

Improving Reproductive Performance

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Improving sow reproductive performance and reducing piglet mortality are two key factors that swine producers need to always focus on to improve the economics of their production system. Over the past few years the industry has found itself challenged with diseases such as PED and PRRS which have taken a toll on a number of systems. The industry has experienced a plateauing and even decline in important production parameters such as average pigs per litter and average pigs per breeding animal since 2010. What tools might the swine industry turn to for improvement here? How about direct-fed microbials (DFMs)?

DFMs, which contain viable beneficial organisms such as *Bacillus subtilis*, have become a commonplace performance-enhancing tool. They are used by many producers and recommended by consulting veterinarians and nutritionists to improve the general health of nursery pigs and ultimately increase performance. Additionally, a growing number of sows are being put on DFM based feeding regimens to help mitigate health issues such as Clostridia in sow herds. Research presented at scientific conferences have highlighted the benefits of one such product, CALSPORIN® direct-fed microbial, to do exactly that. While many

in swine production accept the fact that products like CALSPORIN can be used to improve the health status of sows and their nursery pigs, are they overlooking the benefits to be gained for sow reproductive performance and piglet health?

Recent work, published by Kritas et al. (J. Anim. Sci. 2015.93:405–413), addresses the question of CALSPORIN'S ability to directly impact reproductive performance and piglet health. Reporting on the results of a longer-term (2-cycle) field study, it presents evidence that CALSPORIN can indeed have a positive impact on performance factors such as sow weight loss and estrus interval, as well as number of piglets weaned, piglet mortality, and piglet intestinal health.



Sow Performance Results

Parameters	First Reproductive Cycle		Second Reproductive Cycle	
	CALSPORIN Treatment	Untreated Control	CALSPORIN Treatment	Untreated Control
Parity	3.6 (2.2)	3.3 (1.3)	4.2 (2.0)	4.2 (1.3)
Sow weight at farrowing (kg)	242.0 (25.9)	238.7 (30.7)	236.9 (18.6)	238.1 (29.1)
Back fat loss (mm)	3.4 (1.9)	3.9 (1.3)	2.7 ^a (1.5)	40.1 (8.0)
Sow weight loss (kg)	35.0 ^a (12.3)	46.9 (10.8)	25.2 ^a (6.8)	40.1 (8.0)
Wean-estrus interval (d)	5.3 ^a (1.0)	6.5 (1.6)	6.0 ^a (0.9)	6.8 (1.2)

Parenthesis indicates Standard Deviation from mean.

^aMeans in same row, within same cycle, differ significantly $P \leq 0.05$.

Piglet Performance Results: Birth to weaning at 28 days-of-age

Parameters	First Reproductive Cycle		Second Reproductive Cycle	
	CALSPORIN Treatment	Untreated Control	CALSPORIN Treatment	Untreated Control
Number of piglets born	12.32 (2.75)	12.26 (1.23)	12.61 (1.16)	12.24 (1.14)
Number of piglets weaned	11.18 (1.36)	11.19 (1.21)	11.87 ^a (1.14)	11.10 (1.22)
Mortality (%)	6.3	8.4	5.7	9.1
Avg. Diarrhea score	4.6	5.2	4.2	6.4

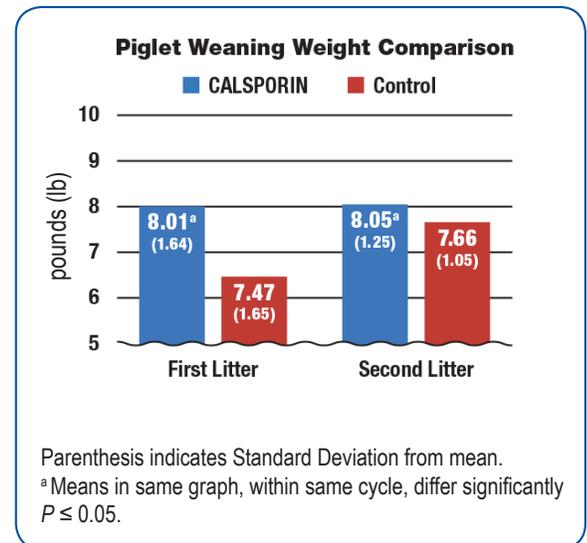
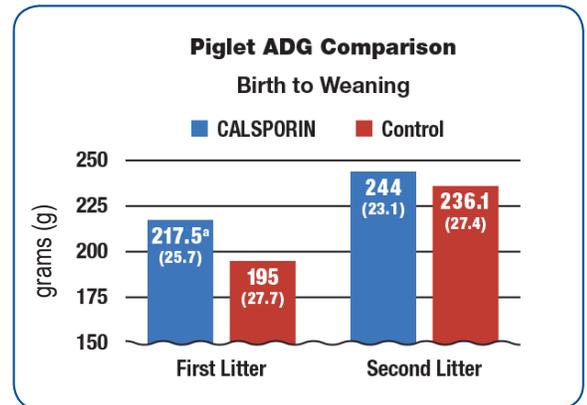
Parenthesis indicates Standard Deviation from mean.

^a Means in same row, within same cycle, differ significantly $P \leq 0.05$.

Some of the key findings from this study were:

1. CALSPORIN significantly improved sow body conditioning during both reproductive cycles by reducing weight loss during gestation. Most interestingly, CALSPORIN fed sows experienced significantly reduced weight loss and back fat loss during the second cycle.
2. CALSPORIN fed sows experienced a significant reduction in wean-estrus interval, due in large part to improved body conditioning observed in the sows.
3. CALSPORIN usage in creep-feeds significantly improved piglet weaning weights for both first and second litters.
4. Piglet average daily gain was numerically higher, and piglet mortality was numerically lower, in both first and second CALSPORIN-fed litters.
5. Reduced numbers of *E. coli* and *Clostridium* spp. were detected in feces of sows fed CALSPORIN during the second reproductive cycle.

This study confirmed what those producers who have been using CALSPORIN over multiple cycles have observed; long term supplementation of feeds with CALSPORIN results in incremental health and production benefits. And why does this occur? The improved sow reproductive performance and piglet health parameters can be attributed to improved nutrient utilization derived from enhanced beneficial intestinal microflora. Want to improve the economic performance of your system? Consider adding CALSPORIN to your gestation and lactation sow diets; and add CALSPORIN to your piglet creep-feed diets.



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