



Topigs Norsvin

A close-up photograph of a pig's face, showing its eye and part of its snout. The image is framed by a thick pink border. A pink rectangular box is overlaid on the left side of the image, containing white text.

Between a gestation and a lactation, a
transition is made

Topigs Norsvin | 2025

7-1-2025 | Chris Opschoor - Director Global Technical Services | BPS

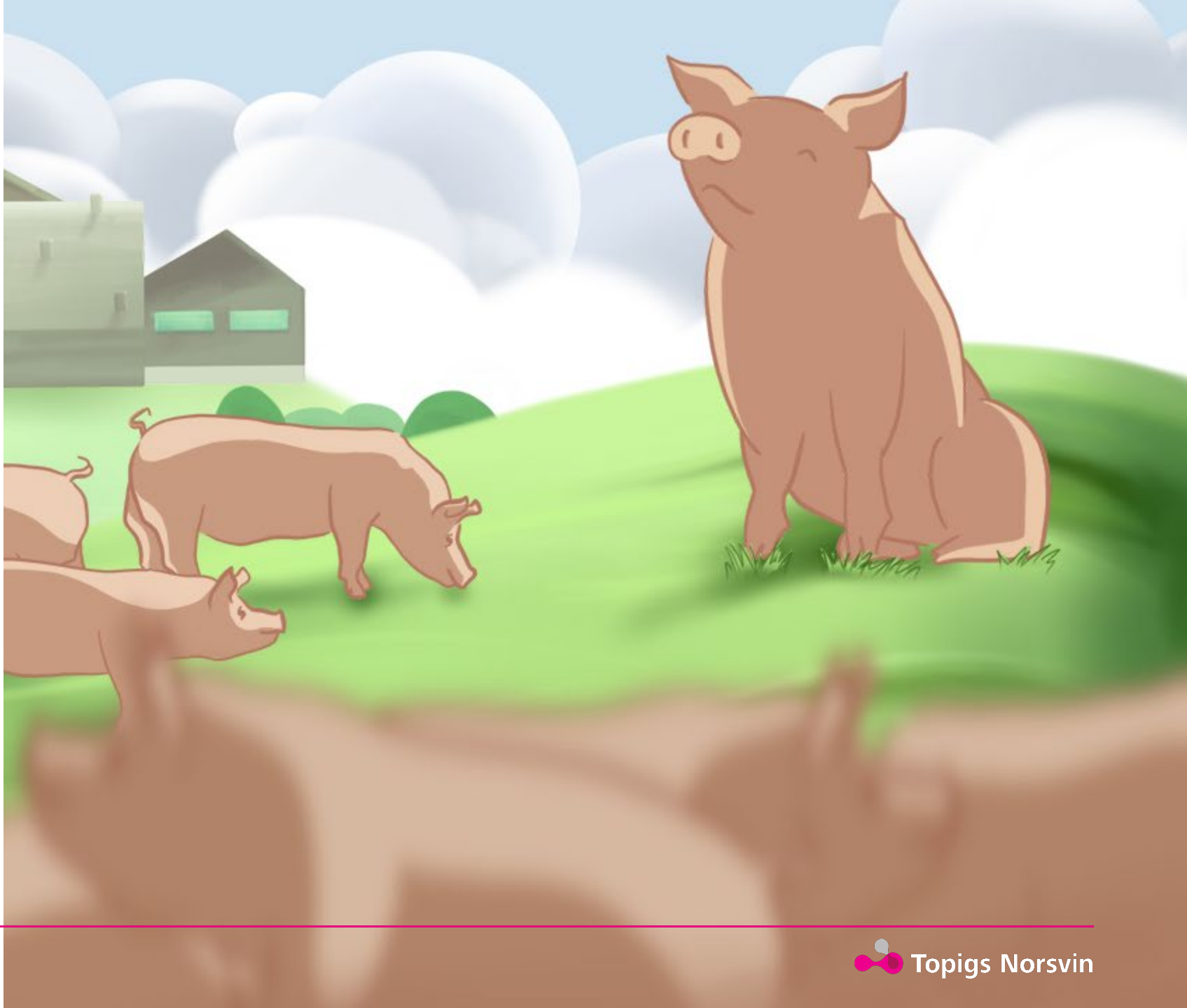
In collaboration with Julia Linck Moroni, Rodrigo Domingos Lima, Global Nutrition and Female Reproduction Services

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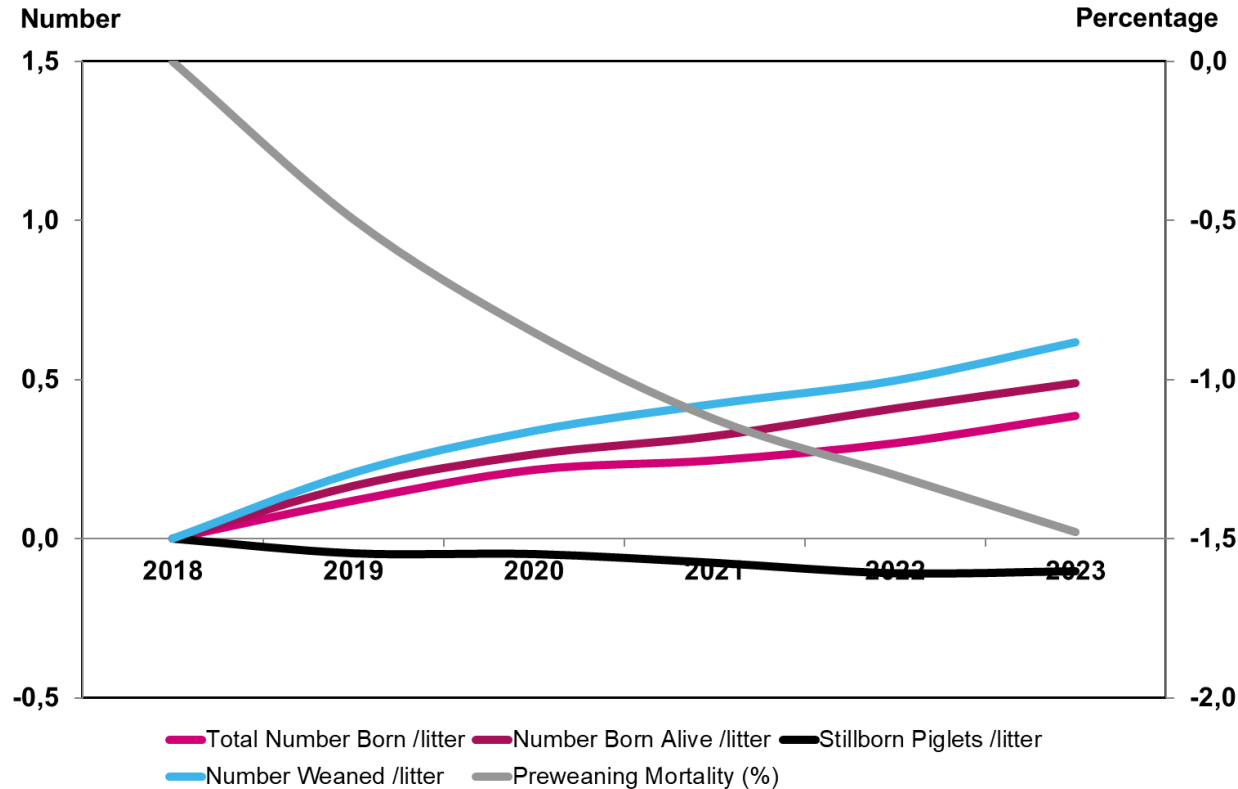


- Introduction
- What is “The transition period”
- “How” does the diet look like
- “If not” possible

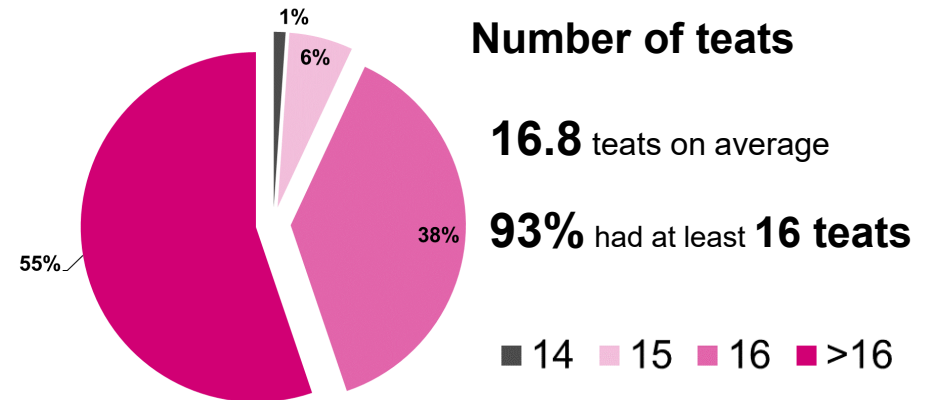
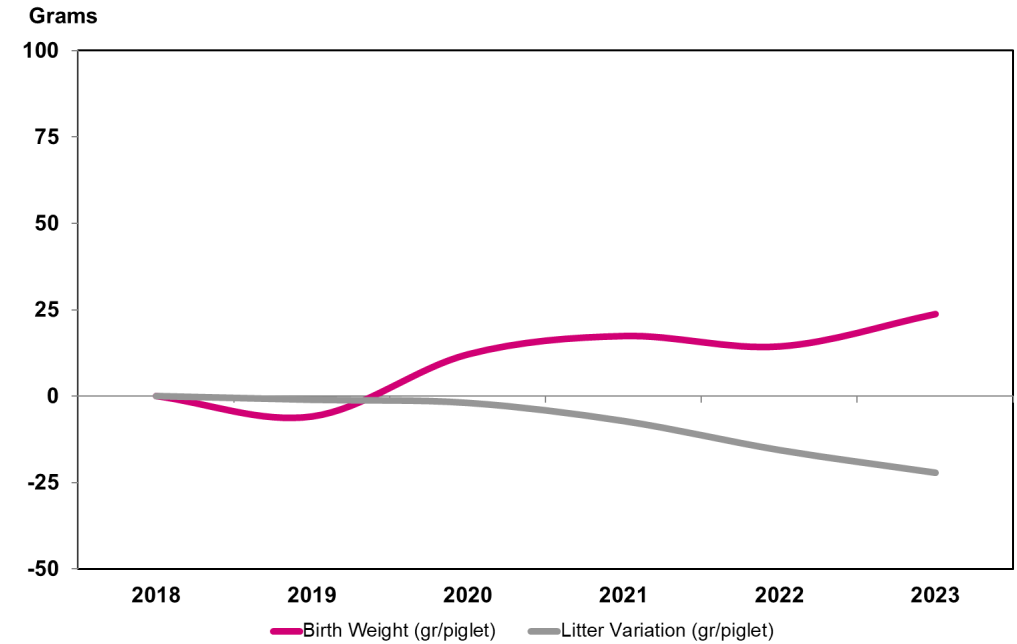


Introduction

Genetics changed over time!



Birth weight & variation



Introduction

What does this mean?

- Higher birth weight and higher survivability
- More piglets weaned per litter
- More pressure on the sow and on milk production

What are the challenges?

- Smooth farrowing process to avoid high rates of stillborn
- To guarantee lactation feed intake (especially in young sows)
- Limit sows' body weight loss during lactation
 - Avoid a negative impact on subsequent parity
 - Impact on sow longevity!

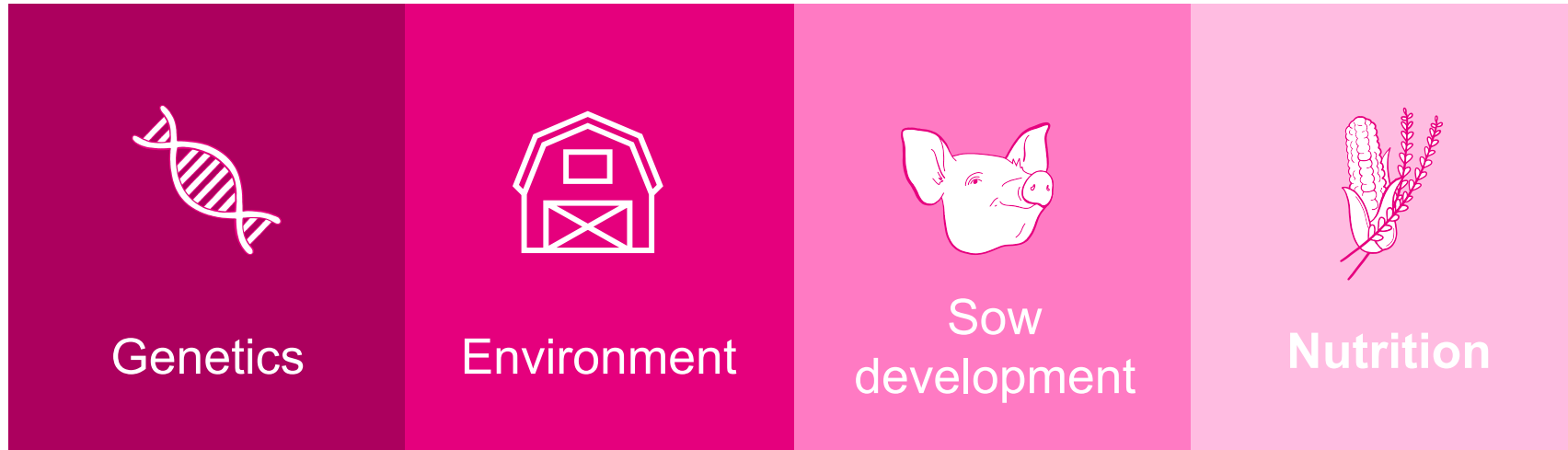
How to overcome the challenges?



HIGH DENSITY LACTATION DIETS!

???

Introduction



 **Balanced** 

Support changes the sow is going through

- Farrowing process
- Mammary gland development
 - Colostrum production
 - Milk production
- Litter weight gain
- Uterine recovery

A close-up photograph of a pig's face, showing its eyes and snout. A bright pink horizontal banner is overlaid across the middle of the image, containing white text. The pig's fur is light brown and white, and its snout is pink with a dark spot.

What is “The transition period”?

The transition period

Definition:

The Transition period focuses on the last 10d of gestation and first 10d of lactation, sow becomes catabolic for milk synthesis

- During Gestation: fetal growth, mammary growth, colostrum, sow maintenance
- Parturition: colostrum and milk synthesis and sow maintenance. Uterus in regression supplies amino acids to the blood (Peter Kappel Theil).

The transition period

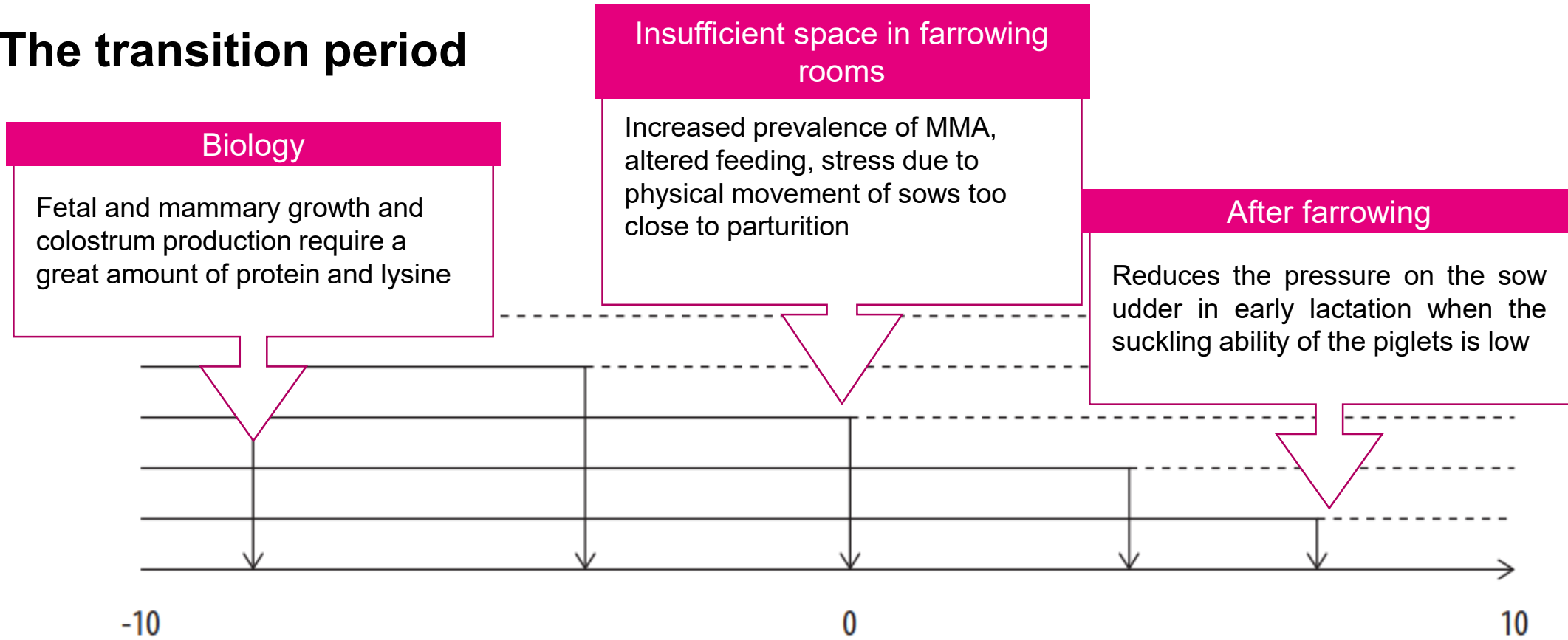


Figure 7.2. Farms use different strategies when changing sow feed from gestation diet (solid line) to lactation diet (dotted line) during the transition period (different strategies are shown by arrows; 0 represents the day of farrowing).

The transition period

Diets composition through gestation and lactation

- Different countries – different diets ...

Table 7.1. Typical contents of dietary energy, nitrogen and lysine in gestation and lactation diets.

	Gestation diets			Lactation diets		
	Energy, ME (MJ/kg) ¹	Nitrogen, SID (% in diet) ²	Lysine, SID (% in diet) ³	Energy, ME (MJ/kg) ¹	Nitrogen, SID (% in diet) ²	Lysine, SID (% in diet) ³
Canada	11.9	1.9	0.52	13.4	3.0	1.0
Denmark	13.0	2.2	0.31	14.0	2.9	0.63
Netherlands	12.1	2.2	0.50	13.0	2.8	0.75
France	12.1	2.2	0.50	12.9	2.6	0.89
USA	13.6	2.2	0.58	13.8	3.1	1.0

¹ Metabolizable energy, i.e. gross energy-energy lost in feces, urine and gases.

² Standardized ileal digestible (dietary content corrected for apparent ileal digestibility and basal endogenous losses of nitrogen).

³ Standardized ileal digestible (dietary content corrected for apparent ileal digestibility and basal endogenous losses of lysine).

The transition period – the daily needs

Understanding the needs

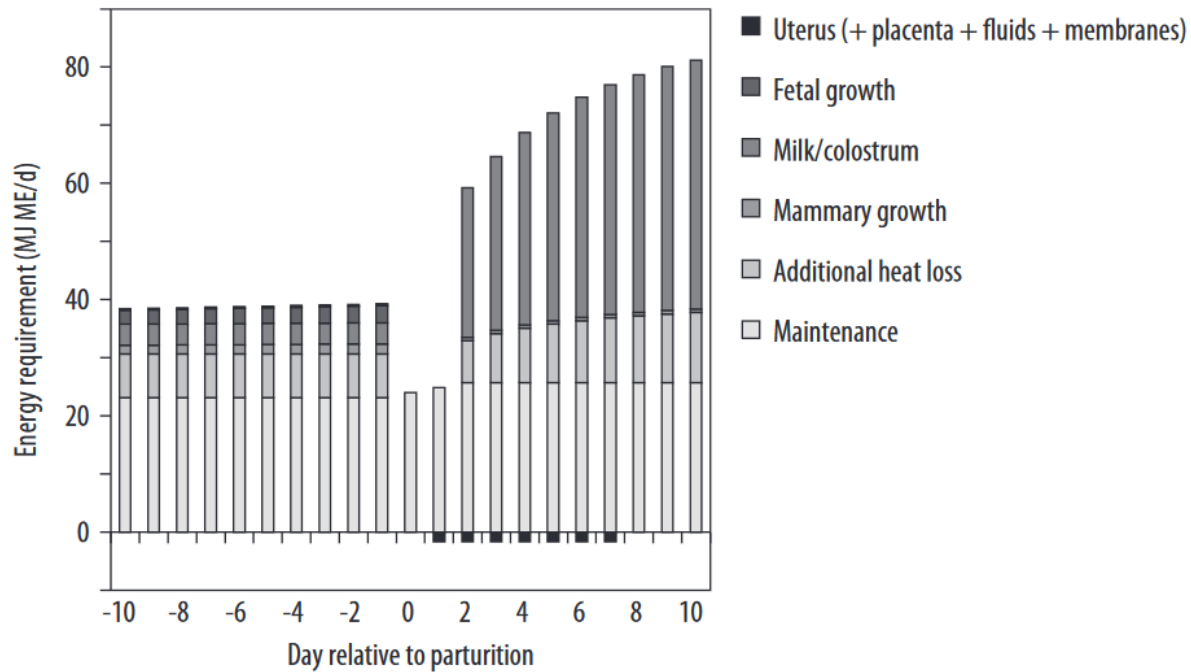


Figure 7.5. Energy requirement of transition sows. ME = metabolizable energy.

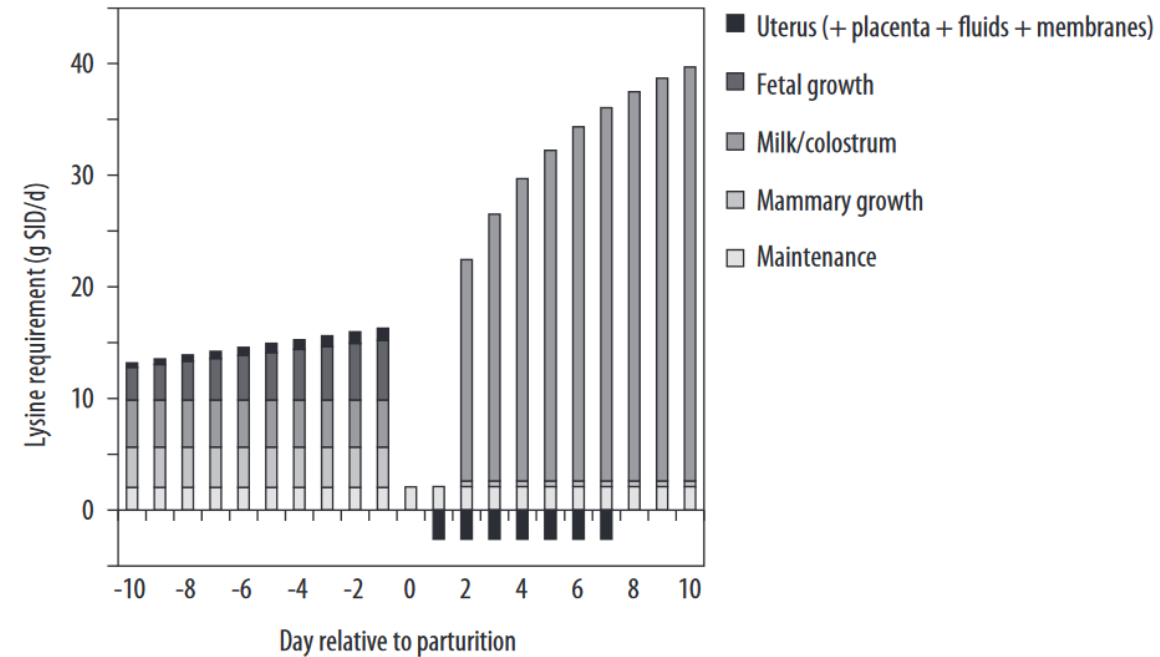
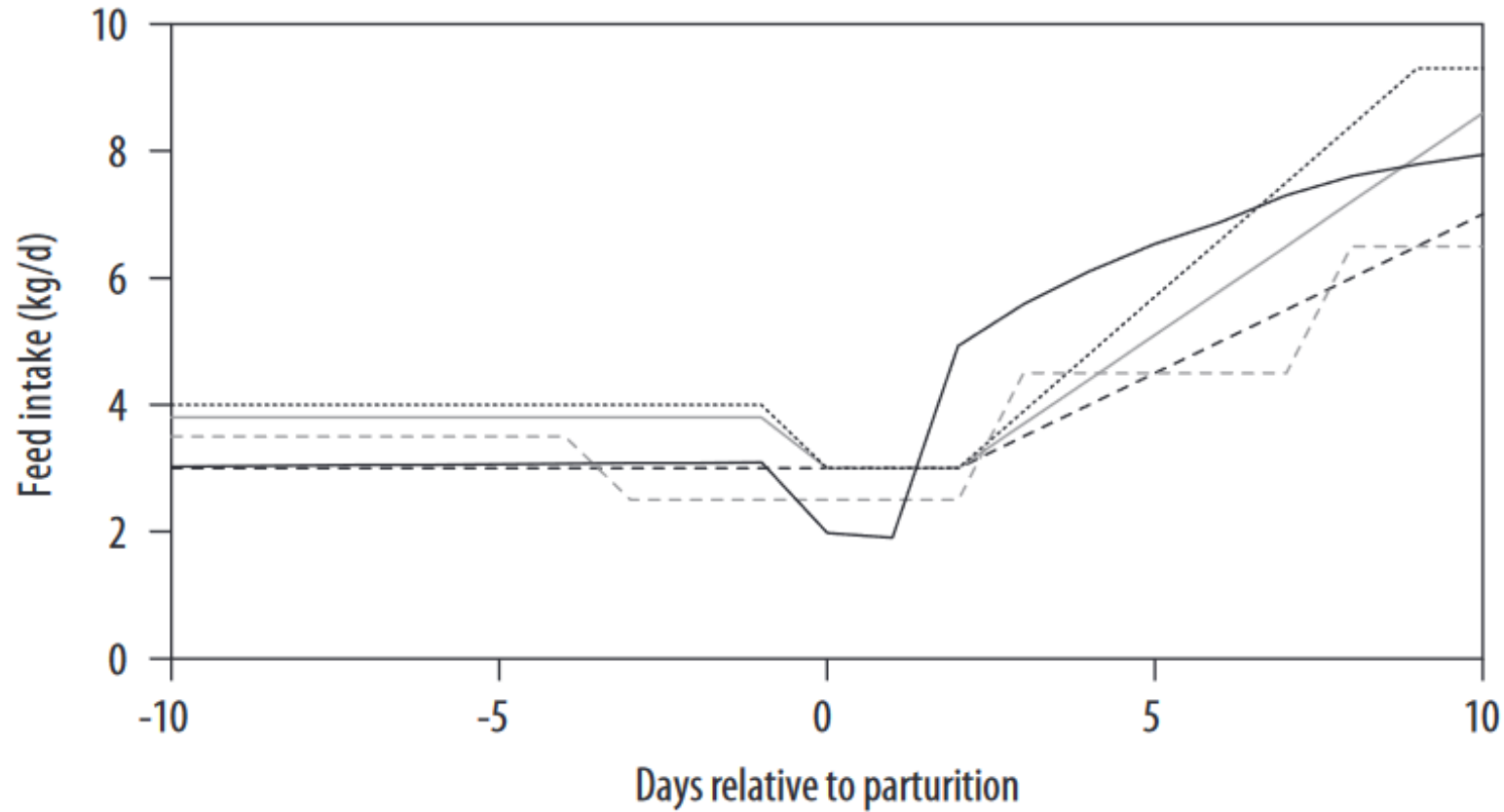


Figure 7.6. Lysine requirement of transition sows. SID = standardized ileal digestible.

The transition period – in practice

In late gestation, most sows are fed at or above the energy requirement



The transition period – feed management

Ad libitum Feeding during the transition period

Table 2. Sow performances according to the peri-partum feeding strategy irrespective of parity number and body condition score (least square mean \pm standard error).

	Stepped	Ad Libitum	<i>p</i> -Value ¹
n	44	42	-
Total born piglets (number)	13.5 \pm 0.44	13.6 \pm 0.47	NS
Stillborn piglets (%)	4.2 \pm 1.34	3.3 \pm 1.44	NS
Mummified piglets (%)	1.8 \pm 1.09	2.1 \pm 1.17	NS
Farrowing-assisted sows (%)	65.9	52.4	NS
Piglets after fostering (number)	12.6 \pm 0.13	12.8 \pm 0.14	NS
Weaned piglets (number)	11.5 \pm 0.09	11.4 \pm 0.10	NS
Sow weaning to oestrus interval (days)	4.9 \pm 0.24	4.6 \pm 0.26	NS

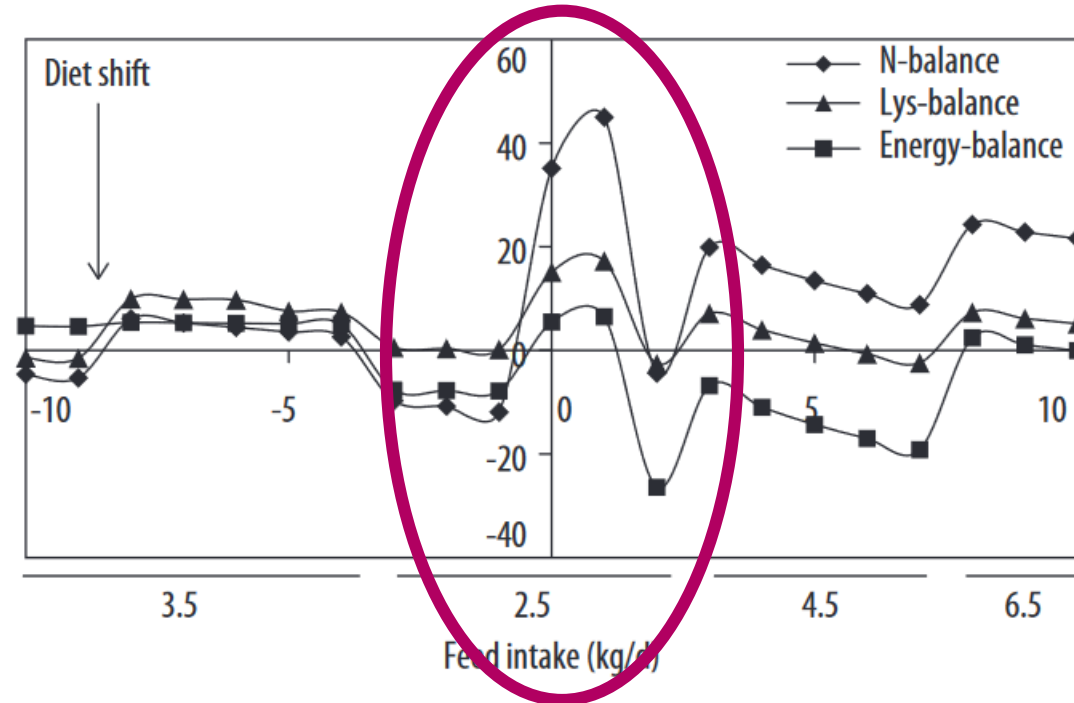
¹ NS = non-significant ($p > 0.05$).

The transition period – feed management

Ad libitum Feeding during the transition period

- **Conclusions**
- Greater voluntary feed intake than the stepped schedule from two days before to five days after
- No clear advantage on piglet survival at farrowing or post-partum reproductive recovery of SOWS
- Increased prevalence of postpartum dysgalactia syndrome (MMA)

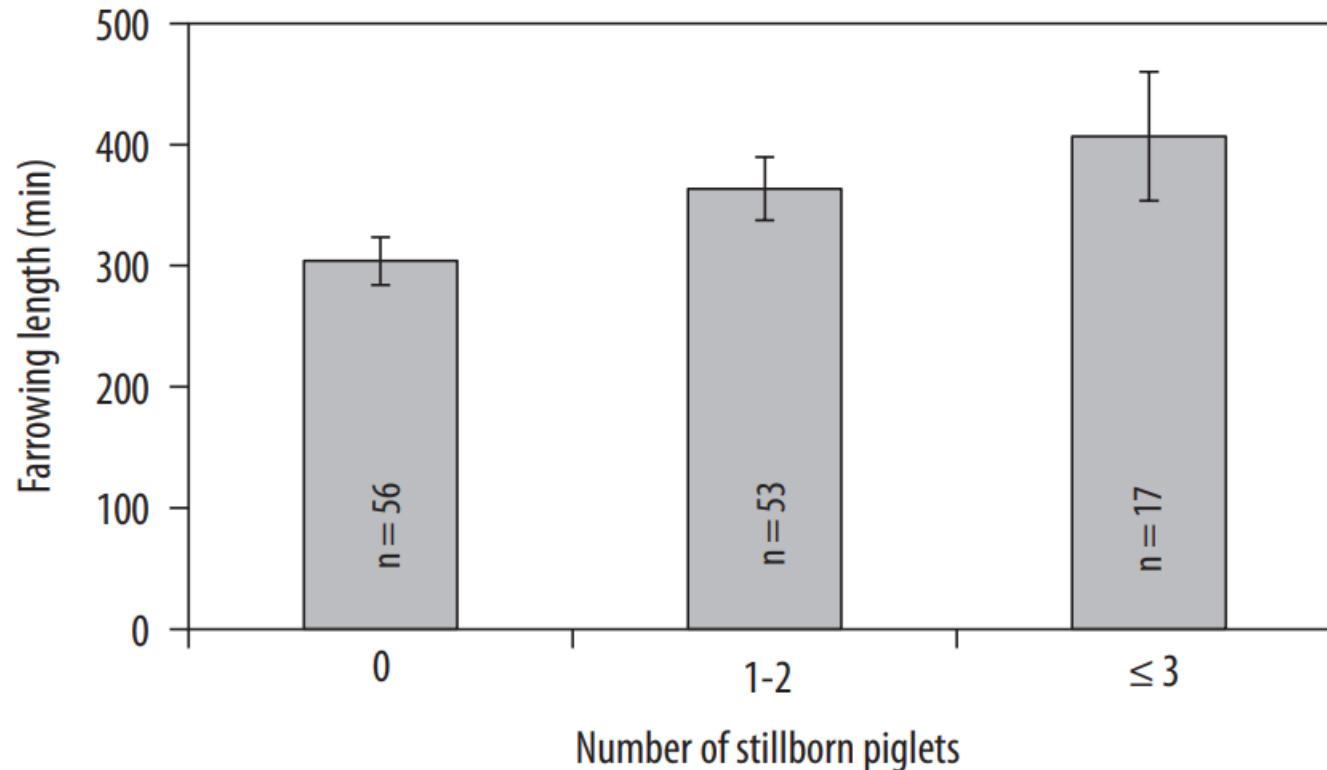
The transition period – farrowing process



Providing energy at the onset of farrowing may reduce farrowing duration, addressing the longer birth interval

Carnevale et al., 2024

Energy supply and stillborn piglets



- Stillborn piglets are associated at least partly with the farrowing process (Oliviero et al., 2010)
- Major loss of liveborn piglets occurs during the first 3 d postpartum
- And neonatal mortality can, to a great extent, be explained by insufficient energy supply

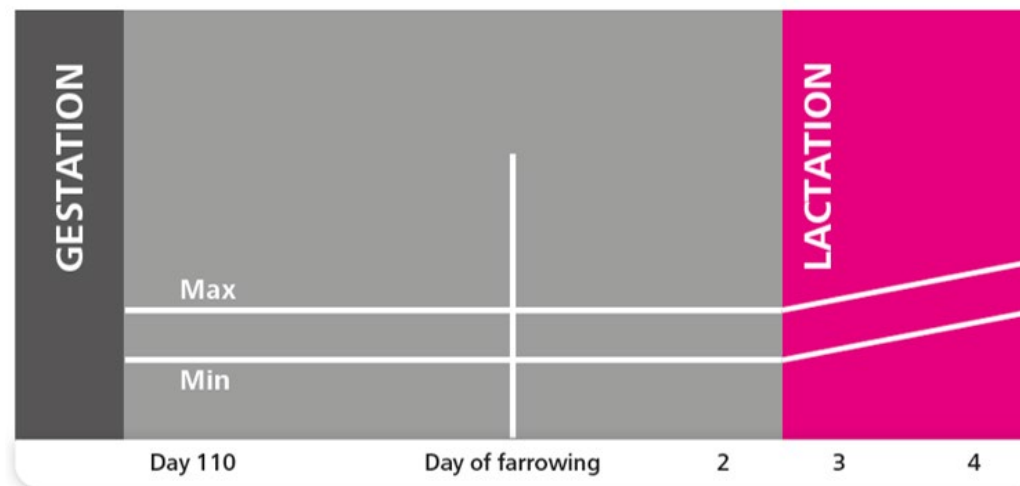
A close-up photograph of a pig's face, showing its eyes and snout. A bright pink horizontal banner is overlaid across the middle of the image, containing white text. The pig's fur is light brown and white, and its snout is pink and textured.

How does a transition diet looks like?

The transition diet

Gestation

High fiber
Low density
High dEB



Lactation

Low fiber
High density
Low/moderate dEB

Primary goal of a transition diet is to provide a smooth switch between the distinct nutritional requirements of gestation and lactation

Transition feeding

- Objective is to ensure optimal piglet health and reduce neonatal fetal mortality
 - Colostrum production and intake is critical in piglet survival and vitality
 - Insufficient energy supply
 - L-carnitine supplement during gestation may help stimulate fetal growth and potentially increase placental growth = nutrient provider for fetuses

Advantages of transition feeding

- Improve milk production
- Reduce constipation as the diet is an “intermediate” diet between gestation and lactation feed.
 - Gestation: lower energy and protein level
 - Lactation: higher energy and protein level
- Reduce udder congestion and MMA
- Provide proper energy for farrowing process and distribute the energy more equally
 - Feeding frequency can help reduce farrowing duration and the number of stillborn

Advantages of transition feeding

- Feed similar raw materials that are also used in gestation and lactation.
- Use proper fibre sources.
- Choline, L-carnitine, citric acid and B vitamins will help in protecting and boosting the liver.
- Optimize dEB in gestation, transition and lactation (220/240 – 180 – 200)

The transition period

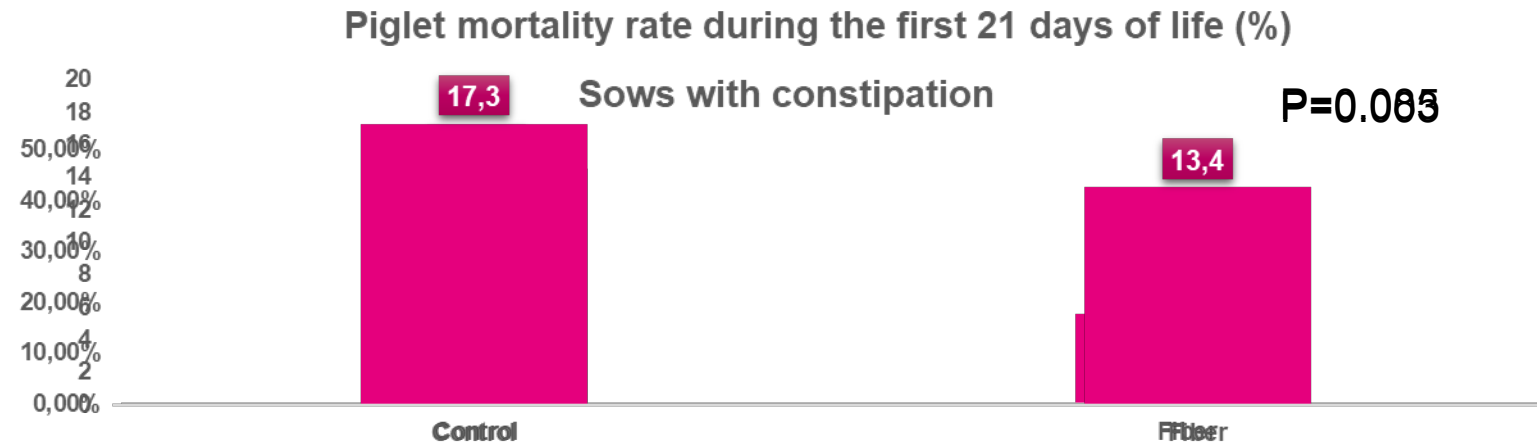
Effects of fiber on transition period

Composition	Control Diet	Experimental Diet
Metabolizable energy (Kcal/kg)	3732	3732
Crude protein (%)	17.81	17.43
Crude fat (%)	5.94	5.82
Crude fiber (%)	4.30	5.53
Ash (%)	8.78	8.61
Lysine (%)	1.10	1.10

animals MDPI

Article
Impacts of Fiber Supplementation in Sows during the Transition Period on Constipation, Farrowing Duration, Colostrum Production, and Pre-Weaning Piglet Mortality in the Free-Farrowing System

Natchanon Dumniem ¹, Rafa Boonprakob ^{1,2}, Chayanat Panvichitra ¹, Shutpisit Thongmark ¹, Nutthawat Laohanarathip ¹, Thanyathep Parnitvoraphoom ¹, Siwapat Changduangjit ¹, Tanaphum Boonmakaew ¹, Nakarin Teshanukroh ¹ and Padet Tummaruk ^{1,3,*}



Dumniem et al., (2024)

The transition period

Effect of transition diet on milk yield during lactation

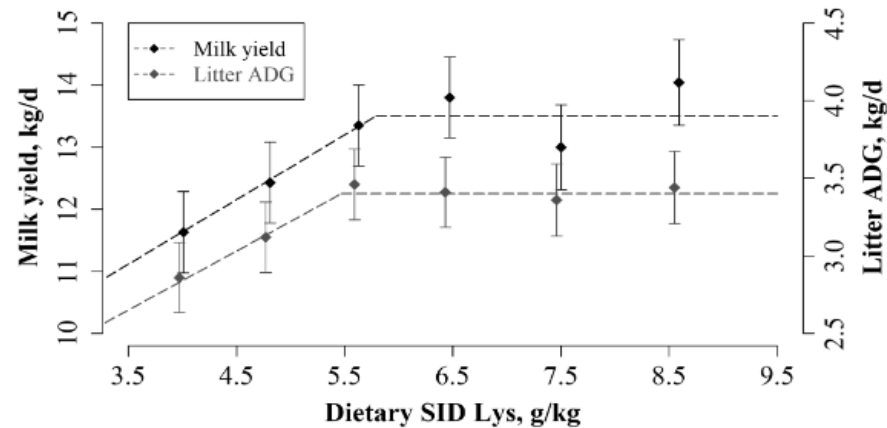


Figure 2. The effect of increasing concentration of SID Lys in the last week of gestation on sow MY and litter ADG. Data was best described by a broken-linear model and the breakpoint is presented together with SEM and the P value for the slope below the breakpoint is presented. The MY increased until a breakpoint at 5.79 ± 0.63 g/kg of SID Lys and reached a plateau at 13.5 kg/d ($P = 0.04$). For $X_i < 5.79$, MY, kg/d = $13.5 - 1.04 \times (5.79 - X_i)$, where X_i is the concentration of SID Lys, g/kg, for the individual sow, i . The litter ADG increased until a breakpoint at 5.47 ± 0.76 g/kg of SID Lys and reached a plateau at 3.40 kg/d ($P = 0.16$). For $X_i < 5.47$, litter ADG, kg/d = $3.40 - 0.38 \times (5.47 - X_i)$, where X_i is the concentration of SID Lys, g/kg, for the individual sow, i . The diamonds (◆) represent the least squares means and the error bars indicate SEM for the least squares mean.

Optimal protein concentration in diets for sows during the transition period

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In conclusion, the transition diet of multiparous sows should contain 5.79 g SID Lys/kg when fed 3.8 kg/d (13.0 MJ ME/kg), for a total SID Lys intake of 22 g/d in last week of gestation.

Higher milk production will result in higher weaning weights

Jakob et al., (2024)

The transition diet

Gestation

High fiber
Low density
High dEB



Lactation

Low fiber
High density
Low/moderate dEB

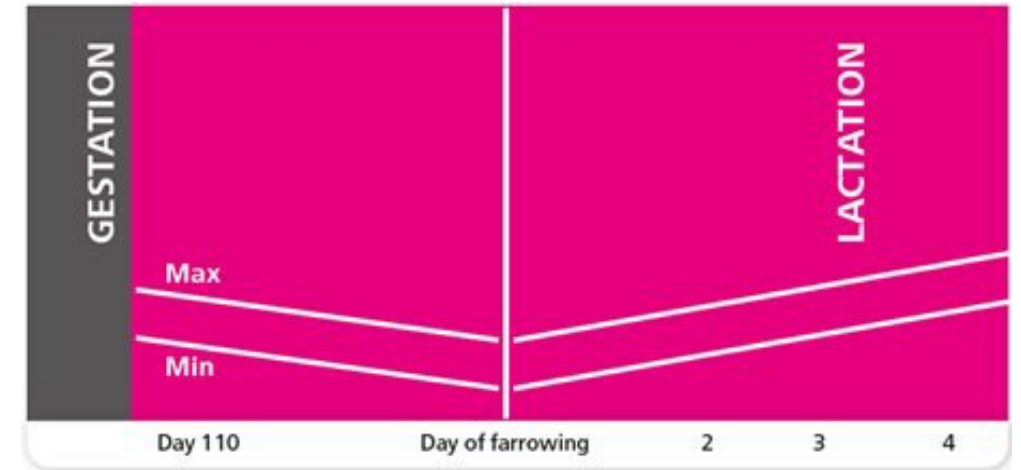
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What if I don't have a transition diet?

Topigs Norsvin advise

- Keep an eye on your animals first!
 - Manage udder health
 - Control gut health
 - Be alert on water supply and consumption
- Use a lactation diet
 - Why the lactation diet
 - Minerals, dEB, fits better than the gestation diet
- Manage the feed program
 - Controlled feeding (P0, P1 versus older sows)
 - Gradually lower intake until the moment of farrowing
 - Increase gradually the first 5 days after farrowing



A close-up photograph of a pig's face, showing its eyes and snout. A bright pink horizontal bar is superimposed across the middle of the image. The word "Conclusion" is written in white text on this bar.

Conclusion

Conclusion

- We agree on :
 - Physiological and metabolic differences between gestation and lactation
 - Crucial phase regarding nutritional and physical aspects (amount of feed)
 - Gut health and fiber help with the transition due to the difference between diets
- Be aware!
 - More piglets to be farrowed and to be weaned
- Feed intake during lactation is key to support the sow, the litter and the future litter

Transition period directly affects → Nutrition, Reproduction and Health



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