Abstract: Feed additives, such as direct-fed microbials (DFM), are commonly included into feedlot diets to improve rumen fermentation, gastrointestinal tract health, and overall animal performance. Among the strains of interest in DFM products, yeast, lactic acid and bacilli are highlighted. Hence, we hypothesized that the supplementation of different DFM would improve performance of feedlot Bos indicus cattle receiving a finishing diet. On day -1, 240 Nellore bulls were blocked based on initial body weight (BW; 374 ± 35.3 kg) into 1 of 60 feedlot pens (4 bulls/pen) and pens within blocks were randomly assigned to: (1) Control: no DFM supplementation (n = 20), (2) EFSC: 1 gram/head per day of a DFM based on Enterococcus faecium and Saccharomyces cerevisiae (Probios Precise, Chr. Hansen A/S, Horsholm, Denmark; n = 20), and (3) BLBS: 2 grams/head per day of a DFM based on Bacillus licheniformis and Bacillus subtilis (Bovacillus, Chr. Hansen A/S; n = 20). There were 3 adapting diets within blocks were randomly assigned to: (1) Control: no DFM supplementation (n = 20), (2) EFSC: 1 gram/head per day of a DFM based on Enterococcus faecium and Saccharomyces cerevisiae (Probios Precise, Chr. Hansen A/S, Horsholm, Denmark; n = 20), and (3) BLBS: 2 grams/head per day of a DFM based on Bacillus licheniformis and Bacillus subtilis (Bovacillus, Chr. Hansen A/S; n = 20). There were 3 adapting diets and the finishing diet (20% corn silage, 33% ground flint corn, 45% distiller’s bran plus soluble and 2% minerals and vitamins mixture) that was offered throughout the experimental period (115 days). On day 113, carcass ultrasound evaluations were performed, and carcass traits were also obtained upon slaughter on day 117. All data were analyzed as orthogonal contrasts (SAS Software): (1) DFM vs. Control and (2) EFSC vs. BLBS. No effects were observed on daily DMI (P ≥ 0.18) or final BW (P ≥ 0.12). Nonetheless, DFM supplementation, regardless of type, tended to improve performance of feedlot Bos indicus cattle receiving a finishing diet. On day -1, 240 Nellore bulls were blocked based on initial body weight (BW; 374 ± 35.3 kg) into 1 of 60 feedlot pens (4 bulls/pen) and pens within blocks were randomly assigned to: (1) Control: no DFM supplementation (n = 20), (2) EFSC: 1 gram/head per day of a DFM based on Enterococcus faecium and Saccharomyces cerevisiae (Probios Precise, Chr. Hansen A/S, Horsholm, Denmark; n = 20), and (3) BLBS: 2 grams/head per day of a DFM based on Bacillus licheniformis and Bacillus subtilis (Bovacillus, Chr. Hansen A/S; n = 20). There were 3 adapting diets and the finishing diet (20% corn silage, 33% ground flint corn, 45% distiller’s bran plus soluble and 2% minerals and vitamins mixture) that was offered throughout the experimental period (115 days). On day 113, carcass ultrasound evaluations were performed, and carcass traits were also obtained upon slaughter on day 117. All data were analyzed as orthogonal contrasts (SAS Software): (1) DFM vs. Control and (2) EFSC vs. BLBS. No effects were observed on daily DMI (P ≥ 0.18) or final BW (P ≥ 0.12). Nonetheless, DFM supplementation, regardless of type, tended to improve ADG (1.57 vs. 1.50 kg; P = 0.10) and FE (145 vs. 140 g/kg; P = 0.07). No further effects were observed on carcass traits measured via ultrasound or at slaughter (P ≥ 0.18) or final BW (P ≥ 0.12). Nonetheless, DFM supplementation, regardless of type, tended to improve feedlot performance of Bos indicus bulls. 

Keywords: Bacillus licheniformis, Bacillus subtilis, Bos indicus, direct-fed microbials, feedlot cattle, performance