Creep Feeding Strategies and Piglet Performance: Lessons Learned From Recent Research

Producer Meeting

Atta Agyekum, PhD

Research Scientist – Nutrition

Outline

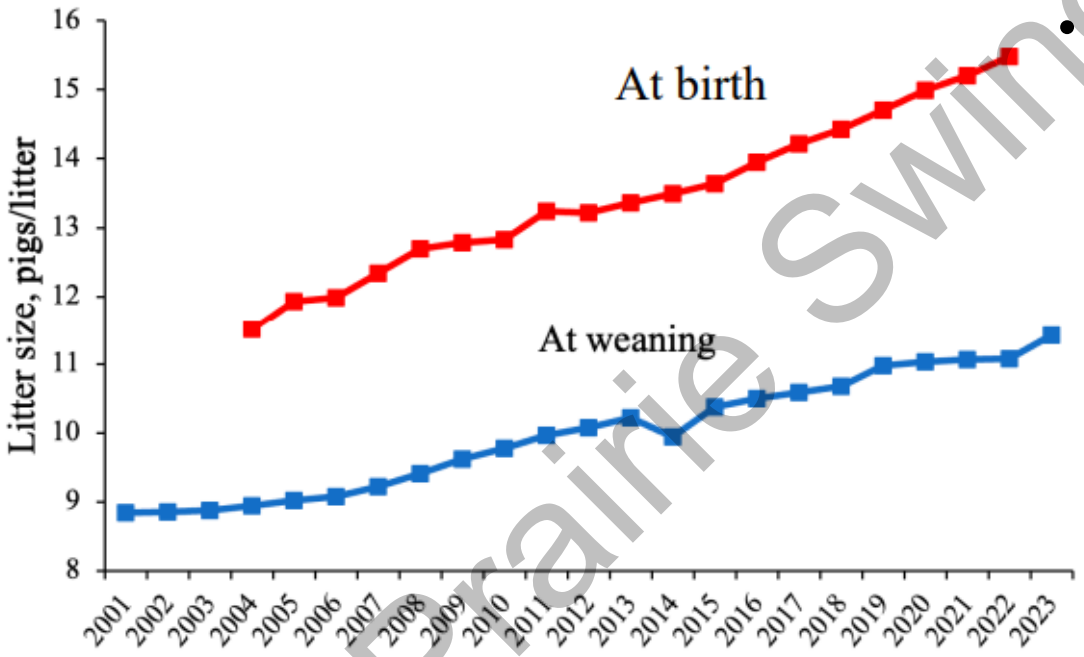
- **Background on creep feeding**
  - Reasons for creep feed provision
  - Why are the results not consistent?
- **PSC recent research – what it shows**
  - 2 completed projects
  - Current research project
    - *Activity 1 – results*
- **Key takeaways**

Activity

1. Who is using or sometimes uses Creep Feed?
2. Why do/did you use Creep Feed?
3. How do you judge if the Creep Feed is working?

The modern hyper-prolific sow

- Modern sows produce more piglets/litter and nurse larger litters



Gormely et al. 2024; PigCHAMP 2024 survey data

- **Lactation challenges due to increased productivity**
  - Larger litter size
  - Milk production requirements
  - Reduced uniformity and growth rate
  - Increased mortality

Hald et al., 2025

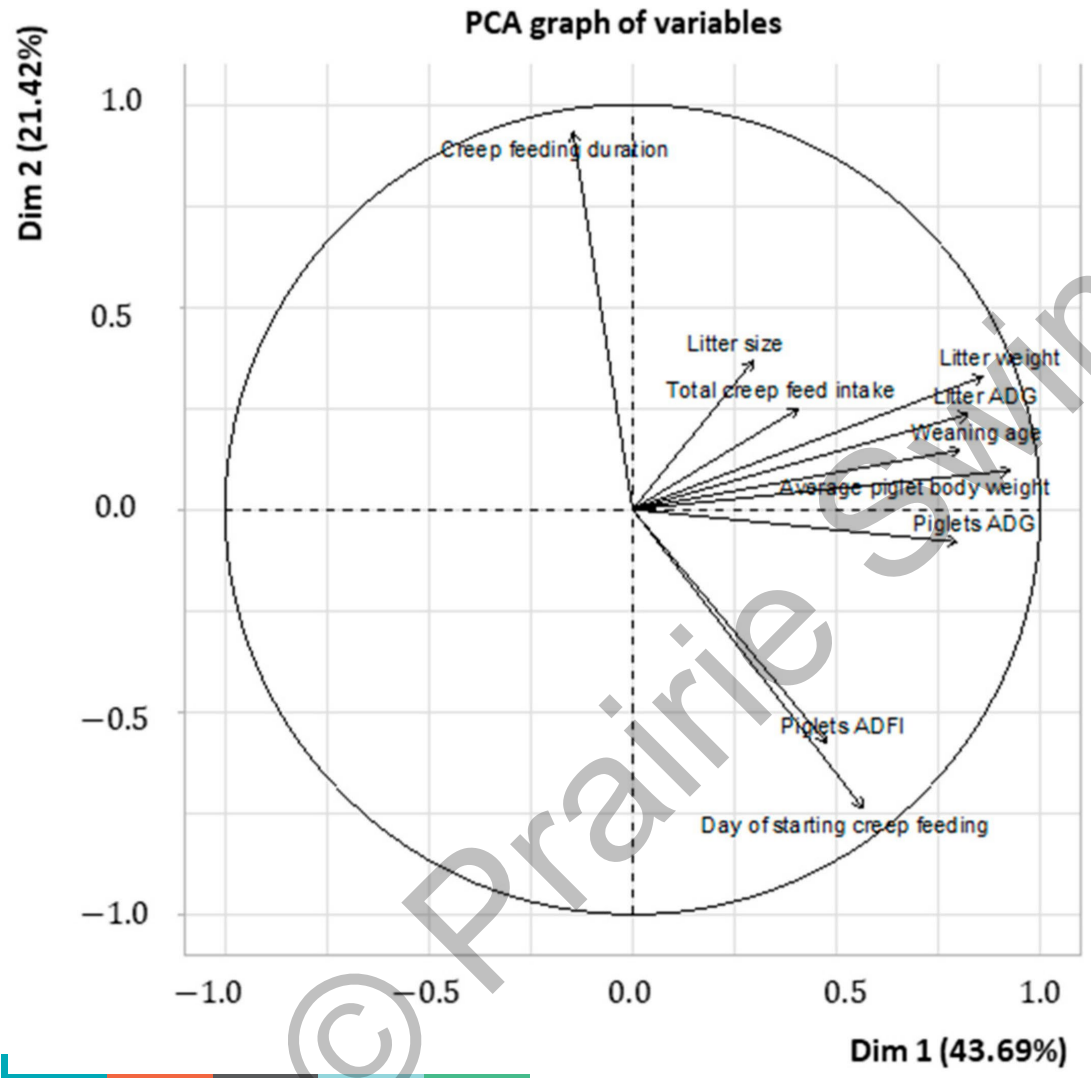
Reasons why creep feed may be used

- Large litters or low milk supply
- Helping small or compromised piglets
- Late-weaning systems
- Familiarize piglets to solid feed before weaning

Different goals = different results

Hald et al., 2025

Why do creep feeding results vary?



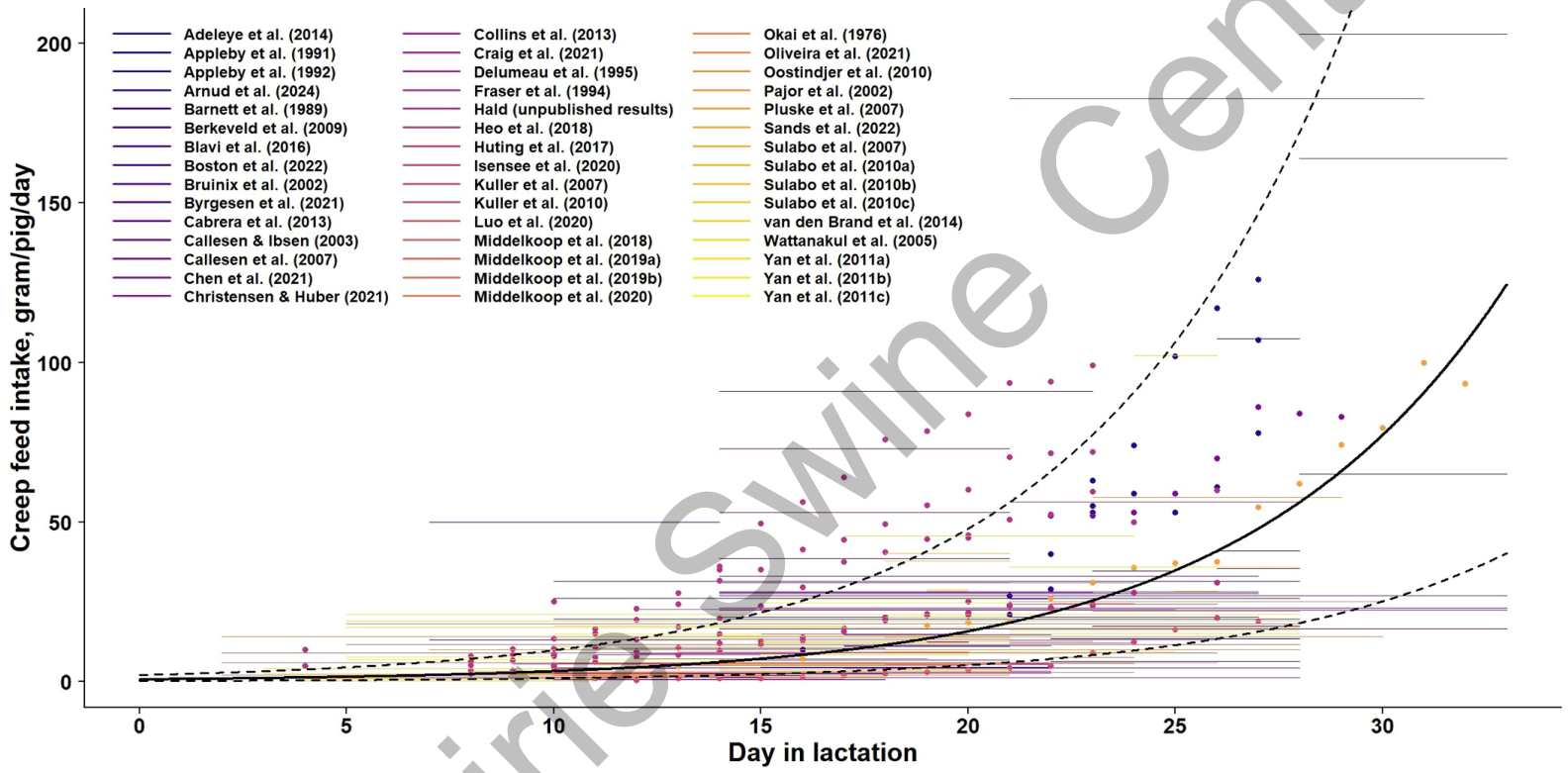
Only 65.11% of the variation could be explained

Highest contributors

- ***Piglet and litter performance***
  - Litter and piglet ADG
  - Litter and piglet weight
  - Weaning age
- ***Creep feeding***
  - Duration and time of onset
- ***Creep intake***

Muro et al., 2023

Creep feed intake during lactation



- Creep consumption varies across studies
- Very low until 2 weeks of age
- Increases as weaning age increases
  - Variation in creep intake also increases

Hald et al., 2025;

How to get the best results – Literature

- **Early exploration**
  - Offer creep feed for **at least 14 days** before weaning
  - Frequency is also important – fresh feed gets more interest
- **Physical form and composition over palatability**
  - Larger pellets encourage foraging behaviour – rooting and play
  - Simplicity vs. complexity
- **Impact of creep feed on other metrics**
  - Gut development and overall pig robustness

Middelkoop, 2020; Sands et al., 2021; Gormely et al., 2024; Hald et al., 2025

Aim

- To cover recent research (last 5 years) on creep feed strategies and the key takeaways

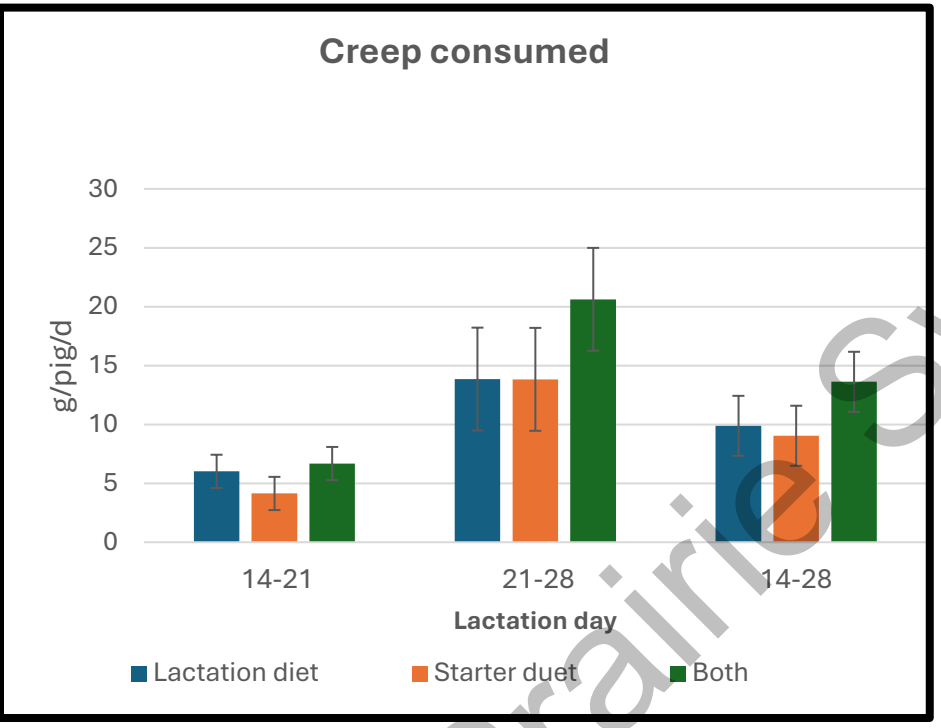
Study 1: Does complexity pay off?

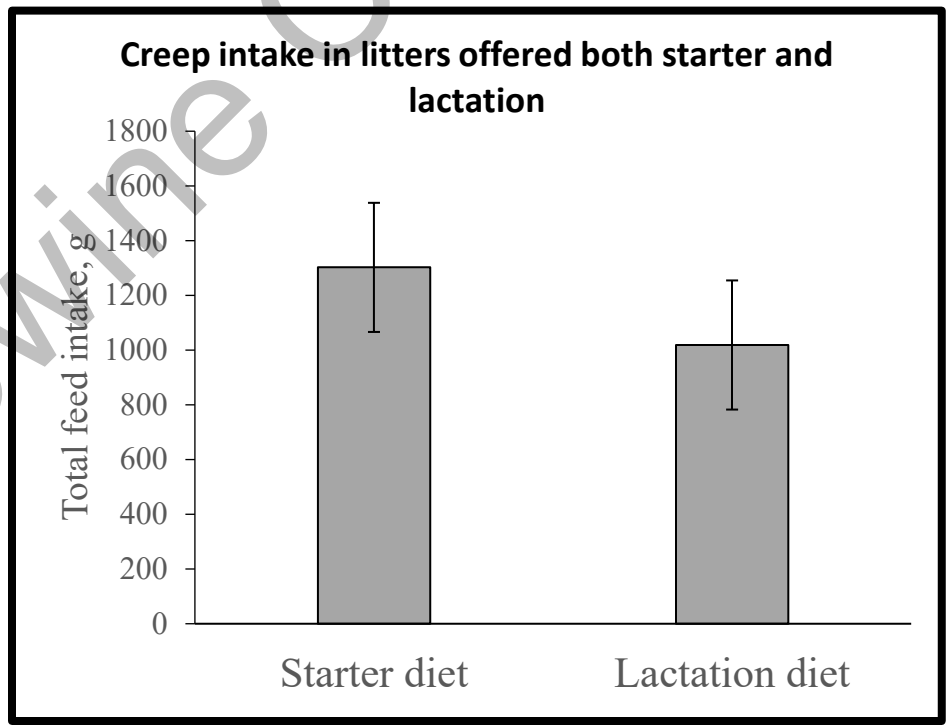
- **Objective**
  - To compare the benefits of a **simple** to **complex creep feed** on piglet **preweaning** and **postweaning** performance

- **Four treatments**
  1. Control – no Creep feed
  2. Simple creep feed – Sow lactation diet
  3. Complex creep feed – Nursery starter diet
  4. Both creep feed – simple and complex creep in separate feeders

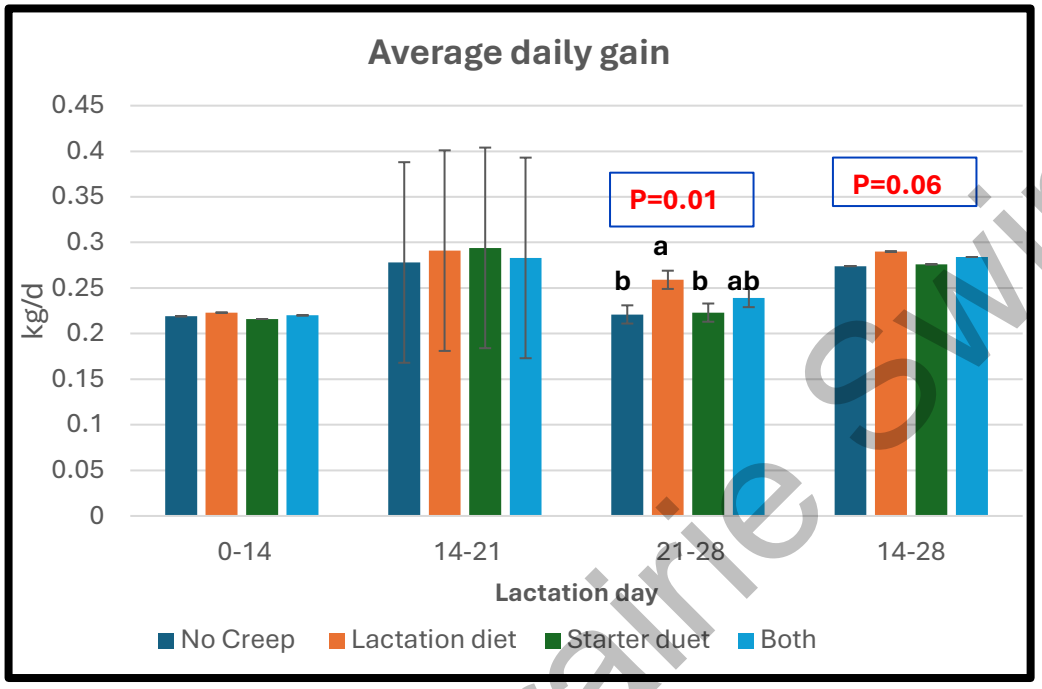
- Creep provided from d 14 post-farrow to weaning

Creep feed consumption and preference – no real differences

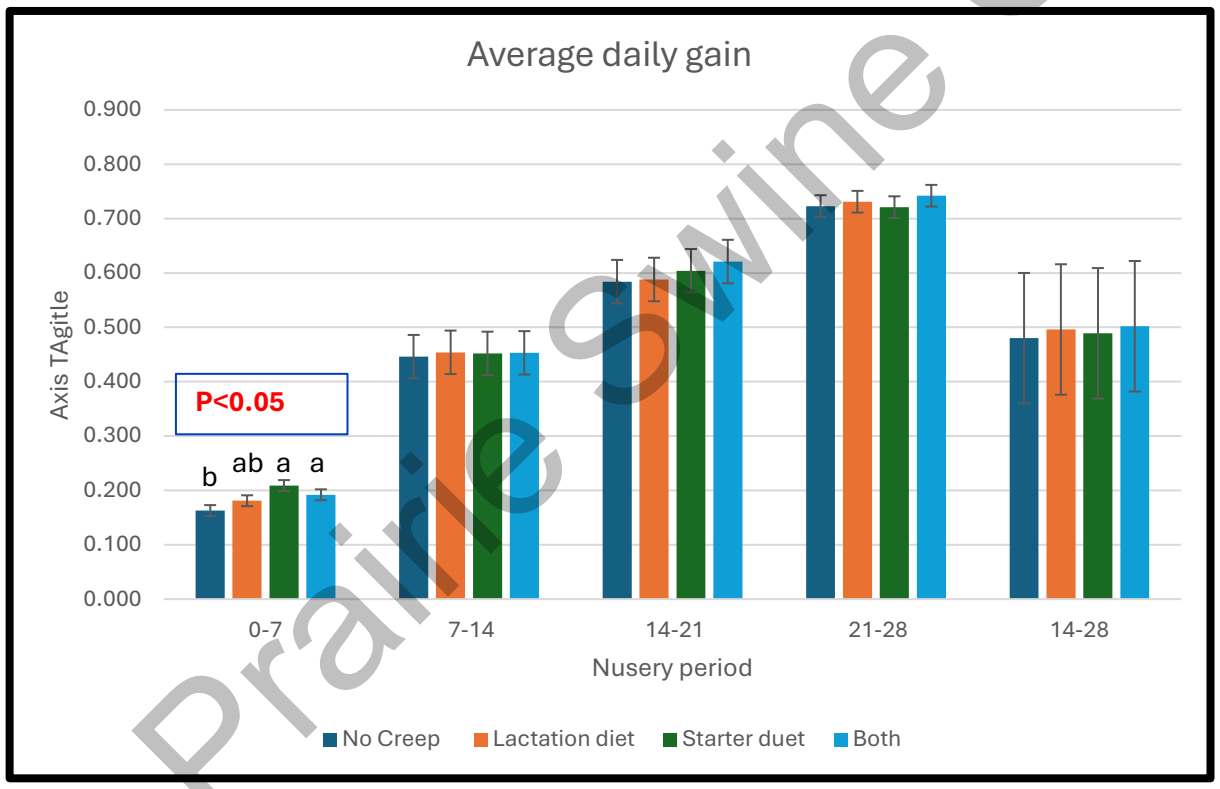




Preweaning growth - Slightly better growth for the Lactation diet in the final week



Post-weaning growth – No Creep grew slower in the first week, but no differences overall



Study 1 - Conclusions

- **Providing creep feed**
  - Improved growth only around weaning – before and after weaning
  - Had no long-term nursery benefit
- No advantage to expensive, complex creep feed

A simple feed is enough if you use creep diets

Study 2: Creep forms on creep interactions, blood iron status, and piglet growth

- **Objective**
  - To determine if creep form influences creep consumption to improve piglet growth and iron status
- **Four treatments**
  1. No creep – Control
  2. Standard creep
  3. Large pellet creep
  4. Mix of standard and large pellets
- Creep introduced on d10 post-farrow to weaning
- Blood collected on the day before weaning – 1 small and 1 large piglet for iron status

Pellet form

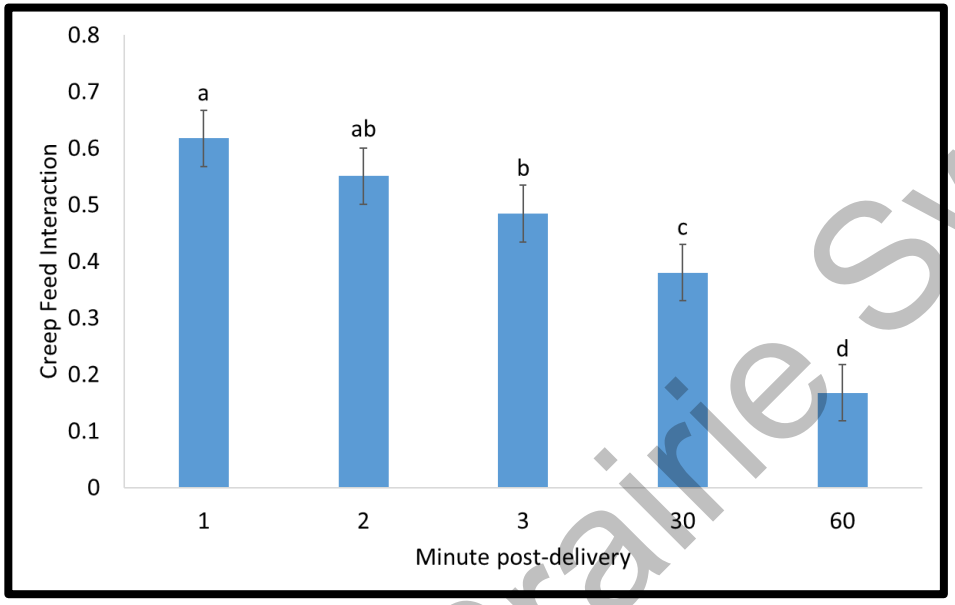
Standard creep

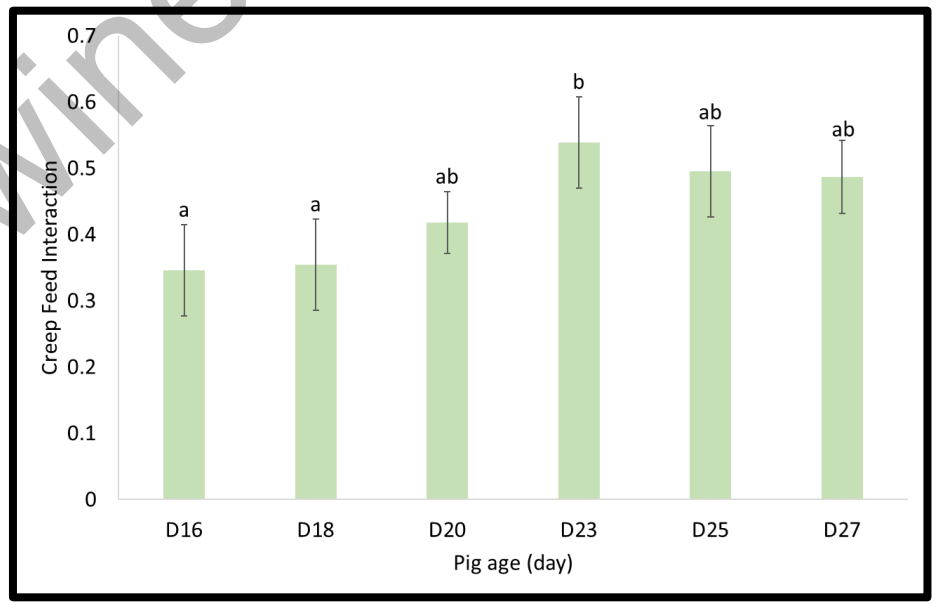
Large pellet creep

- Young pigs prefer larger pellets over finer-textured feed

(Van den Brand et al., 2014; pilot study)

Creep interactions – decreased on delivery day but generally increased with days of exposure





Iron status – large piglets showed signs of anemia

Item	Large	Small	P-Value	SEM
n	20	21		
HGB (g/L)	107.00[b]	121.00[a]	**<0.001**	4.55
HCT (L/L)	0.35[b]	0.39[a]	**<0.001**	0.01
MCV (fL)	57.52[b]	62.11[a]	**<0.001**	0.87
RDW %	20.04[a]	16.95[b]	**<0.001**	0.68
Iron (umol/L)	9.75[b]	21.92[a]	**<0.001**	1.70
TIBC (umol/L)	85.93[a]	60.94[b]	**<0.001**	4.95

Creep form on blood parameters – No form was clearly superior

Item	NC	LC	MC	SC	P-Value	SEM
n	9	10	10	12		
HGB (g/L)	115.00	108.00	116.00	117.00	NS	5.18
HCT (L/L)	0.37	0.35	0.38	0.38	NS	0.02
MCV (fL)	60.66	58.73	58.72	61.14	NS	1.22
RDW %	17.08^{b}	20.31^{a}	19.15^{b}	17.37^{b}	**0.02**	0.85
Iron (umol/L)	13.30	16.40	13.30	20.33	NS	2.72
TIBC (umol/L)	62.62	83.12	82.92	65.08	0.08	7.42

- **Pelleted creep resulted in a higher red cell distribution width (RDW)**

Study 2 – Conclusions

- No creep form improved growth or iron levels
- Large pellets were preferred in a pilot work, but not in this study.
- Large pigs may need more iron than we think

Current Creep feed project – PhD research

- **Overall aim**
  - To examine different creep strategies and birth weight category (low or normal birth weight)

- **Focus on**
  - Long-term impact on piglet robustness
    - Lifetime growth performance
    - Gut development and gut health indicators
  - Sow lactation performance

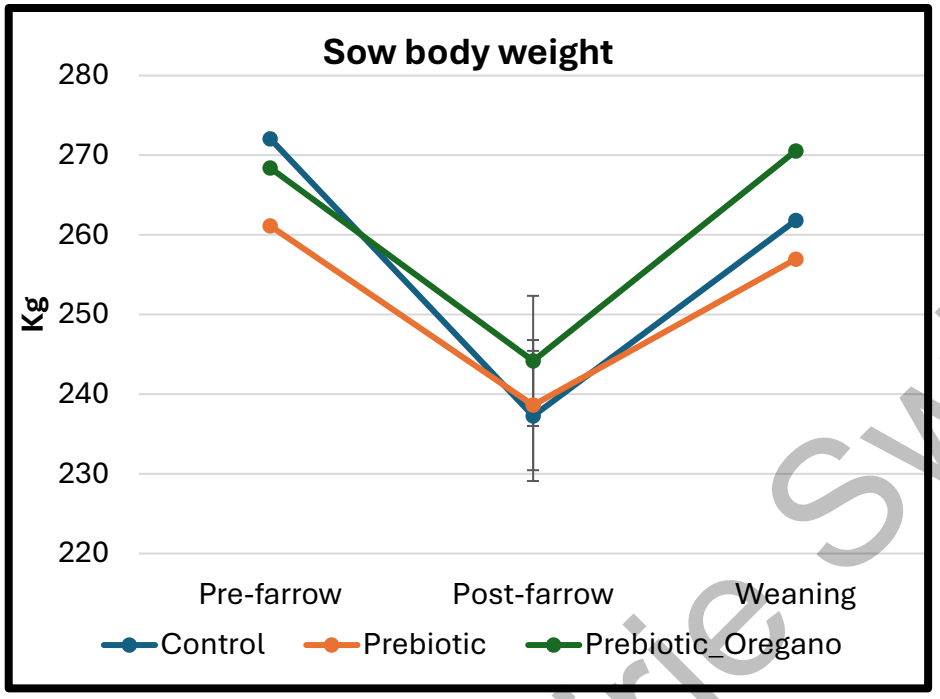
Activity 1: Objectives and treatments

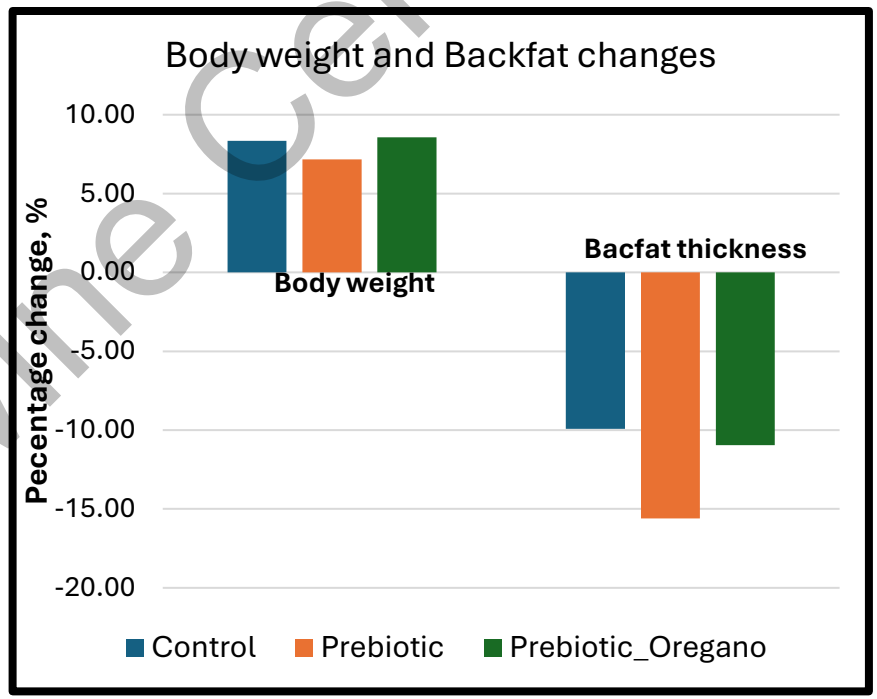
- **To determine:**
  - The benefit of creep supplementation on intake, piglet growth and gut health indicators
  - The effect in both low and normal-birth-weight piglets

- **Three treatments**
  1. **Control** – Nursery starter diet (pellets)
  2. Control plus prebiotic (**Prebiotic**)
  3. Control plus prebiotic and oregano (**Prebiotic_Oregano**)

- Creep was provided from d14 post-farrow to weaning (d 28 post-farrow)

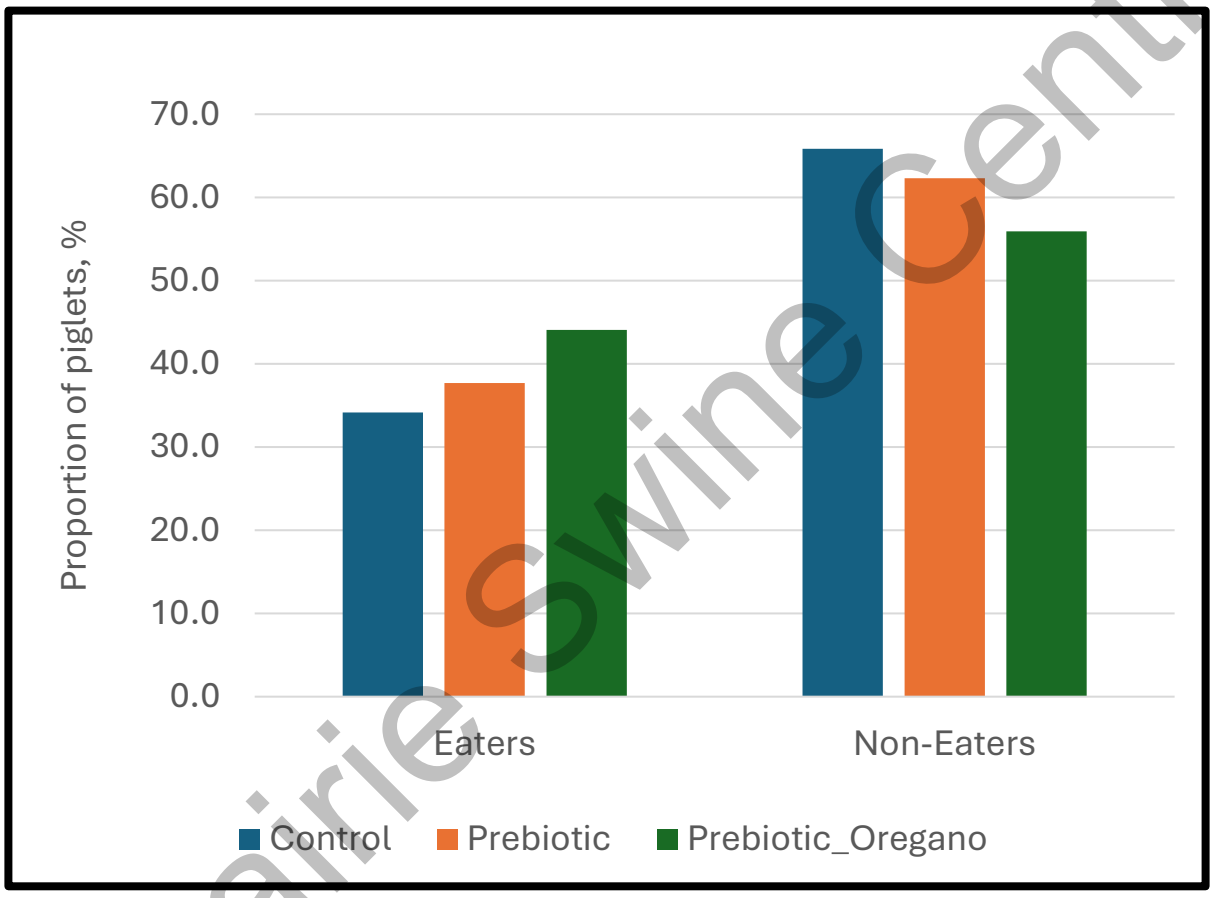
Sow lactation performance





- **No differences, but sows gained ~8% weight during lactation**

Creep feed consumption

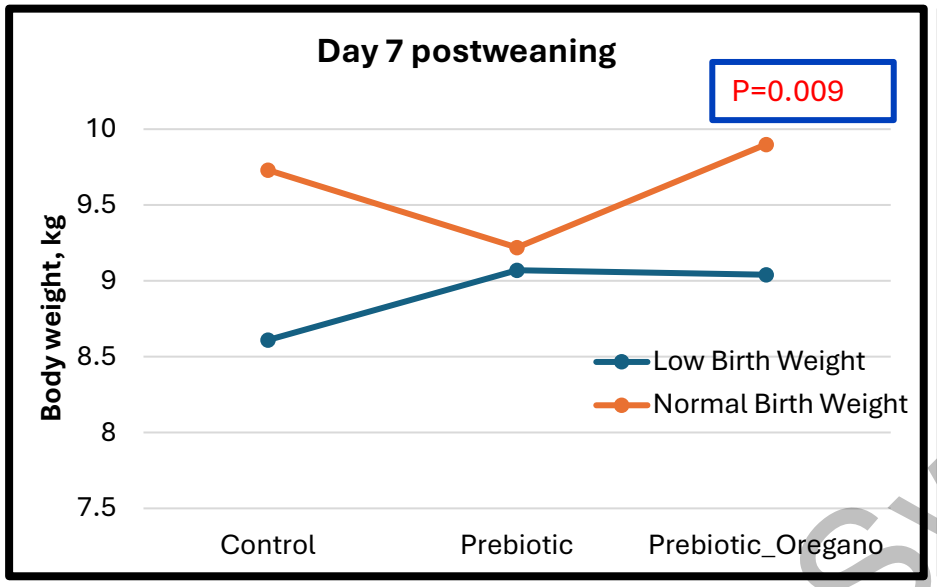


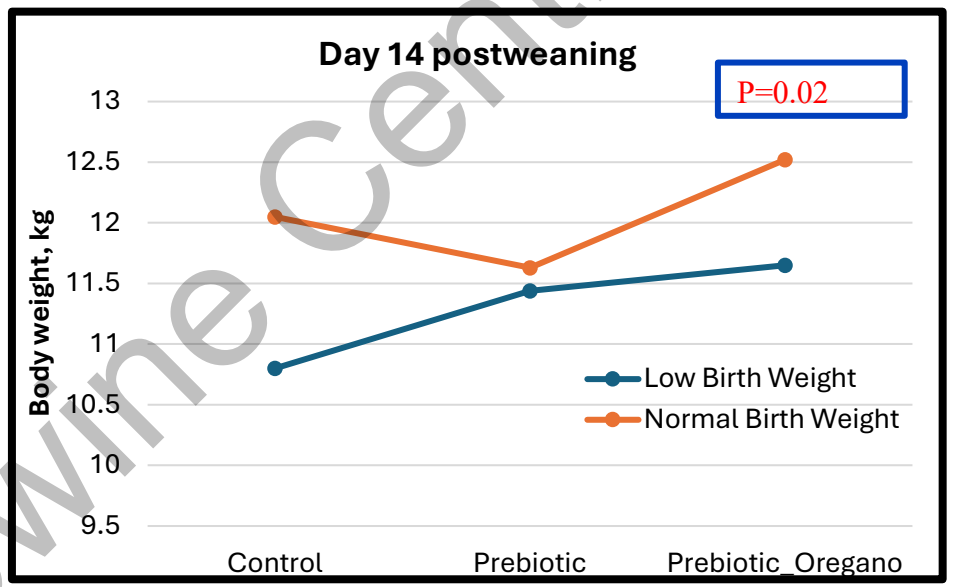
- Only about **40% were eaters** and 60% non-eaters
- No difference across the treatments

Body weight from birth to nursery exit

	Low Birth Weight			Normal Birth Weight				P-values		
	Control	Prebiotic	Prebiotic_Oregano	Control	Prebiotic	Prebiotic_Oregano	SEM	Birth wt.	Trt	Birth wt. × Trt
Lactation Phase										
Day 0	1.33	1.34	1.41	1.75	1.73	1.79	0.02	<.0001	NS	NS
Day 7	2.54	2.6	2.75	3.19	3.19	3.21	0.06	<.0001	NS	NS
Day 14	4.44	4.56	4.84	5.37	5.5	5.56	0.08	<.0001	NS	NS
Day 21	6.66	6.77	7.1	7.81	7.83	7.97	0.12	<.0001	NS	NS
Weaning	7.99	7.96	8.2	9.37	9.07	9.17	0.13	<.0001	NS	NS
Nursery Phase										
Day 7	8.61^{c}	9.07^{abc}	9.04^{bc}	9.73^{ab}	9.22^{abc}	9.90^{a}	0.17	<.0001	NS	**0.009**
Day 14	10.80^{c}	11.44^{abc}	11.65^{bc}	12.05^{ab}	11.63^{abc}	12.52^{a}	0.21	<.0001	NS	**0.02**
Day 21	15.5	16.15	16.37	17	16.31	17.43	0.33	0.0012	NS	0.13
Nursery exit	20.69	21.52	21.89	22.83	21.91	22.82	0.37	0.0003	NS	0.06

- **Birth weight** was the **strongest driver of performance**





Prebiotics improved the weight of low-birth-weight pigs after weaning

Conclusions

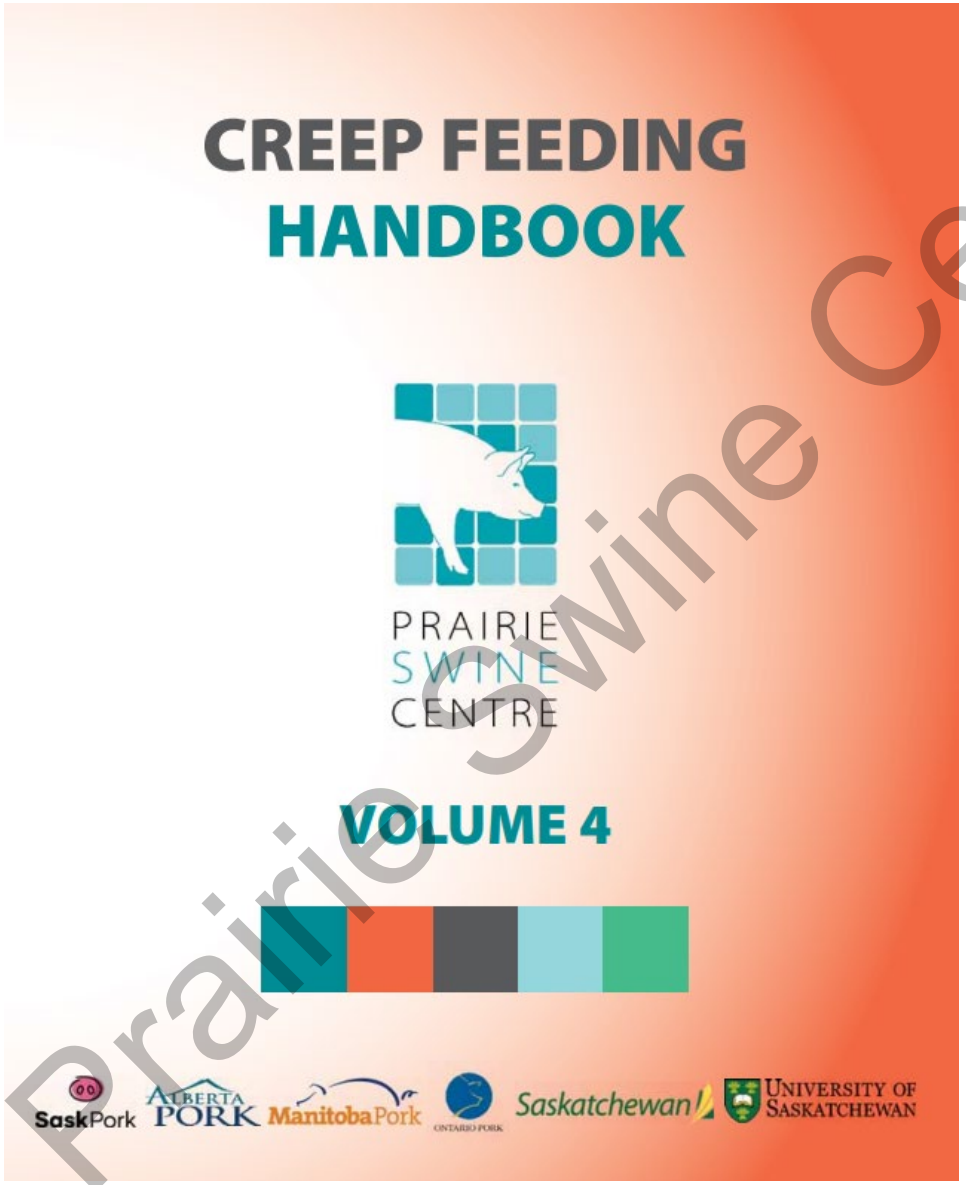
- **Adding additives to the creep**
  - Did not improve sow lactation performance
  - Did not improve overall piglet performance
- **Prebiotics may help low birth weight pigs post-weaning**
- **Creep provision may help sows maintain body weight (reserves) at weaning**

Pending analysis for Activity 1

- Growth from nursery exit to marketing
- Gut health metabolites and microbiome
- Immune markers
- Nutrient utilization markers and gene expression

Key takeaways

- **Creep feeding is most beneficial in:**
  - Large litters
  - Late weaning systems
  - Sows under metabolic pressure
- **Simple, less expensive diets are sufficient**
  - Lactation feed or first nursery feed
- **Provide creep for at least 14 days before weaning**
- **Creep may help sows maintain body condition**
- Ongoing research aims to understand how creep affects gut development and overall robustness



Thank you for listening