

# Does creep feed have any benefit?

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## Creep Feeding Inconsistencies

Creep feeding is a common practice throughout the pork industry. There are a number of perceived benefits, including provision of nutrients, higher weaning weight, and improved transition at weaning, however, these benefits only occur if the creep feed is consumed. It is estimated somewhere between 4-40% of piglets will consume creep feed during lactation. Intake of creep feed is usually low and highly variable among pigs, with smaller piglets having higher intake and larger having little to no consumption. The achieved benefit of creep feed on growth performance in lactation and/or the nursery period remains inconsistent.

The benefits of providing creep feed may have less to do with provision of nutrients and more to do with exposing piglets to a dry feed and enhancing exploratory behaviour. Dietary diversity, such as particle size variation, has been shown to have a greater influence on pre-weaning feed intake than dietary flavour. Therefore, it is possible that provision of expensive creep diets is not necessary to achieve creep feeding benefits related to weaning weight and overall performance. Feeding simple diets, such as a typical lactation diet, may be sufficient. Identifying less expensive alternatives will help to reduce cost of production in the pork industry.

## What We Did

A total of 50 sows and litters with 12-14 per treatment were randomly assigned to 1 of 4 creep feeding treatment protocols. Creep feeding protocols were 1) no creep feed provided (CON), 2) complex creep feed provided (CC), 3) simple creep feed provided (SC), and 4) both complex and simple creep feed provided (SCC). The CC consisted of a standard nursery starter diet and the SC consisted of a standard lactation diet. For the SCC treatment, one feeder contained the simple creep and one contained the complex creep.

Sows were moved into the farrowing room approximately 5 days prior to the expected farrowing date and placed on a commercial lactation feed. Upon farrowing, total pigs born alive and litter weight was recorded. Within 24-h of farrowing, piglets were cross-fostered, if needed, equalizing the number of piglets per sow (12-14 piglets/sow).

Litter weight was recorded weekly on day 7, 14, 21, and at weaning (d28), all mortalities were recorded and litter size adjusted. At day 14 post-farrowing, litters were placed on their respective creep protocol treatment. Type of creep provided and intake were recorded daily and adjusted for wastage. Fresh creep feed was provided each day until weaning.

Upon weaning, piglets were housed in pens of 10-13 pigs/pen with each treatment having 14-16 pens within pre-weaning treatment groups. Individual pig body weight and per pen feed intake were recorded weekly for 4 weeks.

Overall, there appears to be little benefit of providing creep feed in general or of providing complex, expensive creep feed.

## What We Found

### Pre-weaning Performance (Table 2)

There was no difference in litter performance prior to provision of creep feed or in average daily gain (ADG) throughout the first week after creep was provided. However, the second week saw an increase in ADG in piglets, with an overall trend for improved ADG in litters receiving the SC and SCC creep treatments. There was no difference in creep feed intake across treatments. There was no preference for simple or complex feed (Figure 1) in those piglets that had access to both dietary treatments.

(Does Creep Feed Have Any Benefit.....cont'd on page 11)

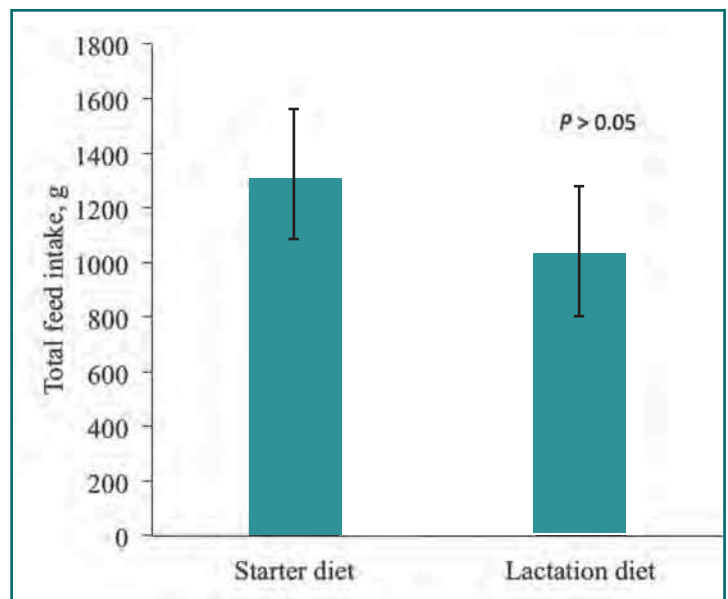


Figure 1. Total intake of starter and lactation diet in litters offered both diets during the pre-weaning period. Values are least square means  $\pm$  SEM.

Table 2. Pre-weaning performance<sup>1,2</sup>

Item	Treatment					P-value
	Control	SC	CC	SCC	SEM	
n	14	12	12	12		
Birth weight, kg	1.52a	1.53a	1.45ab	1.43b	0.030	0.041
d 14 weight, kg	4.69	4.74	4.57	4.60	0.138	NS
Wean weight, kg	8.17	8.59	8.19	8.25	0.209	0.081
Average daily gain, kg/d						
d 0-7	0.180	0.187	0.181	0.187	0.010	NS
d 7-14	0.273	0.273	0.262	0.265	0.007	NS
d 0-14	0.219	0.223	0.216	0.220	0.008	NS
d 14-21	0.278	0.291	0.294	0.283	0.112	NS
d 21-28	0.221b	0.259a	0.223b	0.239ab	0.015	0.002
d 14-28	0.274	0.290	0.276	0.284	0.008	0.062
Creep consumed, g/pig/d						
d 14-21	-	6.02	4.14	6.68	1.41	NS
d 21-28	-	13.85	13.83	20.62	4.37	NS
d 14-28	-	9.88	9.04	13.62	2.55	NS

BW, body weight; CC, complex creep provided; Control, no creep feed provided; NS, not significant; SC, simple creep provided; SCC, both simple and complex creep provided; SEM, standard error of the mean

<sup>1</sup>Values are least square means.

<sup>2</sup>Creep feed was offered to piglets from d 14 after birth until weaning.

Table 3. Nursery performance<sup>1</sup>

Item	Treatment					P-value
	Control	SC	CC	SCC	SEM	
n	14	16	15	14		
Initial BW, kg	8.14	8.19	8.13	8.08	0.283	NS
Final BW, kg	21.60	21.91	21.99	22.15	0.445	NS
Average daily gain, kg/d						
d 0-7	0.163b	0.181ab	0.209a	0.192a	0.015	< 0.05
d 7-14	0.446	0.454	0.452	0.453	0.047	NS
d 14-21	0.584	0.588	0.604	0.621	0.040	NS
d 21-28	0.723	0.731	0.721	0.742	0.020	NS
d 0-28	0.480	0.496	0.489	0.502	0.124	NS
Average daily feed intake, kg/d						
d 0-7	0.163	0.172	0.185	0.176	0.010	NS
d 7-14	0.468	0.466	0.488	0.490	0.022	NS
d 14-21	0.732	0.725	0.744	0.772	0.034	NS
d 21-28	0.970	0.971	0.978	1.002	0.034	NS
d 0-28	0.584	0.583	0.599	0.610	0.017	NS
Gain:Feed, kg/kg						
d 0-7	0.985	1.048	1.099	1.087	0.046	NS
d 7-14	0.935	0.971	0.919	0.931	0.078	NS
d 14-21	0.803	0.802	0.817	0.797	0.035	NS
d 21-28	0.754	0.751	0.742	0.731	0.018	NS
d 0-28	0.867	0.823	0.852	0.825	0.031	NS

BW, body weight; CC, complex creep provided; Control, no creep feed provided; NS, not significant; SC, simple creep provided; SCC, both simple and complex creep provided; SEM, standard error of the mean

<sup>1</sup>Values are least square means.



(Does Creep Feed Have any Benefit.....cont'd from page 6)

### Post-weaning Performance (Table 3)

Pigs that received creep feed pre-weaning had slightly increased ADG in the first week post-weaning, with no differences based on creep feed type provided. There was no difference in performance after the first week and no effect on ADG throughout the entire nursery period or on final body weight.

Overall, there appears to be little benefit to providing creep feed under the conditions of the current study. It should be noted, however, that the data presented are averages for litter (or pen) and does not account for potential positive effects of creep feed on individual piglets. Previous work has indicated there may be a benefit of providing creep feed, but only in those piglets that actually consume it. Another factor to consider - while creep feed had no benefit on overall pig growth, there may be other benefits that were not determined in this study. For example, quicker adaptation to feeding and adjustment to plant-based diets vs. milk may help to improve gut development and health, improving long-term robustness of the pig. Future work should focus on the non-growth impact of provision of creep feed.

Results indicate piglets had no preference between the simple or complex creep diets. Intake of both creep types was similar in the SCC group that had access to both diet types.

### The Bottom Line

Piglets showed no preference for simple or complex creep feed. Providing creep feed had little impact on pre-weaning performance, with increased ADG only in the final week pre-weaning. While there was a slight benefit to providing creep feed on growth performance in the first week post-weaning, this was not maintained through the nursery period.

Further research is required to determine the impact of creep feed on individual pigs and to determine if increasing the number of pigs consuming creep feed will improve the potential benefits of provision of creep feed.

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