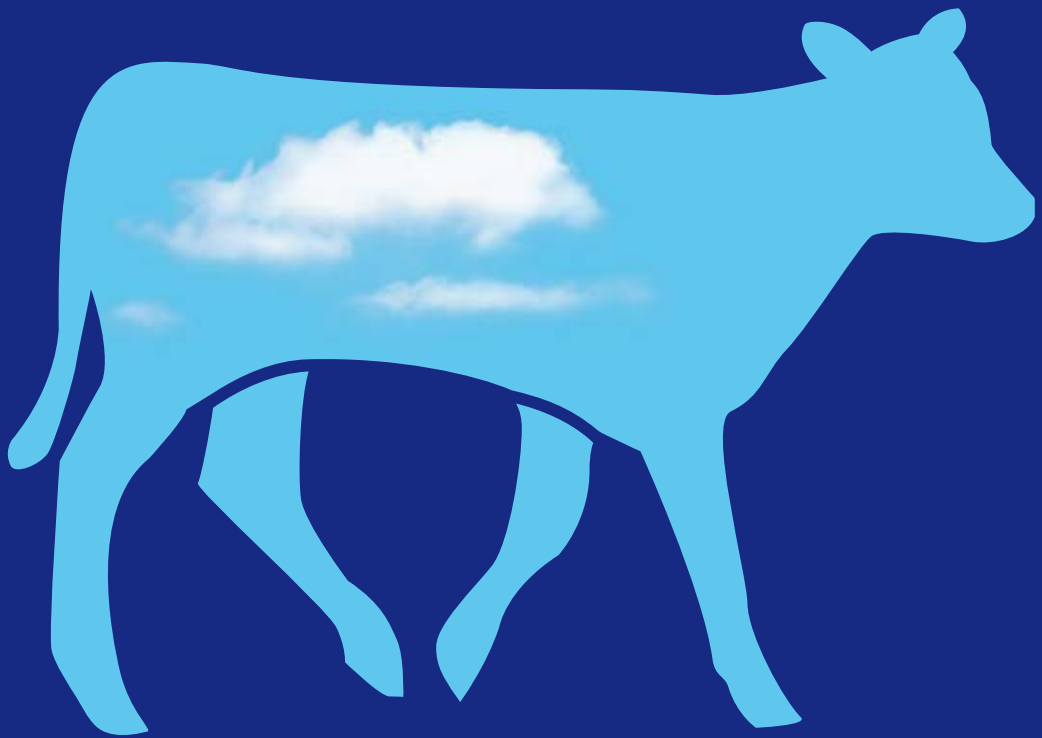
Technical Bulletin

Efficacy of vaccination with Bovilis Bovipast against Bovine Respiratory Disease in reducing antibiotic treatments in veal calves



EVERY BREATH COUNTS

MSD Animal Health

Efficacy of vaccination with Bovilis Bovipast against Bovine Respiratory Disease in reducing antibiotic treatments in veal calves[1]

Objectives

A substantial fraction of antibiotics applied in the veal calf sector is used for controlling Bovine Respiratory Disease. The efficacy of vaccination in reducing the mean antibiotic treatment days / animal was studied in a field trial in veal calves in the Netherlands. The trial was conducted in 2011 and 2012 under the responsibility of the Dutch Product Board Livestock and Meat (PVV).

Material and Methods

This field trial included 40 veal farms and had a cross over study design. The average capacity of number of calves per farm was 740 calves. Each farm was enrolled for two sequential fattening periods (Batch 1 and Batch 2) whereby the treatment allocation was switched between Batch 1 and Batch 2; e.g. a farm that was allocated to be a Vaccinated farm in the 1st Batch, was then enrolled as Control farm for the 2nd Batch. And parallel in time, another farm of similar size was allocated to be a Control farm in the 1st Batch.
In this way seasonal effects and farm effects were accounted for. Animals on 'Vaccinated farms' were vaccinated subcutaneously with a 5 ml dose of Bovilis® Bovipast (inactivated vaccine against Mannheimia haemolytica, Para-influenza-3 virus and Bovine

Respiratory Syncytial Virus). The 1st vaccination was approximately 5 days after arrival on the farm when the calves were approximately 19 days old and the 2nd vaccination with the same product and posology was given 3 weeks later. Control farms were vaccinated with a placebo.
This trial was blinded, participating farmers and veterinary practitioners were not aware of the allocation of farm to treatment.
Any treatments given, dose and duration of treatment and diagnosis were recorded. Also all relevant performance data were recorded.
The statistical analyses were two-sided, using a 5% significance level ($P \leq 0.05$). The farm-period combination was the experimental unit.

Results

Vaccination had a significant reducing effect on daily dosages of antibiotic. The total daily dosages during the entire fattening period (190 days) decreased from 35.3 to 30.2 days which means a reduction of 14.5%. This reduction is mainly in the period 0-84 days (31.7 *versus* 26.9). When comparing the antibiotic use in the period between 14 and 84 days, the reduction was 20%.
Moreover, after vaccination the use of bromohexine was also significantly reduced.
Independent of the vaccine effect in the second Batch the use of antibiotics was significantly lower.
There was no difference between the vaccinated and control with regards to the performance parameters.

Antibiotic[2,3]	Control	Bovilis Bovipast	p-value
Total 0-190 d	35,3	30,2	0,024
0-84d	31,7	26,9	0,016
14-84 d	13,9	11,1	0,028
14-190 d	17,3	14,3	0,055

[2] By using log transformation before analyses of daily antibiotic dosages the antibiotic dosages for the different periods cannot be added and subtracted
[3] Antibiotics used for treatment for all diseases during the entire fattening period.

Conclusions

1) In this field trial significantly fewer antibiotics were used in the farms which had been vaccinated with Bovilis® Bovipast. Therefore, vaccination can be a useful tool to reduce antibiotic use on farms. Also the use of bromohexine was clearly reduced during the Batches with vaccination.

2) The fact that the use of antibiotics was reduced in the second Batch demonstrates a changing attitude of veterinarians and farmers towards a more restrictive use of antibiotics in line with the national guidelines in the Netherlands.

3) In this study, the performance parameters as growth, mortality and poor do-ers were not different between vaccinated and control batches.
A number of factors might have contributed to this result e.g. i) the use of antibiotics limited the effect of respiratory disease on the growth of the affected animals, ii) animals that died for other reasons than respiratory disease were included in the mortality rate.

Reference:
[1] H.A. Vahl, H. Bekman and J. van Riel. Report of the Veal Calf Vaccination Study with Bovilis Bovipast, Published by the Dutch Product Board Livestock and Meat (PVV) - Jan 2014.

BOVILIS
a world of protection

BOVILIS BOVIPAST

VACCIN TEGEN LUCHTWEGPROBLEMEN

- Unieke combinatie voor een brede bescherming
  - BRSV
  - PI-3 virus
  - Mannheimia haemolytica
- Vroege bescherming (vaccinatie vanaf 2 weken)
- Veilig en effectief
- Gelijktijdige toediening met Bovilis IBR marker live geregistreerd
- Beschikbaar in 10 doses en 12 x 10 doses presentaties

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Bovilis Bovipast - Resflor - ResCalf

Bovilis® Bovipast, bevat per dosis (5 ml) geïnactiveerd PI-3 virus, stam SF-4 Reisinger: HA titer ≥ referentieserum, geïnactiveerd BRS virus, stam EV 908: VN titer ≥ referentieserum, geïnactiveerd *M. haemolytica* type A1, stam M4/1: 9 x 10^9 bacteriën. **Doeldier**: Rund. **Indicaties**: Vaccin tegen BRS virus, PI-3 virus en *M. haemolytica* serotype A1 en A6. **Bijwerkingen**: Na vaccinatie kan een tijdelijke, lokale vaccinatiereactie voorkomen. Een tijdelijke verhoging van de lichaamstemperatuur gedurende ten hoogste drie dagen kan voorkomen. Een gelijktijdige onwilligheid om te bewegen kan voorkomen vanwege een stijve nek bij de injectieplaats. Af en toe kunnen overgevoeligheidsreacties voorkomen. **Toediening en dosering**: Eén dosis van 5 ml via subcutane injectie ter hoogte van de zijkant van de hals. **Wachttijd**: 0 dagen. **Waarschuwing**: Maternale antistoffen kunnen het resultaat van de vaccinatie ongunstig beïnvloeden. REG NL 9260 UDD. Voor overige informatie, zie bijsluiter.

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