



SODIUM BUTYRATE IMPROVES DUODENAL DEVELOPMENT EVEN IN CALVES WITH NEONATAL DIARRRHEA

Nº2349W



M. S. NICOLA (1), M. N. CORRÊA (1), A. L. KALB (1), A. A. BARBOSA (1), R. G. MONDADORI (1), E. R. KOMNINO (1), L. A. X. CRUZ (1), V. R. RABASSA (1), B. S. VELASQUEZ (1), E. N. DELLAGOSTIN (1), A. W. S. MARTINS (1), J. A. A. RINCON (2), F. LOPES (3), W. QUINTEIRO (3), E. G. XAVIER (4,1).

1- UNIVERSIDADE FEDERAL DE PELOTAS, RIO GRANDE DO SUL, BRAZIL;

2- UNIVERSIDAD DE LA SALLE, YOPAL, CASANARE, COLOMBIA;

3- ADISSEO BRASIL NUTRIÇÃO ANIMAL, SÃO PAULO, SÃO PAULO, BRAZIL;

4- GRANJAS 4 IRMÃOS S. A. AGROPECUÁRIO, INDÚSTRIA E COMÉRCIO, RIO GRANDE, RIO GRANDE DO SUL, BRAZIL.

SODIUM BUTYRATE

DUODENAL
DEVELOPMENT



CAN DIARRHEA HARM THIS?

objective



EVALUATE THE DUODENAL DEVELOPMENT OF HOLSTEIN CALVES WHO RECEIVED SODIUM BUTYRATE IN THEIR DIET DURING THE FIRST 15 AND 30D OF LIFE AND TO INVESTIGATE IF EPISODES OF DIARRHEA CAN AFFECT THE BENEFITS OF BUTYRATE

n-24



2 GROUPS
BUTYRATE
CONTROL

WITH DIARRHEA
WITHOUT DIARRHEA

EUTHANASIA

15 DAYS (n-12) and 30 DAYS (n-12)

Evaluated:

DUODENAL EXPRESSION

Lactase gene, marker of intestinal immaturity
Glucagon gene-Like Peptide 2, related to tissue repair

DUODENAL MORPHOMETRY

Villous height and crypt depth

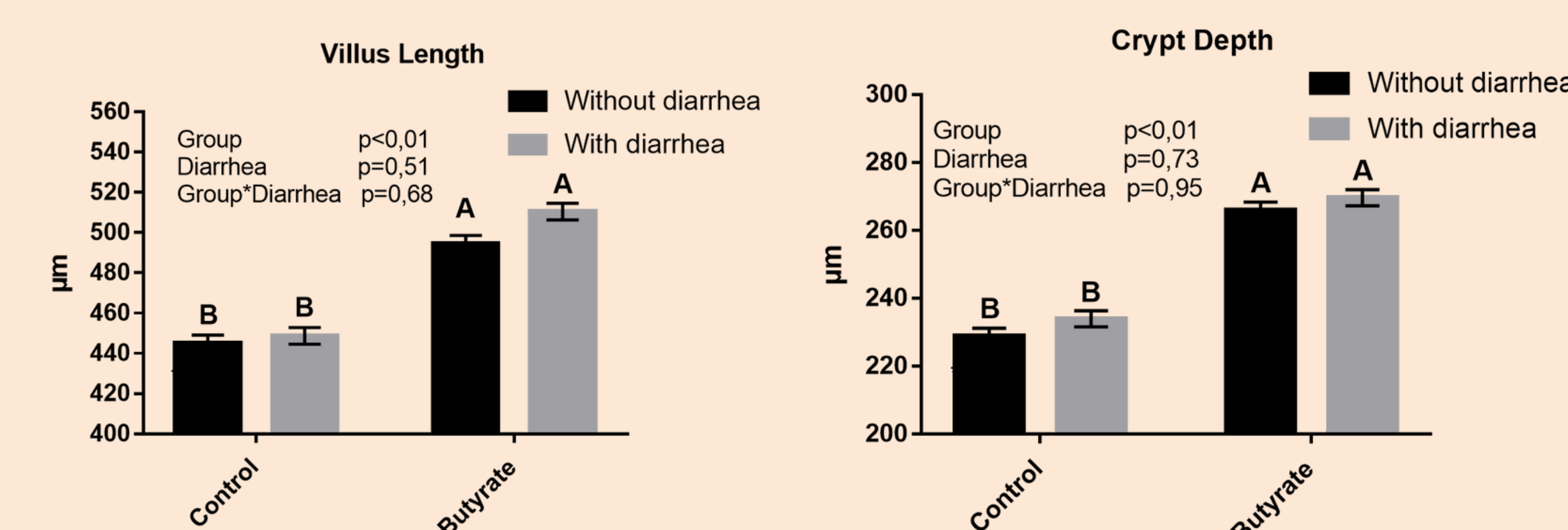


Figure 1: Villus length and duodenal crypt depth of Holstein calves supplemented or not with sodium butyrate and with or without diarrhea up to 30 days of age.

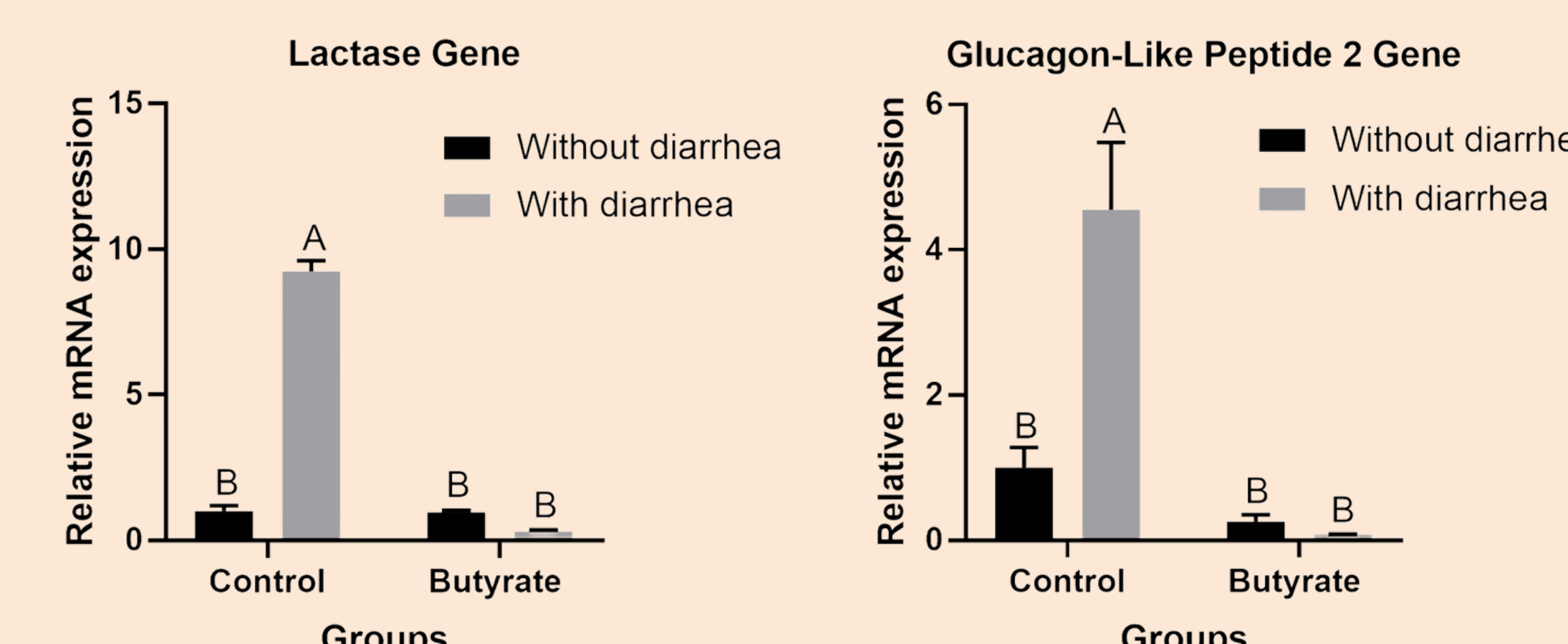


Figure 2: Relative expression of lactase and glucagon-Like Peptide 2 gene in the duodenum of Holstein calves supplemented or not with sodium butyrate with or without diarrhea up to 30 days of age.

conclusion

DUODENAL DEVELOPMENT ATTRIBUTED TO BUTYRATE OCCURRED IN THE FIRST 30 D OF LIFE AND EPISODES OF DIARRHEA DURING THIS PERIOD DID NOT IMPAR THE EFFECTS OF ITS SUPPLEMENTATION

LARGER STUDY

SODIUM BUTYRATE SUPPLEMENTATION

DIARRHEA

MORBIDITY

(CG=50% vs. BG=30%) p=0.04

RECURRENCE

(CG=60% vs. BG=26.67%) p=0.04

ADG UP TO 60 DAYS OLD

CG=0.516 vs. BG=0.555 p=0.09

HIGHEST DEVELOPMENT
OF RUMINAL PAPILLAE

Acknowledgments:



AMERICAN DAIRY
SCIENCE ASSOCIATION®