

COMPARISON OF A VACCINATION PROTOCOL INCLUDING LIVE BRSV, MANNHEIMIA HAEMOLYTICA LEUKOTOXOID AND INACTIVATED HISTOPHILUS SOMNI WITH AN INACTIVATED MULTIVALENT VACCINE: EFFECTS ON ANTIBIOTIC USE AND MORTALITY ON A BELGIAN ROSE VEAL FARM

Jamie Deckers¹, Randy Boone², Jade Bokma², Dolors Giralt³, Raquel Teixeira³, Wojciech Ptak³

¹HIPRA Benelux, Gent (Belgium); ²Veterinary Practice Venhei; ³Laboratorios HIPRA S.A, Amer (Spain)

BACKGROUND AND OBJECTIVE

Respiratory disease is a major cause of morbidity and mortality in veal calves, with a substantial economic impact. Vaccination at young age is an important preventive measure. Therefore, modified live BRSV vaccines are especially relevant, as they stimulate rapid immunity even in the presence of maternal antibodies (Chase et al., 2008; Chamorro et al., 2016). *Histophilus somni* is increasingly recognized as an important BRD pathogen, supporting its inclusion in vaccination programs (Compiani et al., 2023). This study compares two respiratory vaccination protocols in veal calves and evaluates their impact on antibiotic use and mortality.

MATERIAL & METHODS

This study was conducted on a Belgian veal farm that finished 2,347 calves in 4 batches of approximately 600. Most calves were male Holstein Friesian, arriving at 2 to 4 weeks of age and slaughtered at 8 months. Two batches (control group; n = 567 and n = 598) received an inactivated vaccine against bovine respiratory syncytial virus (BRSV), parainfluenza type 3 (PI3), and *Mannheimia haemolytica*, shortly after arrival, with a booster 4 weeks later. Two subsequent batches (HIPRA group; n = 587 and n = 595) received a live BRSV vaccine (NASYM) plus an inactivated vaccine against *Mannheimia haemolytica* leukotoxoid and *Histophilus somni* (HIPRABOVIS® SOMNI/Lkt), with both products administered shortly after arrival and again 5 weeks later. All vaccinations were carried out by the veterinarian. Outcomes were mortality during the rearing/fattening period and antibiotic consumption, expressed as Defined Daily Doses (DDD). Both total antibiotic consumption and antibiotic use for respiratory disease were analysed, with each category further divided into injectable treatments (individual treatments) and oral treatments (group treatments).

RESULTS

The number of calves that died during the rearing/fattening period decreased from 3.4% (33 calves) in the control group to 1.1% (10 calves) in the HIPRA group, showing a significant reduction of 67% ($p < 0.01$) (figure 1).

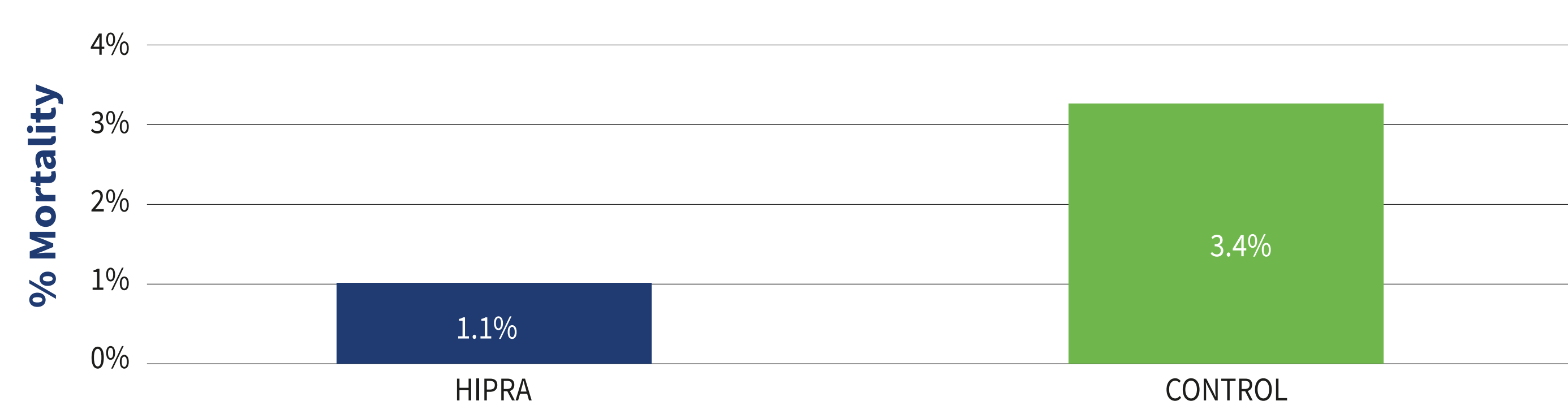


Figure 1. Percentage of calves that died during rearing/fattening (significant difference $p < 0.01$)

The total antibiotic consumption decreased from 58.42 DDD in the control group to 41.25 DDD in the HIPRA group, representing a 29% reduction.

The antibiotics used for respiratory disease decreased from 43.57 DDD in the control group to 25.42 DDD in the HIPRA group, representing a 42% reduction. Oral antibiotics decreased from 40.79 to 23.71 DDD, and the injectable treatments decreased from 2.78 to 1.71 DDD (Figure 2).

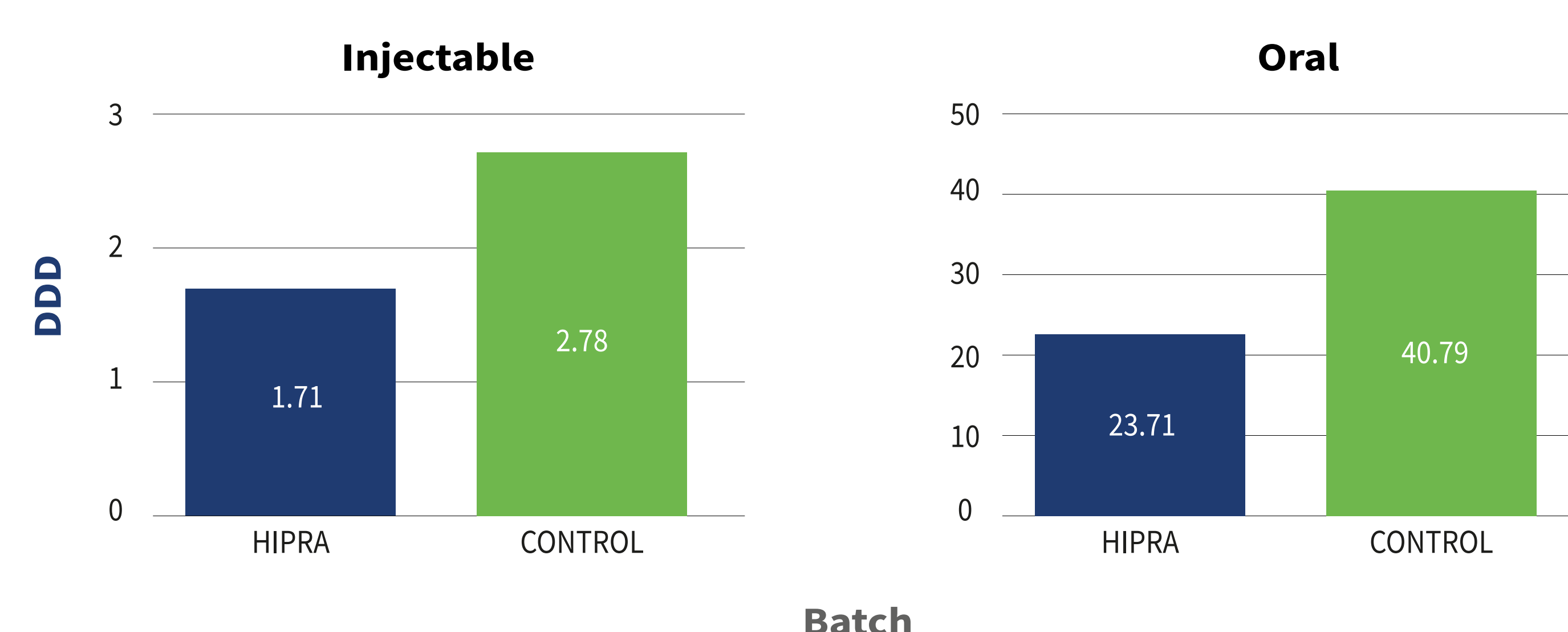


Figure 2. Antibiotics used for respiratory disease

CONCLUSIONS

Adapting the vaccination protocol from an inactivated vaccine against BRSV, PI3, and *Mannheimia haemolytica* to a vaccination protocol containing a live BRSV vaccine in combination with an inactivated vaccine against *Mannheimia haemolytica* leukotoxoid and *Histophilus somni* reduced mortality by 67% and antibiotic use for respiratory disease by 42%. These findings support further evaluation of protocol choice as part of bovine respiratory disease prevention strategies in veal production, while acknowledging the limitations of a non-randomized comparison between batches assessed at different time points.

REFERENCES

- Chase CC, Hurley DJ, Reber AJ. Neonatal immune development in the calf and its impact on vaccine response. *Vet Clin North Am Food Anim Pract* 2008; 24(1):87-104.
- Chamorro MF, Woolums A, Walz PH. Vaccination of calves against common respiratory viruses in the face of maternally derived antibodies (IFOMA). *Anim Health Res Rev* 2016;17:79–84.
- Compiani R, Grossi S, Rossi CAS. Review – The role of *Histophilus somni* in the bovine respiratory disease complex. *Large Animal Review* 2023; 29:215-221.