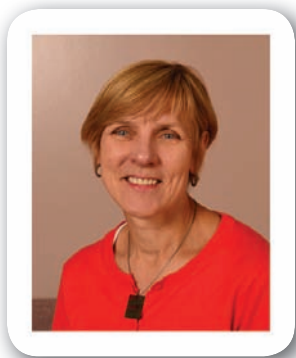


# Bovine Colostrum for Piglets: Can it Mitigate the Post-Weaning Growth Lag?

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## SUMMARY

Bovine colostrum is a good source of nutrients and growth factors, and is very palatable. It was added to the creep feed of piglets in the farrowing room and to the phase one diets immediately post-weaning to determine if it would increase feed intake, and help reduce the impacts of the post-weaning growth lag. Overall, the bovine colostrum had no beneficial effects on growth or feed intake of the piglets. However, it did increase the number of piglets that consumed the creep feed or phase one diet immediately after weaning.

## INTRODUCTION

Weaning is a stressful time for a piglet, and as a result piglets may undergo a “post-weaning growth lag,” characterized by failure to consume solid feed in the hours or days immediately post-weaning. This can be especially detrimental for piglets already compromised because of very low birth weights, which can be a consequence of larger litters.

Increased litter size reduces the overall cost of pork production by spreading out the over-head cost of sow maintenance with increased piglet numbers, and thus increased kilograms of pork produced per sow. However, as the litter size increases, average piglet birth-weight decreases, and pre-and post-weaning mortality increase.

We hypothesized that supplementing bovine colostrum in the creep feed during lactation would benefit piglets that are not receiving sufficient nutrition from the sow, and if continued as a supplement immediately post-weaning, will aid the transition to solid diets in the nursery. The objective of this experiment was to determine if powdered bovine colostrum added to the creep feed or the feed supplied immediately post-weaning would improve feed intake, leading to improved growth.

## EXPERIMENTAL PROCEDURE

A total of 20 sows (10/week) and their litters were used for this experiment. All litters were supplied with creep feed from day 19 post-farrowing to weaning ( $26 \pm 2$  days of age). Half of the litters had supplemented bovine colostrum with their creep feed (6% of offered



feed). At weaning, piglets were moved to the nursery and randomly assigned into nursery pens, based on treatment ( $\pm$  colostrum) and body weight. Pigs were housed 4/pen, and there were 6 pens/treatment/room (2 rooms). The treatments were arranged as a 2 x 2 factorial (plus or minus colostrum in creep x plus or minus colostrum in phase one nursery diet). Piglet body weights were recorded one week prior to weaning, at weaning, and on days 9, 16 and 30 in the nursery. Creep feed consumption was determined daily in farrowing rooms. Feed intake was recorded in the nursery. Creep feeding began one week prior to weaning. Creep feed was spiked with 0.5% brilliant blue for three days to detect eating behavior; which was determined by anal swabbing 48 hours after the blue dye was removed. Half of the phase one diets contained colostrum and all of them were spiked with ferric oxide (red dye colour) for 24 hours post-weaning. Anal swabbing was used to determine the “eaters” of the phase one diet 36 hours post-weaning.

*“The objective was to determine if bovine colostrum added to the creep feed or the feed supplied post-weaning would improve feed intake”*

## RESULTS AND DISCUSSION

Overall, top-dressing the creep feed or the nursery phase 1 diet with bovine colostrum had no effect on growth of the piglets in the farrowing room during the week prior to weaning, nor did it affect growth or feed intake in the nursery (Table 1). Subsets of piglets, the smallest third or the largest third based on day 19 weight, were examined and the same conclusion was drawn. Therefore, it can be concluded that colostrum did not benefit growth of these piglets, nor was there a differential response depending on the body weight of the piglets.

Addition of the colostrum did increase the percentage of piglets identified as “eaters” in the farrowing room and the nursery (Figure 1,  $P < 0.05$ ). When looking specifically at the percentage of piglets identified as “eaters” of the phase one nursery diet it was observed that colostrum added to the creep feed is more influential than added to the nursery diet.

### CONCLUSION

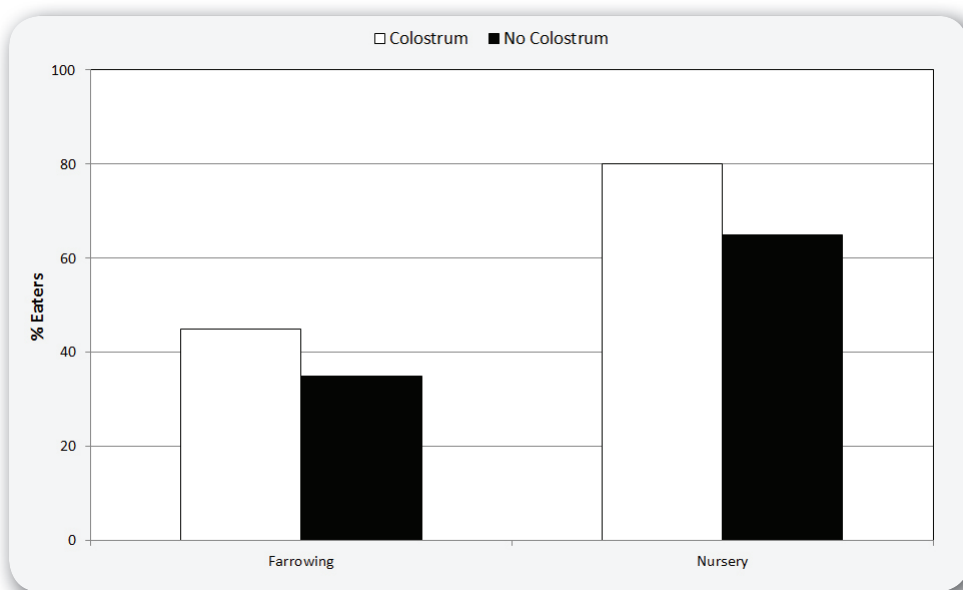
Colostrum, whether provided as a top dress to creep feed or added to the phase one diet, did not improve the growth of these piglets. The observation that colostrum did increase the proportion of piglets identified as “eaters” is important however, and more research is required to determine how we can take advantage of this to improve the growth and health of these piglets.

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**Table 1.** The response of piglets receiving colostrum with their creep feed from day 19 to 26 (weaning) post farrowing and their Nursery phase 1 diet.

Farrowing	Treatment					SEM	P Values		
	Yes	Yes	No	No	No		Trt	Col. vs. No Col.	
Nursery	Yes	No	Yes	No	No			Farrowing	Nursery
<b>Farrowing room</b>									
BW, d 19	6.05	5.99	5.539	5.60	0.32	0.53	0.52	0.82	
BW, d 26	8.10	8.01	7.54	7.63	0.37	0.64	0.73	0.80	
ADG, d 19 to 26	0.29	0.29	0.29	0.29	0.11	0.97	0.81	0.79	
<b>Nursery room</b>									
BW, d 35	9.48	9.43	9.00	8.86	0.01	0.54	0.69	0.50	
BW, d 42	12.02	11.88	11.14	11.27	0.47	0.45	0.63	0.90	
Feed intake, g/d	0.75	0.72	0.73	0.70	0.45	0.65	0.42	0.45	
Gain, g/d	0.25	0.24	0.23	0.23	0.05	0.43	0.74	0.71	
Gain:feed	0.33	0.34	0.32	0.323	0.02	0.28	0.34	0.28	



**Figure 1.** The percent of piglets in the farrowing room or nursery identified as eaters of the creep or phase one diet, respectively. Within a room, ( $P < 0.05$ ).