

Vaccination may be the key to helping to control your herd's mastitis problem

# The next step in mastitis control?

A vaccine that offers a degree of protection against some of the key mastitis-causing bacteria is proving that it was well worth the wait. But could it make a useful and cost-effective addition to your mastitis control and prevention programme? Read on and decide if it's something to discuss with your vet.

text **Rachael Porter**

It sounds like a dairy producer's dream – a vaccine against mastitis. And, indeed, for some herds it's proving to be a welcome addition to the weaponry used to prevent and control the costly disease. But it's not a panacea and it's certainly no substitute for good husbandry, hygiene management and a thorough milking parlour routine. The animal health company behind Startvac, HIPRA, is keen to point that out from the off. But after 10 years of development and European licence approvals it was well worth the wait if results from independent trials carried out so far are anything to go by.

Studies with the vaccine, which was developed to offer protection against mastitis caused by *E. coli*, some coliforms, *Staph. aureus* and CNS (Coagulase Negative Staphylococci), have so far yielded some impressive and exciting results. Many more trials are still on-going and showing promise and several herds across the UK are using the vaccine to good effect and will have some meaningful data to report by mid 2012. The majority of environmental mastitis cases develop, or are picked up, during the dry period. And so it's during this period that the vaccine seeks to help prevent and control infection. "It's licensed to reduce and control mastitis in early lactation – a time when

cows and heifers can be more vulnerable to udder infections due to the stress of calving and the transition period as a whole," says HIPRA's vet advisor Rennie Gresham. "Three shots are required and these must be given according to the label." That's 45 days prior to calving, in other words at drying off. And again 10 days before calving, followed by a third shot 52 days post calving. "Thirteen days after the first shot, the cow will have increased resistance to the families of bacteria covered in the vaccine. And the second shot, 10 days before calving, acts as a booster. As does the third shot. In all, the cow will have additional protection from the three types of mastitis causing organisms for the first 130 days of lactation," says Mr Gresham.

## Prescription only

"The 'dead' vaccine was developed during an eight-year period and it took a further two years to gain European Medicine Agency registration. It's been commercially available, on prescription only, for just 12 months. And research to demonstrate its uses and efficacy on farm is on-going.

## A useful addition to mastitis-control toolkit

Dairy vet and mastitis specialist Andrew Biggs says that many users of Startvac, initially at least, may well be former users of a vaccine, which is no longer on the market, against *E. coli* mastitis. "They're used to the protocols involved in administering such a vaccine and have had a serious enough *E. coli* problem that warranted its use. So they've been looking for something to fill that gap," he says. He agrees with Mr Gresham that it's a useful addition to producers' mastitis prevention plans. "It's another tool in the toolbox of control measures. But you still need to do all the other

things, such as good dry cow and transition cow management, that we know help to control mastitis that's picked up during the dry period. *E. coli* mastitis, remember, can become toxic and even kill a cow – it can be a serious health, welfare and productivity issue. And mastitis caused by *Staph. aureus* is notoriously difficult to treat with antibiotics because the bacteria produce a protective bio-film around themselves when they colonise in the udder. This vaccine produces antibodies that can adhere to that 'slime'. "So where these mastitis-causing organisms are known to be a serious

problem, producers should ask for advice from their vet and discuss the vaccine option." But he too stresses that it's not a 'brick wall' defence against mastitis. "It has been shown to prevent some cases and like previous ones will also reduce the severity of others. "However it's by no means a cast-iron guarantee that you won't see *E. coli*, *Staph. aureus* or CNS mastitis in your herd again, but you would expect to see fewer and less severe cases. Cases that are seen should also be quicker and easier to cure, which could have the potential to reduce antibiotic use."

## Watch this space

Startvac is currently in use on several UK units, but it's too early to collect any meaningful data and to determine if it's been successful in reducing the number of mastitis infections and/or their severity in these herds. So CowManagement will visit some units that are using the vaccine in mid 2012 to find out, first hand, what improvements, if any, it has made to cow and udder health.

*Staph. aureus* is the major contagious pathogen that Startvac was licensed for, but one trial that evaluated the vaccine in field conditions against CNS mastitis causing bacteria concluded that it reduced the incidence of infection – both clinical and sub-clinical cases. It also found that it improved the spontaneous cure rate of CNS infections and reduced the number of mastitis treatments required, while at the same time diminishing the percentage of cows with significant milk yield losses. It all makes good reading. But for many commercial herds it's all about the cost. The figures certainly stack up, according to Mr Gresham. "It's an investment of between £15 and £20 a year to vaccinate a cow. So far trial work has shown up to a 10-fold return on investment, in terms of cost savings on mastitis treatments, fewer milk production and cull losses."

## Economic sense

For a 100-cow herd it would cost approximately £1,500 to vaccinate every cow and with the cost of replacements at around £2,000 per head, preventing just one death from toxic *E. coli* mastitis makes economic sense. The reality is that many herds see more than one death from toxic mastitis or cull other cows due to chronic mastitis and/or high somatic cells counts. "But it's not just about saving money and reducing culling and replacement rate," says Mr Gresham. "There's the bigger picture to consider. Using such a vaccine will improve udder health and cow welfare and it will also reduce antibiotic use – something that producers and vets are increasingly coming under pressure to do. "And it's another step to add to your armoury if the five-point plan just isn't bringing infection down to acceptable and manageable levels. For many it's an end to some of the frustration that mastitis can cause in an otherwise well-managed, healthy and productive dairy herd." |

