

Dry feet, happy cows

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Clear roofs, active air movement and slatted floors with underlying effluent bunkers can substantially improve different types of traditional housing for dairy cows, both in New Zealand and around the world.

Northland entrepreneur Tom Pow has turned his attention to cubicle barns, incorporating many of the proven features which are now part of HerdHome shelters and dairy yards.

Pow believes his concepts address three main issues with standard cow housing; respiration, lameness and udder problems, while delivering cleaner and more efficient effluent handling.

In the cubicles, much larger spacings between pipework allow cows to reclaim their natural behaviour, such as lying uphill and being able to turn around to walk out.

The sunlight and air circulation under a 16m-wide clear span vaulted roof up to 5m high removes any ammonia problems and damp air and will go a long way towards avoiding vitamin A deficiency (rickets).

The shelters and cubicles have eaves and a curved roof designed to circulate air right down to ground level which provides both cooling and warming and ensures stale air is continually exchanged for fresh air. Along with the sunlight, this patented airflow system is also an important factor in drying the floor, which helps reduce lameness.

The firm and slightly sloping rubber mattresses remain dry and are self-cleaning, without a need for regular replacement.

On a recent trip to the UK, Tom and his wife Kathy spent some time going around animal housing on farms, including those in which the dairy herd is indoors most of the time and cows are milked with robots.

"Their cubicle barns seemed to have high step-ups to the one-cow stalls in order to keep the bedding dry and get most of the effluent to fall into the laneways for the mechanical scrapers," Tom said. "The scrapers push a bow wave and the floors are left wet and smelly almost constantly."

Without a need for a mechanical scraper, the step-up to the bedding area can be much lower and the possibility of cow injuries is much less.

Tom said many UK farmers also worry about lethargic syndrome among housed dairy cows, which may result from lack of light, exercise and low vitamin levels. He came back convinced that principles incorporated in HerdHome shelters should be married with cubicles and that cow welfare and milk production would benefit.

"Cows in our cubicles are the cleanest and most content, and the labour



HerdHomes owner Tom Pow, recently returned from a promotion and fact-finding tour of the UK.

requirement is much reduced," he said.

Standard practice in the UK is to vacate the cubicle barn during the summer and then require a complete clean of all surfaces, including the mattresses.

"This is not a flexible system, because if the weather changes you can't immediately reoccupy the barn."

Dry floor

All HerdHomes have removable slatted concrete floors over concrete bunkers, to collect all the liquid and most of the solid effluent.

"By having a continually dry floor, our cows in cubicles don't track effluent onto the bedding areas," Tom said.

A HerdHome cubicle barn in Waikato has been in regular use for five years but the rubber bedding and the floor have never been cleaned. What little effluent that does fall or get tracked onto the bedding dries because of the sunlight and airflow, and then flakes off as the cows move around.

For a herd which is housed for long periods of the year, dry bedding and some delay after milking so that cows cannot lie down immediately should also help deal with teat contaminations.

The under-grate bunkers must be cleaned out annually, but at a time which best suits the farmers and the soil moisture

and weather conditions for spreading slurry.

Tom said the flow of ideas about cow housing and effluent storage is not all one-way. The UK dairy industry has a long history of sludge or slurry spreading, which adds to soil structure and minimises the leaching risk, due to a higher organic nitrogen (N) component.

In general NZ effluent systems add too much water, which then presents downstream problems.

As farmers are required to comply with more environmental regulations, they will use and adapt the best practices from overseas, as well as those which are homegrown.

"Simple management adjustments such as utilising manure effectively, protecting animals from temperature stress and protecting soil from damage can have dramatic positive effects on both profit margins and environmental impact," he said.

HerdHomes has been invited by the British division of Lely to place a shelter over a new experimental dairy to be built near Ruston Spencer, near Macclesfield, involving some on-off grazing even in winter for cows to get exercise and sunlight.

It recently exhibited at the Dairy Event in the UK for the fourth time.