

System type – as well as careful management and regular maintenance – are key to preventing milk contamination

Flushed with success?

Some milk buyers are voicing concerns about the possibility of automatic cluster flushing systems resulting in water or chemicals contaminating milk. We spoke to a milk buyer, the UK's leading milking equipment specialist and several system manufacturers to find out more.

text **Rachael Porter**

Could automatic cluster flushing and dipping systems be a threat to the milk cheque, rather than a way of reducing labour and saving time in the parlour without compromising milking routine and udder health?

Arla Food's technical support manager Linda Clow has concerns about the potential for contamination from this equipment and also urges caution if producers are considering buying a system or already have one installed.

"Any producer thinking of installing a cluster flushing system should ask the supplier for a cast-iron guarantee, in writing, that adulterants, even just water, cannot get into the milk if anything goes wrong. Clearly that will also include your responsibilities for correct maintenance and operation," she says.

"Even if you have already had the kit installed, we recommend that you ask your provider the same question. We are already seeing instances of added water when this type of equipment goes wrong and we do not want to see that adulteration continue, particularly if chemicals are also added. We have already started discussions with some of the major suppliers of this equipment to voice our concerns about potential contamination."

She also stresses that producers should ask themselves why they want to install this automated equipment in the first place. "At their best, such systems are better than a poor herdsman, but nowhere near as good as a good one. The equipment cannot,

on its own, sort out mastitis issues. But a good parlour routine, along with veterinary input where required, can.

The Dairy Group's milk equipment specialist Ian Ohnstad agrees that automating cluster cleaning and dipping is not a 'cure all' for all mastitis and cell count problems.

"Some producers have been led to believe that cluster flushing will be the answer to every udder health issue. But that fact is that neither back flushing nor cluster flushing systems will address a mastitis problem caused by poor housing, for example, or inadequate dry cow management.

Labour saving

"However, combined teat dipping and flushing systems can save on labour and offer a more consistent parlour routine when it comes to teat dipping and cluster cleaning between cows," says Mr Ohnstad. That said, he stresses that they'll only deliver those things if they're properly maintained and managed. "Some producers have them installed and then forget about them. But like any piece of equipment or machinery, they have to be operated correctly and routinely checked and maintained."

But what about milk contamination with water or cleaning chemicals?

"There is always a risk of this when any system introduces water or chemicals into the milking system. There's a slight risk if water can get trapped or fail to drain out adequately, if a valve or injector fails, and issues with the freezing point depression of milk could be due in part to that."

When chemical and water enter the liner in cluster flushing systems, rather than through the long milk tube as they do in back flushing systems, there is less surface area exposed. "This may help to slightly reduce concerns about contamination of the milk supply, although poor operation and maintenance of any system can be extremely problematic," adds Mr Ohnstad.

Cluster flushing

Dairy Spares Tim Evanson says that the Airwash system is designed to ensure that each liner is flushed out, even when the cluster is not upright. "It's washed, safely and effectively, whatever position it's in. The water enters the liner – not the cluster – via an injector. There are four injectors in each cluster, which place water directly into the teat cup and this is purged out with air through the mouth of the liner. Water is injected as close to the point of exit as possible," he explains. T H White's Adrian Moore says that some producers should be concerned regarding some of the back flush systems on the market as they do have the potential to leave water in the milk pipes if poorly managed and maintained.

"But Airwash and Airwash plus, which also dips teats prior to cluster cleaning, only flush the liner – they're cluster flushing and not back flushing systems." In back flushing systems, which inject water via the long milk tube, the tube can sometimes form a loop when the cluster is hung up.

"If the compressor is poorly maintained or not large enough to blow out all the water then some of it can be left sitting in the pipe. Not a lot – about 50ml for each cluster – but in a small herd that can amount to a considerable percentage of water in the bulk tank."

That said, he says he's never heard a producer complain about their automatic cluster flushing and/or dipping system – either in terms of the freezing point depression of milk or chemical contamination.

There are currently 67 Airwash Plus systems being used on UK units and 400 Airwash systems.



"I can be certain that if there'd been a problem with our cluster flushing system then I'd have heard about it. "The only feed back that I get is that the systems are saving time in the parlour and giving consistency to what was previously a slightly ad-hoc routine," he adds.

Novel design

ADF's James Duke also gets good feedback from his customers and he's keen to stress that his equipment is not a back flush system.

"ADF operates upstream of any milk flow and the equipment is not subject to system vacuum during milking. We have had no reports of concern regarding freeze point depression," he says.

"Our system dips the cows' teats immediately after milking from within the cavity in the head of the liner and it only sanitises the liner. This is, after all the only part of the milking equipment that has contact with the cow.

"Teat dip and sanitised water for liner rinsing enter the liner adjacent to an atmospheric break – the mouth of the liner.

"The novel design of our cluster utilises gravity to shut off the short milk tube, ensuring that rinse water is evacuated through the liner mouth piece and onto the parlour floor." To date there are 30,000 award-winning ADF clusters in use on units all over the world, including more than 500 herds in the UK.

The system has just been presented with the prestigious Queen's Award for Enterprise in Innovation.

"With that volume of product in the market, I can assure you that we would know if we had an issue," says James.

Correct fitting

Vaccar's Pete Larnar says that if back flushing systems are fitted correctly then there should be no problem with milk contamination. Mr Larnar agrees with Linda Clow that chemical contamination can be a particular problem in back flushing systems that offer both flushing and dipping. "The issue would seem to be getting the system injection point and milking liner completely clean after the application of the teat disinfectant, particularly iodine."

With conventional cluster flushing systems water is more of a potential problem, but can be prevented by ensuring a proper set up. He explains that the system must have shut-off valves to prevent the flushing liquid getting into the milk line and that sometimes additional controls are required.

"We recommend installing milk tube clamp valves, or good quality milk tube diaphragm valves, as these ensure categorically that no flushing solution can get into the milk line.

"The position of our cluster flush liquid injection is also critical as any liquid between the injection point and the milk meter or ACR sensor could get blown back into the milk line when the injection of compressed air occurs. To minimise the risk of contamination it is vital to get the 'T' piece as close to the milk meter or ACR as possible.

"A wide range of cluster flushing systems are now available on the market. Whatever the system a little common sense and a good understanding of how the system works, together with the technical ability to adapt the equipment to suit the parlour, can minimise the risk of contamination," he adds. |