

Feeding Health Challenged Wean Pigs

Carthage Conference 2025
Casey Neill



CARTHAGE

INNOVATIVE SWINE
SOLUTIONS

Take home messages with Sick Wean Pigs

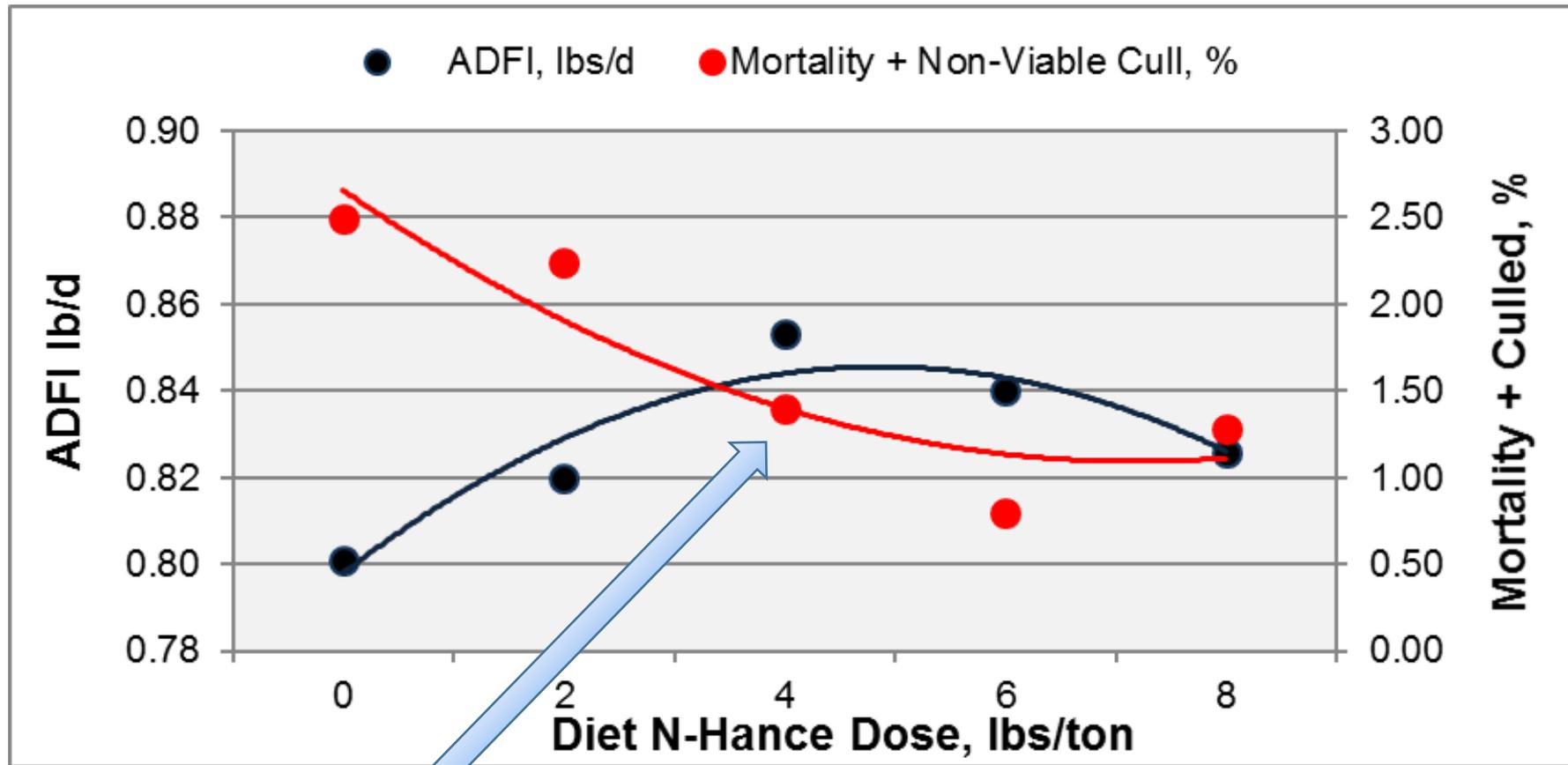
1. Work with a good vet 😊
 - Helps to get a heads up on what you will be receiving from the sow farm
 - Age/weight, med program, etc
2. Mat feeding
 - Encourage feed intake, get pigs up several times a day
3. Ingredients
 - Use ingredients that drive feed intake

Feed Intake is Key (& Water)

- Feed Intake drives everything
 - If pigs don't eat, they will not survive
 - This goes for all phases of swine production and health status
 - Even more important with sick or younger wean pigs
- How do you make sick pigs eat more?
 - Vet help with meds
 - Water products
 - Feed products



N-Hance Dose Response Curve for ADFI and Pig Retention as FVP from Placement to 20 d



Take home points:

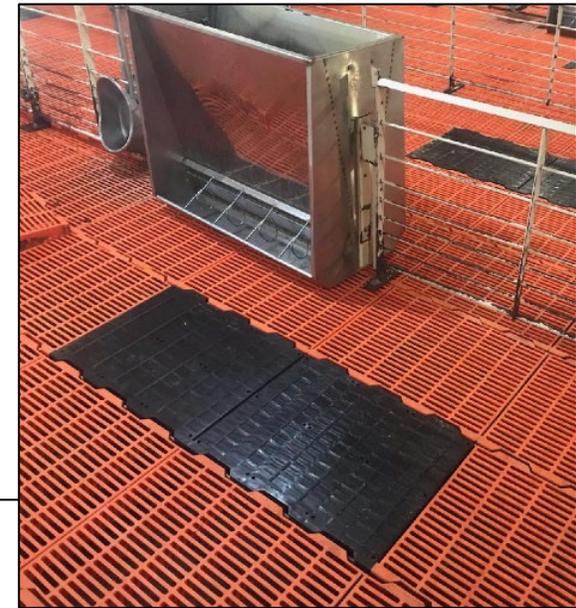
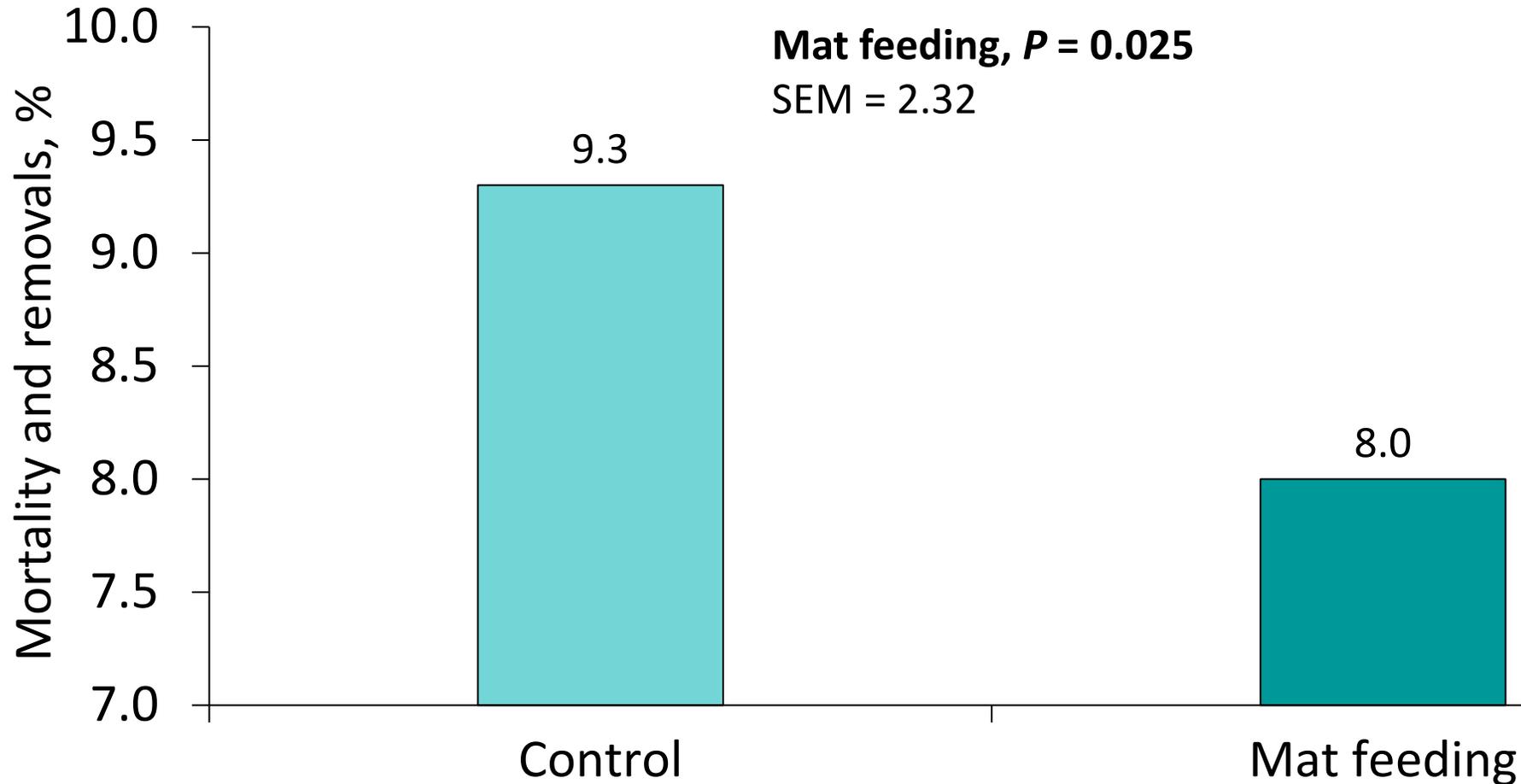
- 1) 6.25% improvement in ADFI @ 4 lbs/ton
- 2) 1.09% unit improvement in Mortality + Morbidity @ 4 lbs/ton

Mat Feeding

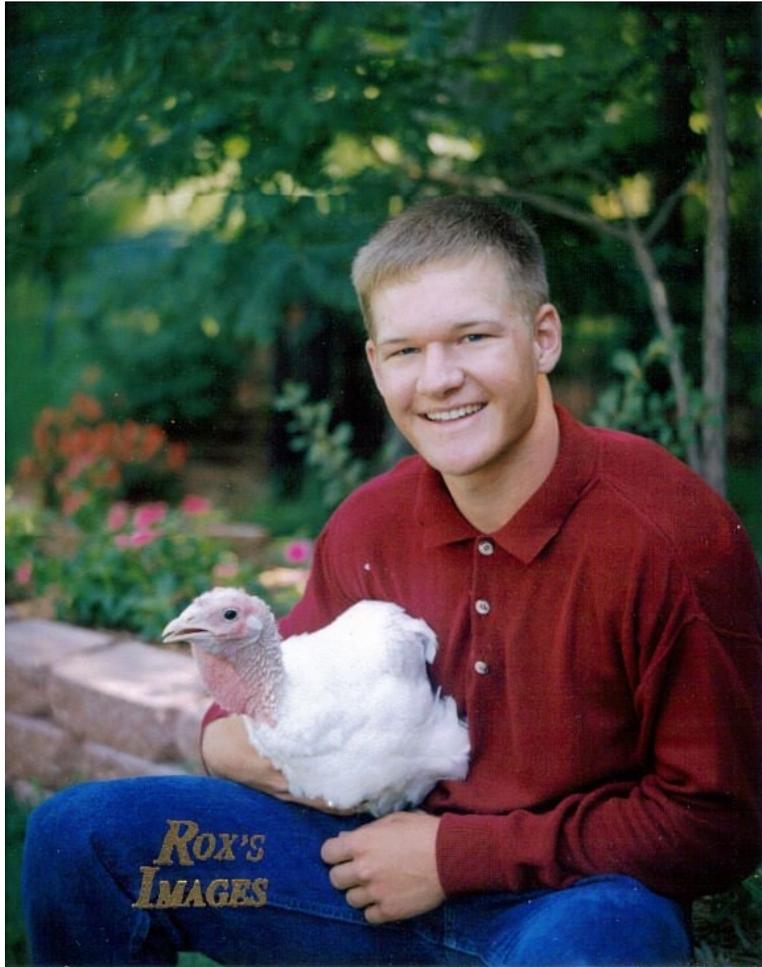


Impact of mat feeding on mortality and removals

3 combined experiments using 9,403 nursery pigs



Poultry Industry



2:23

LTE

The Poultry Site



Autonomous robotics for the poultry shed

Two American entrepreneurs want to change the way poultry producers interact with their flocks. Poultry Patrol is an autonomous robot designed for use in poultry barns to improve animal welfare and cut down on a producer's need to constantly walk the barns doing surveillance.

7 August 2020 8 minute read

By: Andrew Amelinckx

"It can be a constant helper in the barns," says Jack Kilian, who designed the robot. "I don't think it would ever replace a person because a farmer can do things a robot never could, but it will definitely be able to help them keep an extra eye on their flock."

Kilian is an electrical engineer who recently completed his graduate studies at the University of Minnesota. His business partner, Jack Buendorf, is a maths and economics student still at university at St Olaf College, also in Minnesota. He handles the business end of things – both are in their twenties.

While still in its developmental phase, the sturdy four-wheeled robot that stands a little more than 60cm tall will be able to turn bedding, detect poultry disease and mortality through video and audio devices and alert the farmer to any problems it comes across – remotely and automatically. Eventually, they plan to add a mechanism for moving mortalities to an area selected by the farmer for disposal. Currently, operators can remotely log into the robot and drive it from anywhere that internet is available. The system can determine where it is in the barn and has video capabilities, and the tiller is being tested, says Buendorf.



How it all started

2:19

LTE

The Counter



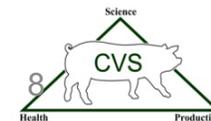
could accomplish. But a cute, French farm robot that debuted at last week's SPACE conference is designed to displace human participation in a far more mundane aspect of the poultry business. It's taking aim at the "walkthrough": the way poultry growers might occasionally walk through their flocks, gently riling up the birds.



Tibot

The Tibot Spoutnic, the world's first autonomous poultry-farming robot

As a species, chickens are somewhat given to inertia. And when you place them in the confines of the average industrial-scale



STP-1



Key Features & Benefits

- **Gut Health Enhancement:** Ani-Tek STP-1 contains a blend of functional fiber sources that promote overall gut health and improve pig performance, providing a solid foundation for growth and well-being.
- **FxP® – A Novel Functional Protein:** Featuring FxP®, a unique dairy-derived protein rich in immunoglobulins, Ani-Tek STP-1 can support the replacement of plasma in piglet diets. Research data shows a consistent reduction in mortality and morbidity, particularly in the presence of enteric challenges.
- **Multi-Strain Probiotic Technology:** Ani-Tek STP-1 includes a specialized multi-strain probiotic formula designed to target and control specific enteric pathogens, helping prevent infections and supporting digestive health.
- **Kaolin Clay for Diarrhea Control:** This product contains kaolin clay, a well-known agent for managing simple diarrhea in livestock and pets, contributing to more stable digestive function.
- **Pharmacological Zinc Levels:** With elevated levels of zinc, Ani-Tek STP-1 aids in enhancing gut health and improving barrier function, providing added protection against harmful pathogens.

Commercial Research Trial – 1100 pigs/treatment

1. Current diet with 5% Other Protein (Phase 1 diet)
2. Removed Other Protein and replaced with 0.50% FxP (Phase 1 diet)

<i>Effect of nursery program on cumulative mortality + morbidity (Week 0-8)</i>			
<i>Mortality + Morbidity</i>	<i>Other Protein</i>	<i>FxP</i>	<i>P-Value</i>
<i>All Pigs</i>	<i>9.40</i>	<i>4.42</i>	<i>< 0.001</i>
<i>General Population</i>	<i>4.71</i>	<i>2.85</i>	<i>< 0.05</i>
<i>Sorted Small Pig pens</i>	<i>37.50</i>	<i>13.82</i>	<i>< 0.001</i>

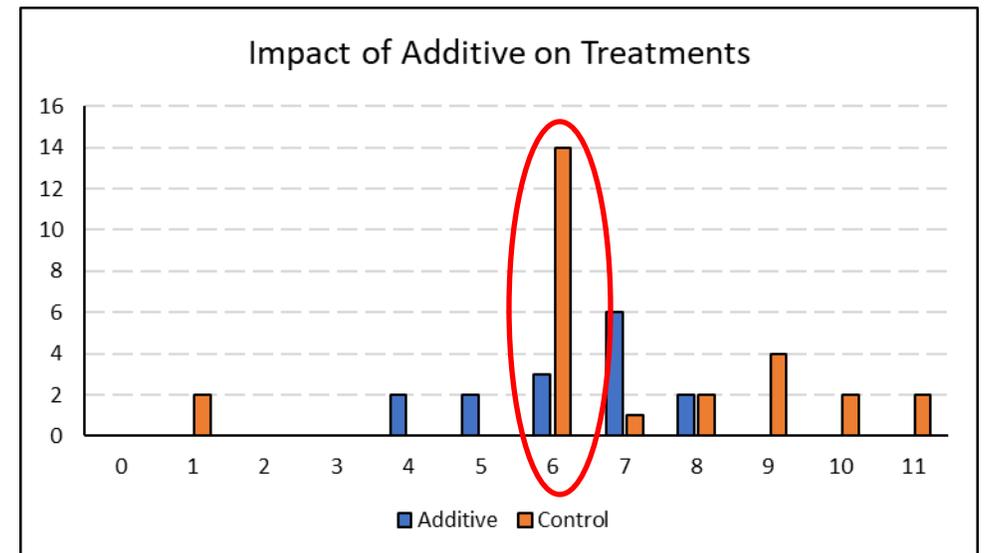
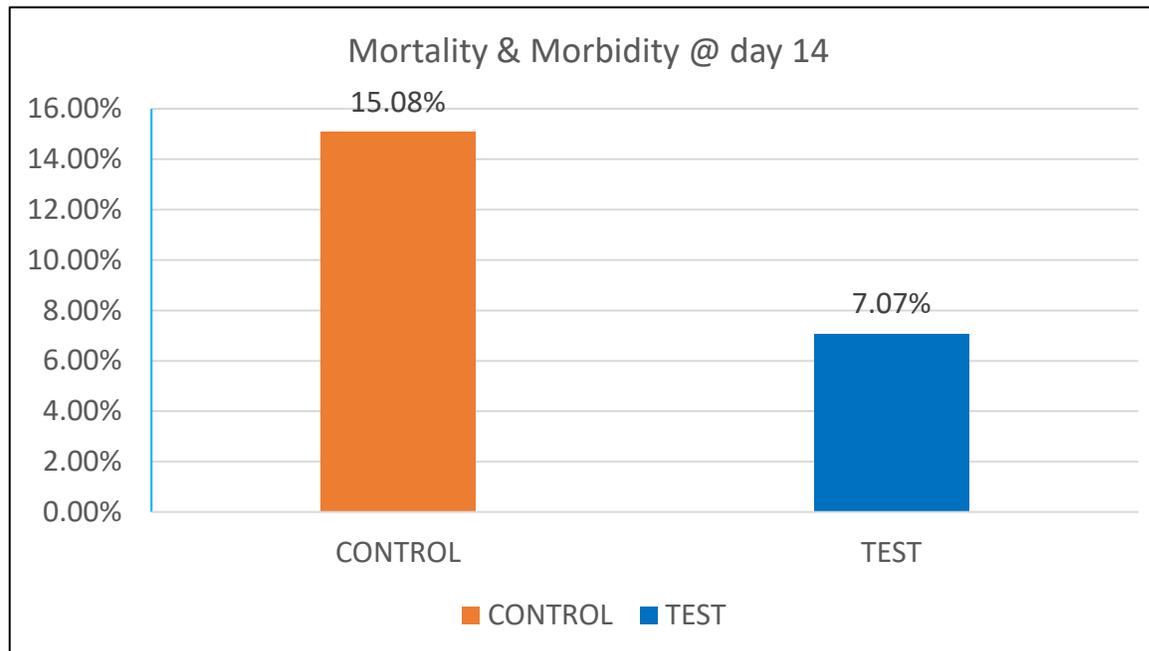
53% reduction in total nursery mortality

FxP Mortality/Removal Meta-Analysis Data Summary

Dead %	Nursery (Days)	# Pigs/Trt	Control	FxP	Difference
Can Integrator 1 Trial 1	46.5	384	3.91	2.86	-26.9%
Can Integrator 1 Trial 2	47.5	364	4.95	1.65	-68.7%
US Integrator 1 Trial 1	39.0	624	6.09	4.97	-18.4%
US Integrator 1 Trial 2	43.0	1250	2.32	1.36	-41.4%
GVC Consulting LLC	43.0	528	4.80	2.90	-39.6%
US Integrator 2 Trial 1		17000	2.40	1.70	-29.2%
US Integrator 3 Trial 1	56.0	1064		4.42	
US Integrator 4 Trial 1	72.0	1950	4.40	3.00	-31.8%
Average			4.12%	2.63%	-36.1%

USA Integrator Trial – 2023

1. Control (Current diet)
2. Additive (Current diet + Kaolin Clay)



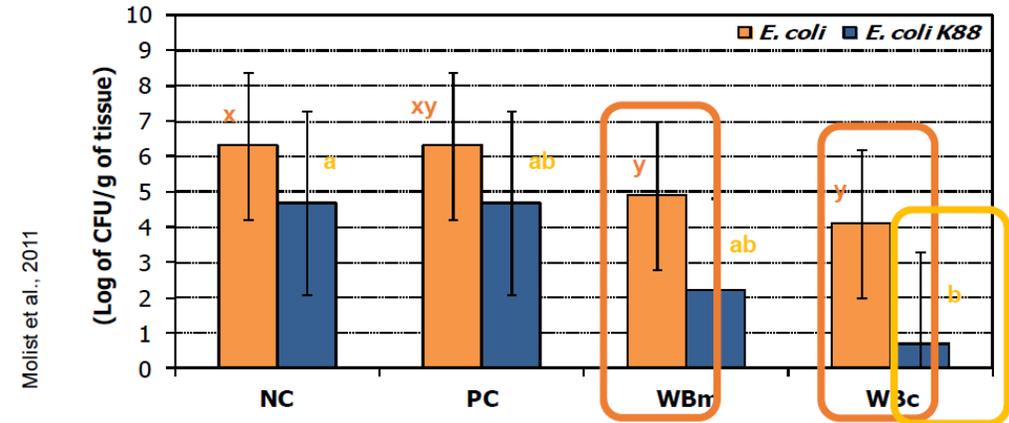
Insoluble Fiber

- Utilize inert fiber source (i.e. wheat bran) to reduce *E.coli* attached to small intestine (mechanical abrasion effect)
- Better efficacy with a “coarse” insoluble fiber source

Physical effect



E.coli attached to ileum the mucosa



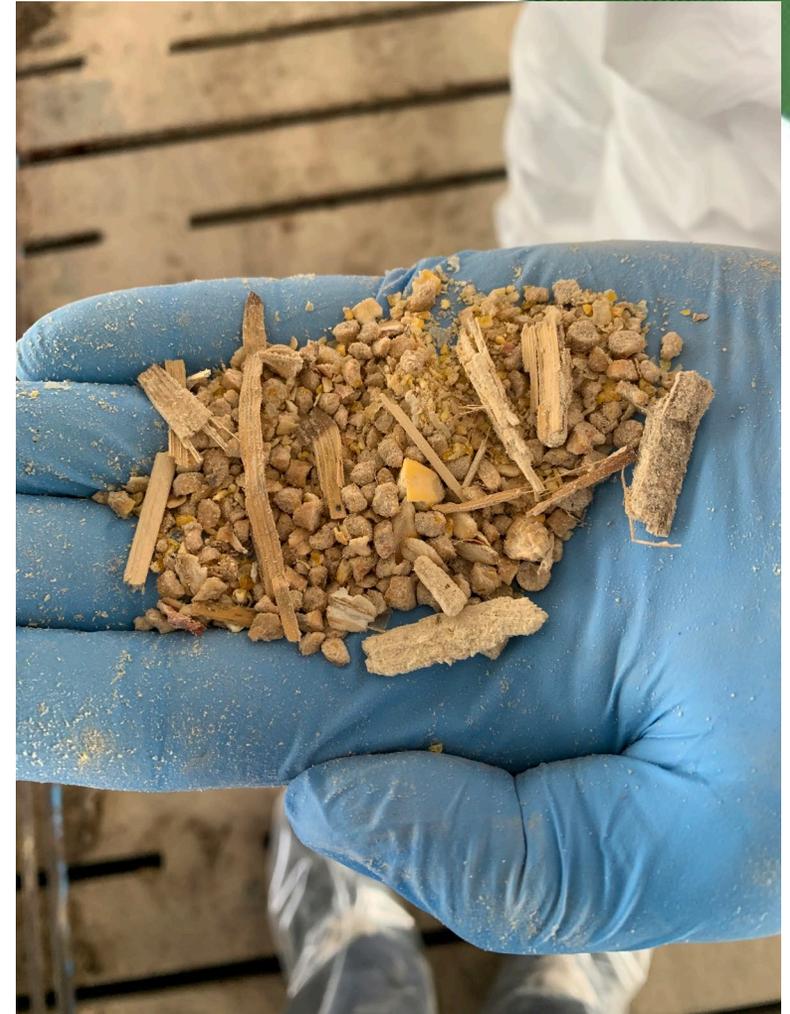
WB inclusion reduces the *E. coli* bacteria in the ileum digesta, and in coarse particle size also reduces the number of *E. coli* K88 adhered to the ileum mucosa

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Schothorst Feed Research B.V

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Iowa State AGP Alternative Review

Category	Number of Trials	Response	ADG, %	ADFI, %	G:F, %	Reduced mortality, %
DFM	311	-	1.6	3.2	1.0	0.0
		+	39.9	12.9	25.7	4.8
Yeast	98	-	1.0	1.0	0.0	1.0
		+	23.5	12.2	11.2	1.0
Prebiotics	99	-	0.0	1.0	0.0	0.0
		+	11.1	6.6	9.1	0.0
Oligosaccharides	92	-	4.3	3.3	0.0	0.0
		+	18.5	8.7	20.7	2.2
Starch/Fiber	281	-	15.3	12.5	8.5	0.4
		+	8.9	7.8	6.8	1.4
Organic Acids	151	-	1.3	0.7	0.0	0.0
		+	31.8	12.6	17.9	6.6
Botanicals	365	-	2.2	3.8	1.6	0.3
		+	23.3	9.3	16.4	0.8
Lysozyme	0	-	11.1	0.0	11.1	NR
		+	44.4	11.1	33.3	NR
Zinc/Copper	613	-	0.5	0.8	0.5	0.0
		+	38.7	24.0	19.4	1.8

Take Home:

- 1) Antibiotic Growth Promoter (AGP) Alternatives improve growth performance about 30% of the time in nursery pigs.
- 2) Seem to see more consistent and positive responses with DFM's, Organic Acids, and Zinc/Copper.
- 3) Lysozyme seems promising as well, but lower # of trials.

**Review conducted by Dr. Nicholas K. Gabler and Wes P. Schweer
Iowa State University

Nursery Formulation

- Quality of ingredients:
 - Highly digestible
 - Lactose/Sugars
 - Fiber (oats: what kind?)
 - Crumble
- Nutritional strategy: performance vs survivability
 - Limit amount of crude protein in the diet – extra nitrogen is a good substrate for bacteria growth
 - Minerals levels (Ca/P/Na)
- Feed additives:
 - Acidifiers
 - Enzymes
 - Medium Chain FA
 - Zinc oxide
 - Copper
 - Probiotics

Impact of Including Sucrose and Lactose in Initial Nursery Diets on the Performance of Nursery Pigs and their Feed Preference

N. Vander Werff¹, N. Gabler¹, D. Rosero¹

¹Iowa State University

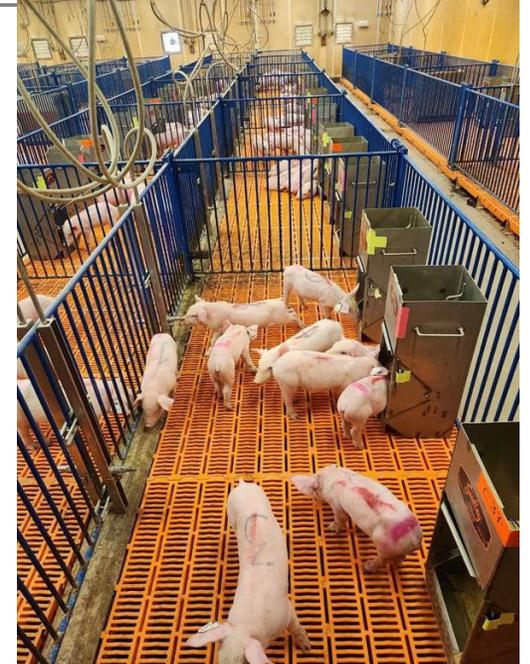
Materials and Methods

- **Growth Assay:**
 - 300 pigs allotted to 3 dietary treatments:
 - Control diet (**CON**)
 - Lactose (**LAC**)
 - Sucrose (**SUC**)
- **Preference Test (Period 1 and 2):**
 - 120 pigs allocated to 12 pens
 - Free choice of the 3 dietary treatments
 - 3 feeders/pen
 - Period 1: 8.0 in feeder length
 - Period 2: 22.5 in feeder length
 - Feeder positions were rotated
 - Period 1: daily
 - Period 2: every other day

Growth Assay:



Preference Test:



Overall Results

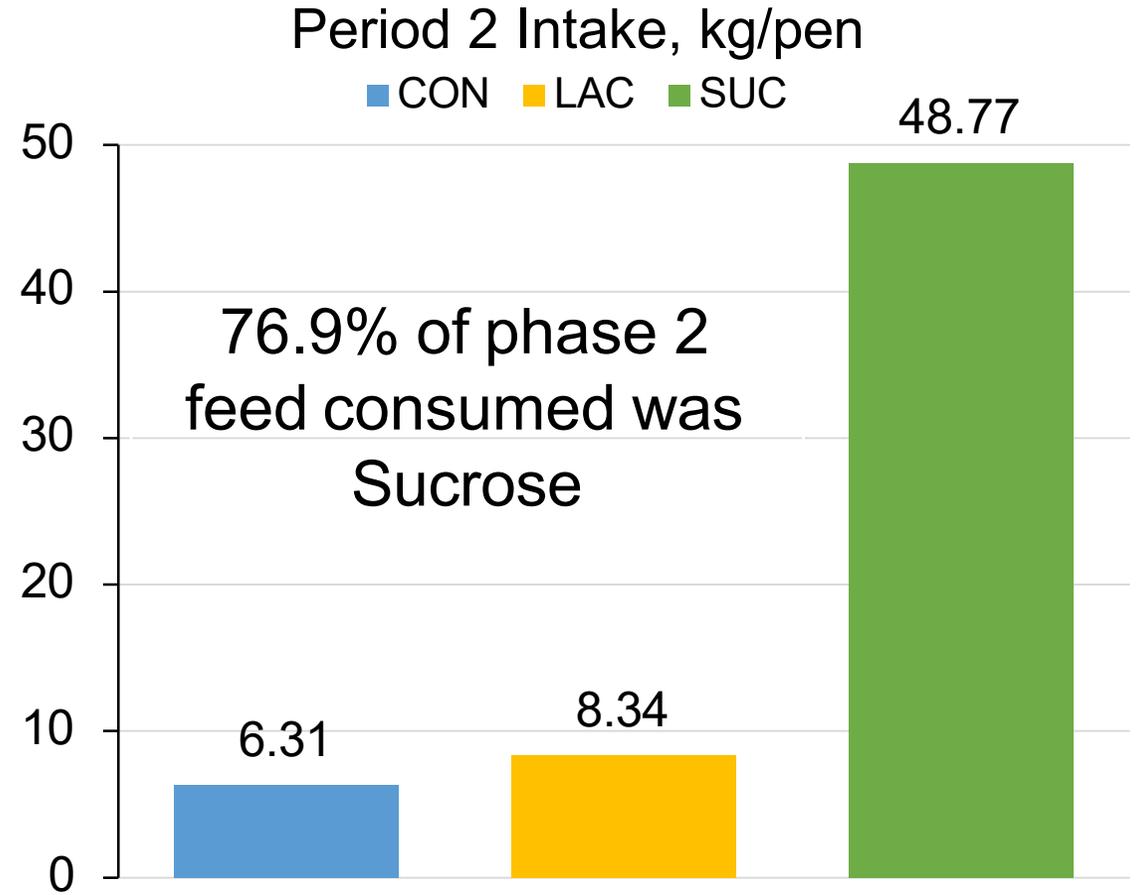
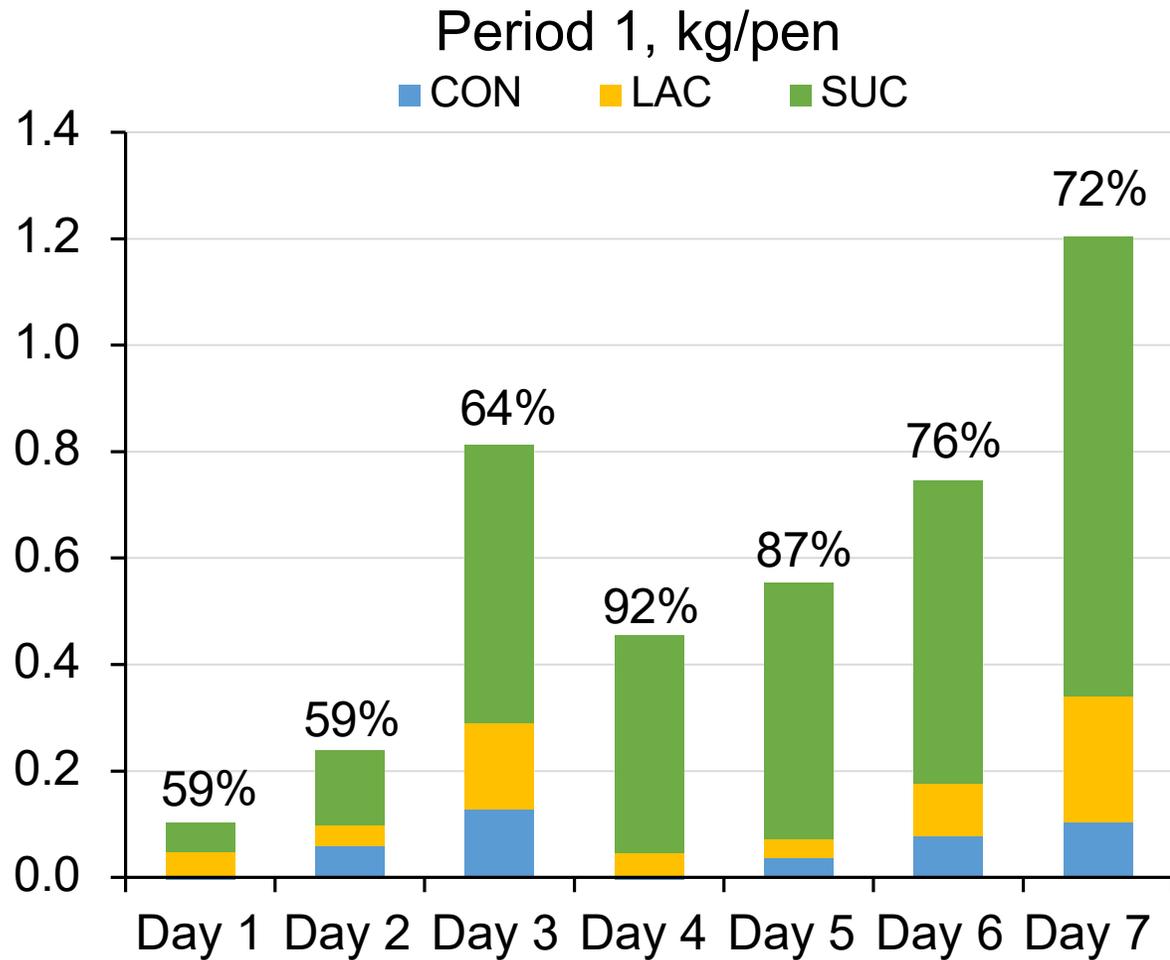
Dietary Treatment

Item	CON	LAC	SUC		SEM		P-value
Pigs, n	100	100	100				
Initial BW, kg	6.22	6.37	6.13		0.107		0.293
Final BW, kg	23.1	22.2	22.5		0.681		0.687
ADG, kg/d	0.370	0.361	0.380		0.013		0.612
ADFI, kg/d	0.556	0.539	0.559		0.018		0.538
G:F Ratio	0.637	0.675	0.681		0.016		0.127
Removal rate, %	24% ^a	12% ^b	12% ^b		3%		0.005

a,b Means with without common superscripts differ $P < 0.05$

Descriptive Analytics: Preference Test

- Pigs consistently preferred sucrose feed





Other Ingredient Options for Sick Pigs

- Steam Rolled Oats – Increase the level
 - Feed longer
- Probiotic
 - Feed longer
- Zinc Oxide
 - Feed longer
- Acidifiers
 - Feed longer

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Thank You



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