

LIVESTOCK

After making the decision to convert arable acreage to pasture, Sam Roberts is now focused on reducing the environmental footprint of his grass-based suckler beef business. Wendy Short reports.

Farm's goal is carbon neutrality

Sam Roberts is keen to understand the environmental impact of his suckler herd enterprise and mitigate any negative effect on climate change.

That is why he joined the Farm Net Zero Cornwall project.

The business, which has spread zero fertiliser this year and uses green waste for cattle bedding, is currently converting the arable acreage to grass production.

The conversion of Blable Farm to a mainly grass unit started in 2019 and, while environmental benefits are only part of the motivation, the goal of achieving carbon neutrality is influencing decision-making, says Sam.

He farms near Wadebridge with his father Mike and mother Alison, with the family assisted in the conversion by James Daniels of Precision Grazing.

"Historically we have rented out 61 hectares (150 acres) for growing potatoes, maize and cauliflowers, but almost the entire acreage will be down to grass and back in-hand by the end of this year," says Sam.

"The only exception will be a small acreage used for growing wholecrop cereals and this will also be converted when we are confident about managing the cattle on a grass-based system.

Projections

"Having a single enterprise with a focus on grass will be simpler to manage and projections show that it will be more profitable.

"In addition, I do not find it enjoyable to sit in a tractor all day and I would much rather be outdoors with the livestock.

"The changes should also be beneficial to the environment, as the cereals take a lot out of the soil and



North Devon and Aberdeen-Angus bulls are used across the Stabiliser females.

PICTURES: FARLAP PHOTOGRAPHY

carry associated risks of nutrient run-off."

The suckler herd comprises 140 spring-calving Stabiliser females, with some calves taken through to finishing.

Until this year, the composite has been maintained, but the business has switched to using the North Devon and Aberdeen-Angus as terminal sires, while a couple of Stabiliser bulls will produce replacements.

"The Stabiliser females have excellent maternal traits, but hopefully the native breeds will produce higher liveweight gain figures off grass," says Sam.

Finishing

"The finishing cattle average 330kg deadweight and achieve R3 and R4L grading.

"They are sold in their second autumn, having been housed for a brief period and given a small quantity of wholecrop barley and peas.

"Despite the increased emphasis on grass, we may still have to buy in a minimal amount of concentrate feed for the slow finishers, which currently receive about 2kg/head/day of rolled barley. Oats will be added to the wholecrop mix this season

“The changes should also be beneficial to the environment, as the cereals take a lot out of the soil and carry associated risks of nutrient run-off.”

SAM ROBERTS

because projects like Farm Net Zero have encouraged us to increase diversity. This practice will spread risk; if one crop suffers from a species-specific pest or disease, the others will still give us something to harvest."

The 202-hectare (500-acre) holding ranges from 45-metres (150-feet) to 182-metres (600-feet) above sea-level and receives roughly 1,200-1,300mm rain/year.

Despite the relatively high

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rainfall, the medium loam soil lies over shillet (a type of local shale) and this permits the out-wintering of cows and weaned calves.

"We aim for a 100-day winter starting at the beginning of December and the land is rotated around the farm," says Sam.

"Some of the winter paddocks are as small as 0.25 acres and they are usually grazed for 24 hours, with supplementary hay.

"The areas are divided using electric fencing and supplied with a mobile water system."

Finishing cattle have been bedded on green waste for more than a decade.

The farm buys 1,200 tonnes a year and it is delivered throughout June and July.

"The green waste is stored undercover and it is completely dry by the time it is ready to be used in October," says Sam.

"The entire quantity is placed in the shed, with the top level scraped off every couple of weeks. It comes with an associated cost, but it is a very good soil conditioner when

About 60 per cent of the farm's summer grazing is down to herbal leys.



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WORM CONTROL: IS IT TIME TO TREAT?

From mid-June onwards, lambs grazing permanent pasture will be exposed to a summer peak in worm larvae infectivity.



The mid-summer rise in parasite numbers can cause significant worm burdens and production loss if left unmanaged.

Actions at this time of year should be considered carefully, aiming to minimise the risk of driving wormer resistance, as well as protect production.

Growth rates offer a useful insight into likely worm burdens in individual lambs.

Regular body condition monitoring and weighing can help to target worm treatments at only lambs which are failing to meet expected growth rates.

In general, only 40-60 per cent of lambs require worming.

A proportion of lambs in good body condition, without clinical signs of parasitism, can therefore be left untreated. This helps reduce selection for resistance.

For farms new to targeted selective treatments, start by leaving 10-20 per cent of lambs untreated while your confidence in this approach grows.

Pooled faecal egg counts can

also be used to assess worm burdens in lambs mid-summer and help identify whether it is time to move lambs on to cleaner pastures and/or give a worm treatment.

Moving weaned lambs on to paddocks with low levels of worm larvae contamination during July and August will reduce worm infection and the need to treat, while supporting good growth.

However, to avoid selecting heavily for resistance, do not dose immediately prior to moving.



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Sam Roberts is aiming to take the farm to carbon net zero.

Youngstock have achieved an average daily liveweight gain of 1.4-1.5kg from the herbal leys.



spread after use and it also keeps the cattle in clean condition."

About 60 per cent of the farm's summer grazing is down to herbal leys, which were introduced in 2019 for their contribution to environmental diversity and because the family had heard about their po-

FARM NET ZERO

FARM Net Zero is a climate action project for Cornwall's farming community running to 2025.

It is funded by the National Lottery Community Fund and is a partnership project between Duchy College's Rural Business School, Farm Carbon Toolkit, Westcountry Rivers Trust, Innovative Farmers and Innovation for Agriculture.

tential for improving forage quality.

The mix, which contains chicory, plantain, alsike clover, yarrow, timothy, white clover, cocksfoot and ryegrasses, is established using a set of discs, followed by broadcasting, with the leys paddock-grazed.

"The herbal leys have lived up to expectations," he says.

"They have proved to be good for the soil profile and exceptionally drought-tolerant because of the deep tap roots of some of the species.

"The mixture has been tweaked slightly, as some of the original, smaller herbs were not as persistent as we would have liked.

"Ultimately, the idea is to adopt a five-year rotation for the herbal leys, using them for out-wintering cattle in year five and then reseeding with a similar mix.

"The chicory and plantain are only lasting for two or three years, so seed

may be added via stitch drilling in the interim.

"Between March and May we are getting an average daily liveweight gain of 1.4-1.5kg for the youngstock; that has exceeded the results from standard grazing."

The farm has moved away from the plough for grass establishment.

Structure

"A set of discs is operated across the old crop and the field is then left to dry out for a couple of weeks.

"However, the power harrow may still be needed on wetter land that has been in wholecrop cereals.

"This routine maintains good soil structure and conserves moisture in dry conditions.

"No fertiliser has been purchased this year; instead we will rely on extended rest periods for the paddocks and on legumes for fixing nitrogen.

Farm facts

■ A 500kW wind turbine was installed in 2014 and is sited in an exposed area some distance from the farmstead. All the electricity produced is sold to the National Grid

■ The suckler herd comprises 140 spring-calving Stabiliser females, which are mainly put to North Devon and Aberdeen-Angus

■ Herbal leys make up 60 per cent of the farm's summer grazing land

"Nitrogen spread on the surface encourages plant roots to be 'lazy' and, in its absence, we find they will reach deeper into the profile."

A carbon audit was performed on the farm in 2021 and showed an annual figure of 859.80 tonnes/CO₂, with another audit due this year.

Testing included organic matter levels, with the former arable land showing 5-6 per cent content and the grassland 13-14 per cent.

Sam says: "The next carbon audit should show a level of improvement, helped by the grass conversion and the herbal leys. Our family has always been keen to minimise the use of sprays and other chemicals, so enhancing our environmental credentials suits the business ethos.

"Soil health will continue to be a priority and regular testing will help us to monitor progress and adopt a more targeted programme of inputs.

"Carbon credits may provide a good opportunity for farmers and our business will be ready to take advantage of the opportunity."

Finishing cattle are bedded on green waste.

Heat stress is becoming an increasingly frequent problem on UK dairy farms, having a significant impact on milk production, cow health, welfare and fertility, costing on average £128 per cow per year. **Farmers Guardian** reports.

How to minimise heat stress

► Develop plan to mitigate risks now

AS prolonged warm periods become the norm, it is important that dairy farmers are aware of the implications of heat stress and develop a plan to mitigate risks now.

Nico Vreeburg, Lallemand's ruminant technical support manager, says production losses occur long before cows show any signs of heat stress. Drops in milk yields, poor fertility and increased health challenges, such as lameness and ketosis, can all be seen as a result.

"Cows start to express signs of heat stress at 21degC, but losses start to occur as low as 18degC," he says.

Mr Vreeburg says a proactive approach to heat stress is key and recommends farmers look at shade management, water, housing and nutrition as a starting point.



Cows start to express signs of heat stress at 21degC.

PREPARING FOR INCREASED WATER DEMAND

MR Vreeburg highlights the importance of access to a reliable source of fresh clean water.

He says: "Cows producing 21 litres of milk per day will drink 103 litres of water when the temperature is 21degC and 109

litres of water when the temperature is 27degC.

"A cow producing 45 litres of milk per day will drink considerably more - 128 litres of water when the temperature is 21degC and 135 litres of water when the temperature is 27degC."

Mr Vreeburg says having the right water infrastructure to allow 10 per cent of the herd to drink at the same time and enough flow and capacity to cope with the demand is important - cows can consume 20 litres in one minute.

"Giving cows access to water in the collecting yard can be beneficial as this is a time when they are in a confined space and temperatures can rise rapidly.

"Do not forget dry, fresh and calving cows, as well as any youngstock," says Mr Vreeburg.

OPTIMISING VENTILATION IN HOUSED COWS

COWS spend about 75 per cent of their time inside, so investing in good ventilation within housing can help to mitigate the impacts of heat stress.

Mr Vreeburg says: "Badly designed sheds could be 5degC

hotter than temperatures outside; however in a good shed, the temperature could be 5degC cooler.

"If designing a new shed, white roofs can help keep the building cool," he says.

"In addition, having a light, high roof with an open ridge that is well insulated, can help increase ventilation and keep the heat out. Open side walls and an open front end can also help with air circulation.

"However, if you are looking to provide a cooler environment within a current shed, fitting simple water sprinklers and vertical fans can help."



Nico Vreeburg

OPTIMISING FEED INTAKES DURING HOT WEATHER

SOMERSET-based independent nutritionist Charlie King says the main challenge in the UK is the swift changes in temperature and humidity and also the severity of the changes, leaving little time for cows to adapt.

"Often people think increasing the energy density of the diet will help, however this can provide further challenges, such as acidosis, since the cows are not ruminating as much due to reduced lying times," he says.

"Introducing a yeast into the diet

can help improve rumen stability, rumination times and digestion.

"Ideally, it is best to incorporate this into the ration two to three weeks before a heat event so that the rumen is working as efficiently as possible, before the heat stress challenge occurs."

As well as looking at concentrates, forage management is important. "Good silage face management is key to prevent spoilage and feeding twice a day can help keep the feed fresh," he says.

MANAGING HEAT STRESS AT GRASS

CAREFUL management of cows at grass during warm spells is important to avoid a drop in milk yields, health and fertility, according to Dr Tom Chamberlain, of Chalcombe.

"Where we have monitored the impacts of heat stress on grazing cows, there has been an average estimated loss in milk production of 129 litres. When taking into consideration the losses in fertility and animal health as well, the costs are substantial," he says.

Management plan

Dr Chamberlain encourages farmers to draw up a heat stress management plan for the summer months and suggests adopting a siesta management approach.

"This involves getting the cows in late morning and keeping them in until after milking, before turning them out again for the evening," says Dr Chamberlain.

"This means they are indoors during the really hot period of the day when there is a lot of daylight. With this strategy the cows will have a major grazing bout in the evening, so you are still making good use of the grass."

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