

'Niche' approach shines new light on mastitis prevention and control

Udder treatment options for progressive herds

In some circumstances there is potential to reduce antibiotic use when treating milking cows for mastitis. Two vets, who spoke at the recent MSD Mastitis Panel meeting, shared their views and experiences.

text **Rachael Porter**

So far, much of the effort to reduce antibiotic use in UK dairy herds has focused on the dry period, with a proportion of herds now practicing selective dry cow therapy. But with a dairy sector target to cut antibiotic use by 20% by 2020, the industry must also look at how mastitis is treated during lactation.

"Clearly the best way to reduce antibiotic use for treating mastitis is to prevent the disease from occurring in the first place," says Synergy Farm Health's Evershot-based dairy vet Rachel Hayton. "There are still plenty of 'big wins' to be made here. And we're seeing a continuing drive on many units to get down below

the UK industry average of about 40 cases per 100 cows."

Of the practice's herds – comprising 46,000 cows and based in Devon, Dorset and Somerset – most are already meeting and exceeding that target. And she's working with 5% of their dairy clients to reduce antibiotic use even further, with a more selective approach to the treatment of milking cows.

Veterinary supervision

"But, and I must stress this, selective lactation therapy is not for all units – not even, necessarily, those with exceptionally low mastitis rates," says Mrs Hayton.

"And it's something that must be done by working extremely closely with your herd vet."

But other 'conditions' must be met first. Not only should the mastitis rate be below 35 cases per 100 cows a year (a figure that instantly rules out more than half of UK herds), but knowing the pathogen profile of your herd is also vital.

Mrs Hayton adds that this profile is something that many progressive herds should know anyway, if they are achieving good mastitis control – whether they plan to take this route or not. "Knowing what mastitis-causing pathogens you have on your unit is useful for both reducing the incidence of, and treating, the disease. This would include knowing the percentage split of gram-negative and gram-positive bacteria."

She stresses that a requirement before even considering taking a selective treatment route, in a bid to reduce antibiotic use, is that the pathogen profile is predominantly gram negative, since these infections tend to clear up without intervention. "Ideally it should





Rachel Hayton and Peter Plate spoke at the 2018 MSD Mastitis Panel, which brought together around 20 vets with specialist interests in udder health

be at least 70% gram negative and with an environmental mastitis pattern. If contagious mastitis is prevalent within the herd then that's a huge red light." She adds that good mastitis detection is also essential, with sound protocols in place for picking up infected quarters early. "Then it comes down to the producer or staff member charged with monitoring and managing mastitis. They must be motivated and passionate about making a change. I really can't stress that enough. "On our units where a more selective approach to lactation mastitis treatment is working, the producers involved relish the challenge and are genuinely curious about this approach to managing and

treating the disease. Personality and commitment count here, as does the ability to work closely with their vet."

Decision tree

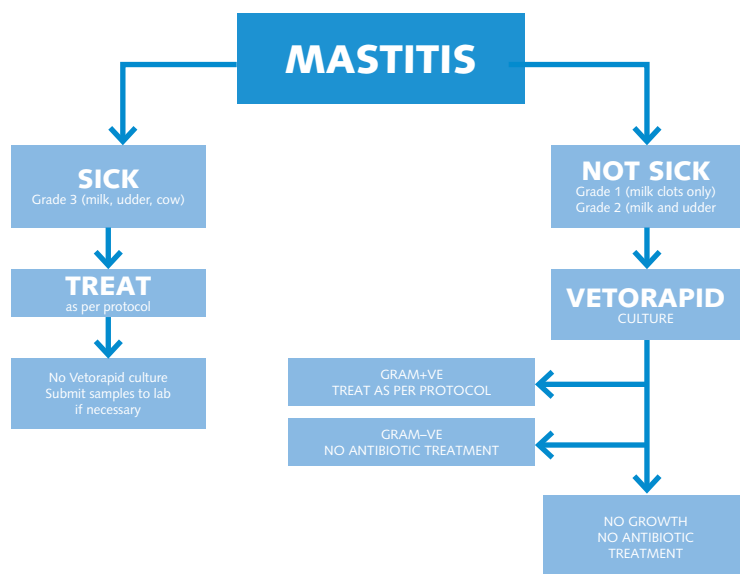
If a herd is considered suitable to adopt a selective system, producers are given a bespoke check list or 'decision tree' to work from, once a case of mastitis has been identified (see Figure 1). "The cow-side test or culture is relatively basic in that it simply determines if the mastitis causing bacteria in an individual case is gram negative or gram positive," explains Royal Veterinary College's Peter Plate. "And if it's gram negative the vet may decide, if the cow isn't unwell or mastitis isn't recurrent, to recommend

treatment with a non-steroidal anti-inflammatory drug only." "Work both with our herds to date and in trials shows that cure rates and the time taken for the infection to clear are the same as when antibiotics are administered," adds Mrs Hayton. "The benefits are reduced antibiotic use and a much shorter milk withhold period." It's vital that these cow-side tests keep things simple: "We don't want to bombard producers with too much information – just what they need to know to help us, jointly, to make the correct management decision. It works on a 'red' or 'green' light basis," says Mr Plate. Such tests, including Vetorapid, are already in use on a small number of UK units. He stresses that the plates used to culture the bacteria must be properly handled and disposed of.

Cow-side test

"A simple cow-side mastitis test, called mastDecide, that uses a closed test tube rather than a petri dish, could soon become available in the UK. Other tests are currently being developed," Mr Plate says. The tests are important. But pathogen profiling is something that many producers will need to do first, and must be done by a specialist laboratory, either in the veterinary practice or externally. Not only will this give them insight into what bugs are causing problems in their herds, it will also help them to prevent and treat mastitis more effectively. And, if the mastitis pattern and bacteria profile allows it and mastitis detection is good, selective lactation therapy could be an option. But Mr Plate and Mrs Hayton agree it's still very much a 'niche' practice – for the few rather than the many. "That could change, as more producers get a tighter grip on mastitis prevention and control. But it will never be for everyone, simply due to the variation in pathogen profiles between individual herds. This is very much an individual approach – there's no one size fits all," says Mr Plate. "And I really can't stress it enough, but it must be done by working closely with your vet. This will dictate the success of following a selective lactation mastitis therapy programme, just as much as any test kits or decision tree. There are many pieces that need to fit together perfectly for this to work," adds Mrs Hayton. |

Figure 1: Decision tree for lactating-cow mastitis treatments



Selective lactating cow therapy check points

- Low mastitis rate – ideally fewer than 35 cases per 100 cows.
- Environmental mastitis pattern with predominantly gram-negative bacteria infection (ideally >70%).
- Good mastitis detection on farm. Early detection of cases, certainly from day one. This is typically easier in herds using milk conductivity software.
- Producer and staff motivation to reduce antibiotic use and commit to on-farm testing protocols and taking ownership of the 'project'.

MSD Animal Health sponsors the UK Mastitis Panel as part of its commitment to work with the industry to establish best practice in antimicrobial usage.