CLIMATE CHANGE CHAMPIONS

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Pioneer in carbon capture

Climate Change Champions

Finding innovative ways to reduce emissions and capture carbon seem to be a family pursuit for Thomas Gent. *CPM* visits their Fenland farm to explore the system that inspired Gentle Farming.

By Tom Allen-Stevens

Caught in the light coming through the half-open workshop doors, the Weaving GD8000T is an impressive piece of kit. But it has two curious additions — a hay rake tine wheel has been attached at each end of its 8m span.

“You always find something’s being modified or adapted whenever you come in the workshop,” says Thomas Gent as he inspects the additions. “These move the swath of straw so we can get the cover or catch crop drilled as soon as the harvester leaves the field without having to wait for the baler to arrive — the combine header’s also 8m wide,” he explains.

At 24 years old, Thomas calls himself a ‘child of regenerative agriculture’. “The farm here has been following it for 12 years, so it’s all I’ve ever known. Put me on a plough or cultivator and I wouldn’t know what to do with it,” he says.

But when it comes to carbon accounting, he’s become something of an authority. In Jan this year, Thomas launched Gentle Farming, reputed to be the first certified carbon-trading scheme for farmers in the UK. “I guess no one really knows how to sell carbon until you set your mind and just do it. Hopefully Gentle Farming is now established in this area and it’s a case of just pushing it forward.”

Family trait

You could say being a pioneer is a family trait, though. The Gents currently farm around 800ha near Wisbech in the Cambs Fens. The land lies mostly on heavy clay, and it was to alleviate the problems associated with this without mixing the soil that Thomas’ grandfather Tony invented the flat-lift, a design developed by nearby Taylor Engineering in what then became a joint venture.

The success of the tool allowed the family farming business to expand, but the need to manage a larger acreage with aging machinery led Tony and Thomas’ father Edward to take the farm down the direct-drilling route. “Originally we had a John Deere 750A, but it didn’t really work on our soils,” says Thomas.

“This was traded in for a Weaving Big Disc, but Grandad reckoned he could make an improvement on the design, so it disappeared into the workshop.” The key difference with what surfaced and then became the GD coulter is that the cutting disc is set at a 25° angle. This lifts up a ‘duvet’ of soil under which the seed is placed and gravity drops it back down, ensuring no open channel is left behind the press wheel.

Another engineering and worldwide success, it’s also enabled the farm to develop its regenerative agriculture system, with almost every crop planted now passing through the GD8000T. “We had the dip in yields in the first few years when we went no-till, but our wheat yields now average 8-10t/ha. Organic matter levels are up ▸

A hay rake tine wheel has been attached at each end of the Weaving GD8000T drill.

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The plan with the legume and herb-rich leys is to keep the clover as an understorey when the land comes out of the temporary ley.

▸ around 8-10%, but when Grandad started down the low disturbance path, they were just 3-4%. What you notice is that when it turns dry around here, our crops stay green. When it turns wet, we can stay on the land for longer," says Thomas.

The cropping is all combinable, apart from maize, grass ley, rye and triticale grown for a local anaerobic digester plant, operated by Adapt Biogas (formerly BioCow). "We grow a small amount of maize, which doesn't really fit in with a regenerative agriculture system, harvested late when it's often wet. But we've found a system that seems to work."

For the past two seasons they've been using a Sly Stripcat, that cultivates a very narrow strip and plants the seed within this. Taking a trip to a nearby field, Thomas inspects a crop that has established evenly and is growing well on land that has had minimal disturbance. "Maize gets a bad reputation around here because of the damage it can do to soils. But I hope we're showing that doesn't have to be the case," he says.

"In theory, you could establish clover in the undisturbed land in between the rows, but we haven't quite got that far, yet." Thomas moves on to the farm's legume and herb-rich leys, though, part of the farm's Mid Tier Countryside Stewardship agreement. The plan here is to keep the clover as an understorey when the land comes out of the temporary ley, he explains. The area has been split up and is grazed sensitively by horses to maximise the pollinator and soil-structure benefits of the sward.

"Livestock form an essential part of the regen ag system, but there's very little around here, and I'm not a fan of keeping animals myself. The horses work well and provide an additional income."

Grazing cover crops

There's also an arrangement with a local sheep farmer to graze the cover crops and oilseed rape. "We establish OSR early once the whole crop rye is off, which means the crop is huge by the time winter sets in. So this year, we mowed 10ha, left 10ha and grazed 20ha with sheep. The theory is that it reduces the cabbage stem flea beetle larvae, as well as improving the canopy."

An inspection of the crop suggests it's the grazed area that's faring best. Then just across the road is the farm's crop of quinoa. "This crop's quite a challenge because we're not allowed to apply any sprays at all — we haven't applied any insecticides across the rest of the farm for years and we're reducing our fungicide spend. But it's not applying any desiccant pre-harvest that's difficult with quinoa. So we harvest at 25% moisture and dry it down to 10%. You can get a yield of 1-1.5t/ha, which brings a return similar to a good crop of OSR," says Thomas.

Beans provide another break, and another essential element in the regen ag system, as well as a low carbon source of protein. But the barn right next door to the bean field is being fitted up for a far more fascinating protein source. "We're about to start farming insects — black soldier flies. They call it super soya," he explains.

"It's part of a UKRI-funded project with AgriGrub and Cambridge University to investigate scaling it up. It could be a very valuable home-produced, low carbon source of livestock protein and far better than importing it from Brazil." The grubs are fed food waste and their faeces, known as frass, is also a valuable manure, he adds.

So how did Gentle Farming come about? "It was after harvest a couple of years ago, I took a sample of grain to the local merchant. There was another farmer there dropping off a sample who I knew had a high input system, burning way more diesel and tilling the soil," says Thomas.

Livestock is an essential part of the regen ag system, which can be a problem in the Fens, so horses work well and provide an additional income.

What makes Thomas Gent a Climate Change Champion?

Innovative ideas

Driven by a conviction about the wider society benefits of regenerative agriculture, Thomas has started a new business for trading carbon, creating opportunities for a whole sector of the farming community.

Productivity push

A well-established system pushes out respectable yields over a wide cropping mix. Good use of chicken manure and anaerobic digestate has lowered dependence on synthetic fertiliser, and this is set to go further using the frass from insect farming.

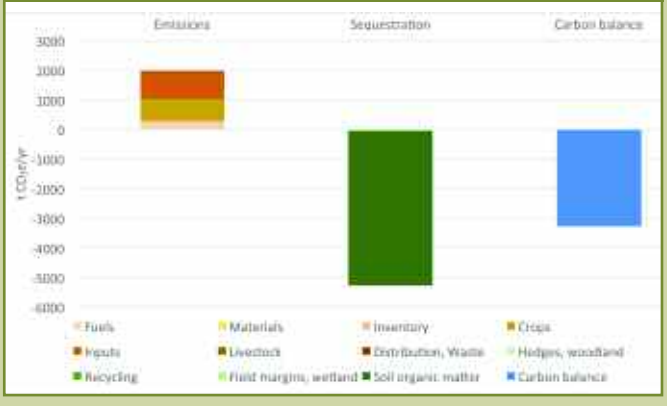
Cultivation care

From a family of pioneers of minimum disturbance and direct-drilling kit on difficult Fenland soils, Thomas carries on a legacy that has seen soil organic matter climb from 3-4% to 8-10%.

Bio-based boldness

Crops grown for a local AD plant producing biogas åoffset a fossil-fuel requirement, while insect farming will reduce dependence on soya imports. But it's the initiative Thomas has shown with Gentle Farming and its potential to reward farmers who offset CO_2 emissions that set him apart as a true pioneer.

CS Gent and Sons carbon footprint, 2020



Source: CS Gent and Sons, Jul 2020, calculated using Farm Carbon Calculator. Figures shown are indicative.

The quinoa presents a challenge because you're not allowed to apply any sprays to the crop at all.

"I thought, how can my produce get the same value in the marketplace as his? There must be a way of differentiating it. So I set about finding out."

When the COVID-19 pandemic hit, it became Thomas' lockdown-learning project. He exhaustively researched avenues that would bring the regen ag farmer a better return for what he considered was a more sustainable farming system. "For ten months, no one would talk to me. It was a really hard slog to find the answers I was looking for."

He had the opportunity to speak at a BASE-UK meeting, and it was following this that a group of farmers with similar aspirations got together. "The initial idea was to sponsor a hectare. We got quite a bit of interest. What we needed was some form of certification."

This is when he came across Commodicarbon, a carbon dioxide equivalence (CO_2e) certification programme based in Denmark. Commodicarbon quantifies carbon sequestration and CO_2e reductions, creating the opportunity for issuing CO_2e certificates based on changes in agricultural practices towards Conservation Agriculture. It's a model designed under the ISO 14064 standard, based on IPCC guidelines (The Intergovernmental Panel on Climate Change), and measured through the Cool Farm Tool.

An agreement was reached to license the certification for UK farmers, and Gentle Farming was launched in Jan this year.

One of the farm's barns is being fitted up to farm insects – the grubs of black soldier flies are fed food waste and frass is also a valuable manure.

"So far we have 40 farmers, selling their carbon credits for this harvest, but demand outstrips supply," notes Thomas.

Interest in the venture is now picking up, he says, driven by recent national press coverage. "It is awesome when you suddenly find yourself having conversations with chief execs. I'm 24 and have only just started this venture. I look at Grandad who's so knowledgeable in this sector and experienced.

"I've already made loads of mistakes and I'm aware there's an element of the young naïve, here. But I'm also not held back by any preconceived ideas or reservations — I'm just doing what I think is right for what I believe is a better way of farming," he reasons. ■

Thomas Gent launched Gentle Farming in Jan this year, reputed to be the first certified carbon-trading scheme for farmers in the UK.

COP-portunity to showcase farming

For two weeks this November, over 190 countries will be represented at a major meeting on climate change in Glasgow. The Conference of Parties (COP) under the United Nations Framework Convention on Climate Change (UNFCCC) brings together not only government parties, but also a wide range of non-party stakeholders (observers) to negotiate and report on progress against past and current climate treaties.

"COP26 is an important conference because governments are due to present more ambitious plans to cut greenhouse gas (GHG) emissions," says NFU climate change adviser Ceris Jones, who also manages the interaction between the UNFCCC secretariat and farmers.

"It's a tremendous opportunity for UK farmers to showcase progress already made towards the NFU's target of Net Zero emissions from UK agriculture by 2040."

Ceris highlights the #Pledge2040 initiative in which NFU members are encouraged to outline their plans to reach Net Zero following strategies under the three key themes of the campaign — productivity, carbon storage, and renewables and the bioeconomy.

"It would be great to see more members taking part ahead of COP26," she adds. "It's really quick and easy to make a pledge and there are monthly prizes available. You post video snippets or images to social media saying 'We're in for net zero', adding #Pledge2040 — it really helps get the conversation going."

In July, all four UK farming unions and other organisations (AEA, AIC, AHDB, CLA, LEAF, NIAB, ORC) organised a soil carbon science webinar. Leading scientists answered some key questions, such as the storage potential of our soils, which practices deliver clear carbon benefits and emerging options for measurement.

"The NFU's ELM scheme net zero Test and Trial saw more than 150 NFU members participating in workshops or 1-2-1s. The lessons learnt have been put into real-life context testing two approaches — a map-based or action-based plan and using a GHG calculator to support decisions," notes Ceris.

"We're still working hard to ensure the ELM scheme includes a broad range of activities, including productivity measures, that are farmer-friendly with appropriate levels of advice and guidance available," she concludes.

Climate Change Champions

UK Farming has set itself the challenging target of Net Zero emissions by 2040. Although led by the NFU, it will take the entire industry, working together in a partnership approach to meet this ambitious goal.

But there are individual growers, thought leaders who have already started on this journey. They have the ideas, the progressive outlook and the determination to shape positive change. *CPM* has teamed up with leading agricultural suppliers who have a credible Net Zero aspiration to identify these individuals and bring them into the top-level discussion about how farming can position itself as the solution to climate change.

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