Technical Bulletin

Arm & Hammer Animal and Food Production

CERTILLUS reduced enterotoxigenic *E. coli* in pigs.

CERTILLUS™ addresses the specific challenges present on your farm with a selection of our proprietary *Bacillus* strains. An on-farm Microbial Terroir™ assessment determines your operation's microbial makeup and the solution that's right for you.

STUDY OVERVIEW

A validation study[1] was conducted to examine the efficacy of a customized CERTILLUS Swine Microbial Terroir solution to manage enterotoxigenic *E. coli* (ETEC) in sows and neonatal piglets on a commercial swine production system in the south-central U.S.

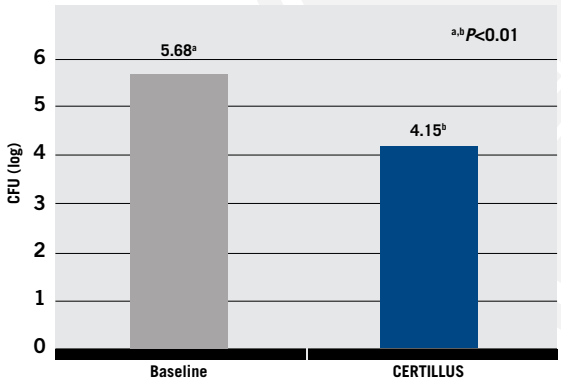
The analysis was conducted over a ten-month period from September 2020 to June 2021. Initial samples were collected from sows and piglets located at four commercial production sites and two nucleus/multiplier sites representing approximately 30,000 sows to determine the current level of ETEC genetic diversity in the system. A CERTILLUS solution specific to the identified challenge was designed. Swabs were taken twice before CERTILLUS was implemented in sow diets to determine the baseline pathogen levels, and twice after the CERTILLUS strains were introduced to assess the effect of treatment.

After the identification of the baseline in November 2020, a custom CERTILLUS blend was implemented. After further evaluation of the baseline determination, the strains in the custom solution were adjusted to better reflect the surrounding environment.

RESULTS

The baseline ETEC CFU counts overall were 5.68 log CFU, and 4.15 log CFU once the sows were treated (Fig. 1). Similarly, ETEC as a percentage of total *E. coli* isolates decreased from 37.5% to 15.9% ($P<0.01$) once CERTILLUS was introduced, and the general prevalence of ETEC in the swab samples declined from 67.6% to 47.0% ($P<0.01$).

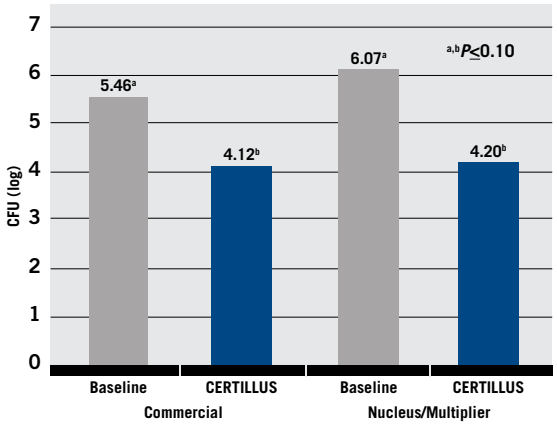
FIGURE 1: Overall ETEC counts before and after CERTILLUS implementation.



a,b Superscripts indicate significant difference ($P<0.01$)

The same trends for these measurement variables were observed when the analysis was performed on the commercial sites and the nucleus/multiplier sites (Fig. 2).

FIGURE 2: ETEC counts by site type before and after CERTILLUS implementation.



a,b Superscripts indicate significant difference ($P \leq 0.10$)

CONCLUSION

In this study, statistically significant data demonstrated that feeding specific CERTILLUS™ strains can effectively target distinct enterotoxigenic *E. coli* pathogens, contributing to healthier and more productive animals.

To learn more about CERTILLUS contact your nutritionist, veterinarian or ARM & HAMMER™ representative or visit AHfoodchain.com.

1 A Commercial Field Trial of CERTILLUS Microbial Terroir – ETEC Technical Report. ARM & HAMMER case study. Data on file. 2021.

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