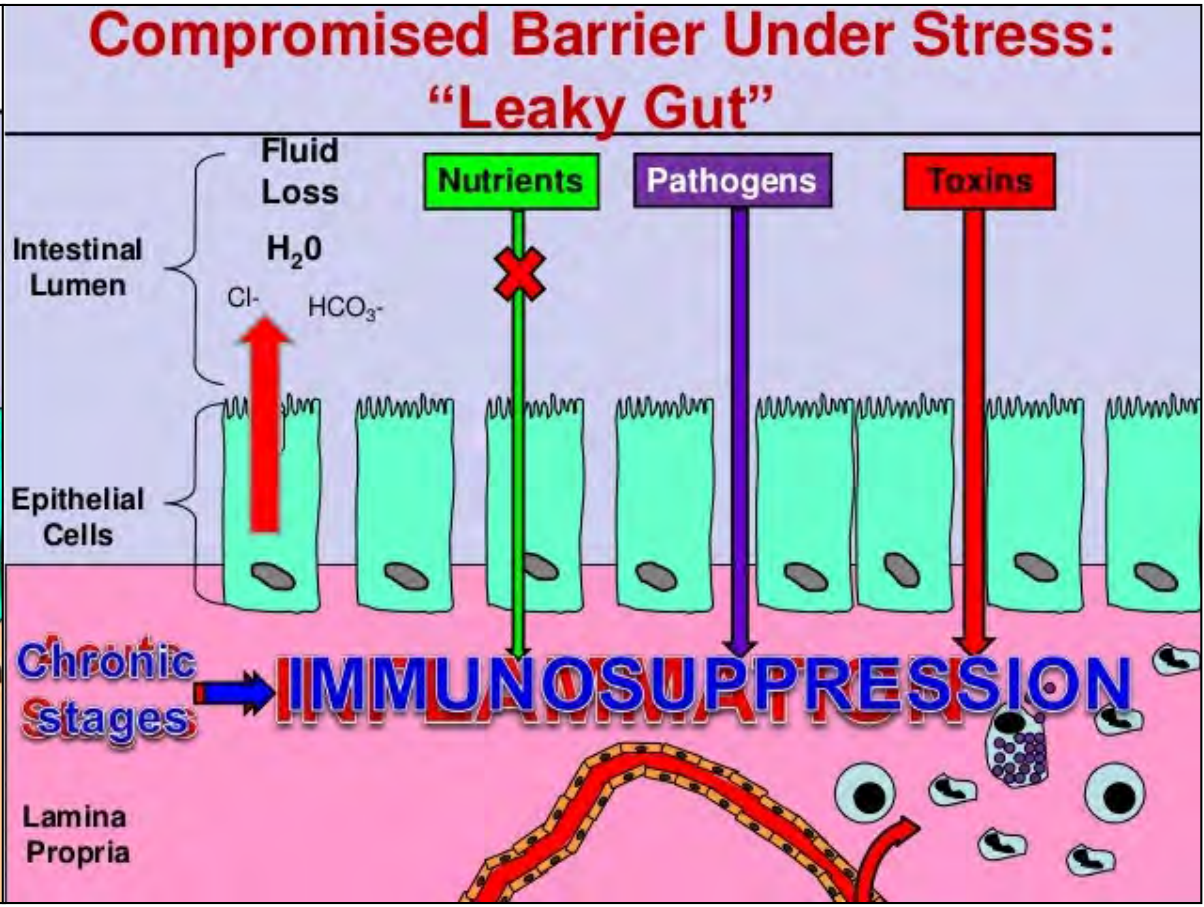
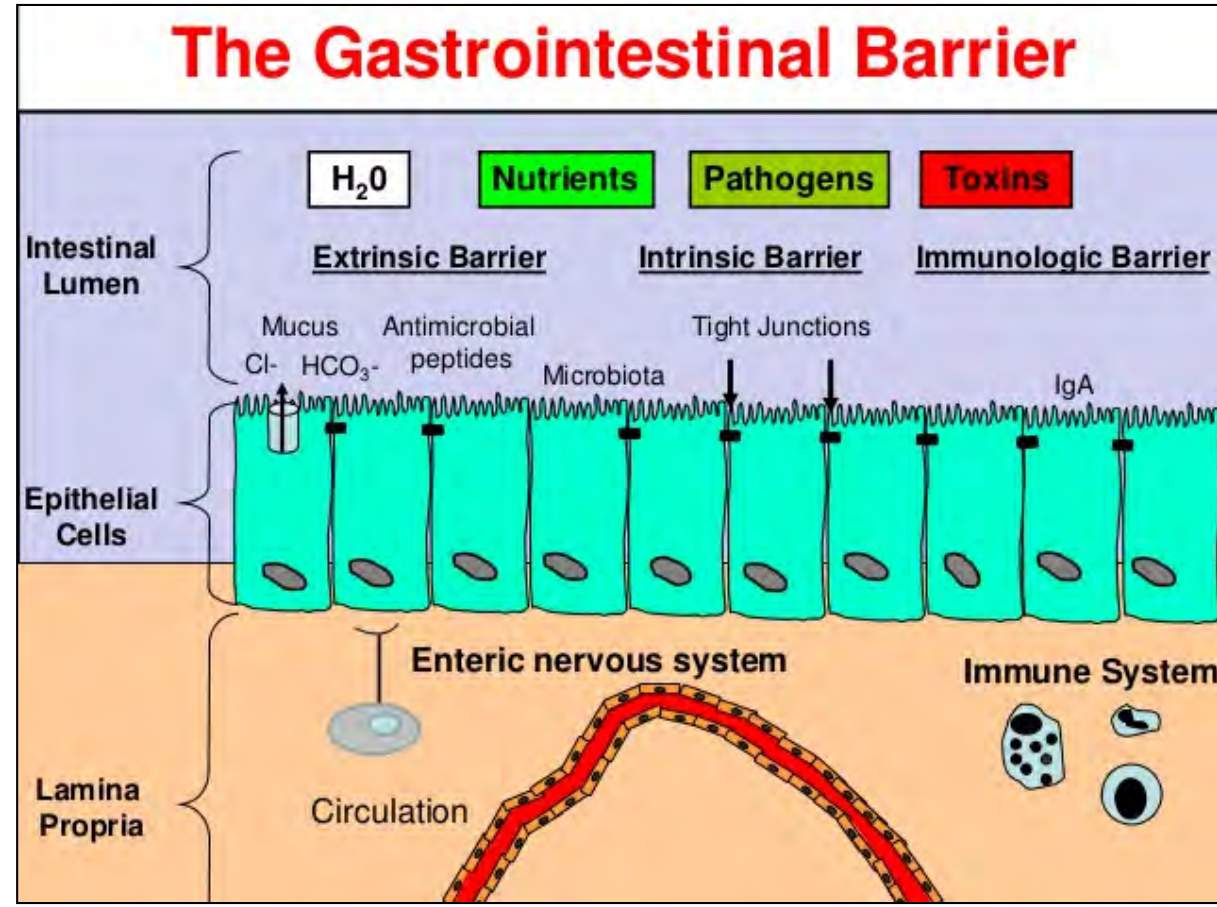


Weaning Stressors



Normal gut

“Leaky” gut



Weaning

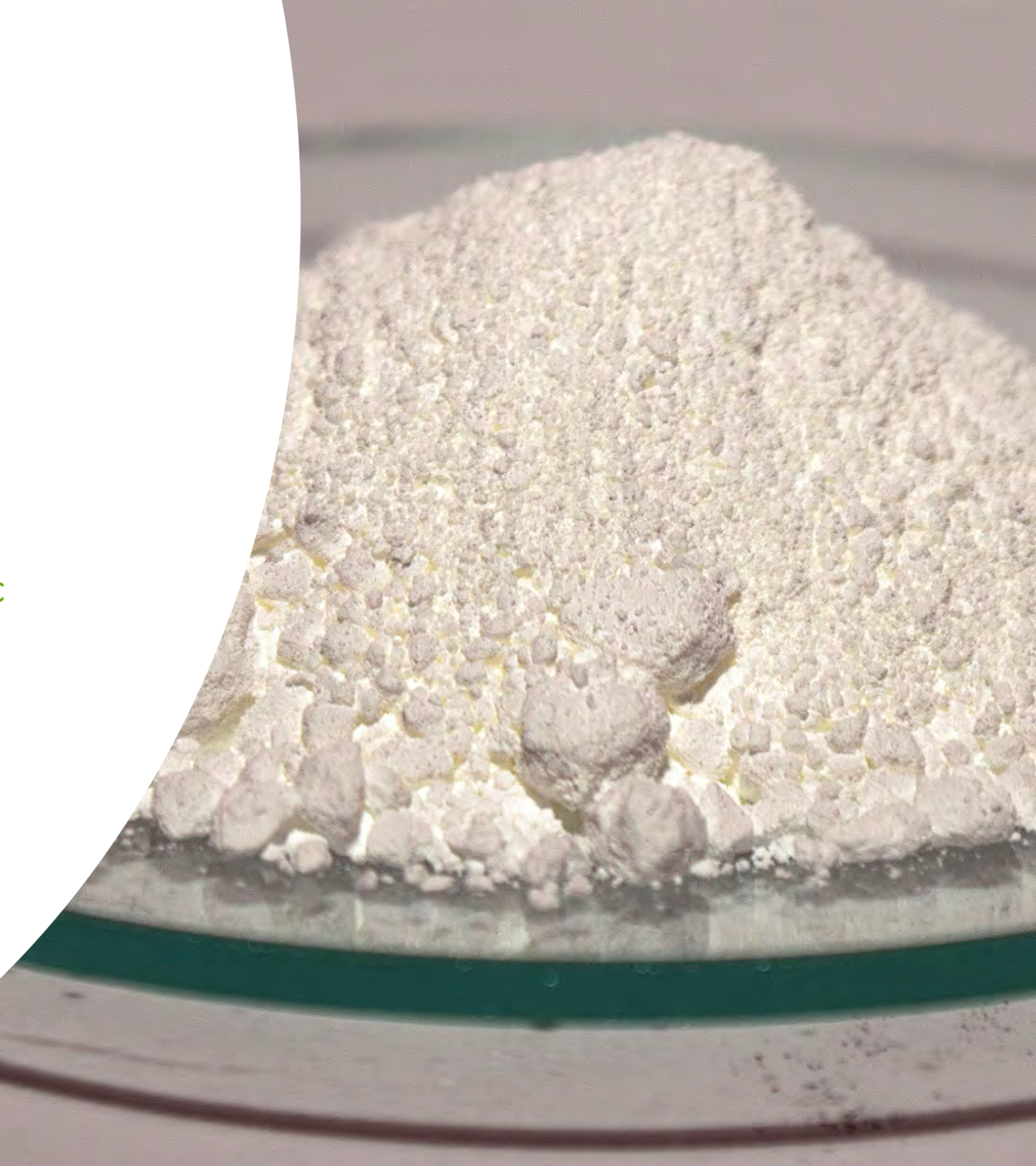
Why Use High Levels of Zinc Oxide?

- 14 day licence at 3.1 kg/t (2500 ppm) in EU
- Control of post-weaning scour
 - Bacterial challenge
 - Problem typically around 7-10 days post-weaning
- Growth-promoting benefits well recognised
- No-one knows exact mechanism of ZnO

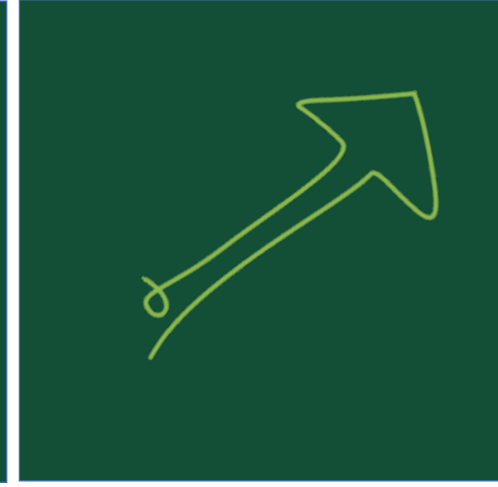
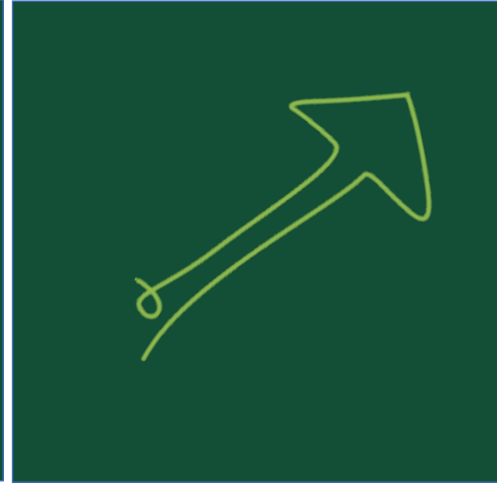
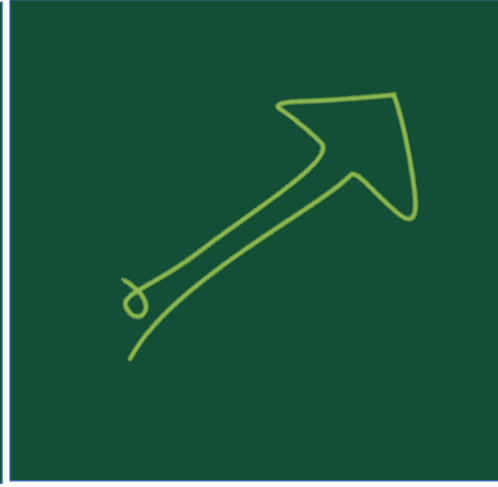
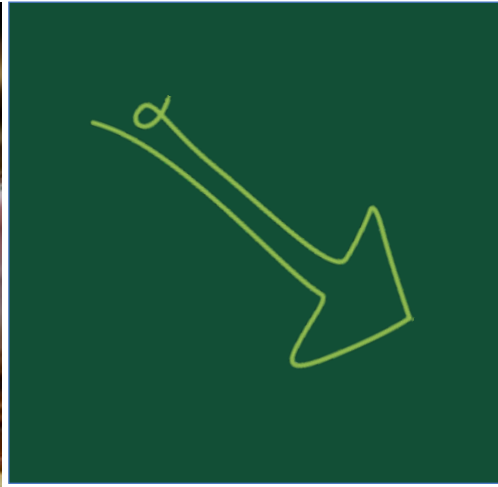


Europe Bans Zinc Oxide in Pig Feed

- In March 2017 the European Commission made the decision to withdraw any veterinary medicines containing zinc oxide
- From June 2022 the maximum allowable level of zinc in piglet feeds will be 150 mg/kg
- Environmental concerns
- Previously estimated that 70 – 90% of piglet starter diets in the UK contain zinc oxide at the therapeutic level *(NPA, 2017)*



Potential Impact of Reduced Zinc Oxide Use



Slower growth

Feed efficiency

Mortality

Looseness

Antibiotic usage



Potential Impact of Reduced Zinc Oxide Use

	Day 20 Weight (kg)		Benefit of Added Zinc
	+ ZnO	- ZnO	
PLTR 241	14.11	12.78	+ 1.33 kg
PLTR 251	15.33	13.46	+ 1.87 kg
PLTR 256	15.31	13.60	+ 1.71 kg
PLTR 258	14.34	13.29	+ 1.05 kg
PLTR 259	15.88	14.20	+ 1.68kg

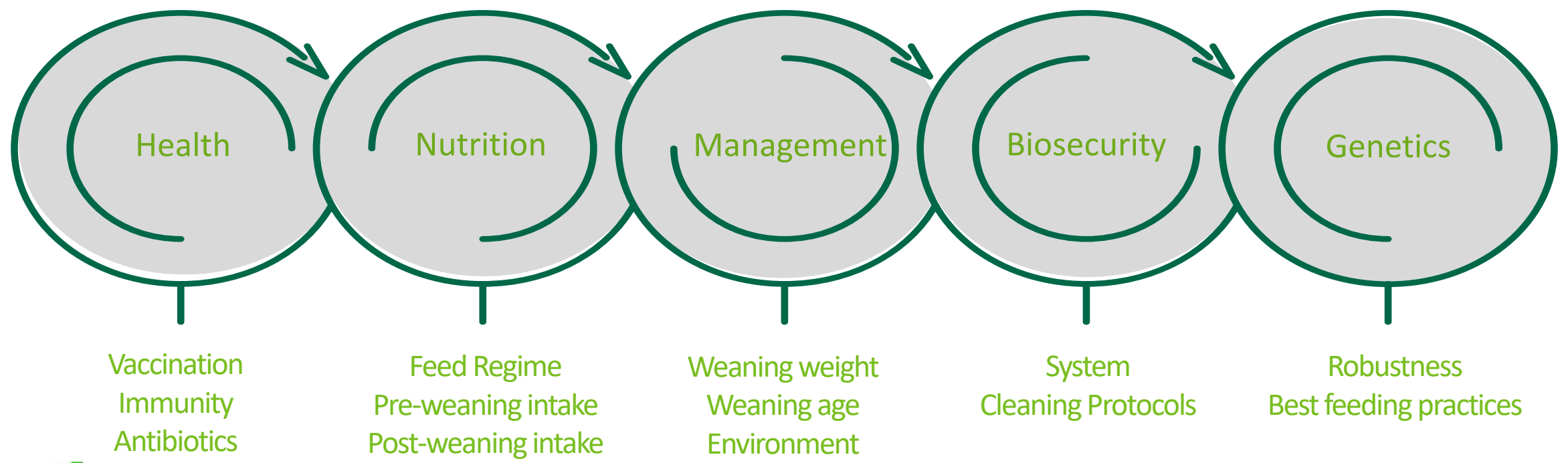
Ref: Primary Diets Leeds University Trials



OUR CHALLENGE: TO LEARN HOW BEST TO PRODUCE PIGS IN THE ABSENCE OF ZINC OXIDE WHILST MAINTAINING HEALTH, WELFARE, AND PRODUCTIVITY

Approaching the Challenge

Multi-Factorial Approach



ONE SIZE DOES NOT FIT ALL

Approaching the Challenge

Nutritional Strategies

- Areas of nutritional focus:
 - **Nutrient supply for requirements under a health challenge**



Approaching the Challenge

Nutritional Strategies

- Areas of nutritional focus:
 - Nutrient supply for requirements under a health challenge
 - **Functional raw materials**



Approaching the Challenge

Nutritional Strategies

- Areas of nutritional focus:
 - Nutrient supply for requirements under a health challenge
 - Functional raw materials
 - **Gut health moderation and the appropriate application of additives**

DIVERSE STRATEGY



Approaching the Challenge

Research into Practice

	Impact of Zinc Removal (%)			
	PLTR 256 2016	PLTR 259 2017	PLTR 273 2018	PLTR 295 2020
ADG day 0-20 (g/day)	-23	-11	+8	+5
ADFI day 0-20 (g/day)	-14	-4	+11	+11
Feed Efficiency day 0-20	-12	-7	+3	-6
Day 20 Weight (kg)	-11	-6	+4	+2

Ref: Primary Diets Leeds University Trials 2016, 2017, 2018, 2020



Challenge Becomes Opportunity

- Have we in effect created a production system that requires zinc to maintain health and welfare?
- Adapting a collaborative approach, we have the opportunity to optimise management, biosecurity, and nutrition so that overall pig health is improved
- A high livestock health status industry is a commercially competitive one



Summary

- From June 2022 maximum allowable levels of zinc will be 150 mg/kg
- Our challenge is to learn how to produce pigs in the absence of zinc and antibiotics whilst maintaining health, welfare, and productivity
- Nutrition is key but only one part of the jigsaw - a multi-factorial whole farm approach is required
- We now have an opportunity to make real improvements in animal health and welfare in the absence of zinc oxide



Thank
you

Best
decisions
made
together

