

## PEMBS FARM SHOWS WAY FORWARD FOR OTHERS, DESPITE BTB RESTRICTIONS

**FARMER: MICHAEL AND ROLAND GEORGE AND FAMILIES, BRYNHYFRYD FARM, WOLFSCASTLE, PEMBROKESHIRE, SA62 5DT.**

**HERD: 1,200 HOLSTEIN COWS (BRYNHYFRYD PREFIX), 10,500 LITRES /COW ANNUAL SALES AT 3.8% BF AND 3.2% P ON THREE TIMES A DAY MILKING AND ALL YEAR HOUSING. CALVING INTERVAL 410 DAYS, 24% ANNUAL REPLACEMENT RATE.**

**COMMENTS: "INTRODUCING ORBESEAL HELPED US ERADICATE CLINICAL MASTITIS AT OR SHORTLY AFTER CALVING, WHICH OF COURSE IS THE WORST POSSIBLE TIME FOR MASTITIS TO OCCUR."**

Pembrokeshire dairy farmer Michael George recalls the year 2002 with distinctly mixed feelings. For the nationally renowned 500-cow Brynhyfryd herd at the time, sales of pedigree heifers and cows that generated a significant proportion of the family business's total revenue came to an overnight stop, due to a positive bTB test. "We've been locked up ever since," he laments:<sup>1</sup>

Without knowing at the time whether bTB restrictions would be a temporary nuisance or long term pain, the George family assumed the worst in planning how to adapt. Michael George says they "identified high output commercial milk production" as their strategy and embarked on an ambitious expansion programme. Today, this results in two 600-cow herds, one run by Michael and the other, brother Rowland and Michael's son James, producing 10,800 litres/cow milk sales at 3.8% butterfat and 3.2% protein.

Meanwhile, it turns out that the upside from 2002 is that Michael George was among the earliest adopters of a mastitis prevention strategy that he says "helped us eradicate clinical mastitis at or shortly after calving, which of course is the worst possible time for mastitis to occur." This change was introduction of a non-antibiotic internal teat sealant into the drying off routine, shortly after the product OrbeSeal® was launched at that year's Dairy Event.

"We found mastitis just after calving had the most damaging effect possible on milk yields for that entire lactation, and we would also lose cows either through forced culling or death of serious cases that defied treatment," he explains. "Then as soon as the first batch of cows dried off with OrbeSeal started calving, we could see the impact."

This experience is consistent with a large number of studies completed over the past 12 years, according to vet Dr Judith Roberts from animal health company Zoetis. Three of more recent found reductions in early lactation clinical mastitis between 37 to 50 per cent following adoption of OrbeSeal in dry cow therapy.

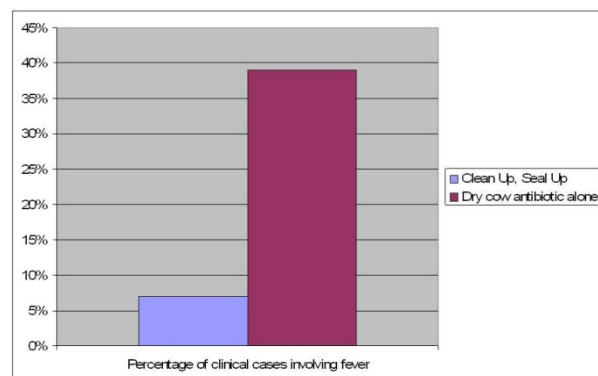
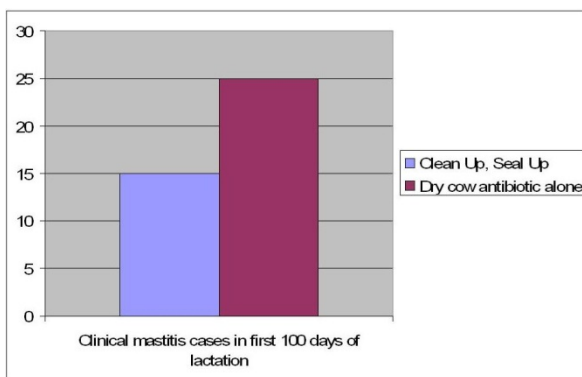
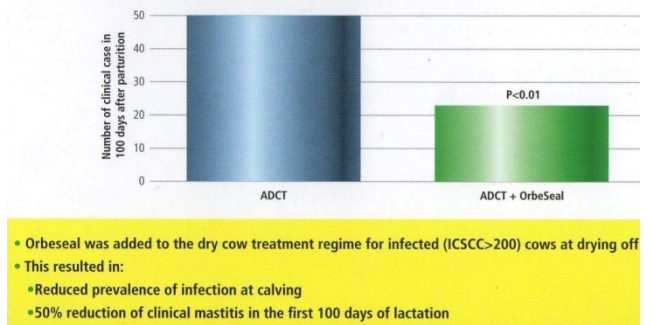
However, Dr Roberts suggests that only about half of UK dairy cows receive teat sealant at drying off. Accordingly, she sees significant potential for gains on many more dairy farms where other aspects of good mastitis prevention practice – including well-maintained milking plant, good milking routine, clean housing and accurate record-keeping – are already in place.

The most recent of the three studies took place on 28 farms with good management records in six EU countries including the UK. Two consecutive 12-month periods immediately before and after OrbeSeal's introduction were analysed. The first six weeks of lactation saw reductions in clinical mastitis cases and mastitis-culling of 37% and 15% respectively following introduction of OrbeSeal.<sup>1</sup>

The second study was a clinical trial comparing the efficacy of conventional antibiotic dry cow therapy alone and in combination with OrbeSeal. This found a 50% reduction in clinical mastitis over the first 100 days of lactation attributed to inclusion of OrbeSeal (see figure 1).<sup>1</sup>

A third piece of research involved 12 commercial dairy farms and found 40% fewer cases of clinical mastitis in the first 100 days of lactation in cows dried off with a combination of long-acting dry cow antibiotic and OrbeSeal, compared to cows dried off with the same long acting dry cow tube alone (see figure 2).<sup>1</sup>

Comparison of the efficacy of Antibiotic Dry Cow Therapy alone and combined with OrbeSeal for dry cow therapy



It also found a marked difference in severity of mastitis as indicated by the presence or absence of fever (i.e. raised body temperature). In cows dried off with antibiotic dry cow tubes alone, 39% of clinical mastitis cases in the first 100 days of lactation involved fever, compared to 7% in cows dried off with antibiotic-OrbeSeal combination (see figure 3).

Without internal teat sealant, it has been established that up to 60% of clinical mastitis cases during the first 100 days of lactation are due to infections acquired during the preceding dry period, despite the use of antibiotic dry cow therapy, says Dr Roberts.<sup>1</sup>

“This factor is key to the payback available,” she suggests. “Using the Reading University costing of £245 per case of clinical mastitis, in a 100 cow herd only 3.3 fewer clinical mastitis cases are enough to cover the cost of OrbeSeal. Any response above this potentially offers a financial gain.”

From an industry-typical starting point of 56 mastitis cases per 100 cows per year before introducing teat sealant, the financial benefit implicated in the three quoted studies is in the range £4,000 to £6,000 per 100 cows annually (see figure 4). In addition to treatment costs, the University of Reading figures include discarded milk during treatment, reduced yield over the remainder of lactation, and increased culling associated with clinical mastitis incidence.

Teat sealant payback calculator			
Cost/return element	Research study		
	Pfizer 2010	Mutze 2008	Newton 2008
Teat sealant cost/tube (£)	2	2	2
Teat sealant cost/cow (£)	8	8	8
Herd size (cows)	100	100	100
Teat sealant cost/herd (£)	800	800	800
Cost per clinical mastitis case* (£)	245	245	245
Number of cases of mastitis in first 100 days in milk before teat sealant introduced**	56	56	56
Study's reduction in clinical cases after teat sealant introduced (%)	37		
Number of cases saved	20.72	22.4	28
Cost saving of fewer cases (£)	£5,076	£5,488	£6,860
Net saving after deducting teat sealant cost (£)	£4,276	£4,688	£6,060
Break even reduction in number of clinical cases	3.27	3.27	3.27

Figure 4

\* University of Reading (<http://www.apd.reading.ac.uk/AgEcon/linvestock/disease/cattle/mastitis.htm>). The economic cost of mastitis (cattlediseasespreadsheets.xls, downloaded 28th July 2009).

\*\* Bradley et al (2007). Survey of the incidence and aetiology of mastitis on dairy farms in England and Wales. The Veterinary Record 160, p253-258, quotes the range 47-65 cases per 100 cows, from which median 56 used here.

Meanwhile, Michael George continues to be optimistic about a return one day to selling the Brynhyfryd brand of high genetic merit cows and heifers when bTB restrictions are lifted. "Until then, everyone here enjoys milking good cows and knows them all by name," he adds. "Our top priority is cow comfort and welfare. If we get these right and combine them with sound nutrition and skilled people, the cows can do the rest."

Evidence that this is being achieved can be found in the herd's breeding statistics. Approaching 60% of cows are back in calf within 100 days of calving. For such a high output herd, calving interval is a respectable 410 days with a 24% annual replacement rate. And age at first calving for heifers is 24 months.

Looking ahead, the George family's plan is to increase cow numbers to 1,400 over the next 12 months, and raise productivity further to 11,500 litres/cow annual milk sales within 18 months.