

Micro-Cell LA Research Summary



Micro-Cell LA is a unique strain of *Lactobacillus acidophilus* (BT-1386, also known as BG2F04) bacteria which exhibits significant probiotic properties in the lower gut of beef cattle fed all types of rations.

Over 20 years of research and real-world experience feeding **Micro-Cell LA** in commercial feedlots has repeatedly proven its effectiveness in improving animal health and performance. Exclusively licensed to Lallemand animal nutrition (LAN), **Micro-Cell LA** was first isolated in the 1980s by North Carolina State University as a probiotic for its inhibitory effects on a number of detrimental organisms including *E. coli*, *S. aureus*, *Salmonella*, *S. typhimurium*, and *Pseudomonas*. Recent independent laboratory studies have also shown **Micro-Cell LA** restricts growth of *E. coli* O157:H7 and feeding **Micro-Cell LA** reduces the number of cattle shedding this pathogen.

FOOD SAFETY & HEALTH

The effects of **Micro-Cell LA** on the lower intestinal health of cattle are the result of several properties of this bacterial strain. The strain (BT-1386) was selected for its superior ability to colonize the intestine and competitively inhibit colonization of the intestine by pathogenic bacteria. Once established in the intestine **Micro-Cell LA** works in two ways: 1) By outcompeting pathogenic bacteria for attachment sites in the hindgut, and 2) Through the production of lactic acid which lowers the intestinal pH to levels that are detrimental to several pathogenic bacteria. These effects are not only beneficial to the animal, but they limit the ability of the deadly human pathogen *E. coli* O157:H7 to colonize the hindgut of cattle fed **Micro-Cell LA**. A recent independent research trial conducted by North Dakota State University demonstrated the ability of **Micro-Cell LA** to reduce the number of cattle testing positive for *E. coli* O157:H7 in the feces (Figure 1).

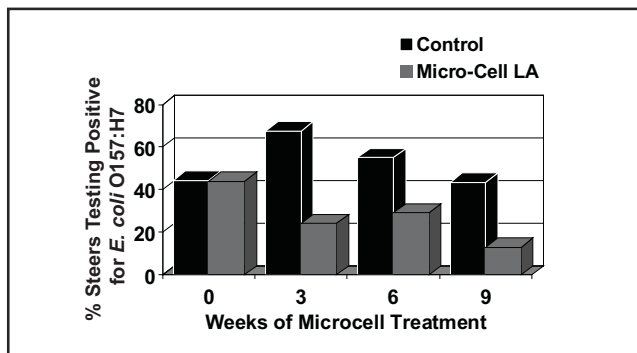


Figure 1. The effects of Micro-Cell LA on the number of steers testing positive for *E. coli* O157:H7 shedding in the feces. (Taber et al. Journal of Food Protection Vol. 71 No. 3, Pages 539 -544).

EFFECTS OF MICRO-CELL LA ON FEEDLOT CATTLE PERFORMANCE

The improvement in hindgut health of cattle that is the result of feeding **Micro-Cell LA** translates into improved feedlot performance and increased profitability. A pooled summary of eight feedlot trials demonstrated the ability of **Micro-Cell LA** to improve average daily gain and feed conversion in finishing cattle (Figure 2). Feeding **Micro-Cell LA** improved average daily gain 4.6% (3.22 vs. 3.08 lb; $P < 0.01$), and improved feed conversion 3.2% (5.94 vs. 5.75 lb; $P = 0.02$).

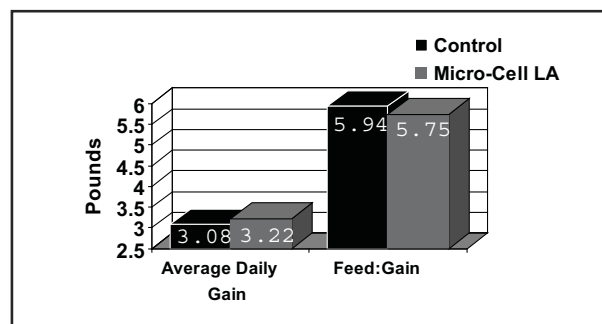


Figure 2. A pooled summary of eight feedlot trials representing 70 replicates and 1186 head per treatment.



(800) 692-4700 LAN_NA@lallemand.com