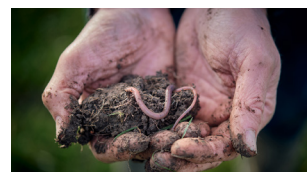


Reaching Net Zero in dairy – one farm's journey



Eva Featherston, Marcomms Manager (Dairy), AHDB, talks to Whitewool Farm

With the increasing focus on achieving Net Zero and accounting for carbon emissions, dairy farmers feel the pressure from milk buyers, consumers, and the industry itself to reduce their environmental footprint.

Whitewool Farm, a 400-cow Holstein-Friesian dairy nestled in Hampshire, owned by brothers Will and Jamie Butler, stands out as a shining example of how to optimise resources, boost profits, and embrace sustainability hand-in-hand. Their 240 hectares of combinable crops (primarily wheat) and diverse activities like glamping, fly fishing, and corporate days paint a picture of a thriving enterprise. However, it is their commitment to a sustainable approach that truly sets them apart.

This shift towards environmental responsibility started when their non-farming businesses demanded it. They soon discovered the hidden financial benefits of sustainable practices and quickly integrated this approach across the entire farm.

Whitewool Farm's journey to Net Zero

Whitewool Farm's vision to be "the most productive farm in the UK – Naturally" guides their every step. They strive to improve efficiency, optimise inputs, and deliver enriching experiences for their customers, team, and, of course, their cows. Our goal is a well-rounded business that supports the environment in everything we do," explains Will.

Better use of slurry and manure to reduce artificial inputs

"One of the best assets we have on the farm is slurry and manure. We do everything we can to enhance the value of this from adding 'Effective Microbes' to ferment the slurry and enable it to retain its nutrients for longer and release them more slowly to ensuring applications of slurry are at the right rate and at the right time. With the help of Portsmouth Water, Natural England and ADAS we have investigated Water Pathway Management, Slurry infrastructure and invested heavily in extra storage capacity and better umbilical spreading equipment," said Jamie.

Jamie and Will are also looking for



Jamie (left), Will (right)

every opportunity to build biology on the farm and one of the ways they are doing that is experimenting with a new method of intensively building fungi and microbes, called a Johnson-Su Bioreactor. This is a very simple system that over 12 months builds a microbial rich substrate that can be applied as a soil stimulant, either as a seed dressing or through a sprayer. Early experimentation has seen a noticeable difference in tillering and plant Vigor in wheat.

The bioreactors are created by filling IBC containers with woodchip, muck, silage and worms to provide a rich base on which beneficial microorganisms can grow. Regular monitoring is required and then there is a bit of a process to extract the substrate in a form that can go through a sprayer or be applied as a seed dressing.

"Not many UK farms have adopted this approach yet, but with the biological gain in the soil and the subsequent benefits that come from building soil health, I think more farms will start their own Johnson-Su bioreactor within the next few years."

Better work planning and workforce engagement

Whitewool farm keep their employees involved in the bigger picture, through project planning and allowing staff to have as much autonomy over day-to-day decisions as possible. Will said, "By helping our employees understand the reason why the farm is aiming to be more productive and work sustainably, they can consider the overall goals in their daily decision-making. We also like to offer training and external support, to help learning and to keep our workers engaged in our farming practices."

Can the dairy industry achieve net zero by 2050?

So, can the dairy industry achieve Net Zero by 2050? Jamie believes the current carbon accounting methodology overlooks a crucial factor: photosynthesis.

"Cows mainly consume carbon sequestered by plants through photosynthesis. Most of the carbon they emit through enteric fermentation was in the atmosphere just months ago," he explains. "Accounting for this natural cycle paints a different picture, where many dairy systems might already be closer to Net Zero than previously thought."

Building closed-loop dairy systems that minimise reliance on fossil fuels and fertilisers further enhances carbon efficiency. This includes practices like improved slurry utilisation, soil health building, and increased biodiversity within crops, all of which contribute to resilience and profitability.

"With further advancements like cow diet manipulations to reduce emissions, dairy farming could even become an environmental necessity."

The future at Whitewool Farm

Looking ahead, Whitewool Farm has joined AHDB's Strategic Dairy Farm program, seeking insights from a steering group and local farmers through on-farm meetings. Additionally, they continue their own trials, with upcoming plans to introduce herbal leys and clover to maximise soil health and optimise feed value for their cows.

Whitewool Farm's story is one of inspiration and action. By embracing a holistic approach to sustainability, they demonstrate that environmental responsibility and farm profit go hand-in-hand. Whether through innovative practices, engaging their team, or advocating for fairer accounting methods, Whitewool Farm is paving the way for a greener future in the dairy industry.

If you would like to get involved with the Strategic Dairy Farm programme, visit: ahdb.org.uk/farm-excellence/dairy for information and see upcoming events, or follow AHDB Dairy on Instagram, X or Facebook.