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MACHINERY



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A popular cubicle bedding concept in Europe and North America is finding favour in the UK. **James Rickard** speaks to a recent convert.

Slurry separator system turns waste into 'free' bedding



The new bedding means cows are lying 5 per cent longer - now up to 75 per cent of the time.

With an unlimited and almost free supply of bedding available, thanks to the latest slurry separator technology, it is no wonder Wiltshire dairy farmer Steve Bennett has reason to be cheerful.

The positives do not end there, he says - cow mobility is up, mastitis cases are down, cows are lying longer and they are cleaner too.

Slurry separation technology is nothing new, but the way it can now be used is. With about eight Green Bedding machines working on-farm at present, separator manufacturer Bauer has taken the concept to the next level. With its ability to extract more liquid, it can produce material with higher dry matter levels.

As several current users have found, this dry material is proving useful for cubicle bedding.

Initially, this type of system was not an obvious choice for Mr Bennett, who runs a 300-head dairy herd at Tockenham Court Farm near Wootton Bassett. While he has dabbled with separation technology before to produce bedding, the material produced was not dry enough and did not keep well.

"While I was impressed with the results, particularly its comfort levels, I was still not satisfied this was the way to go," he says.

With cow comfort as the main driver, Mr Bennett has tried and looked at many bedding concepts and systems from mats to sand beds.

"I've been using mats for a while, which seemed an obvious choice at the time for their sim-

licity and cleanliness," he says.

"However, they lack a certain level of comfort, which needs compensating for using other bedding materials.

"I tried dried sawdust and recycled MDF powder, but it's so expensive and you cannot be 100 per cent sure as to what's in it. Non-dried sawdust is not acceptable either as it heats up, which is particularly bad for mastitis."

Alternative bedding

Gypsum was also experimented with, which was good for cow cleanliness, but Mr Bennett found it was too dusty to work with.

He did consider sand, but although very comfortable and clean, it was quickly ruled out because of its incompatibility with slurry equipment. It needs a lot of management, he says. Availability of materials was big deciding factor too. "You never know what and how much is available."

After a tour of several farms, including two using Green Bedding systems, Mr Bennett decided slurry separators might be the answer.

With some trepidation, a new slurry separator was installed last November.

"For us, installing what we need for the Green Bedding system was not as big an upheaval as it is for others who have not used slurry separators before," he says.

Having used slurry separators for about eight years to help comply with Nitrate Vulnerable Zone rules, Mr Bennett already had the infrastructure in place to accommodate the new screw separator. ▶



Cow stress levels - and Steve Bennett's - are lower as he does not have to worry about sourcing bedding any more.

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"It was literally just a case of swapping the two machines." The manufacturer says a complete system would cost about £40,000-£50,000.

Having used the system for three months now, Mr Bennett is convinced he has made the right decision.

"Cows have cleaned up no end—definitely as clean as cows on sand—and the number of mastitis cases has dropped dramatically," he says.

Foot condition is also better, he says, as the bedding material absorbs slurry and you do not get that 'bow' wave effect in front of the automatic scrapers, which covers feet.

In combination with running the cows through the foot bath twice a week, digital dermatitis is not an issue, he says. "Swollen hocks on older cows, even ones in their eighth and ninth lactation, have gone down too."

While cell counts and bacteriophage levels have remained constant, he says teats are cleaner and milking is a lot quicker as a result.

"Surprisingly though, milk production has increased slightly and because we are not importing bugs with bought-in materials, bug levels remain well balanced. We hardly have to use lime at all now, which would upset the balance."

Due to increased comfort, lying time has increased by 5 per cent to the desired 75 per cent.

"The cows are that comfy I have a job to get them up in a morning," says Mr Bennett.

In terms of how it compares in price to other bedding systems, Mr Bennett says it is quite hard to tell as availability

It takes a while to get your head around the fact cows are lying in their own muck, but it seems to be paying off now
STEVE BENNETT

of materials and prices fluctuate wildly.

"What's great about this system is the fact the material is free, after the initial investment, and is in abundance. Then the biggest difference in cost comes from the improved health benefits and the reduced costs of drugs and treatments to cure ailments from poor bedding."

Consistency

Consistent slurry, supplied to the separator, is key to its efficiency, says Mr Bennett.

"It doesn't want to be too thick or thin."

This is fed via an electrical pump, which takes a feed out of a reception pit, of which the slurry out of the cubicle house runs into via automatic scrapers.

The extracted liquid runs into the adjacent slurry tower, with dry material dropped into a trailer.

The separator runs for about two to three hours per day and produces about three tonnes of



The separator is made by Fan, which is part of the Bauer group, and is powered by a three-phase electrical power supply.

material, containing about 35 to 36 per cent dry matter. Any spare material produced just gets used and spread as before as farmyard manure.

Once the waiting trailer is full, material is tipped in a building, where it is spread out on the floor to a thickness of about 300mm (11.8in) to dry further. However, it cannot be kept in a piled state like this for too long as it starts to heat up, so Mr Bennett aims to use the material within 24 hours of being separated, and therefore only makes just enough for each day.

The fluffy material is dispensed into the cubicles using an

Ag Dispenser bedding machine. "It's very easy to handle and produces hardly any dust," he says.

"Bedding is carried out every other day and still needs raking to pull out the cow muck and to even it out. The best thing about having an unlimited supply of material is it means you can use more of it."

As before, when using the previous separator, the amount of slurry storage required is a lot less compared to unseparated slurry.

One drawback, says Mr Bennett, is the dry material which is scraped into the channel which runs into the reception pit has a

tendency to dry out. This requires liquid out of the tower mixing back into the system to loosen it up.

While Mr Bennett's separator looks after 300 cows, according to the manufacturer, the same separator working 24 hours per day can cope with 2,000 cows.

The liquid extracted, while losing 20 per cent of its nutrients to the fibrous separated material, is actually more useful when applied to the land, says Mr Bennett, as fibres do not have to be broken down and there is a lot less leaf contamination.

Overall, he says, "It was a huge gamble going down the Green

Pros and cons

Pros

- Increased comfort with cows lying longer
- Improved cow health
- Cleaner cows

Cons

- Large capital investment
- Dries out slurry channels
- Does not keep

Bedding route. It takes a while to get your head around the fact cows are lying in their own muck, but it seems to be paying off now."



The material is dispensed on top of mats for additional comfort.



The dry bedding does have a tendency to dry out slurry channels.



The bedding from the slurry separator contains 35-36 per cent DM.



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