

If you give the pig a choice: Suckling piglets eat more from a diverse diet

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Background

Stimulating solid feed intake in suckling piglets is important to ensure a successful weaning transition, exemplified by the correlation between pre- and post-weaning feed intake. In nature, piglets begin to sample food items in a playful manner when only a few days old. In pig husbandry, to the contrary, suckling piglets are not encouraged to forage, whereas we hypothesize that this is crucial to improve piglet robustness via gut colonisation towards more 'mature' microbiota.

Objective

- Does providing diversity in the diet of suckling piglets stimulate their feeding behaviour?

We hypothesize that presenting two diverse diets simultaneously instead of one increases foraging behaviour & feed intake preweaning

Methods

Ten litters were exposed to two diets at the same time, different in size, taste, composition, smell, texture and colour, in a two-choice feeding set-up (diet A+B). Ten other litters were fed only one of the diets (diet A). Feed was provided from 2 days of age in two round feeder bowls per pen. Feeding behaviour was studied by weighing feed remains (d6,12, 16, 22; n=20) and performing observations (d10, 15, 22; n=12).



Figure 1. Two-choice feeding set-up in a farrowing pen.

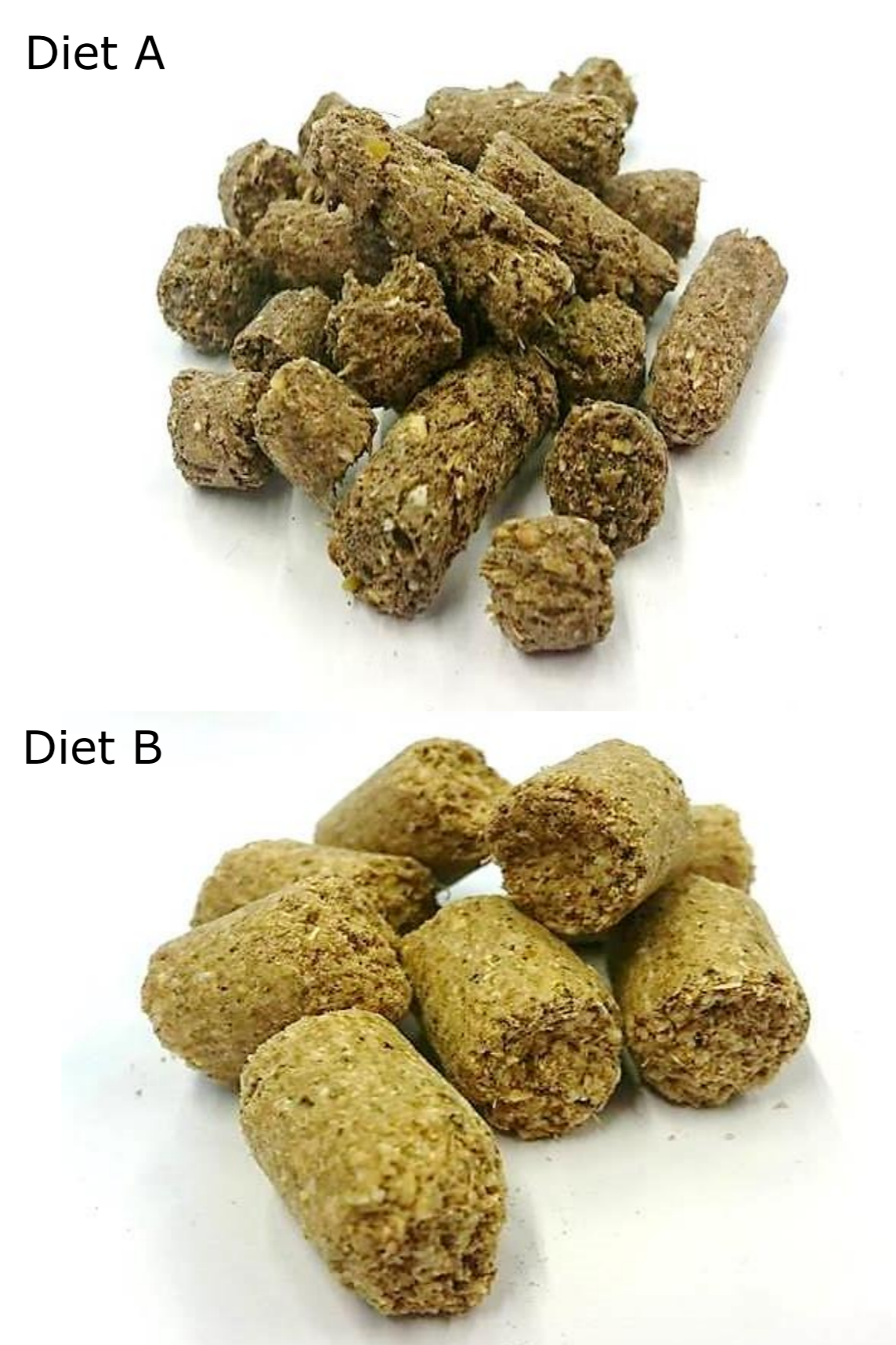


Figure 2. Two different diets provided to suckling piglets, receiving either diet A+B or diet A only.

Results – Foraging behaviour

- At day 15, A+B fed-pigs explored the (feed in the) feeders 2.6 times more during observations compared to A-fed pigs ($P=0.001$)
- At day 15, pigs explored feed that was on the floor 2.5 times more when fed diet A+B than when fed diet A only ($P=0.01$)
- At day 22, pigs fed diet A+B were also observed to be eating feed on the floor 2.8 times more than pigs fed diet A only ($P<0.001$)

Overall, pigs receiving diet A+B played 6 times more with the feed in contrast to pigs receiving diet A only ($P=0.002$)

Results – Feed intake

- A+B-fed pigs ate much more than pigs provided with diet A only (Figure 3)
- Yet, pigs receiving diet A+B had no overall preference for either diet A or B (data not shown)
- The proportion of eaters within a litter did not differ between A+B and A-fed litters (Table 1)

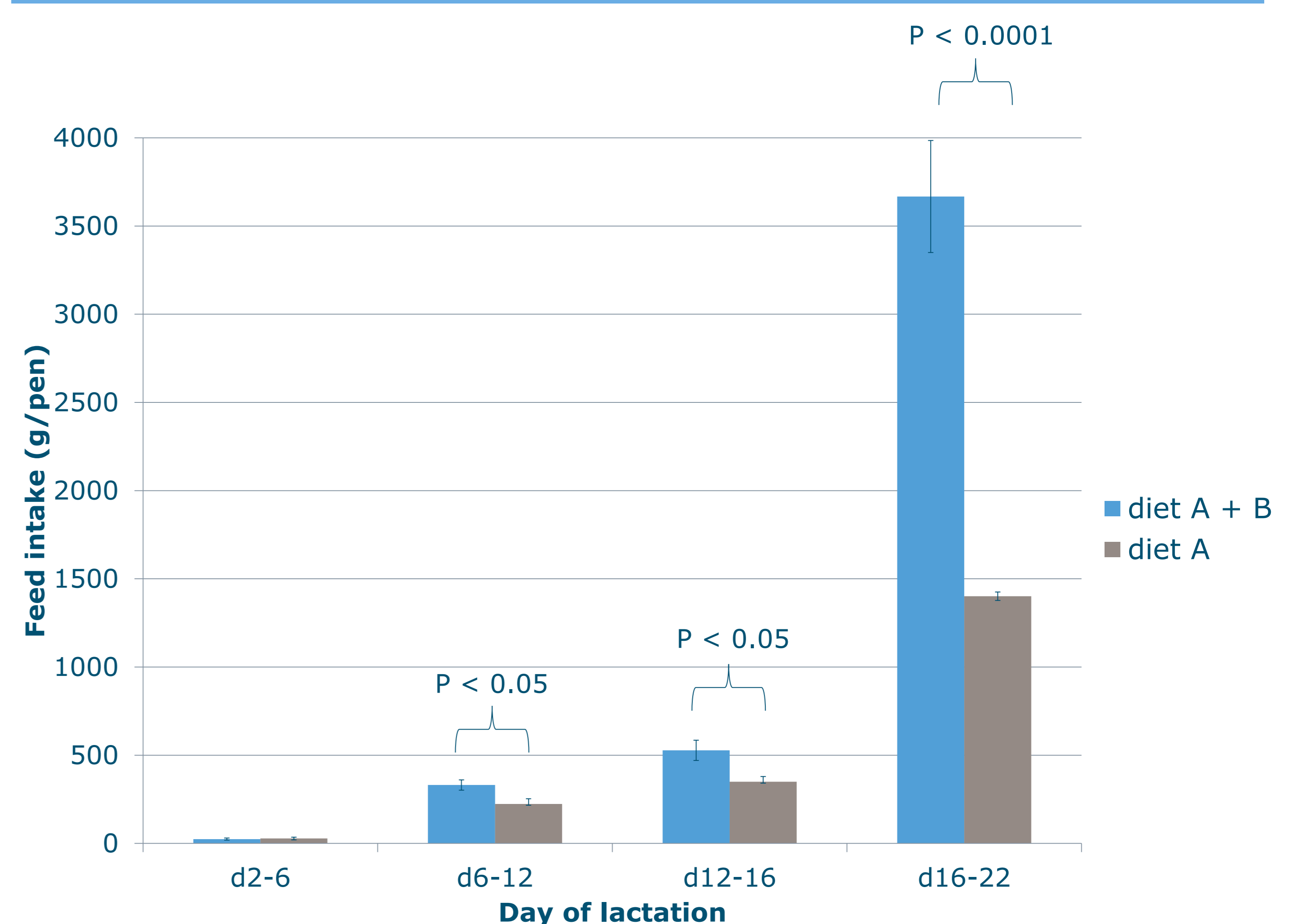


Figure 3. Differences in feed intake over time between pens fed diet A+B and pens fed diet A only. Litters were standardized to 14 piglets.

	Diet A+B	Diet A
Day 10	25%	17%
Day 15	77%	67%
Day 22	93%	92%

Table 1. Percentage of eaters within a litter over time between pens (n=6) provided diet A+B and pens (n=6) provided with diet A. Live behavioural observations were used to determine 'eaters' (i.e. pigs scored eating at least once). Differences were not significant between diet A+B and diet A.

Conclusion

Dietary diversity (i.e. size, taste, composition, smell, texture & colour) stimulates feeding behaviour of suckling piglets shown by more time spent on foraging behaviours and a higher feed intake

What's next?

- Study the impact of early feeding on (gut) development of piglets around weaning (behaviour, performance, gut microbiota colonization along with immune & metabolic status)
- Explore the most effective dietary diversity (e.g. taste, smell, touch) and way of presenting feed to stimulate early feeding

Acknowledgements

The authors thank F. Bartels, M. van den Bosch, E. Alderliesten and personal of CAN IC Velddriel for their help with the experiment and like to acknowledge Cargill Animal Nutrition for the use of their research facilities and Coppens Diervoeding for providing diet B. The authors are grateful to T. Zandstra for the production of diet A and to H. van den Brand for his advice.