

The effect of metaphylactic use of tildipirosin for the control of naturally occurring bovine respiratory disease on performance and profitability in high-risk feedlot cattle

André Pacheco De Carvalho¹, Henderson Ayres¹, Mailson Rennan Borges Dias¹, Pedro Rodriguez Fernandez², Milton Ghedini Cardoso³, Aline Barichello Cerqueira⁴, Roberta Dia da Silva Cunha⁴, Anderson Lopes Baptista⁵, Paulo Henrique Jorge da Cunha⁴

INTRODUCTION

The Bovine Respiratory Disease (BRD) complex is a multifactorial disease involving an interaction between environment, host (cattle) and agents (viruses and bacteria) and is the most prevalent disorder in feedlot cattle in Brazil. The biggest challenge of BRD is an early diagnosis and treatment. Metaphylaxis is the practice of administering an approved antimicrobial to an entire lot or pen of cattle with the intent of controlling the incidence of BRD in cattle at significant risk for BRD.

OBJECTIVE

The aim of the study was to evaluate the impact of metaphylaxis on morbidity, average daily gain (ADG), carcass weight, processing costs, revenue, and profits of high-risk cattle of BRD in feedlot.

MATERIALS AND METHODS

Two hundred eight high-risk Crossbred bulls (*Bos taurus* × *Bos indicus*), from a commercial feedlot farm (Brazil), were included in the study. High-risk cattle met the enrolment criteria: external source; body condition score between 1 and 2; traveled over 500 km for more than 8 hours. Cattle were divided randomly into two groups: Met-Group (n=104) received a single subcutaneous administration of tildipirosin (Zuprevo®, MSD Animal Health) at a dose of 4 mg/kg BW (0.022 mL/Kg BW); Control-Group (n=104) received a subcutaneous administration of 0.9% saline at the same dose. Characterization of BRD was based on the DART system. A blood sample of all cattle with BRD clinical signs was obtained for hemogram. A macroscopic assessment of the lung tissue was initially carried out during the post-mortem inspection. Subclinical cases were considered as animals without clinical signs of BRD and macroscopic lung lesion at slaughter. These lesion scores were adapted from the method described by Griffin (2014). A descriptive analysis was carried out on the data obtained (pulmonary score system). Statistical analysis of the data was performed using the ANOVA test. Student's T test was applied to the hematological variables, with a 5% significance level using the R software

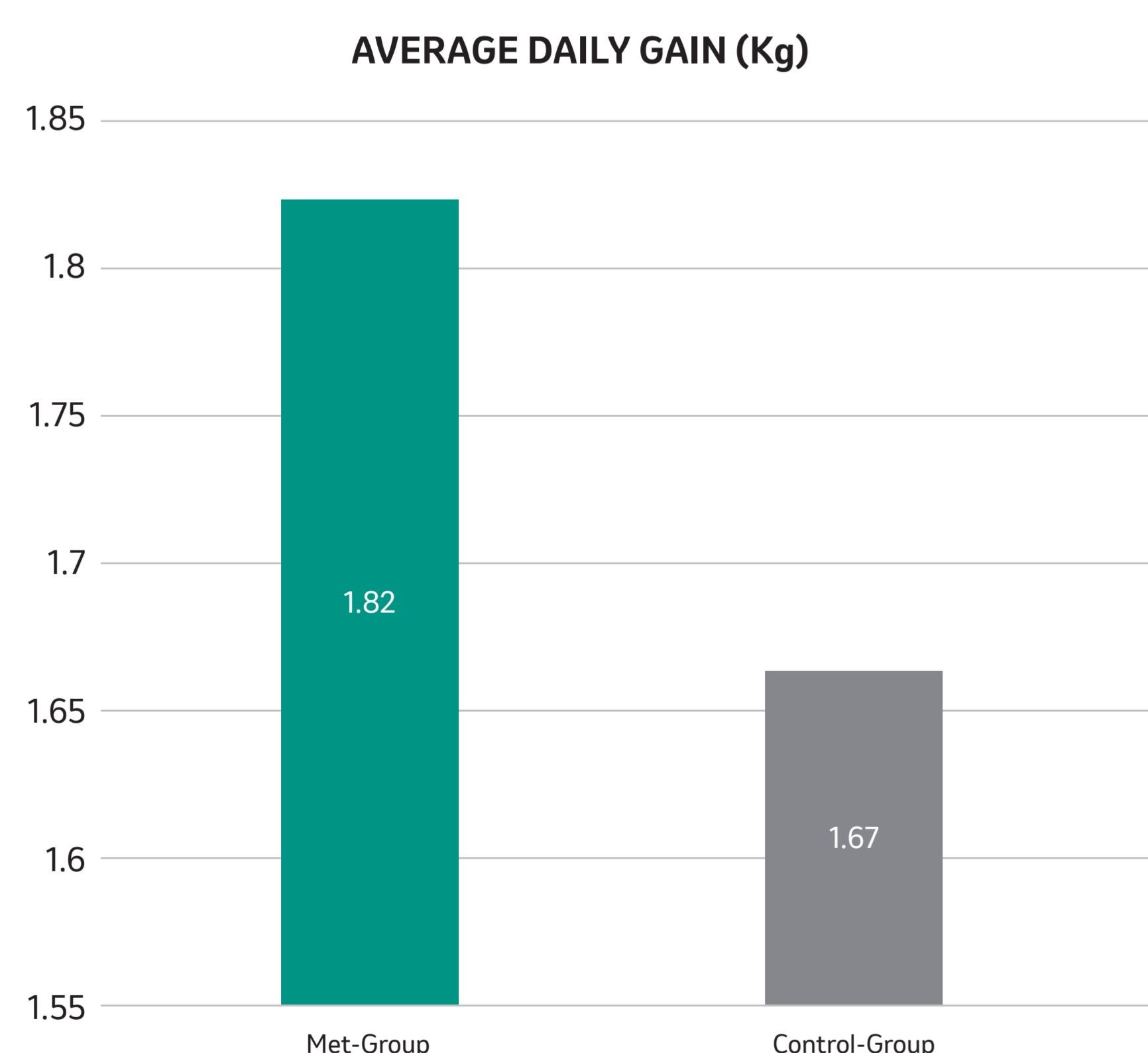
This study demonstrates the advantage of antimicrobial metaphylaxis with tildipirosin in high-risk cattle on their arrival at the feedlot, in reducing BRD morbidity and improve average daily gain, carcass weight and profitability.



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RESULTS

The average body weight upon entry of Met-Group and Control-Group were 360.8 kg and 361.8 kg, respectively. The average daily gain (mean ± SE) for the Met-Group was higher (1.82 ± 0.03 kg) than for the Control-Group (1.67 ± 0.03 kg), P=0.0012.

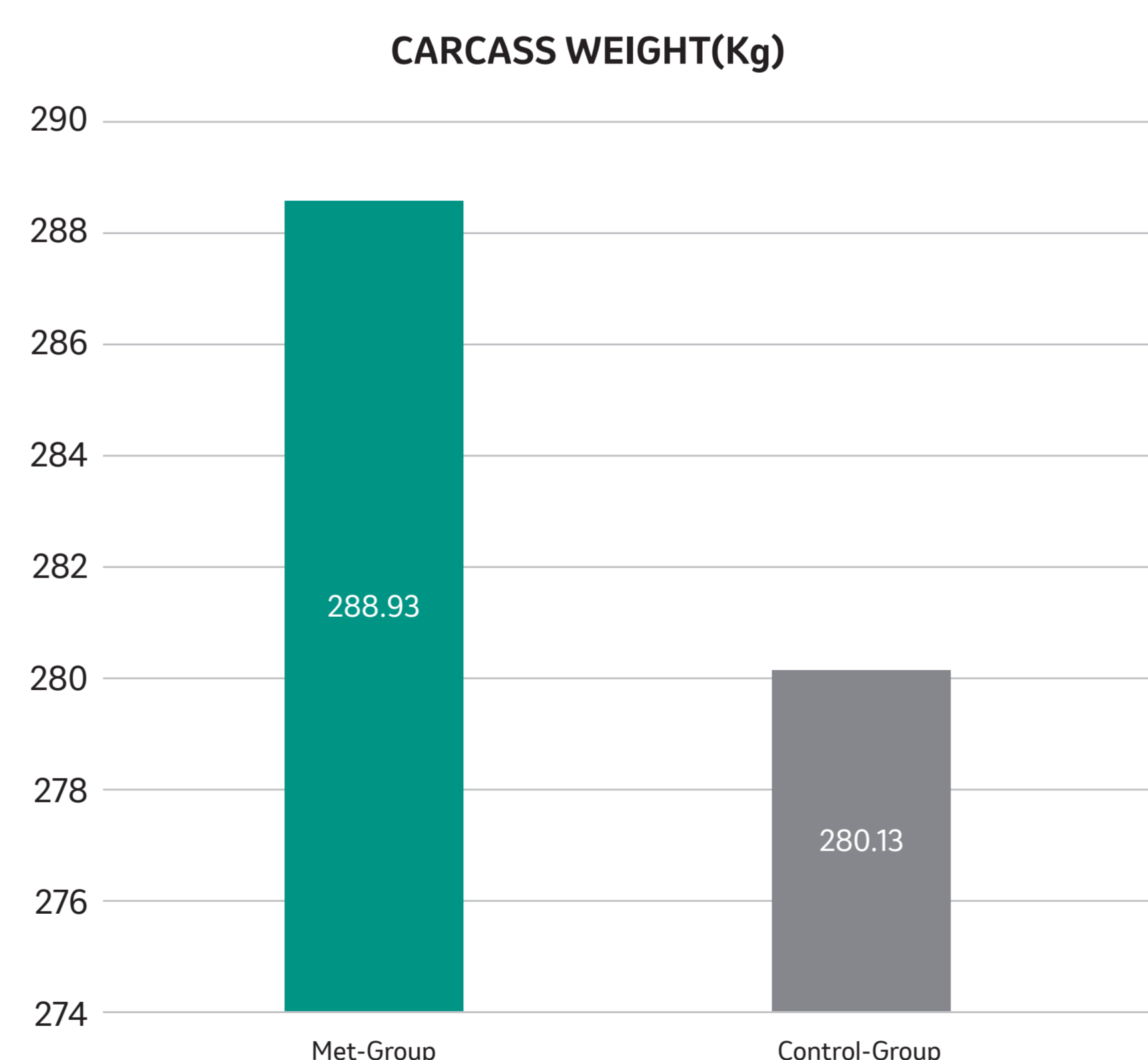


Average daily gain (mean ± SE) for the Met-Group (1.82 ± 0.03) and the Control-Group (1.67 ± 0.03 kg)

RESULTS

The carcass weight (mean ± SE) was also higher for the Met-Group (288.93 ± 2.94 kg) vs the Control-Group (280.13 ± 2.94 kg); P=0.0035.

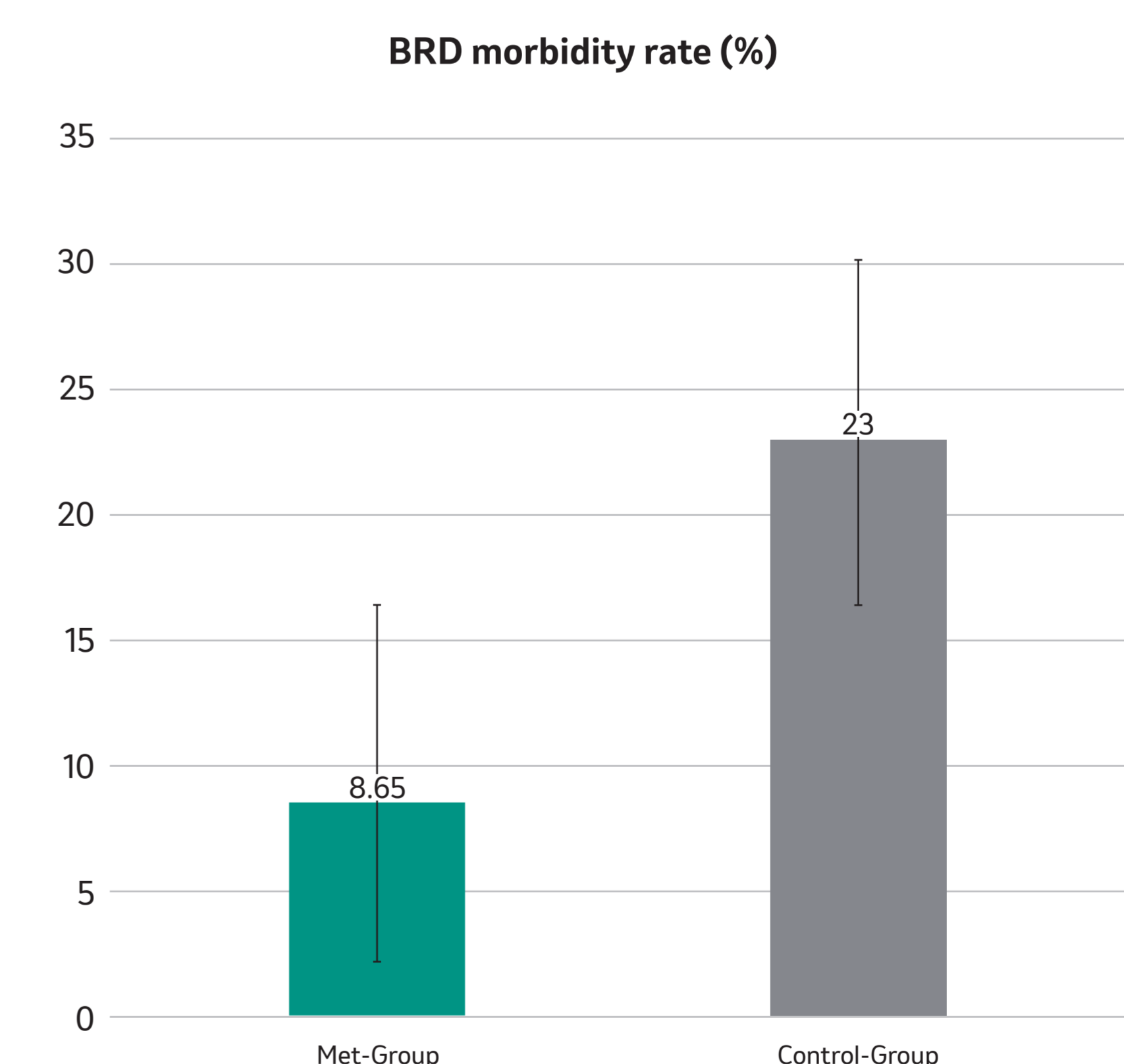
Metaphylaxis increased the processing costs (R\$46.52 vs R\$9.42 for the Met-Group and Control-Group, respectively). However, these costs were compensated by the increased revenues (3.14%) and profits (11.08%) of the Met-Group vs the Control-Group.



Carcass weight (mean ± SE) for the Met-Group (288.93 ± 2.94 kg) and the Control-Group (280.13 ± 2.94 kg)

RESULTS

The difference in performance and profitability between the two groups could be explained by a lower BRD morbidity rate in the Met-Group compared to the Control-Group, (8.65% vs 23.0%, respectively).



BRD Morbidity rate in Met-Group (8.65%) and Control-Group (23%)

AUTHORS' AFFILIATION

1. MSD Saude Animal, São Paulo, Brazil;
2. Merck Animal Health, Kirkland, QC, Canada;
3. Universidade Federal de Lavras, Lavras, Brazil;
4. Universidade Federal do Goiás, Goiânia, Brazil;
5. Universidade Federal de Uberlândia, Uberlândia, Brazil

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