

# Herd factors influencing within herd infection intensity of Bovine Viral Diarrhea Virus (BVDV) in dairy farms from southern Chile



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## Background

- BVDV herd prevalence in Chile has been estimated in over 90%.
- No official Control and Eradication program exists in the country,
- Main control strategies are nonsystematic schemes (vaccination with sporadic confirmatory diagnosis) used when suspicious clinical manifestations are observed.
- Identification of risk factors for Chilean situation are lacking.

## Objective

To estimate association between herd managements (determining risk factors) and within-herd infection intensity

## Material and methods

• A cross-sectional study was performed over a stratified (by herd size) random sample of 150 dairy herds in southern Chile (Los Lagos and Los Ríos regions)

• Blood and serum sample were obtained from all dairy cows present the day of extraction, however a representative random sample were analyzed with ELISA for antigen detection.

• A survey was completed on each farm, to collect information that could be associated as herd-level risk factors for the infection.

• Association between farm-level factors and proportion of infected animals was assessed by a logistic regression analysis where the dependent variable was treated as the relative frequency of infection success and failures.

• The analysis were performed using base packages of R (V3.4.4).

## Results

• Infected animals were present in 59 herds and the median within-herd prevalence of infected animals was 6% (RIC=3-9%) with a minimum of 1 and a maximum of 60%.

• The final model included two variables ( $p \leq 0.05$ ) that increase the odds of the herds to having higher proportion of BVDV infected animals:

- “open herd” (OH) OR=1.3 (95% CI=0.95-1.59), and
- “young animals grazing with adults animals” (YGA), OR=1.2 (95%CI=1.01-1.74)

## Conclusions

- Overall proportion of infected adults animals, was high and extremely variable, and most likely were persistently infected
- The main risk factors associated with within-herd prevalence were related with the introduction of the infection to herds from external sources and with internal transmission dynamics, therefore a control program could influence positively for dropping it

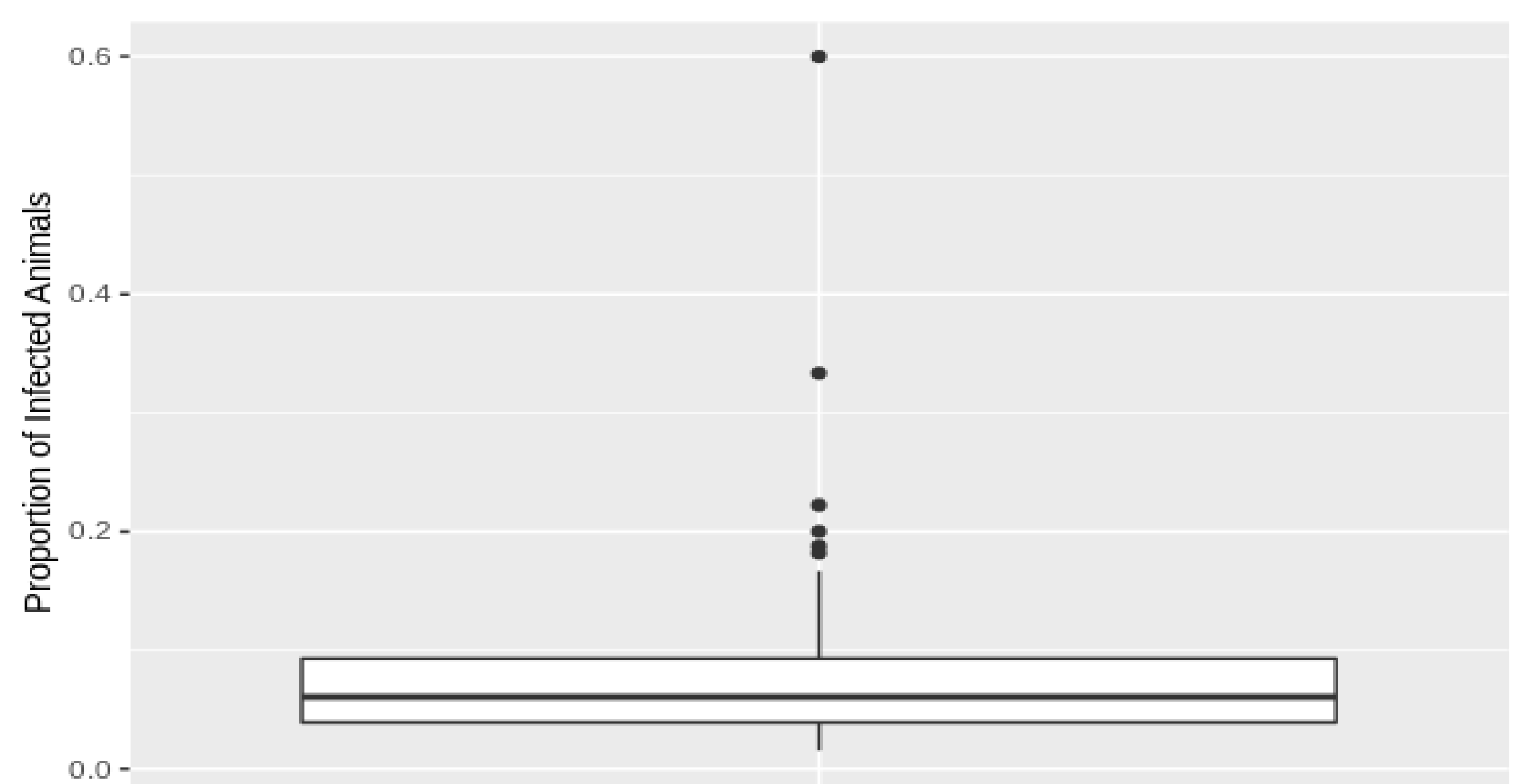


Figure 1. Overall proportion of infected animals.

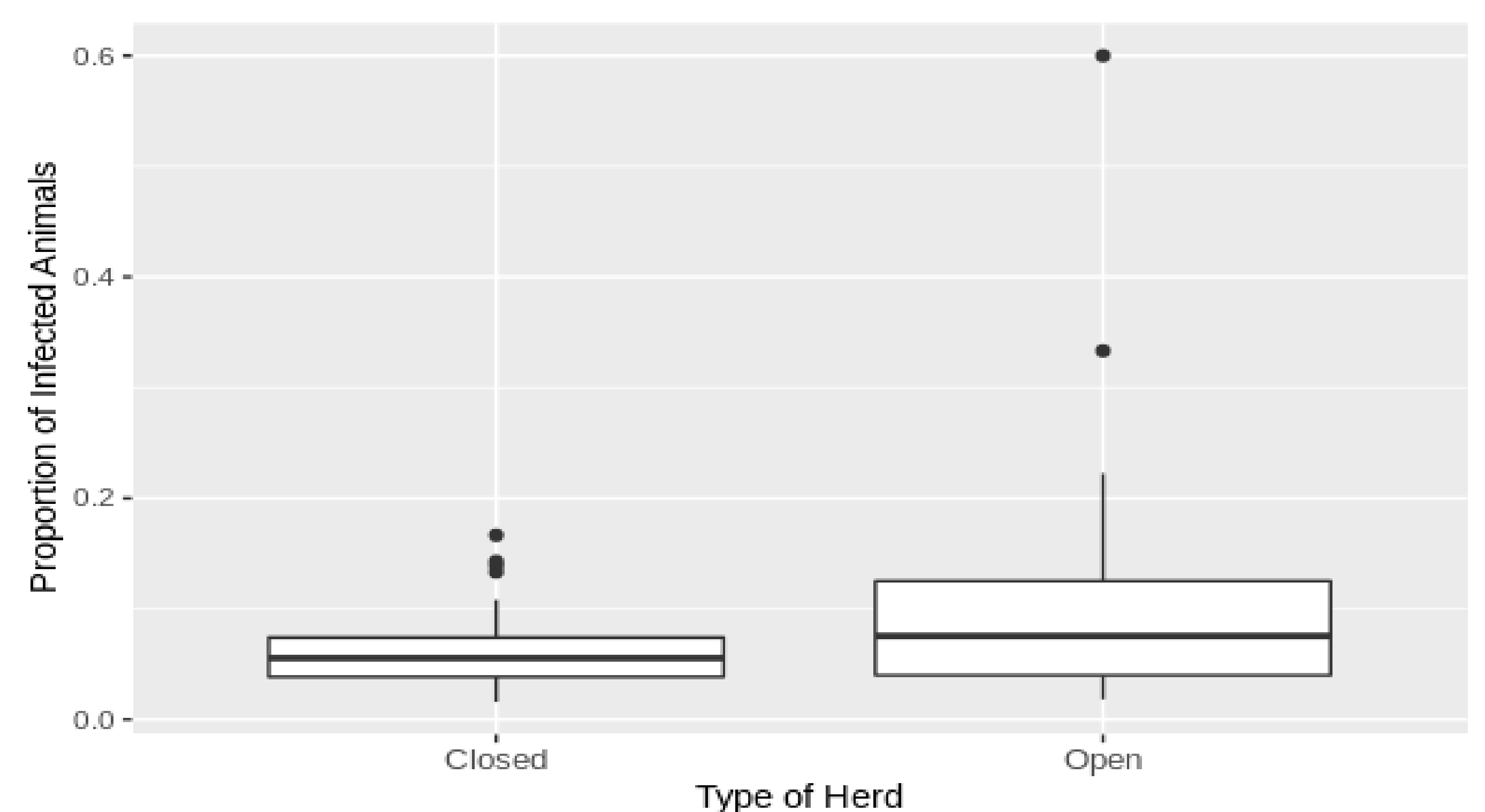


Figure 2. Proportion of infected animals according to introduction of animals herd-status

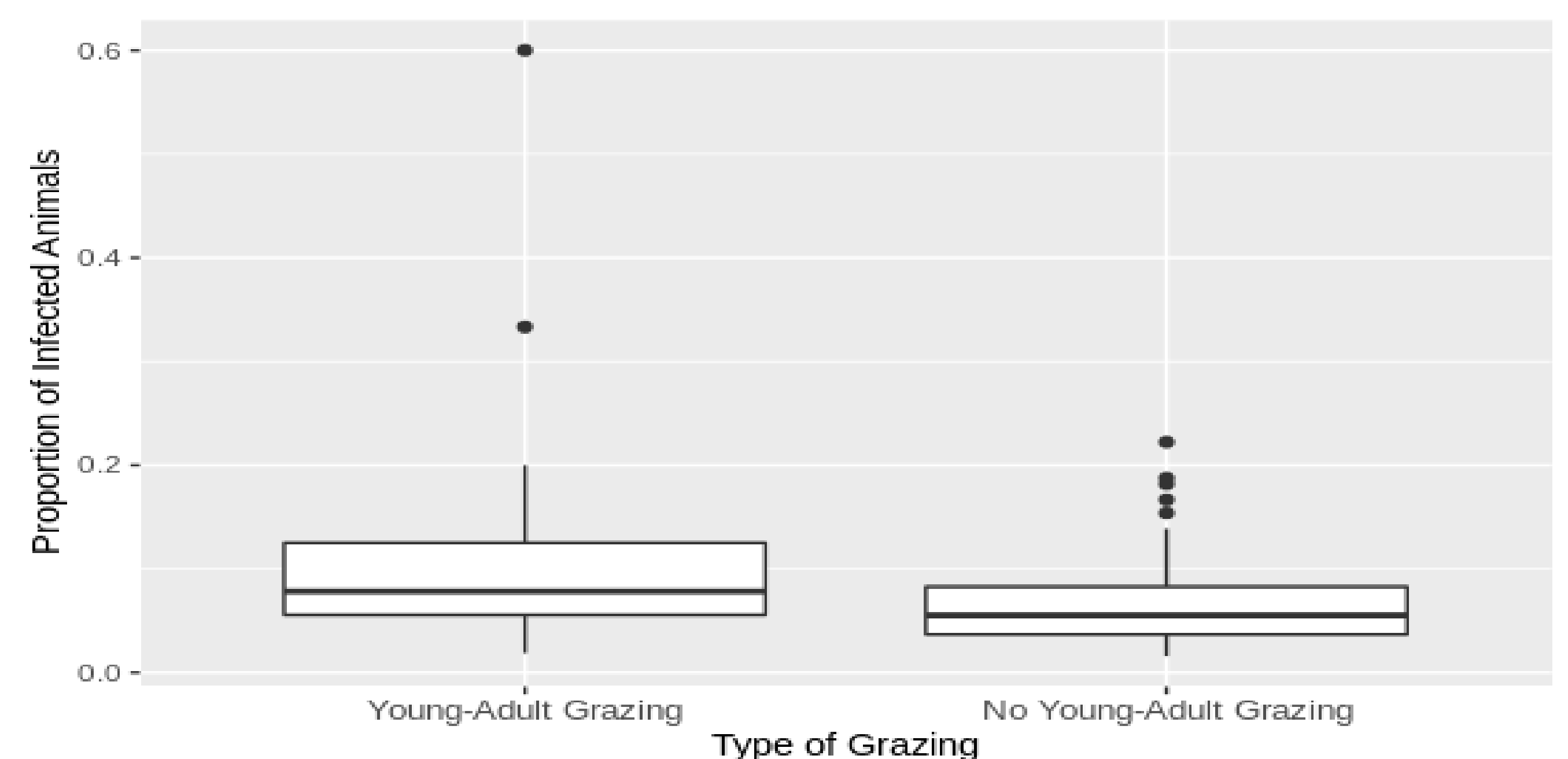


Figure 3. Proportion of infected animals for young and adults animals grazing together or not.