The **Reference** in **Prevention** for **Animal Health**

CASE STUDY WITH VACCINATION AGAINST STREPTOCOCCUS UBERIS INFECTIONS IN 3 DUTCH DAIRY HERDS TO CONTROL CLINICAL MASTITIS, SUBCLINICAL MASTITIS AND INTRAMAMMARY USE OF ANTIBIOTICS.

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OBJECTIVES

The aim of the field trial was to evaluate the efficacy of the new monovalent vaccine against *Streptococcus uberis* (*Strep. uberis*) (UBAC®,HIPRA) in the reduction of the incidence of *Strep. uberis* Clinical Mastitis (CM) and Subclinical Mastitis (SM) on herd level in The Netherlands and the effect on antibiotic use Defined Daily Dose per Animal (DDDA).

MATERIALS AND METHODS

The field trial was performed between October 2018 and October 2019 with 368 Holstein–Friesians cows from 3 commercial dairy farms located in the east of The Netherlands with an average milk production of 9.076kg milk/cow/year. All farms had historical records of *Strep. uberis* CM and SM. At the start of the field trial the presence of *Strep. uberis* infections in each farm was confirmed with a PCR test on 16 mastitis pathogens on a bulk tank milk sample and on all the cows with a Somatic Cell Count (SCC) >100.000cells/ml individually. The vaccination schedule was adapted according to the veterinary team involved and it consisted of a primovaccination at the start, meaning three doses of 2 ml administered intramuscularly in the neck area with 5 weeks in between. This was followed by a booster vaccination after 6 months.

Animals were monitored for one year long. Farm personnel examined animals daily to detect CM. CM episodes were diagnosed on the basis of clinical signs, including abnormal milk and/or a hard or swollen udder. All CM episodes were recorded and a pre-treatment aseptic milk sample from the affected quarter(s) was obtained for PCR testing on 16 mastitis pathogens. Thereafter, animals received antibiotic therapy according to the corresponding farm specific treatment protocols. When a *Strep. uberis* CM episode was diagnosed in the same quarter previously affected, it was only considered to be a new episode if more than two weeks elapsed from the previous episode. Individual milk production was automatically recorded every 4 weeks on all three farms participating in the field trial, with also an individual cell count test. After 6 and 12 months the milk of all the cows with a SCC >100.000 cells/ml was again individually tested by PCR test on 16 mastitis pathogens. The total incidence of animals with CM during the field trial period and the use of Defined Daily Dose per Animal (DDDA) intramammary was compared with a year before vaccination with a monovalent vaccine against *Strep. uberis* (UBAC®, HIPRA).

RESULTS

On the 3 farms 17% of the cows had a SCC >100.000 with a subclinical *Strep .uberis* infection at the start. After 6 months 90% of the *Strep. uberis* PCR positive subclinical mastitis cows were on average cured, with a SCC <100.000 or *Strep. uberis* PCR negative. The amount of animals on the 3 farms with a SCC >100.000 and a subclinical *Strep. uberis* infection after 6 months decreased with 50% and was proven statistically significant. After 12 months the amount of animals with a SCC >100.000 and a subclinical *Strep. uberis* infection decreased even with 55% (Figure 3).

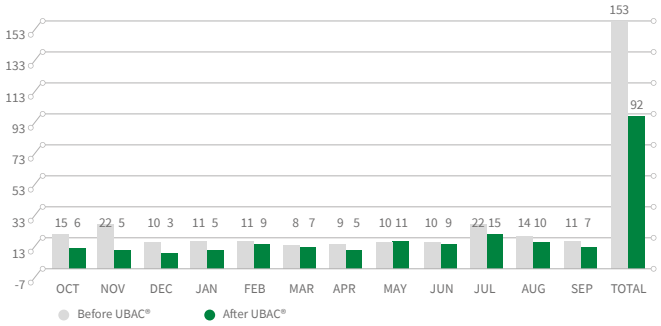

Figure 1. All clinical mastitis cases (monthly/ total)

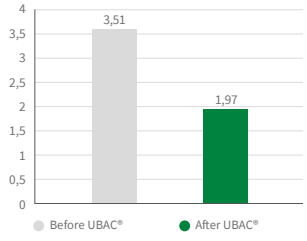

Figure 2. Intramammary DDDA comparation.

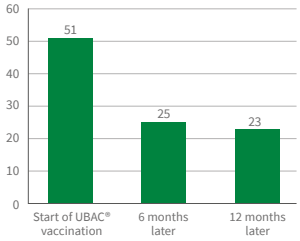

Figure 3. Number of *Strep. uberis* positive animals with SCC > 100.000.

CONCLUSIONS

According to the obtained results it can be concluded that the monovalent vaccine against *Strep. uberis* (UBAC®, HIPRA) administered to dairy cows following the vaccination schedule implemented in this study, is efficacious in reducing the incidence of clinical mastitis (Figure 1), *Strep. uberis* subclinical mastitis (Figure 3) and antibiotic use intramammary (Figure 2) on herd level during a whole year period in herds with presence of this agent.