

# CASE STUDY: PRACTICAL APPROACH FOR LOWERING THE INCIDENCE OF MASTITIS AND THE USE OF ANTIBIOTICS ON A DAIRY FARM IN FLANDERS

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## INTRODUCTION

A herd in Flanders, the north of Belgium, milking 45 Holstein cows with an average yearly production of 9500 liters, suffered from increasing mastitis incidence over the last 5 years. The facilities are free stalls with cubicles with rubber mattresses, 2 times a day they are arranged with sawdust and chalk. The milking parlor is a 2 x 4 tandem. The milker uses gloves, milking routine includes cleaning of the teat ends before milking, visual check of the first milk drops and post-dipping with a product on a iodine base.

The problems began in the summer of 2008 with peaks of severe clinical mastitis (July and December 2008, summer period of 2009, summer and winter period of 2010). In spring 2011 an increasing number of cows showed teat end lesions and keratosis. The number of clinical mastitis cases was high, the amount of milk that was separated because of high SCC and antibiotics residues was very high on this farm (an average of 87,5 liters daily at the end of 2008, this increased to a daily average of 175 liters during 2011). Bacteriology was occasionally performed on milk samples of clinical mastitis, *E. coli* and *S. aureus* were cultured most often, CNS and streptococci were cultured less frequently.

## MATERIAL AND METHODS

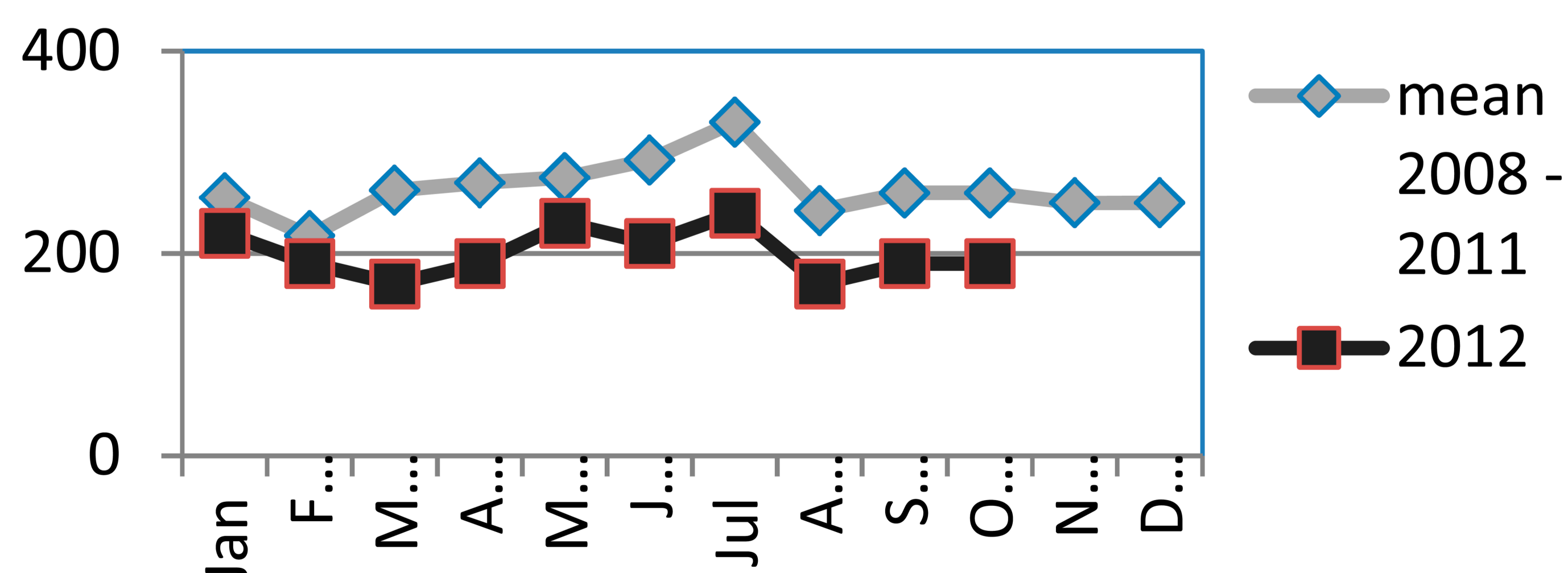
Adaptations were done in spring 2011: the vacuum of the milking parlor improved and the liners were changed by silicone liners. Apart from that the farmer continued the routine he already had during milking, such as using gloves, cleaning the teat ends before milking, visual check of the first milk drops and the use of a dipping product on a iodine base.

Because *S. aureus* and *E. coli* were most often cultured from clinical cases, a vaccination program against mastitis with a commercial vaccine Startvac® was implemented on this farm. Vaccination started in autumn 2011. Fifteen cows were vaccinated following a registered protocol, but very soon the switch was made to a rolling protocol with group vaccination every 3 months.

## RESULTS

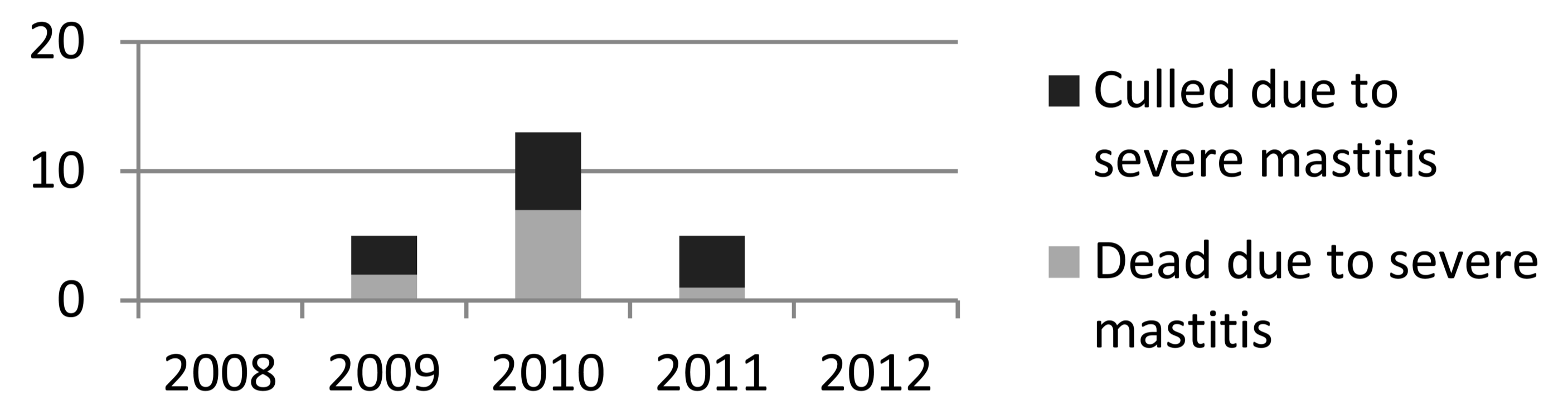
Following the adaptations in spring 2011 there were much less cases of acute severe mastitis, the isolation of *S. aureus* was frequent though, streptococci presence was very rare. During 2011 heifers often had a high SCC after calving or faced clinical mastitis problems. SCC lowered most in 2012 (fig.1).

Figure 1. Evolution of SCC x 1000 in bulk milk.



The culling rate due to udder health problems improved most after implementing all measures that were taken on this farm together, the same situation is seen with cases of mortality due to mastitis (fig.2).

Figure 2. Culling and dead cows due to mastitis.



Since 2012 the calculated average amount of separated milk lowered drastically (fig.3), the number of clinical mastitis cases and the number of treatments against mastitis reached the lowest level in 5 years (fig.4).

Figure 3. Milk losses in liters per day (AB and high SCC).

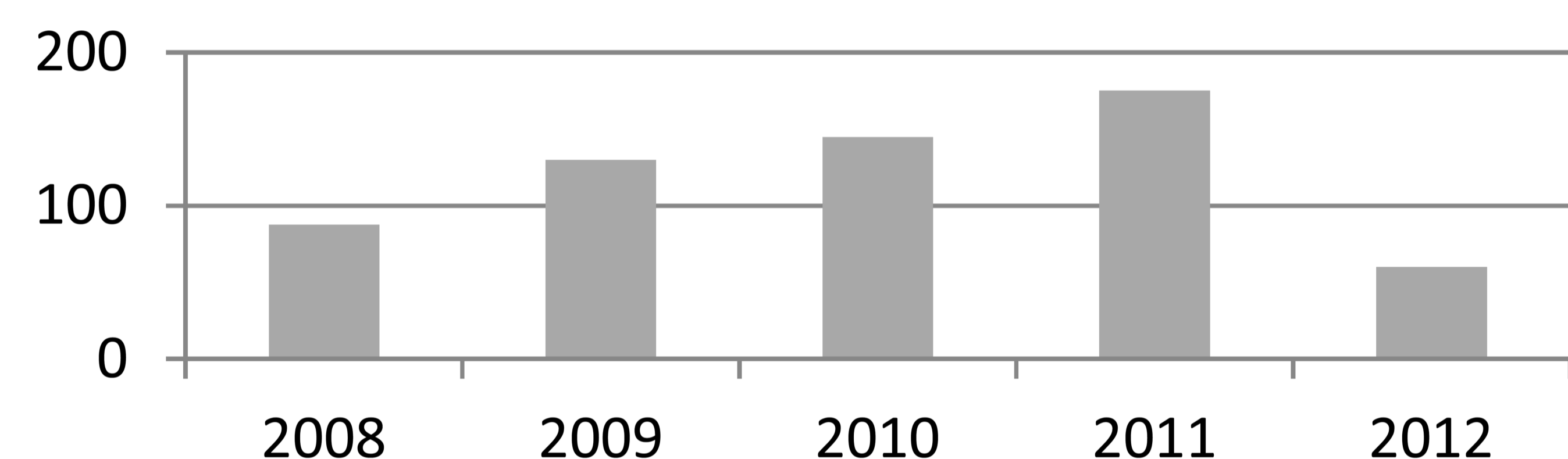
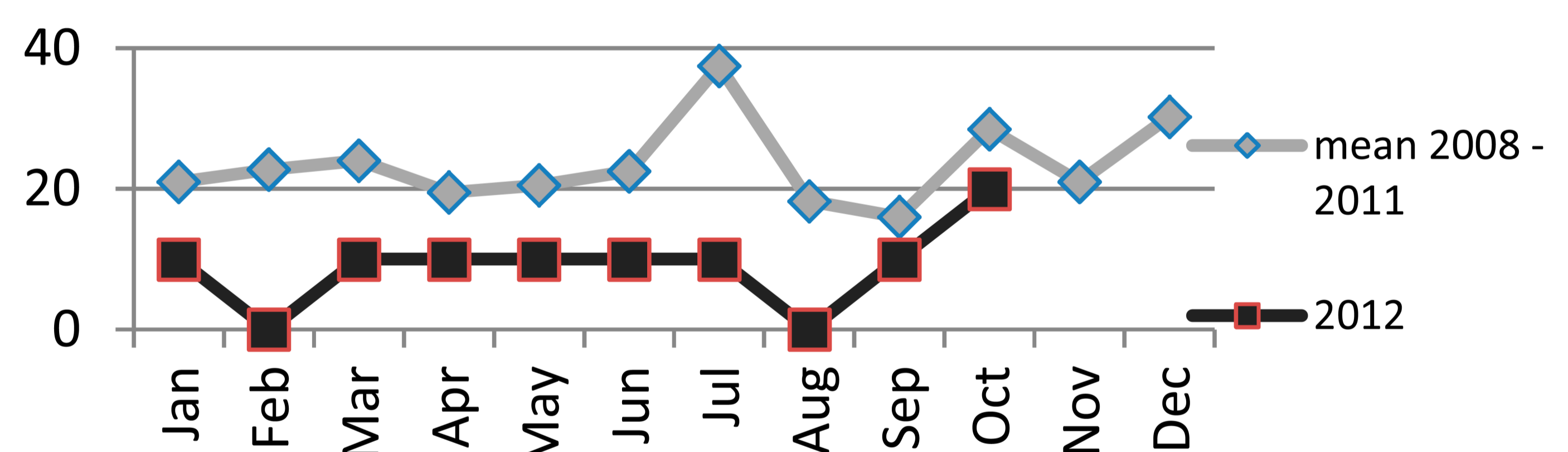


Figure 4. Number of intramammary infusions.



The last shot of vaccine was given in April 2012 and the farmer decided to stop because the problems seemed under control, but in October several heifers were calving with high SCC again, the number of intramammary infusions and the SCC got higher. To start again with vaccination is now under discussion.

## CONCLUSIONS

On this farm several measures were taken to tackle the mastitis problems. Continuous management and milking routine together with the changes to the milking parlor and the use of a mastitis vaccine lowered the cases of severe acute mastitis.