

Have you identified potential risks

Just one breath

Toxic slurry gas has already claimed too many lives on UK dairy units. So we offer some timely advice on staying safe this winter when working in slatted buildings and with and around slurry handling systems.

text **Rachael Porter**

Second chances are extremely rare when it comes to being overcome by toxic slurry gases. Health & Safety Executive inspector Liz Evans knows of at least two men who feel lucky to be alive after surviving an incident involving slurry gas and slatted housing.

“This incident occurred on a unit in Cumbria on a warm, still day. The producer was stood chatting to another farm employee, just a short distance from where his father was standing on some slats outside unit’s cow house.

“The father suddenly fell to the ground and the producer ran to his aid, thinking that he’d had a heart attack or a stroke. But just before he got to him, he also collapsed and lost consciousness.”

Fortunately for them, the employee thought it odd that they’d both collapse close to the same spot and quickly decided that they may have been overwhelmed by gas. So he took great care when he went to their aid, avoided getting too close and pulled them away from the area using a pitch fork. Both men survived.

“But had the employee not seen them collapse or had simply run over to help them without thinking and had himself been overcome by toxic gases then it would most certainly have resulted in two, if not three, fatalities.

“If you see someone collapse and you suspect its toxic gas, then dial 999 and warn the emergency services that there may be a gas hazard. And only attempt to help the person or persons who have collapsed if you can do so without putting yourself at risk,” stresses Ms Evans.

Mixing hazard

The gas had built up around the slats because someone was mixing the slurry lagoon. “So it’s vital that when there’s any mixing or tank emptying going on that everyone working on the farm know about it and knows about the potential hazards.

“Any gases in the slurry will rise to the top during



when it comes to slurry gas on your unit?

could be your last



Assess risk: any work on slurry handling systems, such as stirring or spreading, has the potential to release toxic gases

mixing and leave the system via the closest exit point, which could be slats inside or outside housing. Even if an area is uncovered and seemingly open, on a still day with little breeze, these toxic gases, which are heavier than air, can pool in outdoor areas,” says Ms Evans.

So the advice is to keep away from the entire slurry management system if someone is mixing.

She adds that identifying potential areas where gas could ‘pool’ is important. Confined areas in slatted housing are an obvious one, but less obvious are areas around slatted buildings and slurry stores.

It was just this kind of ‘insidious’ gas pooling in an outside yard – close to a slurry tower and next to a barn on a still day – that resulted in two fatalities in Essex in 2011.

One employee was mending a valve on the slurry tower and he didn’t know that the safety valve had been taken out. He was overcome by toxic gases which, due to still conditions and the barn wall close by, had nowhere to go and created a pocket. As is often the way, if people are nearby, one person rushed over to help and was overcome, so another also came over, who then also collapsed, and then yet another employee rushed

in to help. He too was overcome by toxic gases. Two of the men died and two were lucky enough to survive. But there could well have been four fatalities that day. This human instinct to go and help is often what results in multiple fatalities. “The key is to try to think before you dash in and to over ride this instinct.”

Serious accident

Increasing awareness of the potential danger is key and after a serious accident in Northern Ireland, where three members of the Spence family died, some fellow producers went out and bought themselves slurry gas detectors. But Ms Evans says that this isn’t the answer and, if anything, could put producers at greater risk.

“Such meters will work in the sewage industry, because they come with a robust and sophisticated back-up system. The meters are regularly calibrated and the people using them are highly trained.

“That just isn’t the case on a farm and it’s not feasible.”

She says that a colleague dropped in on a producer who’d bought himself a gas monitor and asked him



Liz Evans: “Toxic gases can pool in ‘enclosed’ outdoor areas”



Lethal cocktail: slurry produces toxic gases including methane, ammonia and hydrogen sulphide

how he was getting on with it. “He was working in the slatted cow house at the time and said ‘really well, thanks’ and my colleague asked him if he could take a look at it and he said he’d have to nip back to the house as he’s left it at the side of the bed!”

High concentration

Even if he had been wearing it at a time when toxic gases rose to a dangerous level, Ms Evans says that there probably wouldn’t be time to get away.

“By the time the alarm sounds, you could already be on the floor. And no one knows you’re there. Far better to just stay out of confined and ‘risk’ areas when mixing and other slurry management operations are going on.”

She says that, at low levels, it is possible to smell the toxic gases. “The smell is like rotten eggs at first and then as the gas levels rise they actually stop your sense of smell. When the gases are at a high concentration they’re odourless and that’s what makes them so lethal.”

Slurry produces a cocktail of toxic gases, including methane, ammonia, carbon dioxide and hydrogen sulphide. “It is hydrogen sulphide that is particularly toxic as it excludes oxygen – it suffocates

you even if you only take one lungful, which is why people are overcome so quickly when they’ve taken just a few breaths.”

Risk assessment is essential if producers and employees are to stay safe and Ms Evans says that good communication is important. “If someone is stirring slurry, or carrying out any other work involving the unit’s waste management system, then it’s absolutely vital that everyone who lives and works on the farm knows about it and that they stay away – and understand why they need to stay away – from anywhere that gases could escape and begin to pool.

“This includes slatted buildings and slats, vents and storage systems, as well as any areas close to slurry storage where ventilation is restricted. Cattle should also be removed from slatted houses – I know of an incident on a dairy unit in the Scottish Borders where three cows died after being overcome by slurry gas.

“In any situation where gas can escape or build up, people should stay away and not enter a building or a restricted area until at least 30 minutes after slurry stirring stops.” Ms Evans stresses that if there’s any doubt – just keep out. “Past

accidents show that there are very few second chances. The gas hits quickly and just one lungful can render a person unconscious.

“They’re then left lying in a pool of low-lying toxic gas. Little wonder that people rarely survive, particularly if no one sees them drop.”

No ‘preamble’

She adds that low levels of gas can cause headaches and nausea. “But there’s rarely an early warning. Stirring will create a substantial gas cloud with no ‘preamble’ – that’s why this is such a serious issue as there will be no warning. “The biggest tragedy about accidents and fatalities caused by slurry gas – and indeed all other farm accidents – is that none of it is new.

“They’re accidents that have happened before and that are well documented, so it’s vital that we learn from them and take steps to make sure they don’t happen again.” |

For more information visit:

<http://www.hse.gov.uk/agriculture/topics/welfare.htm>

<http://www.nfuonline.com/farm-safety-think-slurry-v9>