

Key housing principles for healthy youngstock

A calf's first few weeks set the trajectory for lifetime performance. To ensure optimal growth, reduced vet costs, and a more profitable enterprise, a holistic approach to improving the calf-rearing environment is essential.

Myriad factors impact the success of calf-rearing systems and outcomes, and Galebreaker's animal welfare specialist Chloe Rodriguez recommends that producers should assess and address the following:

- **Fresh air** – pathogens are killed between 10 and 20 times faster in fresh air. However, calves don't generate enough heat to exhaust warm, contaminated air from buildings. Installing a positive-pressure tube-ventilation system delivers between four and eight air changes per hour, while allowing a building to be opened in warm weather can increase air exchange to more than 40 per hour to minimise the risk of calf heat stress.
- **Air speed** – reduce the build-up of harmful gases and support respiratory health by aiming for a target air speed of 0.25m/s in winter and 1.3m/s in summer at calf height (1.2m from bedding). Correct air speed is critical to keep air moving while avoiding draughts. Performing a smoke test can assess ventilation quality and help identify housing issues.
- **Lighting** – aim for more than 200 lux for between 16 and 18 hours, and less 30 lux for between six and eight hours.
- **Hygiene** – protect calf health through strict biosecurity: clean, dry bedding, regularly sanitised pens and feeding equipment. For group housing that is all-in/all-out, group within a 21-day age range to limit disease spread.
- **Moisture control** – allow for good drainage (ideally a 5% fall), fresh bedding and weatherproofing. Automated side curtains can prevent excess moisture and pathogens from accumulating.
- **Temperature regulation** – maintain calves in their thermoneutral zone (between 15°C and 20°C) during the first four weeks of life by using jackets, heaters, adequate nutrition, and housing that supports high nesting scores.

Developing CalfHub

Calf housing is often the 'missing piece' in the system. During a two-year collaboration between Galebreaker, Scotland's Rural College (SRUC) and High Skeog Farm, the CEVEC (Cost Effective Ventilated Environment for Calves) project tested the extent to which a smarter, purpose-built calf environment could optimise performance.

CEVEC's results reinforce that when ventilation, monitoring and shed design work together, dairy units can unlock measurable gains.

- Strong growth rates – daily liveweight gain of up to 250g more than calves housed in hutch systems
- Improved health and welfare – including fewer lung lesions
- Up to 75% reduction in labour
- Better working conditions

The project has led to the introduction of the CalfHub system, a group calf-housing system that combines proven design principles with smart technology to deliver consistent fresh air, healthier calves and simpler daily management.

Concerned about calf housing? Request a building audit from Galebreaker by calling 01531 637 900 or scanning the QR code for more information.



Natural ventilation strategies for healthier herds

Providing fresh air in livestock buildings makes a significant contribution to herd performance. Galebreaker's Chloe Rodriguez explains the five principles of optimising natural ventilation.

Warm air rises

The stack effect in livestock buildings refers to air's natural movement through temperature differences inside and outside a building. "Pushing out hot, moist, or contaminated air and pulling in fresh air is crucial for cow health and comfort," says Miss Rodriguez. "If buildings are poorly designed or there are extreme temperature differences, the stack effect will be compromised."



Optimising ventilation

- **Outlets** – warm, stale air needs to exit the building. Traditional crank ridge tiles are poor exhausts, typically only providing 20% of the natural ventilation required. Galebreaker's VentRidge system can be retrofitted to existing buildings and removes air four times more effectively than an open ridge, while giving full weather protection.
- **Side inlets** – maximise efficiency by ensuring inlets are between two and four times the size of the outlet to circulate fresh air into the cows' microclimate. Traditional weatherboarding is often a compromise between natural ventilation and weather protection, whereas automated side curtains are designed to deliver variable ventilation controlled by weather sensors.

- **Roof pitch** – as a rule of thumb, the steeper the slope, the better. Aim for an angle of between 17° and 22° to provide greater upward air pressure. Also consider lights on south-facing roofs as these can create significant solar gain.
- **Wind shadow** – when increasing existing housing capacity, consider the location of a new shed in relation to other buildings. Adding to existing buildings can restrict the side inlets' effectiveness. Instead, allow a gap between buildings, with an optimal distance of 30m, to allow fresh air to flow between buildings without contaminating other livestock groups.
- **Building orientation** – to maximise airflow, position buildings perpendicular to the prevailing wind. This maximises the natural airflow coming over the ridge and promotes the exhaust effect by accelerating wind speed.

Graig Olway Farm

Russell Morgan runs a housed herd of 170 high-yielding Holsteins producing an annual milk yield average of 11,000 litres.

After identifying heat stress as a key challenge for the herd, Mr Morgan worked with Galebreaker to improve his existing housing by installing a variable ventilation system and VentTube Cool as a sustainable, cost-effective solution.

"The tubes blow fresh air onto each individual cow when she is lying in a cubicle, keeping her cool and comfortable. This system has made a huge difference.

"Since installing the technology, we've seen better health and performance this summer. It's really improved the environment inside the sheds," says Mr Morgan.

Please scan QR code to watch the case study video.



Managing heat stress – practical steps to keep cows comfortable and productive

In a changing climate, livestock buildings need to be resilient to increasingly volatile temperature fluctuations. As more extreme weather patterns prevail, the temperature-humidity index (THI) is becoming a critical measure used to assess the combined effects of environmental conditions on dairy herds. Galebreaker's Chloe Rodriguez looks at the impacts of heat stress and ways to optimise herd environments.

Dairy cows are particularly sensitive to heat stress, and elevated THI levels can significantly affect wellbeing and productivity.

- **Milk production** – decreased feed intake by up to 30% because more energy is expended on staying cool, leading to lower yield and poorer milk quality.
- **Reproductive health** – changes in hormone levels, altered oestrous cycles, and lowered conception rates.
- **Health concerns** – makes cows more susceptible to mastitis and metabolic disorders. Prolonged exposure weakens cows' immune systems, making them more vulnerable to infection.
- **Behavioural changes** – heat stressed cows may display signs including: reduced activity; increased standing, which can lead to mobility issues; panting; and seeking shaded areas.

Common factors influencing heat stress

- **Stocking density** – overcrowding can compound heat stress. For lactating cows, between eight and 10 square metres per cow is recommended in resting areas.
- **Genetics** – modern herds have been bred to be more productive. Pushing milk yields contributes to an increase in the cows' metabolic rate, which raises their body temperature.
- **Climate change** – variability is a problem as the UK experiences greater extremes and prolonged hot weather.

Overcoming heat stress

Managing environmental factors that influence THI can help mitigate the negative impacts of heat stress. For long-term improvements consider installing a cooling system, such as Galebreaker's VentTube Cool, to improve airflow and reduce indoor temperatures.

THI Live

With summer 2025 ranking as the hottest on record, producers can take advantage of Galebreaker's online tool, THI Live, to monitor and mitigate heat stress in cows.

A subscription service is available to producers, to install internet-enabled temperature and humidity dataloggers to provide real-time information on heat stress risk.

Scan the QR code to contact us.



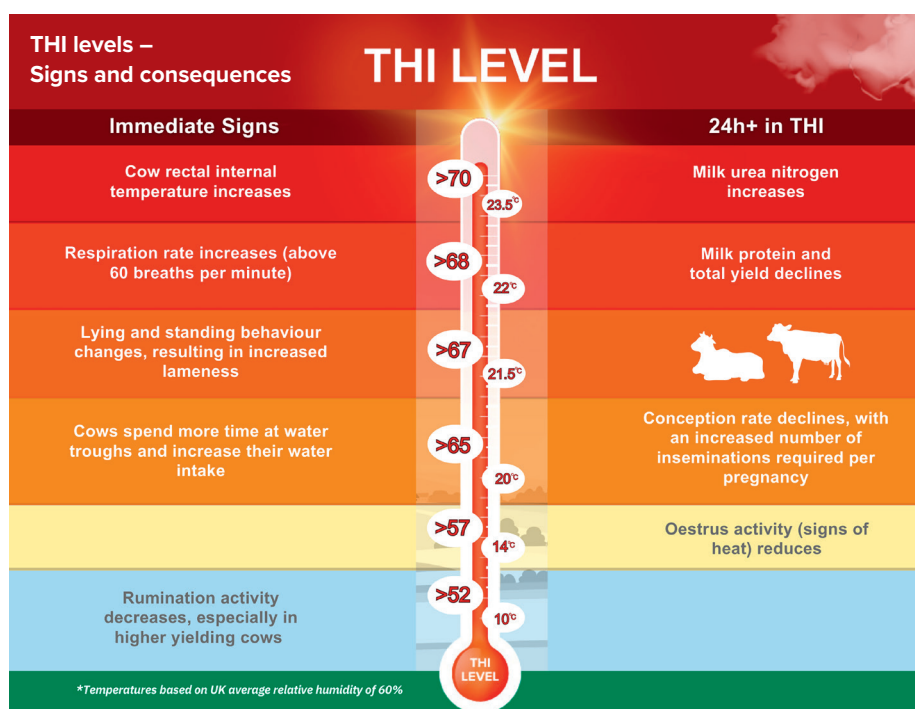
Bolham Farm

Mark and Anita Saunders run a 90-cow herd of predominantly Holstein Friesians.

Keeping their high-yielding cows comfortable is key to maintaining the health, welfare and productivity of the herd, and led to the installation of a VentTube Cool.

"The VentTube made a massive difference to milk yields," says Mrs Saunders. "Even local herds who were using fans in the heatwave suffered a milk loss of five litres per cow per day, compared to our reduction of just one litre."

"The investment has been worth it to keep the cows comfortable and maintain the output as much as possible in adverse weather."



The vet's perspective

By Colin Mason, Ruminant Revival

Optimising the herd environment is crucial at all life stages, from newborn calves to mature cows.

Housing is not an optional extra – it's an integral part of the management system, shaping disease pressure at every stage.

Bovine respiratory disease (BRD) remains a significant welfare and performance challenge for youngstock in UK dairy systems, and the shed environment is a key factor when it comes to prevention.

Thermal comfort matters too. Calves and cows need warmth without draughts and fresh air without chilling. Poor air quality and damp conditions increase the risk of respiratory disease, particularly in milk-fed calves until post-weaning.

We also need to think wider than lung health. Calves that scour, even mildly, are much more likely to go on to develop respiratory disease.

That's why colostrum and transition milk feeding are vital to rearing resilient calves, and why housing must also support gut health with dry pens, moisture control, and effective biosecurity.

Heat stress is another welfare issue, increasingly affecting calves and cows beyond peak summer. As an industry, we need to review how we manage the cow environment to build in climate resilience through better ventilation, adequate space, and shade strategies outdoors.

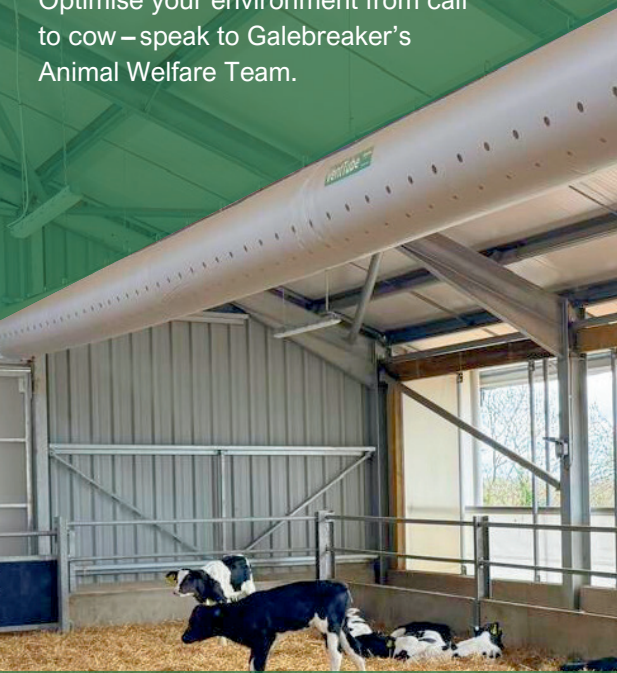
An active approach to health planning that brings together the farm team and vet is the best solution. Creating specific plans to get to the root of current problems will establish a better long-term fix for all.



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Optimise your environment from calf to cow – speak to Galebreaker's Animal Welfare Team.



Is housing the missing piece in your livestock welfare strategy?

With over 40 years of experience, Galebreaker provides innovative housing solutions that not only enhance animal welfare but also improve overall productivity. From reducing heat stress to improving ventilation, our products are designed to ensure your livestock thrives.

Enter to win!

Prizes up for grabs include: Free housing assessments with the Welfare Team (worth £350 each) - THI Live subscriptions - THI sensors - Galebreaker beanies

To enter, scan the QR code and answer this question to win.

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At what THI level do cows experience no heat stress?

- A. Less than THI 52
- B. THI 65+
- C. THI 70+

Every entry will receive a 10% discount on any products purchased with us directly within the next 6 months, please quote CM2026



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