

Abstract

For ASAS and ADSA Midwest,
Des Moines, IA – Mar. 11-13, 2013



Effects of commercial diets with or without CALSPORIN® (*Bacillus subtilis* C-3102 spores) on fresh fecal microbial profiles of sows from breeding through lactation.

B. K. Knudson, Standard Nutrition Services – Livestock Management Company (LiManCo), Waverly, IA
N. Otomo, Calpis USA, Inc., Mt. Prospect, IL
T. Hamaoka, Calpis USA, Inc., Mt. Prospect, IL
B. Lee, Calpis USA, Inc., Mt. Prospect, IL
S. C. Johnson, Quality Technology International, Inc., Elgin, IL

Three groups each containing 10 sows, initially at different stages of reproduction (breeding, early gestation, or advanced gestation), were utilized in an 18-week feeding trial at a commercial facility in Iowa from May-September to evaluate the effects of CALSPORIN® (0 or 3×10^5 cfu/g feed) on fresh fecal microbial profiles. Each sow was individually identified by a numbered tag to facilitate repeat sampling over time. The initial 30 sows were reduced to 19 from movement within the facility, recycling, and death loss. This sow herd had previously been on a regimen of high (~240 g/ton, top dressed) BMD® in feed for 2 weeks prior to farrowing for control of clostridial enteritis caused by *C. perfringens* in suckling piglets (history of clostridial scours on the premises). Fresh fecal sampling was done on 6 dates coinciding with initiation of the trial and prior to feeding CALSPORIN® (breeding stage or during gestation) or during CALSPORIN® feeding (pre-farrowing, farrowing, and lactation) in the 3 groups of sows. Samples were submitted with ice packs by overnight courier to Calpis USA, Inc. Laboratory in Mt. Prospect, IL for immediate microbial profiling on culture media. By combining data from like stages of production (breeding or gestation pre-trial; or pre-farrowing, farrowing, or lactation during CALSPORIN® feeding) for the 3 groups, selected species of fecal bacteria were evaluated. Nonsignificant differences in fresh fecal bacteria counts were found pre-trial vs. during CALSPORIN® feeding (averages of positive cultures) for *Enterobacteriaceae* (19/19 \log_{10} 7.47 vs. 19/19 7.15-7.62 cfu/g), *Salmonella* (12/19 \log_{10} 4.91 vs. 12-14/19 4.82-5.32 cfu/g), *Lactobacillus* (15/19 \log_{10} 7.55 vs. 15-18/19 7.58-7.82 cfu/g), or *Bifidobacteria* (8/19 \log_{10} 5.59 vs. 11-14/19 5.59-6.14 cfu/g). Significant decreases in *Clostridium perfringens* (-77.1% in farrowing and -95.2% in lactation) and increases in total anaerobes (pre-farrowing, farrowing, and lactation), and as expected in CALSPORIN® C-3102 bacilli, were found compared to pre-trial. Dietary CALSPORIN® increased total anaerobes and decreased *Clostridium perfringens* counts in fresh fecal samples from these sows.

Key Words: *Bacillus subtilis* C-3102, CALSPORIN, *Clostridium perfringens*, fecal bacteria, sow

PROVEN TECHNOLOGY
PERFORMANCE. HEALTH. FOOD SAFETY.

www.qtitechnology.com | 847-649-9300

© 2016 Quality Technology International, Inc.
1707 N. Randall Rd, Suite 300, Elgin, IL 60123
QTI ABST '13 02-12/16



ANIMAL HEALTH & NUTRITION