

Freerk Oudman: 'Dry manure scores well on a number of points, but there are still some important unknowns'

Where there's muck there's... bedding?

Dry manure is proving to be comfortable bedding on a number of experimental dairy units in the Netherlands.

And a cost-benefit analysis on mid-sized units also shows a financial advantage. We wait for test results to see if the experts' concerns on health can be set aside.

text **Florus Pellikaan and Rachael Porter**

The use of dry manure as cubicle bedding is raising a few eyebrows and attracting a lot of attention in the Netherlands. And the number of units using the bedding in deep litter cubicles is increasing.

"We get questions every day from producers who are interested in it," says Dutch dairy consultancy Valacon Dairy's project leader Marjolein Feiken.

"An important reason for the increasing interest is the continuously rising price of sawdust and chopped straw, adds Freerk Oudman, cattle adviser with Dutch consultancy firm DLV.

According to both consultants, the coarse fraction in dry manure bedding is a very comfortable bedding material. "Dried manure is

resilient and, therefore, comfortable. Besides that it looks nice and the cows remain clean, contrary to what you would expect," says Dr Feiken.

"It's also dust-free, but there are still a few large and important unknowns like the exact cost, the effect on udder health and the critical success factors," Mr Oudman adds.

These concerns prompted both Dutch consultancies to carry out research.

Mr Oudman is involved in a practical project with four units that are using dried manure in their cubicles.

They are recording and sharing their experiences, including regular bacteriological investigations of both bedding and milk.

Dr Feiken is leading a research project, which is looking at three units that have switched to using dried manure.

DLV has worked out that the cost of dry manure compared to sawdust for a 150-cow unit.

The major cost for running the drying machine is energy at £1.60 per cubic metre of coarse fraction produced.

"The cost of processing manure and using sawdust are about the same for an 80-cow unit.

"After that, on average, dried manure has a slight advantage," says Mr Oudman.

On-going research

"Depending on the scale, the cost is between 52 pence and 78 pence per 100 litres of milk, while the cost of sawdust is about 80 pence."

Bacteriological research is on-going. "The dried manure is naturally a good nutrient medium for bacteria, so this bedding must be managed extremely well," he says.

Dr Feiken agrees: "Bacteria can grow on any organic cubicle bedding. If you don't use the bedding properly it really doesn't work well.

"On the other hand, with dried manure, there is less chance of importing diseases on to the farm."

The experts agree that building up a bed carefully is one of the critical success factors that will be provided by the research.

"Thin layers of fresh dried manure seem to be the ideal, but there are some who maintain that the dried manure should be put in a silo," says Dr Feiken.

Despite good feedback on some units, both consultants are still cautious.

"I wouldn't recommend producers to go into this blind – there are still too many unknowns and the risks are just too great," says Mr Oudman.

"I advise producers to wait for the results of the research programmes. And if they still want to give it a go, start by having some manure processed by a contractor. "Don't jump straight in and buy a manure separator" adds Dr Feiken. |



Not new, just recycled

The idea of using dried manure as cubicle bedding is not new, according to The Dairy Group's dairy housing consultant Brian Pocknee.

"I remember producers who were doing it successfully in Lancashire in 1981, but back then it was not separated. More recently, in 2010, there was another unit that installed a large separator/drier. But it was not a success, with the material being too wet."

The process works by separating the liquid and solid fractions from slurry and then drying out the solids. "What's left is a fibrous material that, in theory, can be used as cubicle bedding."

But, in practice, this hasn't happened. "In my experience, it's not been successful in the UK, so far, because it's simply not been dry enough. Cubicle bedding needs to be dry to safeguard udder health."

Pieter Werkman: 'The number of mastitis cases has been halved'

Pieter Werkman is a dried manure enthusiast from Kerkenveld, in the Netherlands. He first saw the bedding in 2010 during a study tour in Switzerland. "We saw an overcrowded cow house, but the cows were still clean without swollen hocks. That struck me straightway. None of us knew what was in the cubicle. When the coarse fraction has been in the cubicle two or three days, it actually no longer smells of manure," he says.

Convinced that the system would be able to function in The Netherlands, he introduced it to his own 60-cow unit. But his first experiences with the bedding were not too good. "The contractor came and filled 17 cubicles with the bedding. We also had a heap of dried manure made for the following week.

"Things went well for the first week, but

when we added more bedding to the cubicles a week later the problems emerged. In the following week we had five cases of E coli."

He says that that confirmed what he had heard in Switzerland. "You must bring fresh and thin layers of the bedding material into the cubicle on a regular basis. The product just mustn't be allowed to sit and ferment."

In summer 2012 Mr Werkman bought a Sepcom manure separator and now he is particularly pleased with the results. "The somatic cell count has fallen from 250,000cells/ml to 130,000cells/ml and the number of mastitis cases has halved.

"I am convinced that my investment has been cost effective. Since January we have had just four cases of mastitis and



the cows are spotlessly clean, with no sore hocks."

He fills the cubicles with dried manure bedding once a week and estimates that he uses 70 litres per cubicle per week. "This bedding costs very little. And, compared to sawdust, it is easier to shovel a wet patch out of the cubicles."