The purpose of this study was to evaluate the effects of different additives as an alternative to antibiotic growth promoter on performance, diarrhea incidence and relative weight of organs of weanling pigs challenged with E. coli K88+. Thirty-six 17-d old weaned pigs, averaging 4.58 ± 0.45 kg initial BW, were used in a randomized complete block design experiment with 6 treatments, 6 replications per treatment and 1 animal per pen (experimental unit). The treatments were: negative control (NC) - basal diet; positive control (PC) - basal diet with 100 mg/kg of chlortetracycline; SB – basal diet with 2,000 mg/kg of sodium butyrate; HE – basal diet with 500 mg/kg of herbal extracts (25% thymol, 22% cinnamaldehyde, 16% eucalyptus, 14.5% melaleuca, 9% Echinacea, 8% ginger extract, 4.5% capsaisin); HE+SB+P – basal diet with 2,000 mg/kg of a combination of herbal extracts + sodium butyrate + polysaccharides (mixture of inactivated yeast and yeast extracts of Saccharomyces cerevisiae) and HE+SB – basal diet with 2,000 ppm of a combination of herbal extracts and sodium butyrate. Pigs were infected on day 7 with 109 CFU of E. coli K88+ suspended in 6 ml PBS to induce sub-clinical post-weaning colibacillosis (PWC). At the end of the experimental period (14th d), the animals were slaughtered to evaluate the relative weight of organs (stomach, small intestine, colon, liver and spleen). Data were analyzed using the Statgraphics® 4.1 software program. No effects (P>0.05) of the treatments were observed on animal performance during any of the periods investigated (1-7 d and 7-14 d). Pigs fed NC and HE+SB had higher (P=0.0053) diarrhea incidence (9.03 and 10.07%) than those of PC (4.17%) and SB (5.56%). Pigs fed NC had higher liver weight (P=0.0249) than PC and HE+SB. Therefore, PC can be replaced by SB in weanling pig diets.

1School of Agricultural Sciences and Veterinary Medicine, Department of Animal Science, São José dos Pinhais, PR, Brazil.
2Escola Superior de Agricultura “Luiz de Queiroz”, Department of Animal Science, Piracicaba, Brazil.
3Manitoba University, Department of Animal Science, Winnipeg, Manitoba, Canada.
*Rodovia BR 376 – km 14, 83010-500, São José dos Pinhais, PR, Brazil.
corresponding author: batista.leandro@pucpr.br; fax: +55 41 32994363