

CASE STUDY: ASSOCIATION BETWEEN VACCINATION AND MASTITIS ON A UK DAIRY FARM



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OBJECTIVE

A case study to evaluate the incorporation of a polyvalent mastitis vaccine as part of a mastitis control program on a large housed commercial dairy unit.

BACKGROUND

The herd is a large, permanently housed dairy in the north of England with a history of mastitis. The cows are milked 3 times daily through a 40/40 herringbone parlour with an automatic cluster remover and an automatic dipping and flushing (ADF) system. Since 2007 herd size has increased from 400 cows to over 1100, replacements are fresh calved Holstein heifers from continental Europe. Over the years mastitis, in particular staphylococcal mastitis, has been major recurring problem despite implementation of on-going improvements; including Dairy Co. mastitis investigations, segregation of high cell count cows and extended antibiotic therapies. The parlour was upgraded in 2009, ADF system added in 2010 and the 20 swing over system replaced with a 40 point swing parlour in 2011. In 2010, 3 times daily milking was introduced and the automatic manure scrapers replaced with a tractor scraper used at milking times.

MATERIALS AND METHODS

A complete review of the mastitis control program was undertaken in Spring 2011 including milking routine, cubicle management and dry cow management. Sampling of clinical cases revealed 15% *Staph. aureus*, 10% *E. coli*, 8% no growth. A SOP was implemented for the milking routine, mastitis detection, treatment (protocol and recording) and environmental control (bedding, scraping passageways and walk-ways). Vaccination (STARTVAC®) was implemented in November 2011 using a protocol of 3 doses: at drying off (45 days pre calving), at movement to transition cow group (21 days pre calving) and at the fertility check (45-52 days post-partum).

RESULTS

6 monthly results from Oct 2010 to Sept 2012 and equivalent annual percentage

	Oct 10 – Mar 11	Apr 11 - Sep 11	Oct 11 - Mar 12	Apr 12 - Sep 12
Ave. herd size	700	862	952	1092
Mastitis culls	23	24	38	15
Culls annual %	6.6%	5.6%	8%	2.7%
Ave. SCC	193	241	185	144
Clinical mastitis cases	358	392	388	128
Mastitis annual %	102%	91%	82%	23%

DISCUSSION

Vaccination along with other control strategies appears to have had a positive impact in reducing the mastitis incidence in a period of significant expansion. Similar control programs without the vaccination in the past have not had the same impact upon mastitis incidence, BTSCC, cull rate or treatment success rate in this herd. The policy of sourcing heifers has remained the same since 2007 and the average culling rate has varied between 6 and 8% since recording began in 2007. Treatment success for clinical cases has improved, including a reduction in extended therapy cases allowing a commensurate reduction in antibiotic usage, particularly the cephalosporin and fluoroquinolone classes of product.

Figure 1. Bulk milk somatic cell count and herd size.

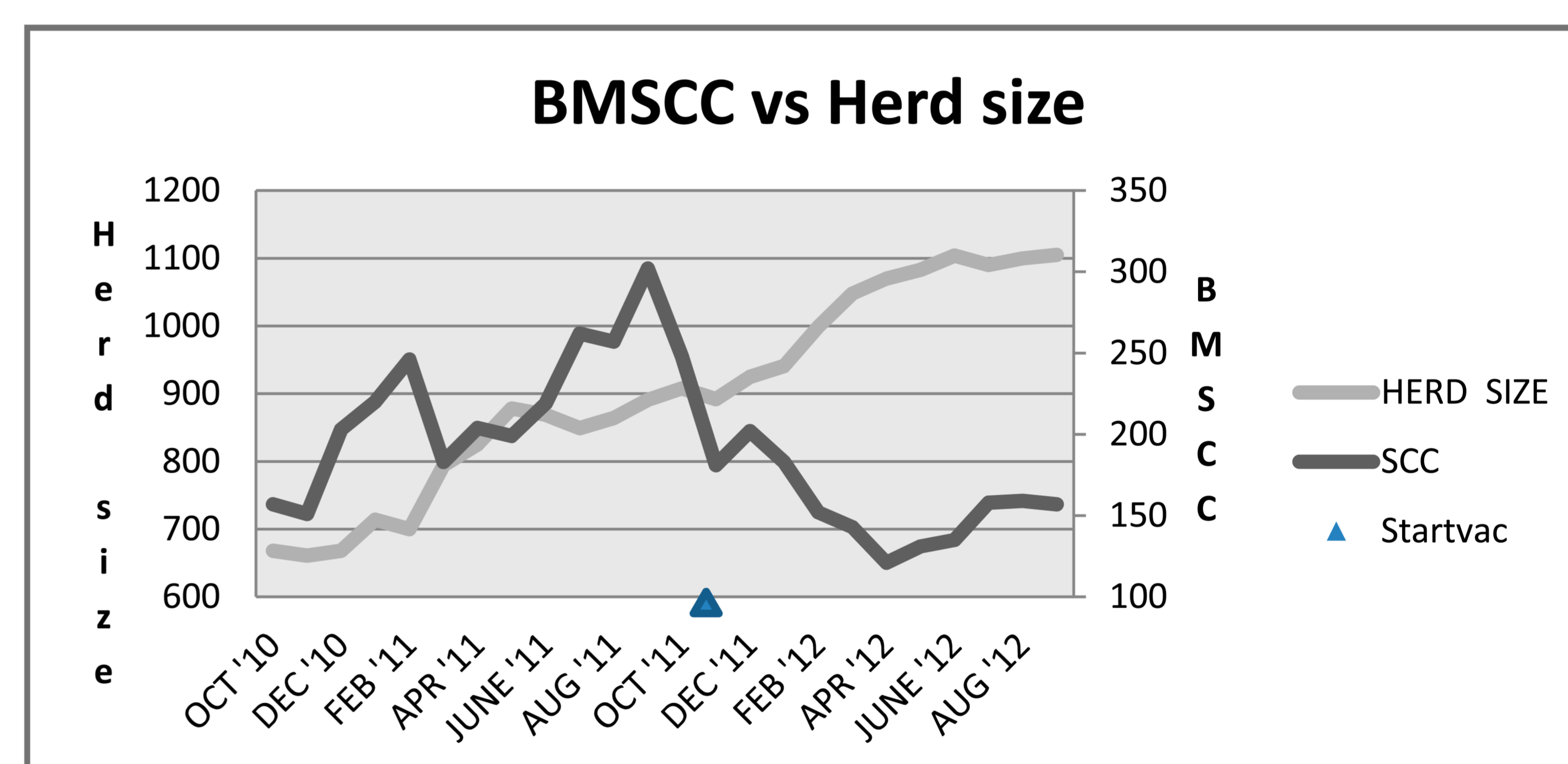


Figure 2. Clinical mastitis rate.

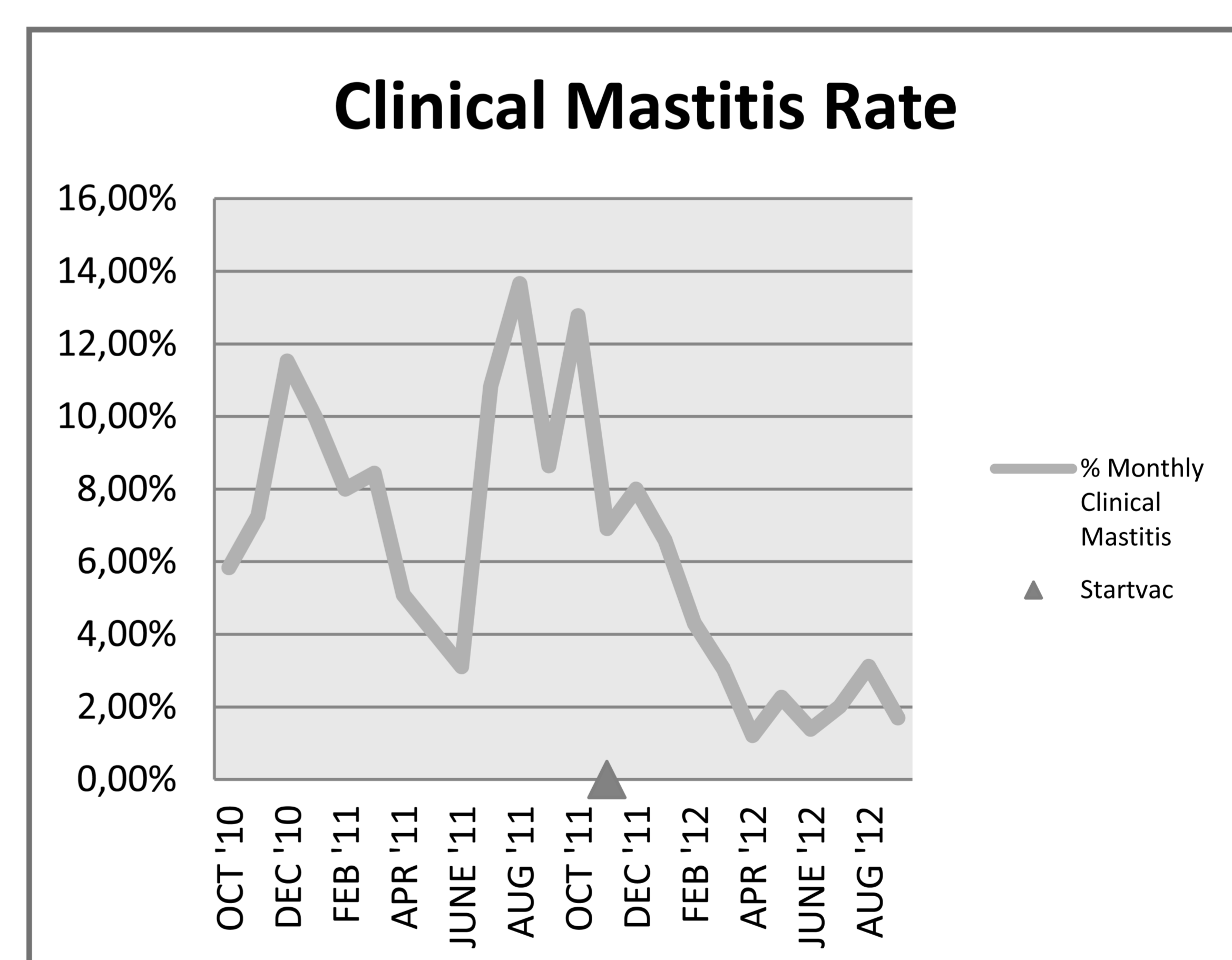


Figure 3. Percentage repeat and new clinical cases.

