

Economic losses resulting from the infection by *Mycoplasma bovis* in young calves from a milk production system.

Luana Camargo¹ and Viviani Gomes¹.

¹Faculdade de Medicina Veterinária e Zootecnia (FMVZ), Universidade de São Paulo (USP), São Paulo, Brazil.

INTRODUCTION

Mycoplasma bovis causes various diseases, including mastitis, arthritis, and pneumonia. The economic costs of Mycoplasmosis in calves include treatment, veterinary services, and losses due to mortality, premature culling, reduced weight, and fertility, as well as potential reductions in milk production. In farms affected by this disease, financial losses can be significant and devastating. Outbreaks with high morbidity and mortality rates of up to 30% have been recorded.

OBJECTIVE

This research estimated the economic losses resulting from morbidity, mortality and medication costs on a commercial dairy farm infected by *M.bovis*. The studies focused on raising calves, excluding additional costs for cows presenting with chronic mastitis caused by *M.bovis*.

MATERIAL AND METHODS

Costs for all veterinary medications were collected during the pre-implementation period of biosecurity practices designed to reduce morbidity and mortality rates in infected calves. A total of 95 animals, males (57/95) and females (38/95) up to 30 days old were tested for diagnosis of *M. bovis*. Nasal swab samples were collected of animals with respiratory disease. The samples were sent to a commercial laboratory and submitted to polymerase chain reaction (PCR) test. The use of PCR to detect *Mycoplasma* species from various sample types has demonstrated a higher efficiency, specificity, and sensitivity for laboratory diagnosis when compared with conventional culture-based diagnostic methodologies.

RESULTS AND DISCUSSION

Of the 95 animals tested, 40 tested positive (42.10%) for *M. bovis*. Among the animals positive for *M. bovis*, 25 calves (62.50%) were treated with Tulathromycin, a macrolide antimicrobial. Among the treated animals, 40% were refractory and progressed to death (n=10), with clinical cure observed in 15 animals (60%). The remaining untreated animals (n=15) died (37.5%) before the test results were issued and were not treated. The costs of antimicrobials were obtained from the average price of the medication vial and clinical records of treated calves

and amounted to R\$3.658,77. The average price of calves is equivalent to R\$1,948.00 (CEPEA, USP). The cost of the PCR test for *M. bovis* detection is R\$78.00 (Laboratório Vida Vet). Therefore, the total approximate economic loss due to *M. bovis* during this period was R\$59.768,77.

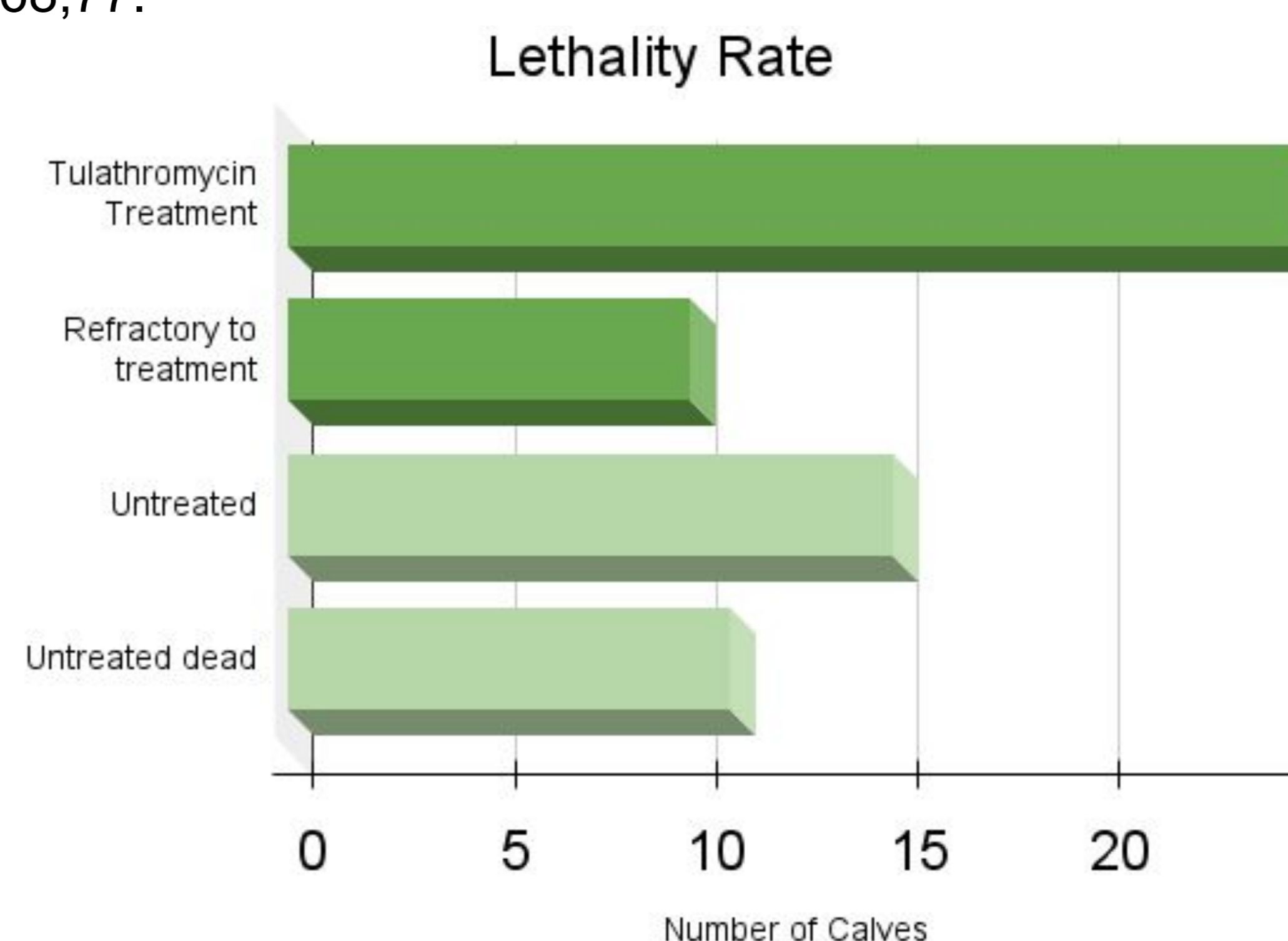


Figure 1. Lethality rate compared between calves infected with *M. bovis* treated and not treated with tulathromycin.

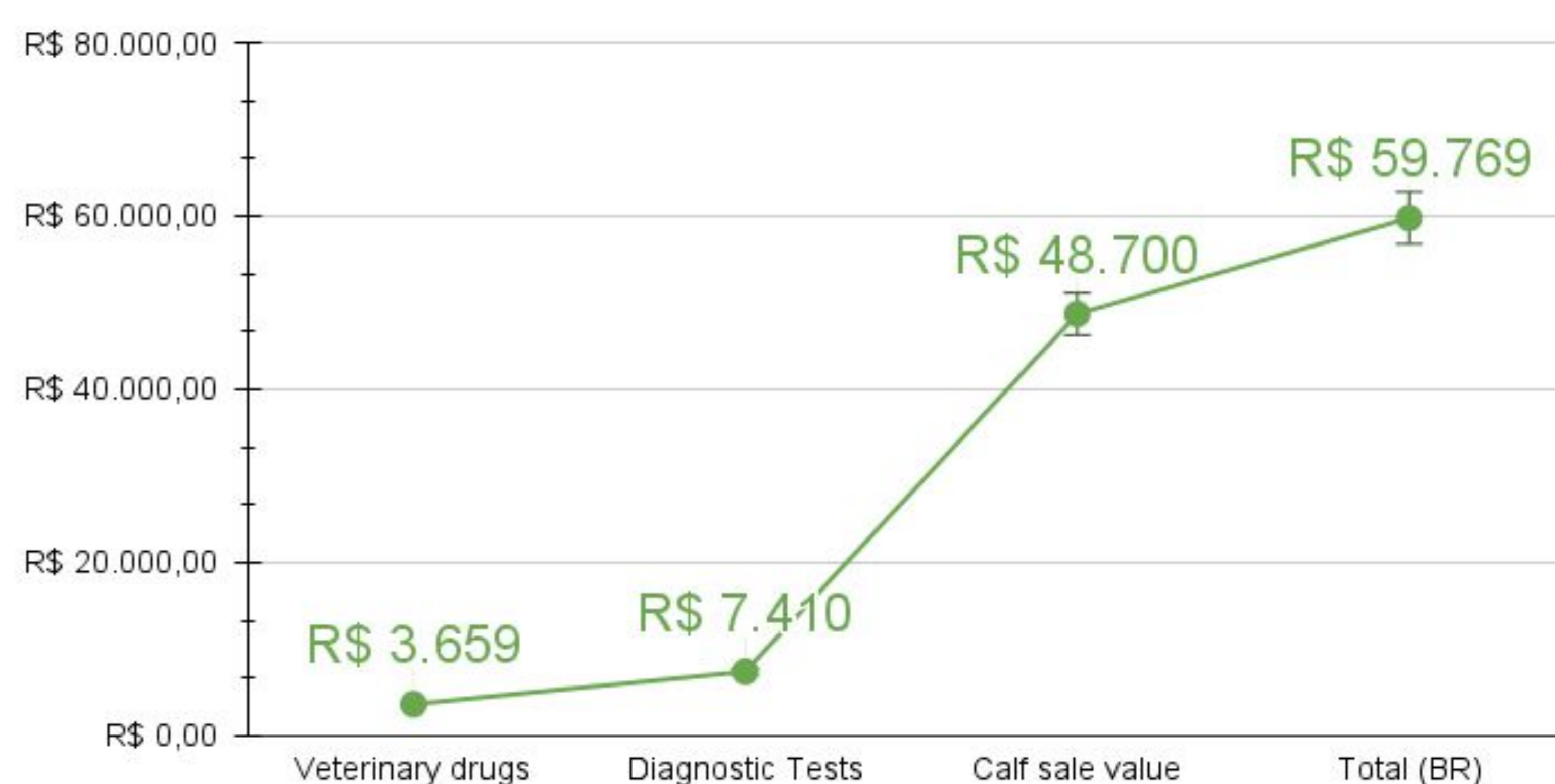


Figure 2. Financial Expenditure Profile

CONCLUSION

The data collection presented in this research demonstrates that *M.Bovis* causes significant economic losses in a real milk production system, mainly in the calf. The best way to contain *M. bovis* in calves is through the implementation of biosecurity measures, with the identification and elimination of the main risk factors present in the production system.