SUSTAINABLE CATTLE PRODUCTIVE SYSTEMS

BRD vaccination strongly reduces the use of antibiotics in Dutch dairy calves.

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INTRODUCTION

A substantial portion of antibiotics applied in the dairy sector are used for controlling respiratory diseases (BRD) in young stock.

Vaccination against BRD pathogens may be a strategy to reduce antibiotics, and therefore an optimization for long-term performance of dairy cattle.

OBJECTIVE

In this field observational study, the antibiotic use in young stock on several Dutch dairy farms was measured depending on the used BRD vaccination program.

MATERIALS AND METHODS

250 Dutch dairy farms were involved.

BRD farms (= farms treating and/or vaccinating against BRD (n = 159)) were divided in 3 groups depending on the BRD vaccination protocol:

- **Group A** did not vaccinate.
- **Group B** vaccinated only in autumn with an inactivated multivalent BRD vaccine (Bovilis® Bovipast® RSP).
- **Group C** vaccinated all year round with the same vaccine.

The antibiotic treatment percentage (ATP) was calculated as the number of calves of 60kg bodyweight (BW) that could theoretically be treated with the amount of antibiotics actually used in 2017 to treat BRD in young animals divided by the number of calves born in 2017 and multiplied by 100 **(Fig. 1)**.

Groups were compared for the number of farms that had an antibiotic treatment percentage higher than 20 (ATP>20%).

This study clearly demonstrates the potential of vaccination with a multivalent inactivated BRD vaccine (Bovilis® Bovipast® RSP) to reduce the antibiotic use in dairy young stock.

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RESULTS

Only 63 (40%) of the 159 'BRD' farms had a BRD vaccination program.

Group A, B and C had respectively 96, 36 and 27 farms **(Fig. 2)**.

The ATP>20 was respectively 84% **(Fig. 3)**, 47% **(Fig. 4)** and 26% **(Fig. 5)** for group A, B and C (p<0.001).

The ATP>20 was significantly different between group A and B (p<0.001) and between group A and C (p<0.001), but not between group B and C (p=0.14) **(Fig. 6)**.

The odds to have ATP>20% is 83% lower in group B compared to group A, and 94% lower in group C compared to group A (p<0.001).

FIGURE 1. Definition Antibiotic Treatment Percentage (ATP).

$$ATP = \frac{\text{Number of calves (60kg BW) treated}^{\S}}{\text{Total number of calves}} * 100$$

§Calculated from the amount of antibiotics actually used.

FIGURE 2. Segmentation by vaccination farm.

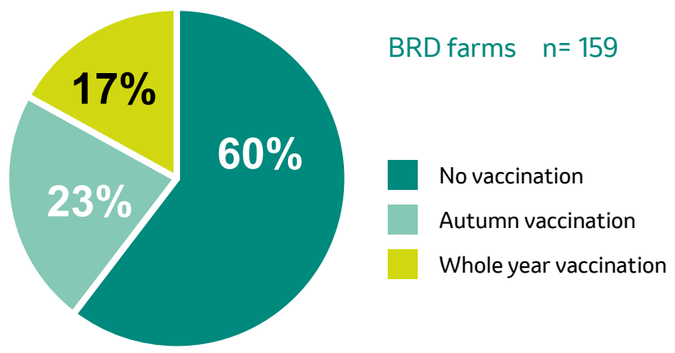


FIGURE 3. Treatment percentage in farms not vaccinating for BRD (Group A).

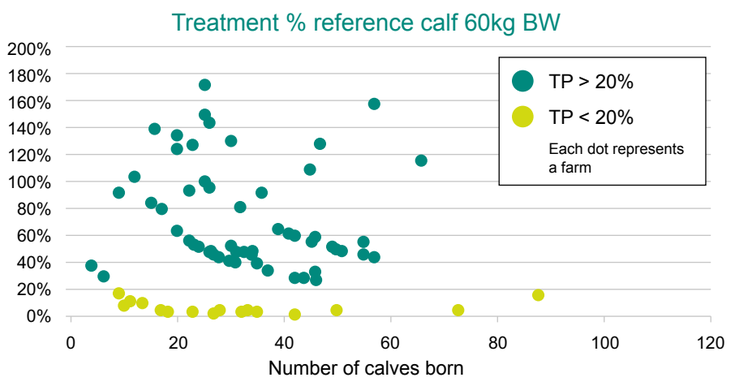


FIGURE 4. Treatment percentage in farms only vaccinating in autumn (Group B).

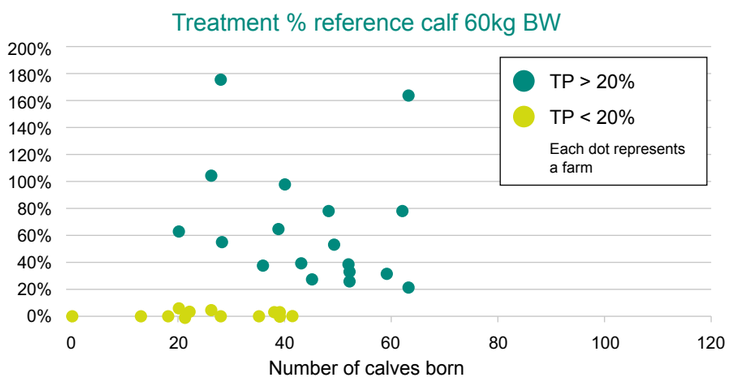


FIGURE 5. Treatment percentage in farms vaccinating all year round (Group C).

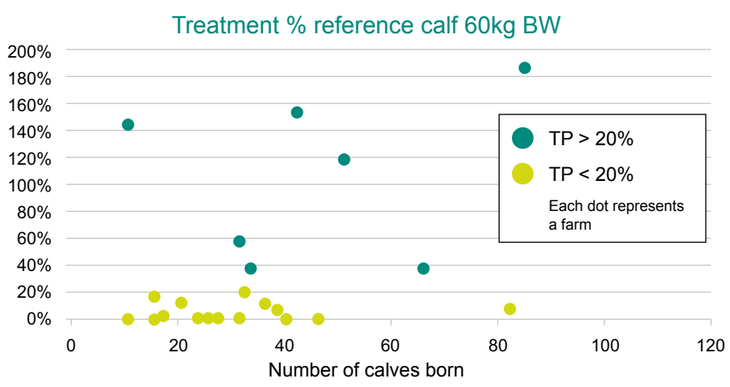
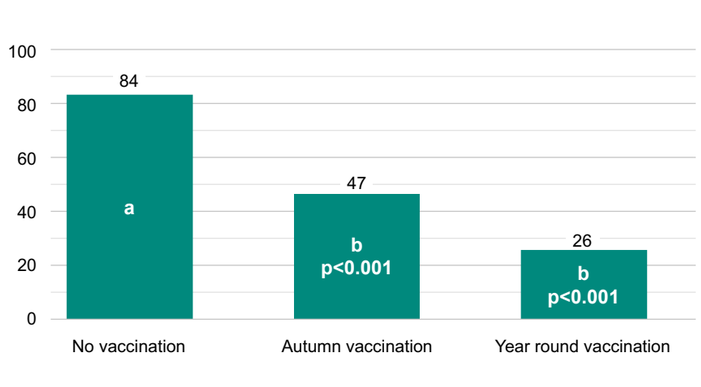


FIGURE 6. Percentage of farms with ATP>20%.



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