Mischievous Microbes and Where to Find Them

When the test results come back and there's something less than ideal we know we need to investigate to find the source of the issue, rectify it, and change procedures to prevent future occurrence, then test to verify the issue is resolved. If you say it fast enough it sounds easy, doesn't it? Yet no matter how simple the milking system is, how rigorous the cleaning or how healthy the animals, when there's an issue to investigate it casts doubt on everything and suddenly there's a million suspects. We thought it might be interesting to share some experiences of members who found the culprits causing them issues. **by RMPA Members**

OUT OF SIGHT

It started when a test result came back with coliforms around 600 cfu/ml. The cows were healthy and individual Somatic Cell Counts were all below 200, so it seemed unlikely to come from sub-clinical mastitis. Temperature checks showed the milk was cooling quickly and staying below 4°C. Our milking system is so simple we hadn't thought there would be much opportunity for problems to arise without us noticing.

We did extra-extensive acid and alkali washes and a biofilm wash in the plant, checked all the joints and replaced every bit of silicone piping. The next set of results were better but then deteriorated again. We found some residues in the tank wash reservoir so gave that a wash but I didn't trust it so we are currently washing the tank manually. We will probably start using the tank wash again at some point and build a regular clean of the reservoir into our routine. I was still taking everything apart to try and find the problem and discovered seals around the sight glasses on two clusters were perished and split. We had completely overlooked them before that. It would have been sucking air from the parlour quite close to the floor so bacteria could get in with any dust or spray and so it makes sense that the results were variable. After cleaning and replacing the seals the next set of coliform results were very low.

BUNGED UP

We were testing weekly with reliably good results until one day the results came back with high coliforms. We launched into a frenzy of cleaning, inspecting everything and testing then starting the whole process again as the results kept coming back with high coliforms. We experimented with different types of chemical washes, opened and scrubbed every joint in the pipework, replaced teat liners, silicone pipes and o-rings, fogged the parlour and bulk tank room with hypochlorite. We swabbed and sampled at every stage of the process. The lab was identifying the main bacteria on the plates and one particular spoilage organism kept coming up, but that didn't help at all with identifying where it was coming from. Testing milk from every quarter of every cow ruled out the possibility that the cows were shedding it. At the time we had a vacuum bottle-filler that circulated overflow milk back to the bulk tank during filling and it seemed like the coliforms were increasing over the course of the morning after milking whilst bottling. We checked the temperature of the milk in the machine and the bottles throughout the morning wondering whether the milk was getting warm at some point during bottling. Every part of the filler was checked, and we eventually replaced it with a gravity filler that didn't circulate the milk back to the tank. This all turned out to be a red herring.

After three months of stress everything had been checked, cleaned or replaced and vast amounts were spent on testing with coliform results going up and down then up again. Then one day I was cleaning the ice bank

type bulk tank and the handle on the bung twisted loose. I unscrewed the handle from the bung and inside the screw thread was a bit of milk. This had never been a problem before but at some point, the seal between the handle and the bung had become compromised and it was acting as a reservoir for bacteria. The coliforms increased over the morning because every time the bulk tank agitator switched on it must have pushed some milk into the screw thread and fed more bacteria into the bulk milk. As soon as the bung was replaced the results improved and we now take it apart to wash daily.

PEACE OF MIND

We test our milk weekly for Coliforms and TVC, and of course test for full pathogens, coliforms and TVC as well as SCC monthly as required by the FSA. The reason for such regular testing for us is peace of mind. Up to 3 of us milk, and it brings a lot of comfort to have a clean test result heading into a busy weekend. Our average Coliforms are under 10 and TVC under 1000 - this is what we're aiming for as a team every time.

At our last DHI test in April, we sent a milk sample off on the same day which I've always done as a bit of an insurance policy. It paid off this time - our sample came back clear with flying colours, but the DHI sample had a raised Coliform count of 350. Not awful, but enough to fail. However, as our previous weeks sample and the sample we sent on the same day from the same jug were perfect, we were able to agree with our DHI that we would only be subject to one re-test rather than the normal two. This resulted in much less disturbance to our business.

Whilst weekly testing adds additional cost to the business, it's nothing in the grand scheme of things and it really does bring an additional level of peace of mind. It certainly helps give confidence to the FSA that we are safe raw milk producers and regular testing is certainly a brilliant way to keep an eye on team performance.

Something else that was mentioned to us is that as we had used NML, rather than our local lab; this gave PH England another level of confidence that the milk testing had been carried out to the same standard as their own - this isn't something I'd thought about before but needless to say we have stuck with NML ever since.

An advantage of being a network is we can learn from each other's experiences. If you have any stories to share about how you've resolved issues (microbiological or otherwise) send them to membership@rawmilkproducers.co.uk