

## VACUUM PUMP PROBLEMS

Peter Edmondson

Colin and his dad, David, are smart farmers, they really know their stock and run a tight ship. They milk 250 holsteins twice daily and average over 9,000 litres. Two years ago we ran into problems with clinical mastitis and the cell count had risen. We found our major enemy on the cell count issue was Staph aureus, the older cows had the highest cell counts and this was confirmed by bacti. They had some great breeding lines and were reluctant to cull so that had to change. But the real problems were with environmental mastitis. The herd mastitis rate was running at over 50 cases per 100 cows per year, with one case being one quarter infected once. More than 35% of the herd had one or more clinical cases and this suggests problems with environmental infections, which hits cows randomly.

James was the new milker who was rather set in his ways, and was not as good as we would have liked. During my visit it was clear that mastitis detection was an issue, the herdsman relied on in line mastitis detectors rather than foremilk. We needed to ensure that we had early detection to improve treatment success and reduce the numbers of repeats.

Teat preparation was an issue. The milk filters were too dirty after milking. I think this is a really simple way of seeing how dirty the cows are and how good the teat prep is. Clean filters mean good prep, and dirty filters increase the risk of environmental mastitis. The UK moved from TBC to Bactoscan as a way of measuring bacteria in milk many years ago and for a herd with good hygiene the count would be under 20. This herd was running between 30 and 40, which was far too high. This was surprising as the herd was already predipping.

There were issues with the parlour. Cows were being overmilked and the ACRs were an old design that could not be adjusted. The parlour was put in back in the early 1970's when the herd yield was about 5,000 litres and it now is running at over 9,000! The parlour was extended and it is double eight high line recorder plant with highly complicated plumbing. The vacuum reserve was adequate but did not cause immediate concern. The plan was to replace the old parlour, but this had been delayed due to the low milk price and profitability.

We got James into our practice with the owners and a few other of our dairy clients and had a milker school. We always run this in the practice so there are no distractions and they welcome a change of environment. It's fun, educational and I encourage them to come up with the good ideas. By the time they leave they understand lots more about mastitis, why things need to be done and we have a set milking routine which they have all agreed. James was going to foremilk, batch prep his cows and be far more diligent in his predipping. Many of their cows had some hairy udders and we were going to singe these off to keep the cows cleaner.

A few months later real progress had been made. The Bactoscan levels fell to below 20, predipping was very meticulous and the filters clean. It was a pleasure to compliment James on his good work. Too often we criticise, rather than praise. The cell count was falling along with levels of clinical mastitis.

About six months later I got a call from Colin. The mastitis levels had increased significantly and could I come and find out what was going on. His immediate thought was that James's routine had slipped and he was falling into bad habits.

The milking routine was super and really all I could do was to compliment James on his continued good work. I did notice that the regulator was leaking air into the system intermittently and this caused me concern. I checked the vacuum level in the plant and it was running at 46 kPa, but a year ago was at 47.5. I attached a my digital vacuum reader to the back of the parlour and the levels fell by 2 kPa every time a unit was attached. This simply should not happen.

I talked to Colin and he told me that there was a problem with one of the vacuum pumps. He was given the option of a new pump or to have new vanes fitted to the problem pump. He chose the latter as it was cheaper. The engineer dropped the vacuum level so that there would be more reserve, but this still below what was required for the plant. The problem was a lack of reserve.

The lower vacuum level and poor reserve slowed down milking, and longer milking time had been raised by James. The following day a new pump was installed and the vacuum put back to 47.5 kPa. Since then, the number of new cases has decreased significantly, and milking time has reduced.

So what can we learn from this case history. Firstly, know the vacuum level that your milking machine should be set at. I am amazed how few farmers know this. Check the gauge and make sure this is level is at the correct setting. Secondly, make sure that the regulator always leaks air into the system, if it doesn't this suggests that there are problems with the regulator or inadequate vacuum reserve. Have the plant regularly tested and maintained and deal with any faults rather than put them off until tomorrow. Your milking machine is your forage harvester.

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