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LIVE YEAST SUPPLEMENTATION TO PERIPARTURIENT SOWS DURING THE SUMMER

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Introduction

Farrowing is a critical time in the sow reproduction cycle where health and digestive challenges occur, playing a role on the dam's behavior after birth and the subsequent litter ability to thrive. The live yeast *Saccharomyces cerevisiae boulardii* is well documented for its anti-inflammatory characteristics[1] and its ability to mitigate the deleterious effect of diarrhea causing agents such as *C. difficile* toxins[2] or *E. coli* endotoxins[1] in the host when a stressful event upsets the gut microflora. This study aimed at evaluating the benefit of adding a live yeast to periparturient sows in a herd with a history of *C. perfringens* type A and *C. difficile* diarrhea, in the presence of heat stress, on their litter performance.

Material and methods

A total of 60 crossbred Genetiporc (♀) x PIC380 (♂) sows from two successive lots of gestating sows were randomly allocated to a control (C) or live yeast (LY) treatment group (*S. cerevisiae boulardii* CNCM I-1079, Levucell SB). Supplementation started 3 weeks prior to parturition ($2x10^9$ cfu/kg) and continued through lactation ($1x10^9$ cfu/kg). Sows were housed in farrowing rooms without any cool cells. Litter size, weight and growth were monitored, as well as occurrence of diarrheas. Data were analyzed by GLM (IBM SPSS 19.0) with treatment and classes of parity as fixed effect, and the lactation duration as covariate.

Results

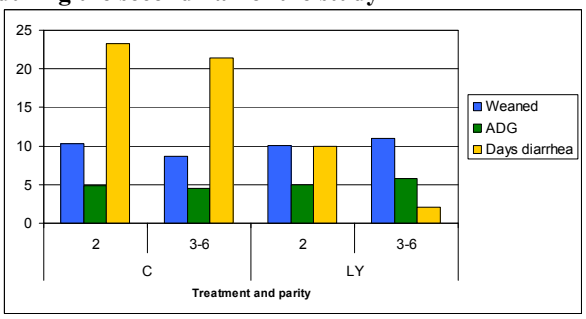
Despite a lower total born number for LY, the live yeast fed sows weaned 1 more piglet (P=0.054) and had heavier litters at weaning (P<0.05). Growth tended to be improved with the additive and the percent of days with diarrhea was also significantly reduced in the LY group. (Table 1).

Interestingly, the second half of the sows, suffering less heat stress, displayed a treatment by parity interaction: 3-6 parity C sows weaned less piglets than the others, the days with diarrhea (%) were reduced for the 3-6 parity LY sows versus the control, and ADG was improved within the 3-6 parity sows with LY (Figure 1).

Table 1 : Overall sows performance per treatment

	C	*LY*	**P<**
Total born	14.54±0.42	13.00±0.50	0.021
Born alive	12.82±0.45	11.76±0.54	0.139
Stillborn	1.27±0.28	0.83±0.33	0.324
Weaned	9.38±0.32	10.37±0.38	0.054
Litter wgt at weaning, lb	108.0±4.3	124.2±5.2	0.019
ADG, lb/d	4.24±0.24	4.91±0.29	0.082
Days with diarrhea, %	19.4±2.0	7.8±2.3	<0.001

Figure 1 : Parity and treatment effect on piglets during the second half of the study



Conclusion

In this particular herd with older facilities, a history of scours, and in the presence of heat stress, Levucell SB lowered the incidence of scours, reduced pre-weaning mortality, and greatly improved litter weaning weights. Further investigation is needed to see if these benefits can be generated in less stressful conditions.

References

1 Pothoulakis C: 2009, Aliment Pharmacol Ther 30:826.

2 McFarland LV: 2006, Am J Gastroenterol 101:812.2