ISSUE 35 | JANUARY 2026

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DIRECT DRILLER MAGAZINE

Issue 35
January 2026

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A HEARTFELT THANK YOU TO **TRINITY AGTECH**, AND A WARM WELCOME TO **LLOYDS**

As we bring you Issue 35 of Direct Driller, we also mark a significant milestone in our journey. For the past three-and-a-half years, since Issue 17 in April 2022, we have had the immense privilege of partnering with Trinity AgTech as our main sponsor. Now, as we bid them a heartfelt farewell, we want to take a moment to reflect on their invaluable contribution to the magazine and the wider regen community.

Our collaboration with Trinity AgTech has been a journey of shared purpose. From the outset, their mission to empower farmers with credible, science-backed tools to navigate the complexities of natural capital has resonated deeply with our own ethos. Through the insightful leadership of their executive chairman, Dr Hosein Khajeh-Hosseiny, and the consistent, expert guidance of Managing Director Anna Woodley – both of whom have been our steadfast writers – Trinity has not just been a sponsor but a vital content partner.

Over the course of our partnership, Trinity's team has authored a remarkable series of articles that have consistently been at the forefront of the agricultural conversation (scan the QR code at the end to read them). Their contributions have provided our readers with a comprehensive education on one of the most critical and rapidly evolving areas of modern farming: natural capital. Their articles have demystified complex topics, turning abstract concepts into tangible, actionable insights for farmers on the ground.

Trinity's content has consistently revolved around the central theme of empowering farmers to take control of their environmental and financial destinies. A recurring focus has been the critical importance of robust, science-led measurement. In pieces like "Why scientific credibility and standards compliance are vital" and "The myths around carbon standards," Anna Woodley and her team tackled the confusion surrounding carbon accounting head-on. They argued persuasively that for natural capital to become a genuine asset its valuation must be built on a foundation of unimpeachable data and transparent standards.

They didn't just talk in hypotheticals; they provided the tools. Many articles served to introduce and explain their flagship platform, Sandy, the Smart Natural Capital Navigator. They detailed how this new generation of software, which uniquely accounts for peatland and extensive grasslands, moves beyond simplistic carbon calculators. Articles like "Revolutionise Your Farm" and "Do You Know the Hidden Value of Your Natural Capital?" demonstrated how farmers could use Sandy's predictive analytics to model the impact of management changes, optimising for both profitability and sustainability. This focus on practical application showed a deep understanding of the farmer's need for tools that deliver real-world value, not just compliance.

Furthermore, Trinity's contributions have consistently pushed the boundaries of the science. Dr Alasdair Sykes provided deep dives into complex topics, such as the advanced methodologies for calculating nitrous oxide emissions, proving that their commitment to scientific rigour runs deep. This dedication to leading-edge science, combined with a clear-eyed view of the commercial realities of farming, has been the hallmark of their sponsorship. They have helped our readers understand not just the "why" of regenerative agriculture, but the "how". How to measure it, how to manage it, and ultimately, how to monetise it. Their final articles, focusing on building resilience and identifying the traits of farms that will thrive in the coming decade, leave us with a forward-looking legacy that will continue to inform our readers for years to come.

As we close this chapter, we extend our deepest gratitude to Dr Hosein Khajeh-Hosseiny and the entire Trinity AgTech team for their unwavering support and their profound contribution to the dialogue within our pages. Their vision has helped shape the conversation around natural capital in the UK, and for that, we are truly grateful.

Welcoming our new sponsor: Lloyds

Now, we are thrilled to look to the future and announce our new main sponsor, Lloyds. We are incredibly excited to embark on this new partnership, which promises to bring a new dimension of support and insight to our readers, particularly as the industry navigates the transition to a more sustainable and resilient regen future.

Lloyds' commitment to the agricultural sector is well established, and their focus on supporting farmers through periods of change aligns perfectly with the challenges and opportunities facing our community today. We are delighted to share their vision for supporting regen farming, which has been cultivated through extensive research and conversations with farmers and industry stakeholders. From this dialogue, Lloyds have launched Agriculture Transition Finance. Designed to help farms transition to regenerative practices and become more resilient, its aim is to support farms through a period of adjustment by offering greater certainty and support during transition. And we all know the transition never really ends on a regen farm!

We look forward to a fruitful partnership with Lloyds, and to bringing their expertise and support to our readers in the issues to come as they explain more about what they are doing

Read artilces from Trinity:

REGENERATIVE AGRICULTURE: ARE WE HEADING FOR A GREAT DIVIDE?

Written by Chris Fellows after reading Caroline Grindrod's latest regen report

The term "regenerative agriculture" is everywhere, but what does it truly mean? As corporate giants and grassroots farmers rally behind the term, we are seeing a great divergence, a split that will define the future of our food system.

Regenerative agriculture has captured the imagination of the food and farming world, promising a future of healthy soils, thriving ecosystems and resilient farms. With billions in corporate investment and growing consumer demand, the movement is at a critical juncture. However, this surge in popularity has created a fundamental split between two distinct visions for its future.

The two streams of regenerative agriculture

On one side, we have "regenerative practices". This is the corporate-friendly, checklist approach. It focuses on a handful of easily measurable and marketable practices like cover cropping and no-till farming. While these individual actions can offer some benefits, they often fail to deliver deep, lasting change because they are bolted onto a fundamentally extractive industrial model. This shallow version of regeneration is appealing to large corporations because it can be easily certified, marketed and controlled without requiring fundamental changes to their supply chains or business models.

On the other side is "regenerative agriculture systems". This is the practitioner-led, holistic approach. It views the farm as a complex, living organism and focuses on whole-system transformation. This deeper form of regeneration is guided by principles like maximising biodiversity, integrating livestock and maintaining living roots in the soil year-round. Rather than a rigid set of practices, it is a journey of continuous learning and adaptation, rooted in a deep understanding of a specific place. This approach delivers far greater benefits in terms of soil health, carbon sequestration and farm profitability, but it is also more complex and challenging to implement.

What's driving the split?

Several powerful forces are pulling these two streams apart:

- Corporate investment: The vast majority of corporate funding flows towards the "Regenerative Practices" model. It's scalable, fits existing business structures and doesn't threaten the status quo. This channels resources away from the more transformative, systems-based approaches.
- Carbon markets and certification: The burgeoning carbon credit market and various certification schemes inadvertently favour the checklist approach. It is far easier to measure and verify the carbon sequestered by a single practice than by a complex, integrated farm system. This creates a perverse incentive, rewarding the shallow version of regeneration while penalising deeper transformation.
- The farmer's dilemma: For farmers on the ground, this divergence creates a difficult choice. The pragmatic path involves adopting a few corporate-backed practices to access funding and new markets. The principled path involves a more challenging, less-funded journey towards whole-system regeneration. This isn't a failure of individual farmers; it's a systemic failure to create conditions that support genuine, deep regeneration.

Why this matters for the future of food

The direction regenerative agriculture takes over the next five years will have profound consequences. If the shallow, corporate-led model becomes dominant, "regenerative" risks becoming another greenwashing buzzword. We might see modest environmental improvements, but the underlying industrial food system will remain unchanged, perpetuating its social and ecological problems.

However, if we can support the deeper, practitioner-led stream, we have the opportunity to create a truly transformative movement. This path leads to a food system that is more resilient, equitable and in tune with natural systems. It empowers farmers, strengthens local communities and heals our planet.

A call for true regeneration

The future of regenerative agriculture is in our hands. As farmers, we must look beyond the checklist and embrace the principles of whole-system thinking. As consumers, we must look past the labels and support farmers who are committed to deep, authentic regeneration. We must demand more than just a handful of practices; we must demand a paradigm shift.

Let's work together to ensure that regenerative agriculture fulfils its promise, creating a food system that nourishes both people and the planet for generations to come.

Read the report here:

You can read the full report, called The Re-Rooting of Regenerative Agriculture – Why the Next Five Years Will See a Renaissance, The Emergence of Second-Tier Agriculture: Ancient Wisdom, Emerging Science, and the Reclaiming of Integrity from Caroline Grindrod by scanning the QR code and downloading the full report.

As Caroline says in her conclusion: "We stand at a remarkable moment. The industrial agricultural paradigm that has dominated for a century is visibly failing – ecologically, economically, and spiritually. The alternatives that seemed marginal a generation ago are demonstrating their viability at scale. And emerging science is beginning to validate what traditional practitioners have known all along. The question is not whether transformation will happen, but what kind of transformation and who will lead it."

I'm pretty sure some of the leading will be reading this article.

FARMER FOCUS TOM SEWELL

January 2026. Time for a review and plan for the future.

So! A new year! Time to reflect, take stock and plan for the future?!

Well, when Chris asks for an article I always say yes then think "What on earth have I done that's remotely interesting?" Having just reread my last article, it does seem as though the last year has been a bit of a Groundhog Day!

The 2026 harvest for us was poor with yields at probably 70% of "average". However, quality was excellent and probably the only time we have consistently got 13%+ protein on our milling wheats. Had this happened 12 months previous then my premiums would have been significant and the base price reasonable too! However, for some strange reason the poor harvest has led to falling base prices and milling premiums so poor that we're barely getting £180/t for full-spec group 1 milling wheat, that's if you can sell it! That's probably down £100/t on two-to-three years ago. The combination of poor yields, falling commodity prices, increasing machinery and labour costs, plus a government that continually move not only the goalposts but change the size of them, the shape of the ball and every rule of the game, has led to a farming environment where navigating the future seems like pinning the tail on the donkey when you've had your hands chopped off!

So, seeing as I have very little optimism or enthusiasm on this cold dark January evening, I thought I would look back at the past, take stock of the present and look to the future as to how we navigate the current climate.

Nuffield 2013 cohort

Nuffield travels took me to Paraguay

Past

Looking back at memories, photos and achievements is sometimes good to see just how far we have come and how so much has changed over the years. I have a photo somewhere of my father's farming system in the late 80s/early 90s. There were three tractors in a field in October establishing a crop: one subsoiling with a 7-leg shakearator, one power-harrow drilling with a 3m combi unit with a tractor on front-and-rear dual wheels, followed by another dualled-up tractor pulling a set of 6m rolls. Then there was probably a seed trailer on the headland with a JCB to load one half-ton bag at a time. So, three tractors, three men, lots of diesel and wearing metal and 30 acres a day was a good day!

I also look back with fond memories of places I worked to gain experience before coming home to join the family business. After A-levels I took a gap year and, once autumn drilling and spraying was finished at home, headed to Methven in New Zealand for a four-month harvest job on the Canterbury Plains. Working for Alec, David and John Wright, I learned about harvesting grass seed, clover, fescue and cereals as well as seed cleaning. Returning to the UK in the spring, I went to Sussex to work for my dairy farmer uncle, John Ford, who was installing a 40-point rotary parlour, making silage and planting maize.

After my gap year I started a degree course at Harper Adams University. I managed two years before I went to work for someone who probably taught me the most about farming and contracting: Harry Wilson. Harry and his wife Lynn had single-handedly built up the biggest fleet of foragers in Europe (36) when I worked with them. They ran up to five silaging gangs and had just bought a farm in Shropshire which they were developing. The rest of the choppers were hired out all over the country. They did everything superbly well and with a smile on their faces. They worked incredibly hard but never worked Sundays. A year working with Harry and his sons Keith and Ian was invaluable.

I also wanted to mention three different farming courses that I've completed over the past 20 years as they've had such a positive impact on me. The first is the Worshipful Company of Farmers' Advanced Course in Agricultural Business Management that I attended at Wye College in January 2008. This was an intensive three-week course where a group of 20 of us lived,

worked, ate and drank together! We formed an incredibly close bond, and our yearly reunions are still attended by the majority of the delegates. I would not be exaggerating if I said that I trust some of these friends more than some family members!

The second was being fortunate enough to be selected for a Nuffield Scholarship in 2013. My year group were particularly gifted and influential, and travelling to countries such as Canada, USA, Brazil, Argentina, Paraguay, New Zealand and Australia, looking at long-term no-till farmers as well as making friends and experiencing different cultures was a huge confidence boost. On the back of this we built our cross-slot drill on farm and my Nuffield report being published led to many conversations and speaking opportunities and I hope has been a help to many others who have read it.

The third and most recent course I've attended was the Institute of Agricultural Management (now the Society of Agriculture) Leadership course. This was again a three-week course with one week held at RAU Cirencester, one week at the Farmers Club in London and the third week in Brussels. The first week was held in Cirencester in February 2020. At the end of the week, someone mentioned COVID19 and how it might come to the UK! Well, the second and third weeks were held over a year later!

The course directors, Rob Shepherd and Wynn Jones (who was my Principal at Harper!), were excellent at encouraging us to step out of our comfort zones.

The reason for mentioning these courses is that they have continued to build me up, and the friends made and relationships built have been such a blessing. Being able to pick someone's brains in Suffolk, Scotland or Tasmania is pretty handy sometimes!

When you farm on your own or in a close family business, being able to access personal development opportunities can be hard but the benefits are huge and long-lasting. They have helped shape me and given me the confidence to take on challenges.

Looking back on a cold January day can give some hope and enthusiasm for the future.

So now moving on to the present!

The recent easy and relatively dry autumn has led to many crops establishing very well. Some crops, dare I say, look possibly too good with some crops of oilseed rape and wheat locally looking like a dose of half-rate pigeon and full-rate sheep could be required?!

This past year I decided to part exchange a 12m set of rolls for another Sumo LDS subsoiler. Now we have the Horsch Avatar, I found that the rolls were hardly ever getting used and I felt that running a low disturbance subsoiler in front of the drill, particularly before planting beans would be a sensible approach, even if it does put my fuel use up!

As I farm on my own, with a few self-employed drivers (and because subsoiling is boring!), we put a 3m and 4m LDS to work and covered 300 acres in a few days. The beans have emerged more consistently and with far less root damage given the deeper sowing depth.

The recent rise in the IHT allowance for family farms has been a relief for many. This still isn't an ideal solution but probably gives a lot of family farms significantly more wiggle room.

Having said all that, growing commodities such as wheat, barley and oats at the current prices is

Cross Slot drilled wheat

hardly an exciting prospect! Looking at new combines at £500k+, sprayers at £300k+ and tractors at £200k+ with wheat at £160/t is not for the fainthearted! Then factoring in labour costs, NI rises, uncertain government support programmes and increasing fertiliser and spray costs has led me to seriously look at the future. We currently have a farming system that works and is very cost-effective; running a 12m drill on a 20-year-old tractor using 4 litres of diesel per hectare is a pretty cheap establishment. It's all bought and paid for and I'm the one on the seat! But look to growth, adding land, employing staff and changing mainline equipment in the current climate and I quickly lose interest!

Future

This year I turn 50. It only seems like last week that I was driving up to Harper in my old Peugeot at 4am on a Monday morning in time for lectures! I have four children aged between 12 and 20 but none are chomping at the bit to go farming – yet! In some ways I don't blame them. My current thought pattern seems to sporadically go from "I need to be farming 3500 acres" to "Let's sell up and do something else" – sometimes within the same day!

The increasingly overcrowded South-East where we farm is not particularly conducive to easy arable farming growth. The value of land, particularly with soft fruit or solar farms, is making rents rise, not to mention the many farmers who have benefitted from selling land for building. I'm starting to think we need to be farming people and their

requirements. There will undoubtedly be more people locally, and looking after their leisure and business needs may be what the future looks like. With very little government support and a willingness to import food and commodities from any country other than ours means a good future in arable production is hard in the current climate.

First year cover crops with cross slot

I'm currently having a quiet winter without any courses, travelling or projects. Having read an excellent book called The Ruthless Elimination of Hurry by John Mark Comer, I have a new slogan on my office whiteboard: R.E.O.S. That's the ruthless elimination of stuff (or other words beginning with S!).

Marketplace has become my new friend as I clear out all unwanted or unused stuff from the farm to free up some cash and space; it's amazing how little you actually need when you farm on your own. That's about as exciting as things get at the moment. One of my favourite sayings, "Need or want?" will come into play this year, particularly given lack of cash flow.

Getting through the spring and summer will be a challenge for many, so as I always ask, please check in on those

Built a cross slot on the back of my Nuffield

friends and neighbours who you think could do with a chat. Take a minute to stop for a cuppa, a pint at the pub or meet up for breakfast.

Let's hope for some spring sunshine, grass growth and a rise in commodity prices for 2026?!

Happy New Year!

THE MEANING OF **RESILIENCE**

WRITTEN BY MIKE DONOVAN

Resilience is a popular goal for politicians, big business and also farming. The 2026 Oxford Farming Conference (OFC) had the title 'Growing Resilience' and was led by Jude McCann whose day job with the Farming Community Network gives him a ring-side seat at the problems of our industry. He has seen a procession of ministers of state take on the challenge of farming and rural affairs which today is led by Angela Eagle as Minister of State for Food Security and Rural Affairs who is aided by Emma Reynolds, Secretary of State for Environment, Food and Rural Affairs who addressed the OFC on Jan 8.

Eagle and Reynolds follow a quick succession of ministers. She was preceded by Daniel Zeichner (2024 - 2025); Mark Spencer (Con 2022 - 2024); Victoria Prentis (Con 2020 - 2022); George Eustice (Con 2013 - 20) and Robert Goodwill (Con 2019). Each needed a rapid course on the issues involved.

None of these previous ministers had the welcome from farmers as was given to Emma Reynolds, when 100 tractors descended on the conference venue of the University Examination Schools. Drivers were lined up in the High Street and spent 30-40 minutes leaning on their horns in an unsuccessful attempt to out-shout the minister of State.

The protest had a confused response, with conference delegates not knowing the exact purpose given the changes to inheritance tax rules which had just be made. Many delegates were under the impression the battle had been largely won - but apparently not.

Resilience is largely seen in terms of climate; the supply and cost of services and utilities; the control and cost of disastrous events; the multiplier as issues as passed on from one business sector to another. Resilience involves all those in the farm business. Recognising where these come from, and how they can be managed, made for a useful conference.

Costs of control depend on the actions needed. The protesting farmers, and those of similar mind who were attending the 'Real' other Oxford conference, largely looked at the threats coming from global warming and other events beyond our control. The whole business will make for depressing analysis for many farmers, and provide huge opportunities for those involved.

The protesting farmers, and those of similar mind who were attending the 'Real' other Oxford conference, largely looked at the threats coming from global warming and other events beyond their control. Yet the protesters are a potential threat themselves, as these involved will be away from their work. Livestock will be at greater risk, the day will be largely wasted.

There's the chance of retaliation, with tighter rules over demos and tighter regulation of farmer privileges such as red diesel, business rates on farm buildings, tractor tax discs etc.

Nb: I am always interested in readers' comments which can be sent to **mike@farmideas.co.uk**

Mike Donovan founded Practical Farm Ideas in 1992 as a new form of farm journalism, and is proud to be associated with Direct Driller in an editorial capacity. Both titles provide readers with the means of sharing time and cost cutting ideas - PFI focussing on projects developed by individual farmers and DD on developments from the industry and associated institutions.

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HOW LARGE-SCALE ARABLE FARMS IN KENYA ARE EMBRACING **REGEN PRINCIPLES**

Written by Mike Abram

From continuous cereals to growing multiple crops using no-till and other regenerative farming techniques, a group of Kenyan farms have made big strides in the past 15 years

I'm standing in a farmyard next to a Horizon disc drill, discussing how the farm is getting on with using it in its first year, when it suddenly strikes me how much chirping from small birds is happening in the background.

It takes me back to my childhood when hosts of house sparrows and other small songbirds proliferated in my parents' farmyard. Over the years, as we know, these birds have dwindled in number, but here there's no shortage as I look over towards other buildings across the yard.

This farm isn't in the UK though, despite the Horizon drill, but around 2000m above sea level in the foothills of Mount Kenya. The chatter from birds, including familiar-looking house sparrows, is a really noticeable difference between farms at home and the three farms I'll visit on a three-day trip to Meru County, about four hours north of Nairobi.

These farms have some similarities with those at home, in cropping, mechanisation and size, unlike the majority of Kenyan farms. All are large-scale arable or mixed farms, owned or managed by fourth or fifth generation Kenyans, whose families arrived from Europe shortly after the First World War.

The main farm income was originally built on the wool trade from Merino sheep, but over the years gradually all three farms also incorporated arable farming. Unlike in the UK where rotation was introduced over 200 years ago, for a long time break crops were seldom grown, if at all.

Instead, continuous cereals, primarily wheat or barley, dominated and it wasn't until the latter part of the 'noughties' that changed, when a major shift in philosophy occurred driven by a recognition that the previous model wasn't sustainable, either financially or ecologically.

Visits from and to overseas advisers, especially in Australia, provided the inspiration and knowledge-base to make a change to a system based on no-till, controlled traffic farming and a more diverse rotation, including oilseed rape and peas.

"From 2008, this farm went straight out of the old system into no-till and a 50:50 rotation of cereals and break crops," Bryn Llewelyn, owner of the approximately 1000ha Ol Donyo farm, tells me.

It now grows nine different commercial crops, plus cover crops.

Next door at Marania Farm, a mixed farm covering around 2,800ha, the transition was slower, Jamie Murray says, starting with 10% canola.

The transition was difficult – five or six years of "financial hell", according to Bryn, not least because there was little knowledge about how to grow the new break crops in Kenyan conditions.

There were also no markets for those crops in Kenya, but one of the other key lessons from the trips to Australia was the power of collaboration, which led to the formation of Agventure.

A co-operative of 10 farms from three different regions in Kenya, Agventure handles the sales and marketing of the commodities grown on the farms. That's involved developing markets for certain crops, notably oilseed rape, which is cold- and hot pressed on Agventure farms, and sold as branded products creating added value.

Bryn Llewelyn, owner of the approximately 1000ha Ol Donyo farm

Jamie Murray

The collaborative power extends to buying inputs and negotiating bulk contracts for wheat and barley to manage pricing, while encouraging standardisation of machinery brands across the farms helps bring enough business volume for manufacturers to justify dealerships and local stocking of spare parts and trained technicians.

Without the help of similar bodies as AHDB, NIAB or ADAS in Kenya, Agventure also performs its own research and development. A team of eight, set up by the firm's British-born agronomist, David Jones, carries out field-scale and small plot trials, with the latter extending to a couple of thousand plots annually across four trials sites covering around 6ha in total.

Many of those trials mimic the no-till, regenerative conditions the farms are using, David says. "It's crucial to being able to make progress."

The mimicry hasn't extended yet to using a small plot direct drill, although Agventure is trying to build one, to establish the trials. "We use farm equipment to go through with their tine planter and put fertiliser down and then use push along hand planters to plant plots. It's very manual, but at least we know it is properly metered," David explains.

David is hosting my tour around the three farms, taking me to multiple fields on each farm to provide an overview of the cropping and agronomy challenges faced by the farms. He arrived in 2017 as Agventure's first agronomist and is due to leave at the end of the year for a new opportunity in Algeria, leaving behind businesses progressing collectively towards fully incorporating regenerative principles.

Cover crops are increasingly being grown on the farms to provide living roots through the entire year. These aren't over winter cover crops – Kenya doesn't have such a thing with average daytime temperatures in the Mount Kenya region typically low 20s all year round. But with most of the 600-1000mm annual rain falling in two distinct periods in April and November, it's led to the farms splitting their area with half planted in March and the other half in October.

David Jones

It's all what we would term spring cropping and with usually just one crop a year, it means that half the farm is fallowed at any one time. The primary reason is to capture and conserve moisture under the previous crop residue, which allows crops to be drilled and get established in the month before the next rainy period, David explains.

"It starts to chase down to the moisture, developing a big root system, and then you get a period of rain until early grain fill, followed by two months of hopefully sunshine to maximise grain fill."

Traditionally the fallow is sprayed multiple times with glyphosate to keep the field weed-free to continue to conserve moisture, but with the focus on "working with mother nature", as Bryn describes it, and a concern over weed resistance development, cover and / or forage crops that keep living roots in the soil are being trialled.

"We're finding as the soils develop with the more diverse rotation and no-till retaining residues on the surface, that we can do a lot more with the rain," David says.

Cover crops have particularly worked in front of peas. Data analysis using Google artificial intelligence tool Gemini has highlighted that peas, unlike other crops, yield better when planting is delayed until around or just after peak rainfall. That means it's not quite so critical if a cover crop robs some of the stored moisture, as the peas will be planted into decent moisture levels.

The cover crop is having other benefits. In field-scale trials, growing a rye cover crop attracted lots of aphids, in turn building up hover fly larvae populations. "We found that when the peas emerged, the beneficials were already primed and eating any aphids trying to attack the peas," David says. "That was a major win – for the first time we had a crop of peas that needed no insecticides."

Data is also showing the herbicides bentazone and clomazone are negatively impacting yields at higher latitudes, possibly because of more crop damage as a result of higher light intensities. Growing a cover crop that increases residue cover reduces weed burdens and the need for the herbicides, David says.

Gemini also pinpointed a strong correlation between higher residue cover and lower Aschochyta levels, which is also reduced by later planting, leading to lower fungicide use.

In front of some other crops, incorporating cover crops has been more challenging, with termination timing and method important. Terminating too late can mean the cover crop has taken too much moisture from the soil, compromising the cash crop in dry seasons.

Glyphosate remains the key tool for termination. The farms have experimented with crimp rolling, but David says they're not advanced enough in their knowledge about making it work for it to be used in anything more than a trial currently.

On Marania Farm, cover crops are being grazed with mobs from a herd of 1250 Aberdeen Angus / Boran cross beef cattle. Crossing the Angus with Boran, a local breed with a shoulder hump typical for the region, helps with resilience – improving calving rates, providing more resistance to tick-borne diseases, and higher liveweight gains compared with grazing on permanent pasture alone.

"We've cut our glyphosate use in half just by grazing cover crops without changing anything," Jamie says.

He's also experimenting with making compost to use in extracts. First attempts have used horse manure, straw and green material, but he's conscious that with the farm's bacterial-dominated soils, he would like to add wood chips to increase the fungi loading in the extract.

After bubbling through micron bags to produce an extract for 22ha trial last season, Jamie's looking into using a 1500L conical tank to bubble 20kg of compost through to use in the new Horizon disc drill at planting. "That should simplify it and make it easier," he says.

The trial showed some promise with a field of barley treated with the extract, nutrition and one fungicide yielding very similarly to the next door field treated with a full fungicide programme, Jamie says.

"Cost per hectare was almost the same but that doesn't deter me. If we do that for 10 years, I reckon the soils will be better than a conventional system, and maybe we'll be able to start using less fertiliser."

Double cropping alternative to cover cropping?

Just like cover cropping, double cropping of cash crops could help keep living roots in the soil all year round. But as well as potential financial benefits there are challenges with the system with moisture retention, yields and quality, and logistics.

Bryn used double cropping to help turbocharge his soil biology in the early days of system change. "We knew the quickest way to climb the ladder was to keep soil biology going rather than letting it go to sleep for four or five months [between cash crops]."

The key for successful double cropping is having enough rainfall. Greg Giblett, an Australian agronomist suggested that the approach needed 700mm or over to double crop. "We're generally below, but we have a rainfall of 290mm up to 1200mm a year, with an average of 635mm," Bryn says.

"We did a lot of double cropping, but we eventually pulled back as we had got the soils roughly where we wanted, and you can trip yourself up on harvest and seeding dates."

That was particularly in drier years. "Moisture becomes limiting if you plant a crop into dry soil in March, and it doesn't germinate until April," David notes. "We'd then be harvesting a month later in October or November, sometimes when it rained, so we'd be delayed [getting the next crop in]."

While when it worked it could have a positive impact on margins by increasing annual total outputs, Bryn and other growers have seen that yields don't always hold up, while quality could be reduced too.

An example of that in practice was a field of oilseed rape, David showed me. A year previously it had been in potatoes, and with no cover crop seed available, a decision was taken to plant wheat immediately after potatoes, as much to prevent soil erosion than necessarily to cash crop.

"The oilseed rape was planted straight after wheat, which we don't usually do, and looking through it, you can see it's relatively thin as the wheat has taken the moisture. I think it will yield about 1t/ha compared with 3.5t/ha where we had a fallow that captured the rain," David says.

"But it was kind of a necessary evil."

In hindsight he thinks peas might have been a better option rather than oilseed rape as they need less moisture. "Controlling volunteer potatoes in peas is tricky though, so that was behind our decision."

Other challenges with double cropping include logistics. Planting the whole farm would almost certainly require greater combine and drilling capacities, plus extra storage requirements, increasing fixed costs.

And there are agronomic risks too – increasing the frequency of crops in the rotation, it potentially accelerates the build up of pathogens, such as sclerotinia in oilseed rape, which is a growing threat.

FARMER FOCUS TOM MARTIN

Late winter is a natural pause point on our farm which grows predominantly combinable crops. Most of the decisions that mattered were made months ago, the crops are either in or they aren't, and the consequences are starting to show themselves. It's also when the background pressures feel loudest, because the work rate drops just enough to notice them.

The last three months on farm

The past quarter has been largely shaped by how well autumn behaved. After the challenges of the 2024–25 growing season, September and October 2025 were, frankly, a gift here in East Anglia: good soil conditions, timely drilling and very little compromise. We're farming heavy clay, so we didn't delay too long, and we still managed to use three drills (ours and two from a neighbour) to establish our last field of beans, but it was a reminder that when autumn does what it's supposed to do, a lot of stress simply evaporates.

Crops went in cleanly and evenly. Establishment has been strong, roots are down where they should be, and fields look settled going into winter. Blackgrass is there in some places, of course, but largely absent. Covers are doing their job: protecting soil, holding structure and providing something useful to look at rather than bare ground, and the brassicas within the cover crop mix have been outstanding. This year I've included 0.5kg/ha of oil radish, stubble turnip, hybrid kale and OSR. Livestock have been able to graze without damage, and the abundance of forage means we've been able to move them on before a chance of overgrazing.

We also benefitted – I feel – from finally putting our stubble rake into service in perfect conditions. Our flint-free, deep clay soils meant that we could take advantage of deep, deep cracks and move a little residue into them, hopefully driving silty organic matter to depths that typically are exclusively heavy clay with the expectation that this season's roots can follow.

That stubble rake flashback to last summer is perhaps a small highlight of an extremely challenging year. The 2024–25 season was difficult, not because things didn't germinate but because the dry weather either stalled growth or sent crops bolting to an early death, even on our no-till heavy soils where we typically expect a week's extra greenery on light land nearby. Buckwheat is a neat illustration of that pattern. It emerged, then sat there, stunted and unimpressive, until a bit of rain finally arrived in late August. By then, the clock had won. We harvested before it was properly fit (I'll tell the buckwheat story another time, but in this climate it's never 100% ready), and germination suffered as a result, which fed straight through into price. It wasn't the worst crop, just a very clear example of how weather now compresses risk into short, unforgiving windows.

The wider load farmers are carrying

Running alongside the agronomy is a set of pressures that have nothing to do with soil or rainfall.

Even with a Christmas present from the Labour government, inheritance tax hangs over farm businesses in a way that's hard to overstate. Even before anything changes in April, and before the Christmas climb-down, the

uncertainty alone shaped decisions, often defensively. We've spent time with accountants – costing money our accounts tell me we don't have –trying to mitigate a policy that at best will be the subject of a U-turn or a reversal from the next government and at worst would still tear our business apart in the sad event of an untimely death, or two. It happens.

Layer onto that the usual churn of schemes, inspections and shifting priorities, and it starts to feel like farming is expected to carry more and more complexity without any corresponding simplification elsewhere. World grain markets remain depressed, which limits margin for error, but even without getting into prices, the sense is that resilience is being asked for faster than it can realistically be built.

There's also a nagging feeling that political focus is drifting. When attention is given to issues like trail hunting or shotgun licensing while bigger questions around food production, land use and rural economics remain unresolved, it's hard not to feel that the centre of gravity is off. It creates the impression of a system busy with detail while missing the direction of travel. Pick your favourite analogy here – Starmer's fiddling whilst Reeves is rearranging deck chairs…

What still works

Against that backdrop, one of the most consistently positive things I do is run farm walks.

I charge £70 per person for a series of eight walks, spaced roughly six

weeks apart, running from mid-autumn through to early July. We meet at 8am on a Saturday morning for a chat and a coffee before we head off on a circular walk, often directed by the topics we discuss over coffee. We pick up on topical issues, seasonal changes, national and local challenges, and we all learn, me too. The structure matters. People don't just see a snapshot, they see the whole year unfolding. Fields change, decisions play out, mistakes become visible and successes make sense in context.

They see covers growing, being grazed and disappearing. They see why something is left alone. They see soil behaving differently under their feet as the season moves on. At harvest, they get an invite onto the combine, which never fails to reconnect people with the reality of food production.

When I talk about cover cropping and grazing in that setting, it does sometimes feel like alchemy – not because it's mystical, but because people are surprised that farming can be deliberate, adaptive and quietly complex rather than purely extractive.

Holding perspective

So yes, there are plenty of reasons to feel uneasy heading into the new year. Costs, policy, weather and economics are all pulling in different directions, and none of them feel especially stable.

But there's another truth running alongside that. Farmers are held in high regard, often more than we realise. When people are invited in and shown what's actually happening on the land, the response is overwhelmingly positive – curious, respectful and supportive.

That doesn't solve inheritance tax or fix the weather. But it does remind me that what we're doing still matters, and that people want us to succeed.

Clearly it would be great to have both government and people onside, but I remind myself that governments don't last forever, people do.

QUORUM SENSING:

THE SOIL NETWORK HIDING IN PLAIN SIGHT

THE SILENT SYSTEM BENEATH YOUR BOOTS

Written by Hugh Goldsworthy, Farm Landscape Contractor and Independent Soil Researcher

If you have never heard of quorum sensing, do not worry, you are not alone. Ask a room full of farmers or soil scientists about it and many/if not most, will not have heard of it either. But that needs to change, because quorum sensing may be one of the most influential, underappreciated forces in every farming system.

Quorum sensing (QS) is how microbes communicate. It is the real-time data exchange system used by bacteria and fungi to make decisions. First discovered as a chemical 'voting system', science has since proven that electrical QS also exists. That means microbes are not only talking through molecules, but also through bioelectrical signals – pulses, patterns, waves flowing through all soils, wherever you are, right now.

How Quorum Sensing works

QS starts when individual microbes release signal molecules into their environment. The more microbes there are, the more signals build up. Once a critical threshold is reached – a quorum – the whole group flips into action. This could mean forming a biofilm, launching spore production, initiating symbiosis with a plant root or triggering dormancy.

Electrical quorum sensing goes further. It is faster, more responsive, and able to move information across longer distances using potassium ions and conductive filaments called bacterial nanowires. In essence, QS is the microbial version of the WWW and most soils are buzzing with data exchanges. It is widely thought around 80% of all bacteria and fungi can communicate effectively using a universal language across all differing types.

A Soil Profile as unique as DNA

Every field contains a unique microbial ecosystem shaped by local climate, crops, soil type, and history. You cannot easily import that complexity from somewhere else. Just as you would not send Highland cattle or penguins to the equator to live, adding microbes from a distant environment may do more harm than good. While a soil sample may be tested to look at the soil biome, it does not account for all bacteria within a sample, as many bacteria can be hibernating or in long term dormancy for years or decades and can be virtually undetectable if they hide intracellularly, within biofilms, or as VBNC cells.

Whilst they could be beneficial or not, in the soil, they have chosen to wait until an opportune moment comes for them to emerge that is driven by QS

Instead of importing biology, what if we listened to what is already there? In my early experiments, I built soil batteries using anodes and cathodes embedded in soil from a field of ours. Not only did these setups light up LEDs, but they also powered an entire outdoor Christmas tree set of lights using a few Kgs of soil. I was not adding bacteria, I was feeding the existing community. And that is when I realised: the soil was not just producing energy; it was producing information. Every year since, I power up the lights on a Christmas tree outside the farm office as a reminder of where things started purely using soil as the energy source.

Recording the language of the soil

Instead of stopping at voltage, I treated the electrical output like a message. Over years, I've developed systems to record, digitise, and analyse this microbial communication in real time. Using microcontrollers, data interfaces, and software, I have broken the output into strands of data so I can interpret data as well as being able to directly engage with it. Instructing differing bacteria to behave in certain ways or denying electrical communication completely is no longer something

of fiction, which is something I have spent a fair bit of time looking at, but there are lifetimes of learning to do on this still. At the end of the day listening rather than meddling is a far safer option.

These strands include:

- Water availability
- Nutrient availability/ demand
- Temperature response
- Microbial population dynamics
- Panic signatures (e.g. spore or dormancy triggers)

The patterns are consistent. After water, hydration signals spike. When synthetic fertilisers are applied, signal complexity often collapses (after an initial frenzy). And when biofilm formation is triggered, signals harmonise in a way that is both measurable and repeatable. It is not just a reaction, it's a strategy.

Carbon, Organic Matter, and the QS Connection

There is a lot of talk these days about carbon sequestration, organic matter restoration, and regenerative farming. But too often, the microbial coordination required to make those systems work, quorum sensing, is completely left out of the conversation.

Here is the reality: bacteria and fungi are the frontline engineers of carbon cycling. They process plant residues, stabilise humus, and form protective biofilms that physically hold carbon in place. But none of this happens at random. It all depends on QS.

Without proper QS signalling, microbes stay disorganised. They do not form structure. They do not aggregate soil. And they can even start to cannibalise stable organic matter, releasing stored carbon back into the atmosphere.

When quorum sensing is intact, we see microbial populations build carbon scaffolding – extracellular matrices, glues, and aggregates that not only store carbon, but regulate nitrogen, phosphorus, and water retention. But when QS is disrupted, often by tillage, synthetic nitrogen overload, or overstimulation without rest, this architecture breaks down.

This has direct implications for regenerative agriculture. Practices like minimal and zero tillage, reduced fertiliser input, and optimised nitrogen timing all benefit from, and can be guided by, healthy QS signalling. Rather than guessing at nutrient cycles, we could be measuring real-time microbial coordination to know when soil is building carbon and when it is leaking it.

This flips the narrative: carbon sequestration is not just about reducing emissions or planting cover crops. It is about enabling microbial societies to function as carbon architects. And that function starts and ends with quorum

sensing.

SAR (Systemic Acquired Resistance), biofilms, and the power of symbiosis

Plants do not just benefit from soil microbes, they talk back. They release root exudates to feed specific bacteria. They respond to quorum signals with immune readiness and under pressure, like drought or pest threat, plants and microbes jointly decide how to respond.

One of the most fascinating discoveries has been biofilms, coordinated microbial mats that can either help hold water or shut down soil pore space in what is called bioclogging. These are not failures. They are strategic moves by microbial societies, and QS is what drives them.

This leads to the detection of SAR (Systemic Acquired Resistance). Before a visible drought symptom appears in a plant, QS activity spikes, coordinating water retention and plant immune priming. This proves that QS is not only a reflection of environmental change, but also a predictor of it. In essence, it is early warning data built into biology.

Where This Leads: Beyond Sensors

Traditional soil sensors can measure pH, moisture, and temperature. That is helpful. But they do not tell you what microbes are thinking. QS does. We are on the edge of reading microbial networks in real time. Not just measuring effects but understanding cause and intent.

Imagine being able to:

- See when soil life is ready/optimal for seeding or needs recovery
- Detect disease stress before plant symptoms appear
- Gauge which nutrients are/are not available
- Optimise irrigation timing based on QS hydration chatter
- Read SAR activation before a pest outbreak

This is the microbial layer we have been missing, one that could change everything from how we plant to how we defend crops with less chemical input.

The microbial internet: what makes QS revolutionary

Quorum sensing is often described as microbial communication, but that doesn't go far enough. What we're really looking at is a living, responsive, decentralised network. Like the human brain or a digital internet, QS networks allow distributed communities to coordinate without central control.

When enough bacteria or fungi reach a quorum, they act like a single organism. They form colonies, alter their chemistry, and even sacrifice individual cells for the benefit of the group. This behaviour mirrors systems theory in nature and technology, from neural networks to social insects to traffic routing.

Why is this revolutionary for agriculture? Because it proves that biology already contains the logic we try to simulate with artificial intelligence. Instead of forcing control over soil systems, we could design responsive strategies that plug into this network.

Quorum sensing and human health

Quorum sensing is not just happening in soil; it is happening inside us too. In the human gut, trillions of bacteria use QS to regulate digestion, immunity, and even brain chemistry. Certain microbial peptides produced in the gut can cross into the bloodstream and influence the brain via the vagus nerve, helping to regulate mood, stress, and inflammation.

In the mouth, bacteria use QS to coordinate the formation of biofilms, better known to most of us as dental plaque, allowing microbial colonies to protect themselves, resist antibiotics, and cause gum disease if unchecked. Just like in soil, when this communication is balanced, it supports resilience. When it breaks down, the whole system, whether gut, mouth, or brain, can spiral into disorder.

Why isn't this widely known?

I have spoken to soil scientists across multiple countries. Many of them tell me the same thing: up to 80% of published academic soil/farm research is not fit for field use. And yet, here we have a well-documented, dynamic, real-time system that has been operating beneath our boots for millennia, and it is almost completely ignored.

Instead, the focus is often on manipulating biology by adding microbes, spraying stimulants, or applying chemistry to force change. But the biology is already there. It's networked. It's intelligent. It just needs to be heard.

Quorum sensing is not a theory. It is proven. It is recordable. And it is ready to be part of the next generation of practical farming.

Final thoughts: next time you walk your field...

Take a moment to consider what is happening below the surface. Every root, every pore, every microbial cluster is exchanging information. QS is that exchange. And with the right tools, we can read it.

This is not about fighting the soil. It is about understanding it - not just physically, biologically and chemically, but informationally. We have built an Agritech world on sensors and screens. Maybe the most powerful sensor is already beneath our feet, waiting to be decoded completely.

And to cap it off, the laptop you may read this on will most likely contain around 20 miles of circuits within it. A handful of soil contains around 20 miles (at least) of mycelium that supports Quorum sensing data transfer – just further food for thought!

CELEBRATION WITH A CAUSE: STAFFORDSHIRE FCN MARKS 30 YEARS

By Tim Parton FCN Volunteer

Staffordshire FCN's 30th anniversary Farmers' Ball brought the agricultural community together for an unforgettable night, raising vital funds and highlighting the growing importance of support for farmers under pressure.

Staffordshire FCN held a Farmers' Ball on 1 November to celebrate their 30 year anniversary and was attended by over 400 people who celebrated throughout the night, whilst raising some funds for FCN. This involved a raffle and a good old auction where one tray of eggs went for over £100, with the total raised for the evening being well over £25000, which is just amazing. The celebrations went on into the early hours and was a memorable night for all who attended. A huge thanks must go to the whole Staffordshire FCN team for organising, with a special shout out for Julia Taylor and Meg Elliot for all their hard work. Hopefully this can become a yearly event, as never has there been a more important time in farming to bring the whole agricultural community and its ancillary industries together. Thanks must also go to all the sponsors who helped fund the event, without which the ball would not take place.

I feel farming is under such pressure now and support from charities like FCN has never been more important. Farming can be a very isolating occupation and as we move more into the digital and technological age, it can become even more isolating, as there is less reasons to go out to market, or visiting suppliers, as a lot can be done online. As human beings we are social creatures and having a reason to go out and meet people has never as important, in my opinion, with the storm that agriculture is currently going through.

This is where the work of FCN and other charities is imperative. FCN has a confidential helpline (03000111999) which is open 365 days a year from 7 am to 11 pm, handling over 2000 calls over the last 12 months. I feel that sometimes just being able to talk to someone about your problems and have a sympathetic ear can lessen the burden. Nobody is immune from stress and depression, as I have experienced myself, but having the right support around you can help dramatically in your road to recovery. FCN is there to help with your burden be it personal or business related.

FCN also runs a one-stop portal called Farmwell which contains lots of information, helping your business; from succession planning, to farm health and safety. Over 30000 unique visitors used the website last year. Whatever the issue, FCN is here to help, so please always keep the number and the web address to hand as you never know when you or somebody you care about need to talk (Farming Community Network - Farming Community Network)

On a lighter note, Staffordshire's FCN chairman Steve Jackson had the great pleasure of meeting the King, who is Patron of the charity and who follows the work of FCN with much enthusiasm and offers his full support behind the organisation, realising the good work that FCN volunteers do for the community. Please, if you know anybody that you believe to be struggling or have any questions however insignificant they may seem to be, phone the helpline number and let's keep people supported. You do not have to be alone. FCN support is only a phone call away.

RETHINKING SOIL:

RETHINKING SOIL: WHAT TWO NUFFIELD SCHOLARS LEARNT ABOUT CHANGE, CARBON AND FARMING'S FUTURE

Across climates, continents and farming systems, one thing united these Nuffield Presenting Scholars in Aberdeen: soil is no longer just a technical consideration, but a social, economic and cultural one too.

From understanding why farmers change their practices, to investigating the future of peatland management, these two scholars offer complementary insights into how soil will shape the next era of farming.

Tom Scrope: Why Farmers Change

Tom went into his Nuffield Farming travels convinced that data and software would be the answer. After travelling 6,616 miles across Europe, Australia and South America learning from farmers, advisors, researchers and policymakers he realised that whilst software and data are inherently useful they were not the driving force behind the reason for change.

His findings highlight a three-step framework: motivation, advice, and funding.

Motivate: The spark that drives action

These six motivators kept coming up:

- external pressures (drought, price shocks)
- personal crises or transitions
- charismatic educators
- strong peer communities
- benchmarking
- immersive courses like "Grazing for Profit"

Advise: practical, trusted guidance

Tom found that well-run farmer groups were the closest thing to a silver bullet for soil practice change. Their success depended heavily on skilled facilitators, peer accountability, and good networks enabling swift knowledge spread.

Fund: supporting risk in transition

Soil-friendly farming often pays long-term but carries short-term risk. Tom highlighted England's SFI as a world-leading model, and water companies as major private-sector drivers, while noting that carbon markets remain immature.

He uses these insights through his work at Soil Benchmark, a digital platform which helps farmers and agronomists create data-driven soil and nutrient management plans, supporting consultants, farmers, and growers in using soil data and benchmarking tools to inform decisions.

Harry Winslet: For Peat's Sake! Do we need a new approach to peatland agriculture?

Harry originally comes from London, far removed from the Cambridgeshire soils he would later come to know when working at G's, Europe's largest fresh produce supplier. Through his undergraduate and master's degrees,

Harry became increasingly interested in how a changing climate would reshape the way we live, and more urgently, how we would continue to feed ourselves.

His Nuffield travel took him across the UK, Europe, Canada, Brazil and Southeast Asia to explore whether peatland farming could be done differently.

In their natural state, peatlands are stable carbon stores. "Peatlands in and of themselves are not an environmental crisis," Harry says. "That only occurs when we drain them for agriculture." Drainage introduces oxygen, triggering oxidation and releasing carbon dioxide at scale. In temperate regions, drained peat emits around 30-35 tonnes of CO_2 per hectare per year, compared to roughly one tonne from mineral soils. In the UK, cultivated peat accounts for nearly 5% of total greenhouse gas emissions.

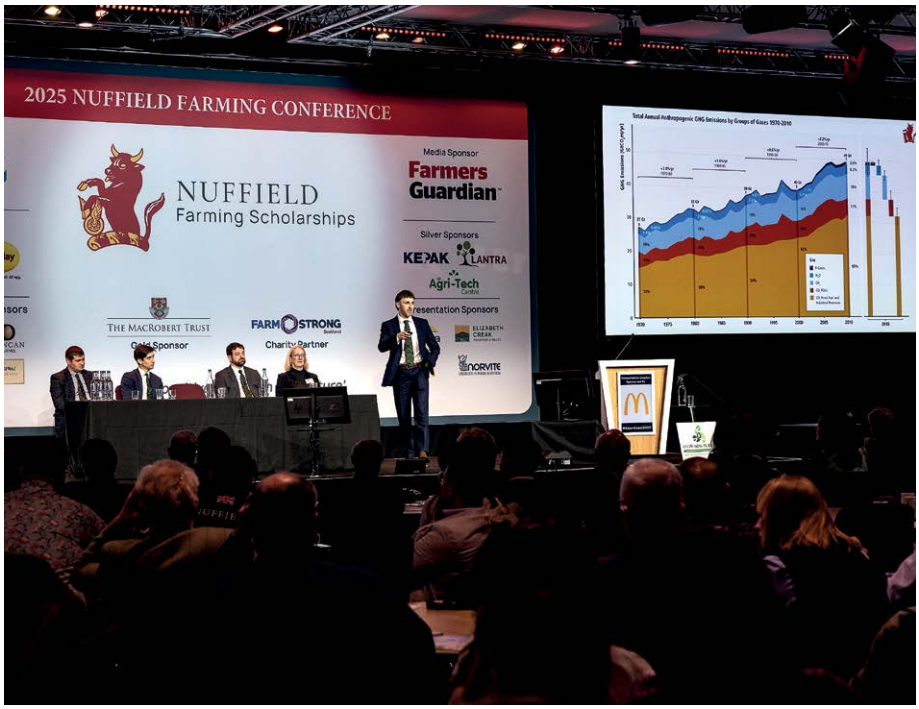
But peat remains central to food production, with around 40% of the UK's fresh produce grown on drained peatland. "They're flat, they're fertile, they have easy access to irrigation". Harry notes. Walking away from peat entirely would mean moving a third of the UK's vegetable production elsewhere, bringing its own carbon and food security implications.

In Canada, he saw projects reintroducing carbon through willow coppice. In Indonesia, smallholder farmers were practising paludiculture and agroforestry. Although these systems are under-researched, Harry

found that maintaining high water tables, permanent ground cover and minimal disturbance was consistently associated with lower greenhouse gas emissions.

Harry's conclusion is not that peatland farming is harmless, nor that all peat should remain in production, but that a mosaic of solutions will be needed. One thing he made clear is that farmers can't be left to do this alone. Support, incentives and long-term policy will be essential if peat is to be managed more responsibly.

Now retraining in law, Harry hopes to advocate for farmers working in fragile landscapes, ensuring peat is no longer the awkward exception in conversations about soil, carbon and regenerative agriculture.



Looking ahead, Nuffield Farming is investing in the next generation of soil enthusiasts

Applications for **Nuffield's Next Gen Scholarships** are now open, offering funding and travel opportunities for young people aged 18-24 looking to explore the future of food and farming. A new **Regenerative Agriculture study tour** has recently been launched for 2026, specifically aimed at those who want to develop practical, systems-based thinking early in their careers.

For those eligible who are interested in soils, carbon and the long-term resilience of agriculture, it is an opportunity well worth exploring.

FARMER FOCUS
FREDERIK LARSEN

Christmas time is approaching and yet another year has passed. My last piece was in June, and it was warm, it was dry, then wet, and hopes were high for the approaching harvest time. Harvest 2025 was special to me because it was the first harvest in many years that I did not drive the combine from start to finish. Luckily, my brother volunteered and he's actually doing a much better combine-driving job than me, having the good attention and patience to drive according to the loss monitor. Apparently, that makes a huge difference with volunteers, post-harvest. Who would have guessed.

Let's dig into the evaluations, learnings, trials and future perspectives from this year.

Harvest 2025:

Yields were surprisingly good (slightly above our average in all crops), being saved by a good rainfall event in early May. Winter wheats yielded 9 ton/ha. It was clear that good pre-crops (beans) were the highest yielding. Pre-crop OSR was also above but the yield potential was reduced because of horrendous slug grazing back in the autumn of 2024. Then, spring barley as pre-crop turned out to be a very poor pre-crop yet again. My agronomist herbicide injury in that particular field did not help either.

Spring faba beans were alright, averaging 5 ton/ha in better soils and 4 ton/ha in sandier soils. Winter OSR did really well. No-till OSR with new undersowed livingmulch mixture did 3.8 ton/ha on a sandy soil type. Subsoiler drilled (depth 28cm) on clay soil did 4.8 ton/ha and was a really nice crop all season, except for an odd headland where the agronomist (me) burned the crop with either residual ALS-chemistry from a wheat spray or a too high dose of foliar potassium together with the two fungicide applications in the OSR. This year I have learned to be careful, especially with foliar potassium in OSR and I have rediscovered that old generic cheap fungicides are just as good in OSR than the new expensive premium fungicides.

Hybrid winter wheat drilled on the 7th September at 125 pl/m2. Variety: Saaten-Union SU Hybingo. It was initially sparse but have tillered very well and compensated for the low plant population.

Winter milling oats were this year's big winner yet again. For the second year in a row, we managed to get 9.5 ton/ha of oats off the field. Unfortunately, 2025 has been a national high yield year for all crops, which has reduced oat prices as well. If we factor in the lower fertiliser requirement and cheap fungicide programme required for oats, compared to winter wheat at slightly lower yield but higher price, then winter milling oats and winter feed wheat turns out at similar gross margin on our farm. Because of this and the much-improved pre-crop value of oats compared to barley, we have changed our crop rotation for 2026 and put in only winter and spring oats and no spring barley.

Biannual cereal crop experiment 2025:

One particular fun experiment I did for 2025 was the biannual winter cereal trial. I drilled winter hybrid barley and winter hybrid wheat on 1 August 2024. Then, combined the barley on 10 July 2025 and the wheat in the early days of August 2025. We managed to keep these crops for a full year in the field. I'm exploring multiple potential benefits from an ultra-early winter cereal drilling day: 1) Less grass weeds because we are ahead of the grass weed autumn germination window (similar to our grass seed growing guides), 2) ultra-low plant population with huge tiller numbers leads to more efficient resource use/partitioning, 3) large plants with many tillers for improved weed competition, 4) if we were mechanical weeding we would have good and dry conditions in September for mechanical weed control, 5) autumn cut/graze opportunity, 6) explosive spring growth and earlier harvest which allows better cover crop and/or livingmulch regrowth.

Anyway. Importantly, the hybrid winter barley in the trial was one of these brand-new Syngenta varieties (SY Zoomba) which is BYDV resistant. And there was absolutely no BYDV infection in the barley. The yield was a satisfying 10 ton/ha. In the tramline next door was the winter hybrid wheat. It was not BYDV tolerant/resistant and it was completely destroyed by BYDV infection. I did not even care to properly measure the yield, but it was at least half the yield compared to our traditional wheats. For 2026 we are redoing the biannual cereal experiment but only with BYDV-resistant winter hybrid barley. Unfortunately, I didn't

BYDV-tolerant winter wheat. RAGT Goldfinch. Looks promising.

September drilled oats after summer catch crop. Notice the leaves and tillering compared to later drilled oats.

manage to source BYDV tolerant winter wheat in time for the early August drilling day.

Livingmulch farming system in 2025:

My main trial field of the livingmulch farming system was 25ha with the winter milling oats. This field has now carried a WOSR at 3.8 ton/ha, winter wheat at 9 ton/ha and now a winter milling oat crop of 9.5 ton/ha. After each crop we have managed to take a lucerne forage cut 6-7 weeks after the combine. (The very same lucerne plants which were undersown together with the WOSR back in August 2022). First year was 3,000 kgDM/ha, then 2,000 kgDM/ha and this year we got 1,700 kgDM/ha. As expected, the lucerne stand seems to become thinner throughout the years, which is also why for my new livingmulch field we have started to add a little bit of red/white clover to the mix. I'm actually impressed at how successful and easy-to-manage this particular field has been. Every spring I'm anxious that the lucerne won't survive our chemical mowing (herbicide) strategy but then two weeks prior to cereal harvest, it grows slightly above the cereal crop and lets us know it's ready to make harvest difficult should it turn out to be a wet harvest season. The main drawback for the livingmulch system is that I can't control thistles (hence you need a clean field to start with) and that the seed cost is expensive up front. I need at least two good autumn growth seasons for my lucerne-based livingmulch to break even compared to drilling summer cover crops. Now I have got three autumn seasons out of this one planting and time will tell if we spray the lucerne off in the summer of 2026 ahead of winter OSR. Currently I'm undecided.

October drilled oats after catch crop. Drilled 3 weeks later than September drilled oats. Notice the singular tiller/leaf. And the decomposing cover crop residues still visible.

What benefits do I want to gain from my livingmulch system?

1) Keep fields green and capture as much sunlight as possible, 2) easier and more reliable green manure/cover cropping compared to traditional summer cover crops, 3) increase crop competition against grass weeds allowing more winter cereal crops in my rotation, 4) fixate nitrogen and capture nutrients from depth, 5) deep soil percolation from the massive lucerne roots increasing water infiltration and summer water usage which prepares the field ahead of a wet winter season, 6) sell crop residues because the livingmulch provides sufficient soil armour and soil feed.

Important management tips for the livingmulch system:

I think the lucerne-based livingmulch system is ideal to deliver on the above objectives. However, there are a few key basics which need to be understood before you endeavour into livingmulch farming systems. Firstly, we need to talk about crop competition and niche differentiation. Lucerne is a tap root and will leave empty topsoil available for our companion winter cereal to thrive in. This is the reason, I think, that lucerne is a great livingmulch companion compared to the dense and shallow-rooted white clover, which will provide severe root competition against fibrous winter cereal crop roots. Secondly, we need to manage the above ground biomass of the livingmulch in the key yield forming period of our main cash crop (winter cereal). That means either row mowing or chemical mowing using selective herbicides to temporarily stunt the lucerne growth, allowing the cash-crop cereal to canopy and make its yield potential (critical yield forming period for wheat is two weeks prior and two weeks after flowering), assuming you have achieved sufficient amount of big tillers. If you don't get this right the lucerne can and will outcompete your winter cereal with severe yield consequences. If done right, it's my experience that the yield penalty is somewhere between 0-500 kg/ha. Thirdly, post cash-crop harvest, it's important to mow the field to the appropriate height for fresh optimum livingmulch regrowth (similar to how you initiate regrowth in a grass seed production field) because you need to remove the sick legume leaves (from chemical mowing), remove old lignified

Biannual winter hybrid barley drilled on the 8th of august into a new young legume livingmulch right after winter OSR harvest. The barley rows are visible and have survived both the darkness in the bottom of the legumes and the forage mower.

Close up picture of the biannual winter hybrid barley and the livingmulch. Good tillering so far but much more required. The barley population is 80 pl/m2.

legume stems for proper regrowth initiation and you need a short cereal stubble for good sunlight reach onto the legume crown shoots.

Can we merge the biannual cereal experiment with the livingmulch system?

One fun and exciting trial I have established for harvest 2026 is a merger between the biannual winter cereal trial and the livingmulch system. The logic is straightforward: if we must go with the mower right after cash-crop harvest in early August to initiate livingmulch regrowth, why not just drill next season's winter cereal at the same time. Then we will, technically speaking, establish our biannual winter cereal as an undersown crop in the bottom of the livingmulch for the next 6-7 weeks until we graze or take a forage cut on the livingmulch in mid/late September. Seven weeks is not critical for a cereal/grass to stay in the dark below the canopy, as long as they have got at least two leaves prior to canopy closure. (We know this from undersowing grass seed crops in spring cereals.)

By undersowing the winter cereal in the livingmulch green manure phase (post cash-crop harvest until forage cut seven weeks later) I hope to gain additional benefits compared to the ones mentioned above: 1) Glyphosate-free no-till made possible by the intense plant competition from the livingmulch species, 2) more forage production for cut/graze because the winter cereal will add a little bit of green leaves, 3) no rush to get the winter cereal seeded in late September because it's already there, 4) no winter cereal seeding deadline so might be able to get a second forage cut or light graze from the livingmulch phase before winter.

First year notill winter wheat after winter OSR which was undersown with legume livingmulch mixture taken for a forage cut 7 weeks after OSR harvest. Wheat drilled 25th of September 2025.

Notill winter OSR with legume livingmulch mixture undersown in the bottom. Acts as a companion crop to the OSR in the seedling autumn as well.

Currently in autumn 2025, the trial has been going to plan. We managed to seed the Syngenta BYDV-resistant hybrid barley (SY Zoomba) on 8 August after WOSR harvest, which itself was undersown with a new livingmulch of lucerne and red/white clover. Then on 20 September we took a forage cut on the livingmulch, liberating the much-shaded barley plants. We were also set back by some slug grazing, which was solved using a good dose of slug bait. Then in early October, we applied some soil residual herbicides to prevent overwinter germination of grass weeds. Here in the middle of December it looks like the barley plants have slowly recovered from the forage cut while the legumes are shutting down for winter. I'm very excited to follow this trial through next year.

Status of crops for harvest 2026

Crops for harvest 2026 look brilliant at the moment – the best it has looked for many years. No major slug grazing and good drilling conditions in September and October 2025 makes the crops look promising here before the calendar turns to 2026.

Again this year we have decided to seed bed place NPK fertiliser with our drill. Applying all P/K at the time of drilling should maximise use efficiency and gain agronomic benefits (increased tillering and overwintering, etc) while allowing for cheap spring fertiliser (AMS, Urea, N32, N34). We have sufficient soil fertility also aided by our long-term no-till system, so we apply 50% of expected crop removal of P/K.

This autumn we have two main drilling date windows for our winter wheat. The first window is around 7 September

Close up picture of the legume seedlings below the OSR canopy. Livingmulch mixture consist of 80% lucerne, 15% red clover and 5% white clover with seed rate of 22 kg/ha.

and the second is around last week of September. The early drilling date of 7 September is because of some Danish nitrogen leaching legislation where we can grow early drilled winter wheat instead of mandatory nitrate catch crops. There's plenty of risk and challenges to growing early planted wheat: mainly grass weed issues but also aphid vectored BYDV. Therefore, I have made a small on-farm trial this autumn where we grow two new BYDV-tolerant winter wheat varieties (RGT Grouse and RGT Goldfinch from the UK) and a new hybrid winter wheat (SU Hybingo) and compare them to our standard line wheat (this particular field is KWS Scope). I won't get into detail, but I really hate how difficult Brexit has made trading with the UK. One full month of back-and-forth paperwork with the authorities just to import UK trial seed material into EU/DK. But it's really a great effort from the brilliant RAGT team. The hybrid winter wheat is super-expensive seed material and must be drilled at half the population (125 pl/m2) to normal line wheat (250 pl/m2) in this trial just to come close to a realistic chance of similar gross margin. We do not spray insecticides to winter cereals in general so it will be fun to follow this field through and see how the yields compare at harvest time.

Another interesting comparison we replicate for the 2026 season is one field of winter OSR no-till established compared to another field He-Va Subsoiler drilled (losing to a depth of 28cm). First year we saw no difference on comparable soil types. Second year there was a difference but not similar soil types. This year (2026), soil types are similar but the subsoiler drilled field was in need of remediating some compaction and water-lodging issues which we have good experience repairing with the subsoiler established winter OSR.

Winter oat crops are drilled with three weeks' difference. The first field in the last week of September after a summer catch crop, then another field was drilled last week of October after a normal autumn cover crop. It's nice to get good easy weather conditions to do some proper no-till planting green which we succeeded in doing with the oats this autumn.

On the machinery front we don't have much investment planned. I have bought a Griffith Elder Grain Brain continuous flow auger scale for our combine so we can improve how we measure plot yields for our on-farm trials and get a proper reliable yield measurement for each field. I'm looking forward to get going with that system next harvest.

On the livingmulch front we currently have an old fourth crop year field, then a second crop year field and a new first crop year field of winter OSR undersown with a mixture of lucerne and red/white clover. That is plenty to manage and learn from as well.

When you read this, Christmas will have already passed, and we'll be in the new year. I wish you all a merry Christmas and a happy and hopefully successful new year. I can't wait to see what 2026 will bring and what we will learn and discuss one year from now.

AGRONOMIST IN FOCUS...

JACK HIND - INDIGRO

TURNING PRESSURE INTO PROGRESS: MANAGING COST OF PRODUCTION FOR A MORE RESILIENT FARM BUSINESS

In today's arable farming environment, everyone is feeling the financial squeeze. Reduced yields, lower commodity prices, higher input costs, no BPS and uncertainty over government support all have an impact on one thing – margin. When the pie is getting smaller, but pressure continues to rise, how can we improve returns while managing costs more effectively?

To understand where savings can be made, calculating the cost of production is a vital first step. Let's explore how this is broken down and where the main issues reside.

Variable costs – A usual suspect

Variable costs refer to the input costs that alter with cropping decisions and output levels, including fertiliser, seed, crop protection products and fuel for field operations. When looking at cost of production per tonne, they remain relatively consistent irrespective of acreage, with the main fluctuation coming in price. DEFRA's Agricultural Price Index highlights how this figure has increased.

Comparing the 2020 baseline with the latest available data (September 2025), variable costs have increased by 30.62% overall. This includes seed (up 5.15%), fertilisers (up 74.88%), crop protection products (up 6.35%), and fuel (up 36.08%). Most prices peaked in 2022 and have since fallen back, however overall inflation remains on the rise. Between September 2024 and September 2025, costs increased by a further 4.00%, driven largely by fertilisers, which are up 17.89% year-on-year.

With input prices continuing to climb, it is understandable why growers are looking at cutting back. Whist this is something worth reviewing, the financial gain from doing so tends to be less impactful than expected due to yield decreases. Independent advice can certainly help refine input strategies and reduce spending through competitive purchasing, but even these incremental gains only go so far. So where does the actual problem lie?

Fixed Costs – The Real Margin Killer

Fixed costs are the ongoing business expenses that are largely independent of crop production. Some examples include machinery, labour, rent, and utilities – outgoings that must be paid regardless of cropped area.

Over the past five years, several elements of fixed-cost inflation have outpaced variable inputs. Machinery and equipment costs have risen by 34.9% since 2020, with a further 1.3% increase in the past year. Electricity has seen the sharpest rise, up 52.4% since 2020 and 8.0% year-on-year. Labour costs have also increased significantly. Office for National Statistics (ONS) data shows average agricultural wages climbing by around 32% between 2020 and September 2025, with the minimum wage rising another 6.1% in next April having a further impact.

Rent, on the other hand, has behaved differently. DEFRA's Farm Rents statistics show average rents increasing only marginally, from £213/ha in 2020/21 to £217/ha in 2023/24 – a rise of just 1.9%. In real terms, rent is actually cheaper today than four years ago, with 2020/21 equating to roughly £240/ha when adjusted for inflation. Admittedly, local variation does exist, and some regions have seen much higher increases.

Compared with variable costs, fixed costs have therefore seen a greater overall rise since 2020. As they apply to a much larger cost basis, these changes have a stronger impact on farm profitability. It is now more important than ever to assess whether each overhead is financially sustainable and, if not, what can be done to change this. Understandably, many of these costs are tied up in longer-term agreements, but it is still worth considering their viability before renewal or expansion.

By asking these questions, not as criticisms, but as part of a healthier business review, growers can start to build a clearer picture of where fixed costs sit today and how there may be room to adjust, refine and rethink.

Once you understand your costs, working out your cost of production per tonne is then possible. This allows you to

calculate your margin. But there's still one final piece of the puzzle that can make or break profitability – the price the market is willing to pay.

Commodity Prices - Holding Profits Back

While input costs have risen sharply, output prices have not kept pace. Between 2020 and September 2025, cereal grain sale prices increased by 4.12% overall. Barley and oats have risen by 9.37% and 4.73% respectively, with wheat showing the weakest movement, up just 1.75% for feed and breadmaking actually 1.24% lower than 2020. Since September, prices have continued to decline, with May 2026 wheat futures trading at around £171.60/t at the end of November.

It is clear that with rising costs and declining prices, interrogating the cost of production and working out ways to make savings is necessary.

Other commodities have performed very differently. Potatoes are up 83.23%, sugar beet 65.45%, and oilseed rape 19.25%, illustrating how little support cereals have provided to margins when production costs have escalated.

To put this into perspective, based on the AHDB Farmbench tool, the forecasted cost of production for winter wheat is £1659/ha. With a sale price of £171.20/t (May-26 futures, 4th December), a crop must achieve 9.69t/ha just to break even. This is over 1.5 tonnes higher than the UK's 25-year average. With poor weather conditions in recent years resulting in lacklustre yields (7t/ha in 2020 and 7.3t/ha in 2024), it is no wonder that finances are under pressure.

In simple terms, the margin for error has all but disappeared, with any dip in performance or price pushing a crop into loss. This reinforces the need to reassess cost structures and identify where meaningful improvements can be made.

What Needs to Happen Now?

It is clear that with rising costs and declining prices, interrogating the cost of production and working out ways to make savings is necessary.

For variable costs, reducing inputs while maintaining yield is a fine line. However, through independent advice and transparent buying, growers can be confident they are receiving the best value possible.

In practice, fixed costs represent a far larger proportion of total spend, and even small reductions can make a significant difference. More so than ever, it is essential to scrutinise the underlying structure of overheads and challenge whether each element still reflects the needs and scale of the business today.

For example, with commodity prices falling but rents edging upwards (albeit modestly), is the land cost and productivity aligned with the returns you can expect? For contract farming agreements, is the first charge still reflective of actual costs, or has it begun to erode the divisible surplus?

When looking at machinery, is the size and horsepower of kit proportionate to the acres being worked, or could a smaller/shared setup reduce running costs? In terms of labour, is the current staffing level appropriate for the area farmed, or are there opportunities to realign workloads and improve efficiency?

Managing fixed costs is both more impactful and complex, but by starting to make incremental changes where appropriate, businesses can strengthen margins and build a more resilient farming enterprise.

Tools and Support

Indigro is developing a platform to simplify how cost of production is calculated. Having successfully benchmarked the carbon footprint of our clients' farms over the past five years, we now feel it is time to apply the same approach to variable and fixed costs. This service will allow farmers to compare their costs with others and identify opportunities to improve financial stability.

Along with providing independent agronomic advice, we consult on SFI and Stewardship agreements and can tailor options most appropriate to your business. With less than 50% of eligible farms enrolled it is vital to prepare early and have a strategy in place before the scheme is set to reopen in 2026. SFI payments can make a major difference to your margin and so it is worth exploring what's available.

If you are interested in independent agronomy, benchmarking your cost of production, or need help with SFI planning, please email info@indigro.co.uk or visit www.indigro.co.uk. We will also be attending Groundswell and Cereals where you can meet the team and learn more about our services.

GROUNDBREAKING FIELD DRAINAGE PROJECT GETS UNDERWAY AT THE ALLERTON PROJECT

Written by Joe Stanley, Head of Sustainable Farming

A year ago I wrote in these pages about the relatively neglected state of interest in land drainage in recent decades and the increasingly degraded nature of much of our field drainage network. My hope at the time was to initiate a research project at the Allerton Project to highlight the benefits of field drainage and get the issue back on the political and supply chain agenda.

Happily, I can report that in the autumn of 2025, this ambition became a reality. Our research and demonstration farm at Loddington in Leicestershire saw the first new-scheme install since at least the 1980s as the DRAIN-WISE (Drainage for Water, Income, Soil and Environment) project got underway.

DRAIN-WISE brings together a consortium of partners from across the industry led by the Allerton Project, all with an interest in generating modern, UK-specific data on the impact of a modern field drainage system for both production metrics but, perhaps more importantly, for the environmental impact of land drainage too.

And this, I believe, is key, although government pledges to release its '25 Year Farming Roadmap' in 2026 with its vision on how to make British farming more profitable into the middle of the century, most farmers might look askance at such pledges from a government which has at a stroke undermined business confidence and investment with a range of measures directed against farm businesses, not least its move on IHT and BPR. Indeed, successive governments have done little to engender any confidence that they genuinely understand or care about the economics of modern farming. What's more, the UK has no legally binding target on domestic food production, which means that policies that might promote production are always going to come a distant second to those which address our numerous legally-binding environmental targets.

A lost crop of winter wheat in the project field – winter 2023-4

As such, this is the data which we are hoping to focus on with DRAIN-WISE. Afterall, the Environmental Improvement Plan (EIP) 2025 sets out a target of nitrogen, phosphate and sediment loss from farmland to be reduced by 12% by 2030 from a 2018 baseline – with a statutory target of 40% by 2038. There's also an aim to see at least 40% of England's agricultural soils under 'sustainable management' by 2028 and 60% by 2030, with a target of a 39% reduction in agricultural carbon emissions by 2040 from a 2022 baseline. There are also ambitious targets for reductions in the use of pesticides and increased IPM. All of these goals – not to mention wider goals associated with biodiversity recovery – are likely to be key outcomes of well-drained vs under-drained soils.

This is important. According to government figures, agriculture is responsible for the loss of some 2.9m tonnes of topsoil across England and Wales and some 75% of sediment loss into surface water, along with 75% of pesticides, 25% of phosphate and is the source of some 69% of nitrous oxide (N_2O) – 80% of which emanates from soil.

We have selected an 8ha arable field of clay loam texture which naturally lends itself to two discrete 4ha blocks of drainage. In recent years we have experienced multiple crop failures on this field due to extreme wet weather, and it lay very under-drained.

In August, Farm Services Ltd (managed by Nuffield Scholar Rob Burtonshaw) installed a 'gold standard' drainage scheme, future-proofed against extreme rainfall volumes on its western half, utilising 80mm laterals at 17m spacings feeding into 100-160mm mains, backfilled with 10/20mm gravel up to 300mm from the surface, before discharging into a field ditch. The eastern half of the field – for which no

BASE UK
BIODIVERSITY • AGRICULTURE • SOIL • ENVIRONMENT

We are the premier organisation, dedicated to promoting independent, farmer led, regenerative agricultural knowledge across the UK.

Our mission is to enhance soil health, increase biodiversity, and support businesses by embracing sustainable farming practices that benefit both farmers and the environment.

Once again, the BASE-UK members have had the opportunity to be involved in a number of events which have taken place over the past few months. There is more to come in 2026 with our flagship Conference taking place in February. More details below.

ANNUAL CONFERENCE - 11th & 12th February 2026

The theme is "Growing Without Government Support!" and will take place at The Delta Hotel, Huntingdon. Full details are available on our website **www.base-uk.co.uk**. **SAVE THE DATE!**

Upcoming Events

Don't miss our programme of farm walks and webinars. Updates will be shared by email and online.

Award Winning Members


We have celebrated the success and recognition of standout members at the Farmers Weekly Awards and British Farming Awards, where there were several nominations of BASE-UK members. We are thrilled to share that **Ryan McCormack** won the FW Farm Manager of the Year and **Colin Chappell** won the BFA Regenerative Farmer of the Year, which was a new category. Congratulations to them both and to all the nominees.

External Events

BASE-UK will be attending the following events, so do visit us:

- 14th and 15th January 2026 – LAMMA – stand number CT300.
- 28th January 2026 - Yorkshire Farming Conference, Harrogate.
- 11th and 12th February 2026 - Annual Conference - more details below.
- 10th and 11th June 2026 - Regenerative Agriculture Conference Stage at Cereals.
- 1st and 2nd July 2026 - Groundswell.

CEREALS 2026

We hosted a fantastic Regenerative Agriculture Conference in June 2025, and look forward to Cereals 2026 on 10th and 11th June at **Diddly Squat Farm**. Once again, we will be partnering with stand sponsors Tees Law. Members can register for tickets by inputting their membership number (contact Rebecca for help finding yours) to prove their eligibility to attend.

Quarterly Newsletter! - This is available to anyone interested in learning more about what we do. To subscribe, email **rebecca@base-uk.co.uk** or visit our website and follow the link.

BECOME A MEMBER

BASE-UK is a welcoming and dynamic network where you can continuously learn from both peers and industry specialists whilst enjoying the camaraderie of a supportive community.

As a BASE-UK member, you will enjoy a range of benefits, including:

- Access to exclusive meetings, webinars, events, and farm walks.
- Networking opportunities with like-minded people.
- Our Annual Conference – our premier event to learn and network.
- Educational resources.
- Research – connections with Rothamsted Research, James Hutton Institute, Harper Adams University and several other research groups and universities latest research and updates on conservation and regenerative agriculture.
- Ongoing sponsorship for research undertaken by Joe Collins, PhD student at Harper Adams University.
- Forum – a private forum for discussions available only to members.
- Earn BASIS and NRoSO points annually just by being a member as well as from some of the events **organised by us.**

For more information about how to join visit our website www.base-uk.co.uk or scan the QR code

extant drainage records later than the 1950s exist – was left undrained.

This new trial was overlain with an existing long-term field trial undertaken with Syngenta largely focussed on different tillage regimes. As such, across each half of our field we also have both 'conventional' (ploughed) and 'light-till' (direct drilled) treatments, with historic data back to 2017 on factors such as soil structure, carbon, biology, weed burden and yield. Working with Syngenta on this will enable us to therefore get more 'bang for our buck' from the outset with DRAIN-WISE.

used to assess this, including digital soil water and nitrate sensors from Paul-Tech, which will give us real-time data at a range of depths.

Our final main thrust of investigation will centre around nitrous oxide (N_2O) emissions, a real challenge on our heavier soils when they become waterlogged and especially when compacted. As wet autumn planting seasons become increasingly common (as recently exemplified in 2019, 2020, 2023 and 2024) this is a problem which will likely increase rather than decrease – especially if field drainage systems continue to deteriorate.

The DRAIN-WISE install; August 2025 following a crop of spring barley

Over the next three years we are going to measure a wide range of datapoints; yield, obviously, but also soil health metrics via such methods as VESS (Visual Evaluation of Soil Structure) and soil biology assessments via earthworm counts, identification of soil meso-invertebrates and microresp tests to calculate the functional diversity and biomass of soil micro-fauna. We'll also be taking soil carbon and bulk density measurements to see if any changes can be detected over time.

A key factor to determine will be whether drained land – across both cultivation treatments and a wide rotation – suffers from less waterlogging and runoff with associated sediment, pesticide and phosphate loss, as well as how nitrates move through the soil profile. A range of techniques will be

What we hope to build via this project is the start of an evidence base which will force government and the supply chain to enter the conversation about the importance of field drainage for delivering on many of the priorities for our farmed landscapes. Sadly at present, there seem to be more misconceptions than facts in the civil service on this issue, while politicians and much of the supply chain seem entirely without knowledge of this vital subject. Once that conversation has started, then we can ask the question: 'and at some £3,000/ha, how do we pay for this vital, silent service?' in a race-to-the-bottom food economy. The issue is particularly acute for smaller and tenanted farms.

To be sure, we may also discover some uncomfortable truths. Perhaps it is the case that field drainage speeds the movement of nitrates through the soil and directly into surface waters, as some fear. If that is the case, it's important that we know: then we can build such knowledge into our evidence base and work to mitigate the fact through better system design and nitrogen use efficiency measures. But at present, we're largely working in the dark and with such a low profile that this subject is going nowhere.

The scheme was installed with a drainage plough in good conditions. There was minimal surface disturbance

This first season we are debugging our data collection techniques through a first winter of cover crop (except on the bare ploughed area) before spring oats. Then we hope to enter winter wheat followed by winter rape to test the two most high-input crops in our rotation. But over the coming years, the field itself will be a great talking point for our 2,000 visitors per year, many from Whitehall and the supply chain, so hopefully it will be an opportunity to have some good conversations.

The DRAIN-WISE Project partners:

- Allerton Project
- Agricultural and Horticultural Development Board (AHDB)
- Anglian Water
- Farm Services Ltd
- GW Axup & Co Ltd
- Mastenbroek Ltd
- National Association of Agricultural Contractors (NAAC)
- Syngenta
- With additonal funding from the Cambidge Trust

We are looking for additional expertise and support in this nationally important project. If you would like to discuss, please contact the Allerton Project.

DALE DRILLS

Don’t miss out on Dale Drills' exclusive hire and demo opportunities this Autumn!

If you're interested in trying a **No-Till Tine Drill** on your farm, contact Dale Drills now.

We have a **6m Eco M No-Till** drill available for demonstrations this autumn. For more information, contact us at **01652 653326** or visit www.daledrills.com.

DRILL MANUFACTURERS IN FOCUS...

WITH HISTORY REPEATING ITSELF NOW IS THE TIME TO 'THINK CHANGE'

With lacklustre world commodity prices squeezing profitability, the situation in farming today parallels that in 2002, when Jeff Claydon was forced to reduce production costs or see his family's arable enterprise in Suffolk go out of business. The crop establishment system he invented then has ensured that the Claydon farm has made a profit every year since, even before taking account of government payments.

20 November 2025

Farming is a commercial business for my family, so we continually review what we do and how we do it. Our objective is to operate as efficiently as possible to maximise profitability.

Twenty-three years ago the feed wheat price fell below £60/t; it was impossible to make money growing combinable crops, as we had done for decades. To remain financially viable we had to change how we farmed and reduce our production costs, without compromising yields. We did that by moving away from conventional plough and min-till-based establishment to a unique form of direct seeding.

The direct drill I designed dramatically reduced the machinery, time, fuel and labour required to establish our crops, and therefore our costs. Over the years we developed a holistic approach to crop establishment, which transformed our farm's economic and ecological sustainability. Simple, practical, fast and ultra-efficient, Claydon Opti-Till® has also brought tremendous improvements in timeliness, soil structure, soil biota and our quality of life.

The Opti-Till® System has transformed the economic and ecological sustainability of the Claydon family's farm in Suffolk. This simple, fast, low-cost approach has also brought tremendous improvements in timeliness, soil structure, soil biota and quality of life. Used behind a Fendt 724 Vario, the Straw Harrow is a fast, efficient, low-cost way to distribute chopped straw evenly across the field and take out weeds / volunteers. This autumn it was used up until the first week of September, then glyphosate applied to take out any remaining volunteers before direct drilling wheat with a 6m Claydon Evolution.

After 23 years of using Opti-Till® to establish crops, the Claydon farm's heavy Hanslope series clay soils are in excellent condition and very well structured. The farm's 6m Claydon Evolution drill, placing four products separately at the same time - fertiliser, seed, companion crop and slug pellets - operates at 11-12kmh, so the level of soil loosening by the leading tine is high and the output is greater than a wider direct drill travelling slower.

Those early days highlighted the importance of considering the next crop at the point of harvest. This way of thinking formed the foundation of a stubble management programme based around the Straw Harrow, which allowed us to effectively control volunteers and weeds as well as slugs, which were more of an issue when we grew oilseed rape.

Subsequently we developed the TerraStar®, a light rotary harrow which is still used occasionally to level uneven ground on new contract fields or to create a little more tilth than the Straw Harrow in adverse conditions. This versatile implement can also be used to incorporate/mix large amounts of straw, manures and compost.

Throughout the 23 years that the Claydon farm has been direct seeded, our crops have consistently yielded on a par or more with those established using conventional cultivation methods, while weather risks have been largely eliminated because no cultivated land is left exposed to the elements.

Fuel use is now incredibly low, just 40 to 50 l/ha last season, including all stubble management operations, drilling, spraying, fertiliser application, inter-row hoeing with our 6m Claydon TerraBlade, harvesting and corn carting. Tractor hours have fallen by 80% and in three years, our main drilling tractor, a 2022 Fendt 942, has only just passed 1200 hours, even though in 2025 it drilled the farm with our 6m Claydon Evolution two and a half times (catch,

Winter cover crops, in this case following wheat, were looking excellent in mid-November.

companion, main crop). Wear and tear, servicing costs and depreciation are all significantly lower.

The benefits of this approach have been reflected in our bottom line; excluding support payments, the Claydon farm has made a profit every year. Given that governments of all political persuasions have a habit of changing their minds like the wind, we feel that is a good position to be in and every year I have fun with my accountant in wagering that we will make a profit just from growing crops. Profits are largely reinvested in the farm, whether to keep machinery up to date or in longer-term projects such as field drainage. Doing so puts us on a sound footing for the future.

Sadly, the previous Integrated Administration and Control System (IACS) payments are no longer, but for the fortunate few, SFI has offset the lost income. A key factor is that direct seeding is helping us to take advantage of SFI payments, which currently match those of the IACS.

SFI has made farming very interesting and ensures that the business remains profitable. We have found that direct seeding a catch cover crop within hours of combining the previous crop has helped to conserve moisture. In a dry year such as 2025, this approach greatly assisted the cover crop to establish as well as encouraging volunteers and grassweeds to grow so that they can be taken out later.

Following spring oats, this approach proved so successful that by mid-September the tail oats were dominating the cover crop, so it was sprayed off on 10 September, a little earlier than planned. Once the residues had died back, we used our Straw Harrow to kill a flush of grassweeds and followed in with the drill, direct seeding winter wheat from 22 September until 2 October. Our agronomists were not amused that it went in so early!

Conditions were much better than in the previous two years when drilling into wet Hanslope series clay, while the wet, windy weather which followed compromised blackgrass control as we couldn't get chemicals on at the optimum time. In complete contrast, this autumn we were able to roll everything behind the drill, then apply Avadex and pre-emergence sprays within two or three days.

Our initial concern that establishing cover crops under SFI would be challenging due to time constraints proved ill-founded. Direct seeding directly behind the combine while there is still moisture in the soil has paid off. The only downside being that it happened so quickly that we did not have time to bale anything and the oat straw would have fetched a good price.

Investing in more efficient, more effective ways of working could help to ensure that you have a sustainable business going forward, emphasises Jeff Claydon, seen here in a field of Elsoms Bamford winter wheat. In the background, at the entrance to the Claydon factory, is the original drill which Jeff invented in 2002, and which subsequently transformed the fortunes of his family's arable farm in Suffolk.

The companion crop of beans can clearly be seen growing in this crop of Elsoms Bamford winter wheat.

Recently, I talked to a farmer who had been direct seeding using a disc-type drill, moving almost no soil, and after noticing some stratification of the soil layers, reverted to ploughing to mix the layers. Soil stratification will never be an issue with Opti-Till® because the standard leading tine system on all Claydon direct drills avoids this and consequently eliminates any need for low-disturbance subsoiling to remedy the problem. The leading tine doesn't have to be run deep every year, just on a sensible basis according to conditions and what you see from looking at the soil. For some crops you will run it a little bit deeper, for others slightly shallower and for best results we recommend drilling at a slight angle to the previous crop.

Timing is everything

Timing is everything in farming and keeping it simple is the key. Operating full RTK guidance, we don't need to put tramlines in with the drill and can come back in the spring with the TerraBlade inter-row hoe to take out any weeds growing between the band-seeded rows. Reducing weed competition in this way has significantly increased yields and any slight concerns we had about going through the spring oats at an early growth stage proved unfounded.

All our winter wheat for 2026 harvest was planted early, in excellent conditions. Fields destined for spring oats were sprayed off in September, a few days earlier than planned, to take out the catch cover crop/grassweeds/volunteers, then the over-wintered cover crop was direct seeded into the residues. It is now growing strongly and will be taken out prior to drilling the spring oats, along with any grassweeds that have emerged since we sprayed off the catch cover crop. That's where the real value of this approach lies and it works a treat.

I am seriously impressed with the way the farm looks this season now that we have fully integrated cover crops into our regime, even though it has been a learning curve for me and the team. Having gone down the SFI route, we are seeing considerable advantages in terms of improved weed control from using just one spray of glyphosate to take out the cover crop and the weed rake (Straw Harrow) to remove most of the remaining blackgrass pre-drilling.

Before sitting down to write this article on 20 November, I drove around the farm and saw that all our cover crops are in excellent condition. Our wheat is also in great shape going into the winter months, being strong, competitive and very clean considering it was drilled earlier than normal. Elsoms Bamford impressed last season, and we sold it for a small premium, so we are growing it again. Some might say that's a bit risky, because if that variety fails you've no fallback position, but having just one variety of soft milling wheat makes it easy to manage the grain store.

Time to take stock

Record harvests across the world during 2025 have led to lacklustre commodity prices and as long as ample supplies remain available I see no reason why they will increase significantly.

Against that backdrop I am pleased that we farm the way we farm, as Opti-Till® reduces risk and provides a simple, fast, low-cost method of establishing any crop that can be air sown. My goal is to remain profitable, even before government funding, and the bottom line is that, before subsidies, which are becoming more of an unknown quantity, we have achieved that every year for 23 years. The solution that worked for us back in 2002, by greatly reducing establishment costs and producing consistently high yields, still works for us today and gets better year-on-year.

If we are to continue farming it is important not to fall into the trap of using machinery until it wears, because patching up old kit to keep it running will cost money, both directly and through inefficiency. Currently you have five years to average profits, so before getting into a situation where you have five years of loss, make the changes which will help you farm efficiently and profitably.

No one will argue that times are tough; the question is what can you do about it? Rather than burying heads in the sand and hoping that everything will come good in the end (spoiler: it won't), those who are determined to stay in farming will review what they are doing and implement changes to maximise profitability.

With harvest and autumn work out of the way, now is a good time to evaluate the considerable benefits that are described in the Claydon THINK campaign; we developed this to demonstrate how Opti-Till® reduces the time and cost of establishment by almost 50%. It also demonstrates how our customers improve yields and benefit soil health to deliver healthier, more sustainable, more profitable crops. Details can be found on the Claydon website: claydondrill.com/think-change/

Visit **https://claydondrill.com/our-customers/** to hear from farmers across the UK and further afield who are achieving great results with Opti-Till® on a range of crops on varying soils in all climates. You can also keep up with the latest posts, photographs, and videos from Claydon and its customers through the Claydon Facebook page www.facebook.com/Claydondrill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FARMER FOCUS
TIM PARTON

The start of a new year, full of hope and expectation! I always try to stay upbeat and hopeful as that is far better than just moping around the yard, moaning! Yes, we have a lot against us at present but looking at the black side does not do our mental health any good. I tend to think that there is always a solution to any problem. It may not always be the solution that you would really like, but nevertheless it is a solution and when things are piling up on top of us, it is so important to regroup, take a breath and work out how we are going to overcome the difficulties that lie ahead of us.

Crops are looking very well at the time of writing and went to bed with a nutrition-balanced foliar spray to give them the ability to get through the winter months, be that from low temperatures or pest / disease attack. As you all know, it is my firm belief that everything can be overcome by ensuring the correct biology and nutrition is available to the plant. Companion cropping further adds to that mix, interacting with more biology and hopefully making more nutrition available to the cash crop, which is obviously the most important crop for the business. Profit must always be our number one concern in the troubled times we find ourselves in, as without profit we are finished as a business.

Cover crops have looked well all the way through the season, even though they were a little slow to get going due to the lack of water and they haven't reached the height that I would normally expect them to. That said, they are still doing that wonderful job nature intended them to do, putting carbon back into our soils and pulling out nutrition from the soil to make available for the following cash crop. To me, this is the wonder of nature in action, as it has been done for millions of years before human beings started to think that we know better. Applying lots of synthetic products throws everything out of balance, leading to the need of more synthetic products to treat the symptoms the initial products have caused! What a wonderful way to make money! The harvested and produced 'food' is then supposed to nourish us (or animals destined to nourish us), but is more likely than not, lacking in nutrients and phytochemicals. This then leads our bodies to get sick from lack of nourishment and we go along to the doctor to get treated for illness – again treating the symptom, not the cause! Thus, making certain companies an awful lot of money. (The pharmaceutical industry is now worth $1.5 trillion worldwide.) Is it me or should we be asking the question what is going wrong? Am I just a sceptic? As soil degradation has got worse, human health has declined, along with livestock.

Getting biology back into our soils is the only way to address these perpetual problems, along with carbon. When biology starts to work, things begin to fit into place and nutrients become available. I have seen a soil pH change by itself just with biology! But is it really any wonder? How do we really think our soils got so productive and active without mankind's intervention! Do we really think we know better than mother nature? We have so much to learn and biology has so much to offer if we are prepared to put the time in. When biology starts to work and the porosity of the soil starts to change, that aggregation begins to get more depth and compaction becomes a thing of the past. That is when the power and magic of biology become visible and our food becomes nutrient-rich and packed with phytochemicals that are then going to enrich our bodies and immune systems to help us to stay healthy.

Getting that biology back into our soils can take time and, as I have always maintained, you must earn the right to farm in the way that I do. It's not just going to happen overnight, but if you are prepared to put the work in, happen it will. It may well reappear and function on its own, but for me, as I can get impatient sometimes, I like to reintroduce as much as I can on a regular basis. This is done from buying in microbes, where you know exactly what you are introducing and why! Alternatively, it can be from farm-made compost, which is going to give a very wide variety of microbes if it has been made well. Good compost making is not rocket science and there are plenty of books on the subject if you are prepared to put the work in. Extracting the compost is the best way of getting all those lovely microbes off the carbon and into the liquid applicator on the drill made by Trevor Tappin (who has recently excelled himself yet again by helping me get more mobile around farms with my own beach buggy and trailer. I can't thank him enough - see picture below - independence is everything when you have lost it). Extracting compost is always the safest way in my experience as not all biology will multiply when in the brewer and I want to get as much variation as I can back into the soil biome. Compost teas are great when your own knowledge of compost has improved and you are confident what is in your compost, but until then, extraction is always the safest bet. As your soil becomes more aerobic and this new community starts to work, improvements in soil commence, in my opinion.

I hope the year ahead is kind to us, as growers, as we could do with a normal growing year for a change. But with the moon in its current orbit, I suspect not! Nevertheless, the main thing is to keep spirits high and know that we shall get through this storm cloud hanging over us one way or another.

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NEW WINTER WHEAT VARIETY AIMS TO CONTINUE MARKET RESURGENCE IN UK SOFT WHEAT PRODUCTION

Written by Kurtis Scarboro from Elsom Seeds

As a crop manager working for the UK's largest independent seed breeder, Elsoms Seeds, I'm delighted that, following the success of Elsoms Group 3 wheat Bamford, we are now able to announce another exciting new soft wheat, Sparkler, to the 2026/27 Recommended List (RL)

Kurtis Scarboro

Prior to the arrival of Bamford in 2023, there hadn't really been any Soft wheat varieties agronomically able to compete with the highest yielding Hard wheats since the halcyon days of the early 2,000s when outstanding wheat varieties such as Claire, Consort, Riband and Robigus ensured that nearly 50% of the UK wheat area was made up of Soft wheat. Since that time, though, the area of Hard wheat grown in the UK has surged way ahead of the Soft wheat area, creating an imbalance.

Whilst that imbalance still exists, the recent success of Bamford (now officially the UK's leading winter wheat variety in terms of its market share) added to the arrival of Sparkler should help to restore some much needed balance, as well as helping to create more opportunities for growers to achieve premiums.

According to many grain traders and millers, there is now very good milling demand for Bamford. And, following their analysis of the crop25 harvest results, the quality of Soft wheat across all the key metrics – including protein levels, bushel weights and Hagberg – was equal to Hard wheat last season.

With a treated yield of 106%, Sparkler has joined the RL as the highest yielding UK Soft variety, offering growers and agronomists a powerful genetic background combining the individual strengths of both Graham and LG Skyscraper. Graham was always noted for its strong performance in the West, whilst Skyscraper dominated the North of England and Scotland for many years, so expectations are high that Sparkler will continue that impressive lineage in not only those key regions but throughout the rest of the UK.

From a disease-resistance perspective, Sparkler is particularly noteworthy. It has a Septoria resistance score of 7.2, the second highest on the RL, and a yellow rust score of 7. Both are impressive ratings, especially in a year that saw many varieties downgraded due to high disease pressure – particularly around yellow rust.

Nick Pitts, Supply Chain Sustainability Manager at the Scottish Whisky Research Institute (SWRI)

On marketability, offering growers realistic opportunities to achieve a premium, the key advantages of this new variety lie in both its suitability for UK distilling and its recent approval for UKS export.

In tests conducted by Nick Pitts, Supply Chain Sustainability Manager at the Scottish Whisky Research Institute (SWRI), Sparkler has been rated as 'High' for its distilling quality, consistently delivering high alcohol yields. This is a significant improvement over the mean of the control varieties. Beyond its distilling potential, Sparkler also possesses a strong set of agronomic traits. It has shown exceptional early vigour, a good specific weight of 76.7kg/hl, and a high tillering capacity, which results in a good amount of straw. All desirable characteristics for growers.

The SWRI's role is to support the AHDB's RL trials by evaluating soft wheat varieties for their distilling quality. They are the sole provider of this data, and their assessments focus on Alcohol Yield and Residue Viscosity. Varieties with high alcohol yield and low viscosity over multiple years are rated 'High', while those with acceptable quality are rated 'Medium'. Distillers prefer soft wheats of at least 'Medium' quality.

The addition of a new 'High' rated distilling variety to the RL is a welcome development. Sparkler has consistently delivered high alcohol yields during testing, offering both farmers and distillers a strong new option for grain distilling.

It's always valuable to see how new varieties perform on-farm, and I was interested to hear from Lincolnshire-based arable farmer Vic Barker, who

Sparkler Crop - July 2025

farms 222ha on soils ranging from heavy loam to light silt loam. He had an early opportunity to evaluate the new Group 4 and was impressed with its performance during a very challenging season noted for prolonged dry conditions.

Vic explained that he drilled 6ha of Sparkler at a seed rate of 175kg/ha in early December 2024, following crops of cabbages and parsnips. The crop established well, showed tremendous early vigour, and wintered well, before kicking on again in early spring following its first split of N applied at a rate of 80kg/ha on March 3rd.

He went on to add, "Given this variety is completely new to us, we adopted a belt and braces approach in our fungicides strategy, with both our T1 and T2 sprays built around a strong tank mix that included both Revystar (mefentrifluconazole + fluxapyroxad) and Stabilan (chlormequat chloride) - a PGR we use as additional insurance to prevent lodging and strengthen plant stems. The variety was straightforward to manage, fitting nicely into our normal spray pattern and all went smoothly through spring and early summer, with the lack of rainfall our only serious concern.

Harvesting in the second week of August, it was his highest yielding winter wheat from five varieties grown in 2025, recording an average yield of 9.76t/ha – a great result given the near drought conditions. In terms of his initial observations, he felt Sparkler's ability to get away quickly could potentially make it a good variety for late drilling. It tillered well, producing a lot of straw and coped better with the dry conditions than some of his other varieties.

For his 2026 Sparkler crop, Vic has gone with an earlier drilling date and increased his drilled area to 10ha.

He concluded: "Assuming different weather challenges next year, I'm sure we'll know a lot more about this variety by next harvest. It's early days, but I certainly like what I've seen so far and its inclusion on the new RL looks fully justified."

FARMER FOCUS
HEATHER OLDFIELD

Holding the Line in a Year That Kept Moving the Goalposts

There's a moment every autumn, somewhere between the last grain lorry rumbling out of the yard on its way to central storage and the first drill making its opening pass, when I catch myself believing the new season might just play ball. It's fleeting, lasting about as long as it takes me to finish a cup of tea, but it's enough to set me up for the next round of decisions, compromises and cautious optimism that come with British arable farming.

This year, we held our nerve and drilled winter wheat in mid-October, after letting a decent chit of blackgrass appear. I'll admit I walked those fields in the evenings, doing my usual mental arithmetic on soil temperature, rainfall and how many days of weather luck we might have left. Blackgrass still sets the rhythm, and 2025 was no different. On our stubborn heavy clays, you either get conditions perfect or pay for it all winter. Too soon and you're inviting weeds, too late and you're risking a mud-wrestling match that will haunt you until spring.

Thankfully, the Horsch Avatar did its job: consistent depth, tidy placement, minimal disturbance. Wheat establishment is even, strong and, I'll whisper it rather than say it, the best start we've had in years.

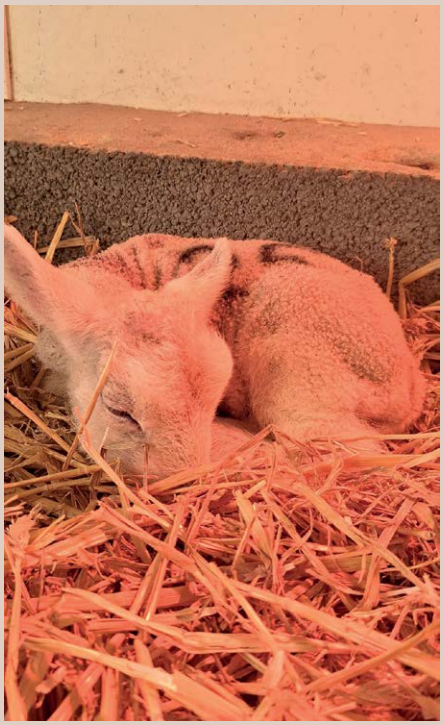
Like many others, we've leaned further into spring cropping. Spring barley still ticks several boxes: weed control, a bit of a premium when the market behaves and straw for the growing beef. With grain markets dragging, we're feeding home-grown barley for the first time, and so far, it's proving its worth. In a moment of bravery, we're trying spring beans in 2026 too. Grass continues to be the unsung hero here, offering reliability for forage, soil rest and weed management.

One thing I genuinely welcome from Minette Batters' Farming Profitability Review is its push for clearer long-term direction, stronger supply chain fairness and better data-driven decision-making: all actions that feel grounded in the real world of farming rather than theory. The review's emphasis on boosting resilience, improving business confidence and recognising farming's wider economic value gives me hope that the sector is finally being heard at policy level.

And while there's no silver bullet, the call for coordinated action and for government to put farming at the centre of food, environmental and trade policy feels like exactly the kind of reset we need.

It's also encouraging to see the focus on practical innovation, home-grown solutions and reducing reliance on imports. That ties directly into our own decision to bring spring beans into the 2026 rotation: a small but meaningful step towards producing more of our own protein on farm. Not only does it strengthen our agronomy and support soil health, but it also aligns with the review's message that boosting domestic production where possible is key to building a profitable, resilient future.

Weather wise, this season has been



kinder than the last few. Friends across the country are muttering about wanting more rain, but after the bog-like conditions of 2023–24, I'm grateful for where we are. Crops have potential, fields are carrying well and optimism, that scarce resource, is reappearing.

The mild winter, however, has brought rising disease pressure earlier than usual. Timings will be everything. Nitrogen scheduling, fungicides, crop management: all of it sits in the annual balancing act between agronomic need and budget frustration.

Then we come to the Sustainable Farming Incentive. If I'm honest, the SFI has been the other dominating storyline of last year, though not in the confidence-boosting way one might hope. The government's snap closure of options in spring 2025 knocked many of us off-balance mid rotation and mid budget.

Trying to plan multiyear environmental outcomes while the rulebook keeps getting rewritten feels like farming on shifting sands. One minute a scheme makes sense, the next, you're redrawing maps, reassigning margins and recalculating income.

Wider government policy hasn't offered much stability either. Machinery investments, choosing varieties, hiring staff; these aren't short-term decisions. You need a predictable policy horizon.

Becoming a mum has changed how I look at all this. I think more about the future landscape my children might walk into, and whether they'll have a farming industry that values both food production and environmental care.

Looking ahead to 2026, I'm cautiously hopeful but fully aware we need stability, fairness and better prices. Volatility helps no one.

Meanwhile, real life keeps happening here. The children have already declared that we "definitely need more cade lambs" this spring. They may be fluffy hooligans, wildly inefficient users of milk powder and prone to escaping at the worst possible moments, but the children love them. And honestly, they teach good lessons: responsibility, timing, gentleness and the joy of seeing something thrive because you turn up every day.

2025 demanded nerve, patience and the stubborn refusal to take shortcuts even when tempted. It hasn't been easy, but farming rarely is. What it continues to offer, even in the most uncertain seasons and shifting policies, is purpose, community and a sense that what we do still matters.

AGRONOMIST IN FOCUS...

BEN FOSTER

HOW VARIABLE RATE NITROGEN APPLICATIONS CAN HELP OFFSET UPCOMING FERTILISER TAXATION

The new carbon border adjustment mechanism (CBAM) tax, which is expected to add £50-£75 per tonne to nitrogen prices, is less than a year away. But it is likely to be felt this year, since the EU implemented its CBAM tax, which accounts for most of the UK's nitrogen fertiliser imports.

"We could see £40/t added to fertiliser prices this spring because of CBAM's implementation in the EU, which isn't ideal considering the current grain prices and that nitrogen is already at a high price," says Ben Foster, product manager for RHIZA.

He believes adopting variable rate nitrogen can readily generate the savings needed to offset any rise, and data from last year back this up. "Variable rate nitrogen has been available for a long time. Some farmers have tried it and decided it wasn't for them, while others have the machinery capable of applying variable rate but have never tried it.

"There are now new tools available to farmers that make variable rate nitrogen cheaper, easier and more accurate. I'd encourage all farmers with the capability of variable rate spreading to look at the technology this season, at least in a trial area, to examine its results on their bottom line," urges Ben.

Examining data from combine yield mapping is a great

starting point for justifying the need to customise nitrogen rates across a field, according to Ben. An increasing number of farmers now have access to yield maps, especially as older combines with this capability become available on the second-hand market.

"I'd recommend looking at the variation in satellite imagery from a platform like Contour in March or April, and overlaying it with historical yield maps. In my experience, the variation in spring satellite images will likely correlate very closely with yield data from the summer. This should give farmers the confidence to tweak late spring nitrogen applications to match field potential," says Ben.

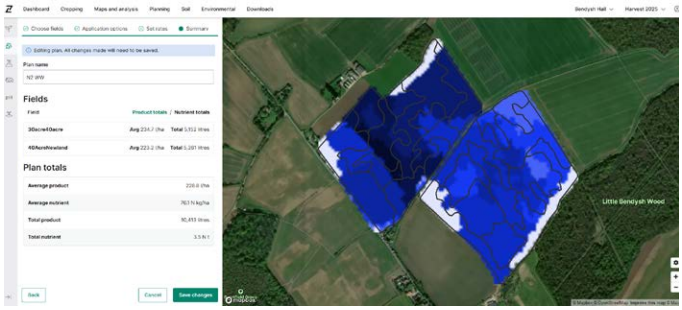
Peter Cartwright, farms manager at Revesby Estate in Lincolnshire, made the move to variable rate nitrogen on his wheat crops last year after seeing its benefits during an Agrii digital technology farm trial. They had used variable rate nitrogen some years before, but gave it up because they lacked confidence in how to adjust the rates.

"In oilseed rape, it's straightforward because it's linked to the green area index," says Peter. "With wheat, we didn't know whether to push a backwards crop or hold back on it. We are still asking similar questions, but we have a better grasp of it with the information available to us.

"We have signed up for the variable rate SFI action and we are using it across the whole estate now."

The new CBAM tax, on top of high prices relative to grain values, has flipped the nitrogen equation, thinks Peter. Not long ago, the benefits of adding more nitrogen to maximise yields outweighed the risks of potentially spending too much. The financial cost for applying too much is far higher now, he adds.

Last season, they did not see a reduction in nitrogen use overall, but Peter says they used it more appropriately, pushing the more promising field areas and holding back on others. Looking ahead to this spring, with grain prices



lower than a year before and nitrogen higher, he is looking for savings. "The economic viability of that last 10% of yield has changed," explains Peter.

The functionality for farmers to make this choice is available in Contour, says Ben. When choosing variable rate plans, farmers can choose between optimum yield and canopy levelling. Selecting optimum yield means the tool will favour better areas of the field with more nitrogen to maximise the yield potential there. Conversely, canopy levelling will increase nitrogen levels in areas with lower vegetative indices.

"There is no definitive answer to this," says Ben. "It is dependent on the season and the farmer's knowledge of the field. We are trying to build our understanding of this through the digital technology trials at Revesby Estate. Last season, they showed promising results from withholding nitrogen on the sandier areas of the trial field due to the dry weather.

With the increasing number of long, dry spells in recent springs, understanding variation in soil texture and underlying geology can be just as important for nitrogen applications, believes Ben. Soils with higher clay content or over chalk often show much better drought tolerance and therefore better yields, which supports higher nitrogen applications in drier seasons.

If farmers want to try variable-rate nitrogen this season, Ben says the Contour tool charges only for the areas where it is used.

"If you want to use it, we will unlock the tool for your whole farm. RHIZA recognises not every field will require variable rate nitrogen and as such offers a pay-as-you-go approach to planning, meaning whilst the tool is accessible across the whole farm, you'll only be charged for the hectares that the system produces a plan for," he concludes.

GENERATING **LOWER-INPUT VARIETY DATA**

Jason Pole, AHDB Technical Content Manager, explains how innovative trials aim to pinpoint elusive crop characteristics to help farmers reduce input use

Every year, efforts are renewed in the quest to grow profitable crops. The fundamental ways to achieve this are well-understood but there is always scope for improvement, which includes turning towards genetics even more for a helping hand.

The Recommended Lists for cereals and oilseeds (RL) already presents data for many key traits associated with input use, including disease resistance. According to results from successive five-yearly reviews of the variety-trialling project, there is a consistent appetite for more agronomic data. Over the years, common themes have emerged, including a demand for more crop physiology data to identify varieties that perform better under lower-input scenarios.

Valued vigour

Although responses to our RL reviews are broad, there are keywords that crop up repeatedly, including vigour. Good crop vigour is clearly valued, but the question of what it is and how it is assessed is complex and has defied clear definition, which is why it has not been included on the RL to date.

Certainly, it is not through a lack of trying. For instance, we have run trials and worked with breeders to develop ways to measure vigour in oilseed rape. We even detected statistically significant differences between varieties in individual trials. However, when trial results were combined, the differences in vigour were lost. Frustratingly, varieties with high levels of vigour in one trial can show low levels of vigour in another. Although we do not know the specific reasons for the inconsistency, it is highly likely to be due to numerous (often interacting) environmental variables, such as temperature, soil moisture, nutrient availability and daylength, that outweigh genetic differences in vigour.

To produce reliable vigour data, we need to know much more about these factors, so we can account for them in variety evaluation. At present, we are focused on assessing potential vigour traits in winter wheat. So far, the results in the small subset of RL winter wheat trials have been more encouraging than those for oilseed rape. The first-year trials (2024/25 season) detected differences between varieties at RL trial sites in England, Scotland and Wales. The differences were small but, importantly, consistent. Measurements will continue for the 2025/26 season. If robust and reliable information on crop vigour can be generated, then the RL Board will consider the potential to measure vigour traits routinely and include them on the RL.

Of course, not all variety research has to be done within the confines of the RL trial system. In autumn 2025, two further projects (at non-RL trial sites) got underway to investigate potentially useful variation.

Withholding weeds

The first project studies how cereal varieties compete with weeds in lower-input situations. It is a topic that has been visited many times by researchers, which includes investigations of key traits associated with early growth habit, tillering and height.

Despite these efforts, there is still relatively little practical information that can be trusted and used by farmers, especially as many aspects of competition remain poorly understood. Additionally, management choices influence a crop's ability to compete with weeds (e.g. seed rates, row spacing and seedbed quality), which add further complexity to the variety-assessment process.

A PhD study showed black-grass root development in hydroponic systems (C) University of Leeds

However, the topic merits attention. There are significant differences between cereal crops, giving hope that this could be extended to the variety level. For example, research suggests that up to 25% control of black-grass can be achieved by using competitive crops – with some crop species more competitive than others (e.g. barley is more competitive than wheat). A recently completed AHDB-funded PhD

Winter oilseed rape RL trial

Weed suppression in a winter wheat trial (C) Cope Seeds

studentship (at the University of Leeds) also revealed how the strong rooting habits of some winter wheat varieties improve competition against black-grass during the autumn.

In 2017, the Organic Research Centre developed an on-farm research network that established field-scale winter wheat variety trials. It provided a proof of concept for variety evaluation in a wide range of farming systems, including organic, reduced-tillage and lower-input systems. It also identified the three main traits responsible for weed competitiveness:

1. Early crop vigour
2. Early crop ground cover
3. Good crop canopy cover at flowering

The speed of growth, rate of development and overall biomass production (ground cover and height) all influence the battle with weeds. The new AHDB project will build upon the initial lessons, run additional trials and develop recommendations for measurable crop physiology traits associated with weed competition. The research will continue until the end of 2027.

Building blends

The second new initiative examines whether growing a mixture of varieties can deliver more sustainable wheat crops. In addition to potentially delivering stronger yield and quality, cereal blends could produce other benefits, such as better yield stability and reduced disease severity (which could help reduce fungicide spray intensity, contribute to fungicide-resistance-risk management and prolong the durability of disease resistance genes).

The AHDB variety blend tool for winter wheat and farmer/miller experience are being used to identify the hard milling varieties (UKFM Groups 1 and 2) to include in the project's variety blend trials, which will also feature single variety stands for comparative purposes.

Although the blend tool can suggest combinations of varieties, it uses agronomic data from RL trials, where varieties are grown as straights. This means the tool cannot account for the complementarity of traits. In other words, it does not indicate whether a mix will be greater or less than the sum of its parts.

The new variety blend trials will specifically assess how varieties complement each other in mixes, including how they work together to exploit resources more effectively. The trials will be drilled each autumn (2025, 2026 and 2027) at two experimental sites:

- Harper Adams University in Shropshire (generally has a high septoria tritici pressure)
- Agrii Throws Farm in Essex (generally has a high yellow rust pressure)

The trials will include the following treatments:

- No or low fungicide treatment to test disease resistance of blends compared to their component varieties
- A high-fungicide intensity treatment (RL standard fungicide programme) to suppress all diseases to test the additional benefits of blends

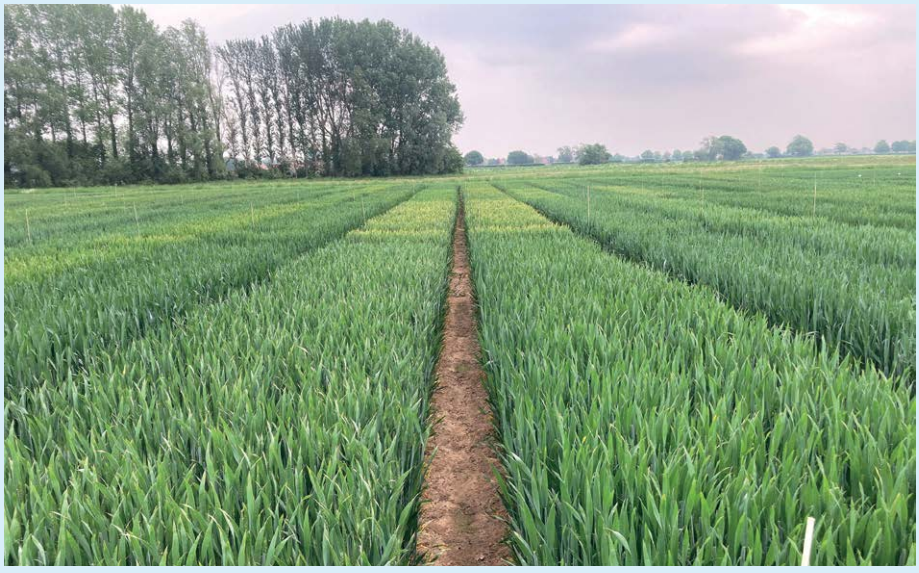
The researchers will take various measurements, including disease levels, growth data and yield. The project will also assess grain quality data (via milling and baking tests provided by Whitworth Bros), analyse mycotoxin concentrations and record the presence of ergot.

Led by Harper Adams University and Cope Seeds (UK) Limited, the work will deliver evidence on the performance of variety blends and prime conversations among farmers and millers. Ultimately, it will increase understanding of the performance of blends in UK conditions.

Further information

You can follow the progress of these and other crop genetics research projects on the AHDB website: **ahdb.org.uk/variety-research**

The page also features details about two scoping studies on varietal responses under reduced-nitrogen and reduced-fungicide scenarios (which were also commissioned in response to the most recent RL review).



Winter wheat RL trials

Jason Pole, AHDB Technical Content Manager

THE **GROUNDSWELL** SESSIONS

Another two examples of 'What you might have missed at Groundswell' from Mike Abram's Groundswell Sessions series on his Regenerative Farmer Substack newsletter

THE GROUNDSWELL SESSIONS

OZEMPIC V ORGANIC

This kind of session is why I'm doing this Substack series. It's not one I would likely attend, but is extremely interesting and is what makes Groundswell so different. ***- by Mike Abram***

Location: Groundswell Festival

Seminar: Ozempic vs Organic - Groundswell 2025

Published: 11-Nov-2025

Length: 1:05:13

Summary

This seminar critically evaluated the growing reliance on prescription weight loss medications, such as GLP-1 analogues (e.g. Ozempic), contrasting them with the long-term health and weight management solutions offered by a diet focused on nutrient density and whole foods. The panel featured Dr. David Unwin, an NHS GP, and Dr. Lucy Williamson, a vet and nutritionist, who highlighted that many people are simultaneously "overfed and undernourished" due to poor diet quality. A key concern raised was that weight loss achieved through these powerful drugs is not permanent, often reversing once the two-year legal usage limit is reached. Furthermore, suppressing appetite while eating a nutrient-poor diet risks dangerous deficiencies in vital nutrients like iron, calcium and protein, potentially leading to muscle loss and compromised bone health.

The speakers championed a low-carb, nutrient-dense dietary approach, noting that it achieved similar weight loss results (an average of 19 kilos in one study) as the drugs, but sustainably and without risk. This diet naturally stimulates the body to produce its own GLP-1 fullness hormone. For farmers, the essential takeaway is the profound connection between soil health and human health: regenerative and nature-positive farming methods are crucial to reversing the historical decline in food nutrient content, where key nutrients like iron and zinc in staple crops have dropped by 30% since the 1960s.

Farmers were encouraged to apply the nutritional intelligence they use for livestock (recognising that carbohydrates are fattening) to feeding their own families. The panelists provided emerging evidence showcasing the superiority of food farmed with nature, noting that organic dairy and meat can be significantly higher in beneficial omega-3 fatty acids and antioxidants. This superior quality work, they argue, must be properly valued and rewarded by citizens — not just consumers — who understand the story and quality behind their food.

Key takeaways

- **Opt for nutrient-dense diets:** Adopt a low-carb, whole-food diet first, as it can match the weight loss results of GLP-1 drugs while naturally stimulating your body's GLP-1 hormone
- **Increase soil health focus:** Continue or adopt nature-positive farming practices, as organic methods consistently increase the levels of beneficial nutrients like iron and bioactives in crops and livestock products
- **Value animal products:** Recognise that high-quality, animal-sourced foods (meat, dairy) and dark leafy greens are the optimal sources for overcoming widespread deficiencies in critical micronutrients like iron, zinc and B12

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- **Apply farming logic to family:** Use the same nutritional knowledge applied to livestock management—understanding that refined carbohydrates are fattening—to make informed, healthy choices for your own family.
- **Support policy change:** Advocate for food policies that restrict junk food advertising to children and subsidise whole, unprocessed foods to improve societal health environments.

"My patients eat about a third less food than the general public. They need less food because they're getting nutrient density." — Dr. David Unwin, NHS GP

Digging deeper

The dangers of GLP-1 dependence

The discussion highlighted that GLP-1 analogues, derived historically from the long-acting venom of the Gila monster lizard, are powerful drugs that mimic the body's natural fullness hormone. While effective for temporary weight loss, they are only legally licensed for two years, after which weight rapidly returns. A major ethical concern is the casual way people are accessing these injections via online pharmacies without medical supervision, meaning they lack informed consent regarding potential serious side effects, which have been associated with 82 deaths reported in the British Medical Journal. When people use these appetite suppressants while eating a poor diet, they face intensified nutritional deficiency, risking muscle loss (as the body melts its own muscles for protein) and depleted calcium stores, which can weaken bones.

"You're not losing weight permanently. It's only while you're on the medication." — Dr. David Unwin, NHS GP

Nutrient density crisis and the regenerative doctor

The seminar established that the low nutrient density of modern food makes it "just about impossible" for older people to meet requirements for certain minerals like magnesium due to current growing methods. This is demonstrated by studies showing a 30% drop in iron and zinc levels in rice and wheat since the 1960s. Dr. Unwin advocates for a "regenerative doctor" approach, working with human physiology by prescribing a low-carb, nutrient-dense diet. This lifestyle change led to significant results for patients, including one case where a patient lost 32 kilos of weight in one year after learning what spiked her blood sugar, despite five years of failed GLP-1 injections. In a formal study, the low-carb diet group lost an average of 19 kilos over a year, matching the performance of GLP-1 drugs.

"My patients eat about a third less food than the general public. They need less food because they're getting nutrient density." — Dr. David Unwin, NHS GP

The "Golden Thread" connecting soil and health

Dr. Lucy Williamson emphasised that microbes form the "golden thread" linking the health of the soil, grazing animals, and humans. A diverse, healthy gut microbiome is crucial for weight control, as it produces the "building blocks" for the natural GLP-1 hormone. Research on food quality confirms that ultra-processed food, even when fortified with nutrients, upsets human biology and leads to greater weight gain compared to whole, wholesome food. Certified organic beef and lamb, compared to non-organic or grain-fed varieties, can be up to 300 times higher in vital anti-inflammatory omega-3 fatty acids. Furthermore, the science on dairy is changing: whole dairy fats are now understood to be protective against heart health issues and Type 2 diabetes. The speakers stressed that the public should shift from being passive "consumers" to active "citizens" who value the quality and origin of the food they buy.

Watch the video on YouTube

THE GROUNDSWELL SESSIONS

FARMERS HELPING FARMERS IN AUSTRALIA

A very interesting session focusing on what Australian and UK farmers could learn from each other. - *by Mike Abram*

Location: Groundswell Festival

Seminar: Farmers helping Farmers in the Land "Down Under"

Published: 11-Nov-2025

Length: 1:05:17

Summary

This seminar presented a case study in farmer-led systemic change, chronicling the experiences of Vic No Till, an Australian regenerative farming organisation, following an eight-day study tour of UK farms. Michael Gooden (President of Vic No Till) and soil health consultant Joel Williams led the discussion, emphasising that successful system change must start "from the bottom up" via peer-to-peer knowledge sharing, addressing similarities between UK and Australian agriculture, such as climate adaptation

challenges and the ongoing cost-price squeeze.

A core finding for farmers was the necessity of a fundamental mindset shift, referred to as "the paddock between our ears", which must precede investment in new technologies like disc drills. The delegation praised UK farmers for their high degree of on-farm experimentation and non-dogmatic adherence to principles; they observed long-term no-till practitioners strategically using shallow tillage to manage specific issues like compaction or potential future weed pressures, treating tillage as a tool.

The Australian team identified significant opportunities for UK farmers, particularly in increasing genuine livestock integration into arable rotations. While impressed by the widespread adoption of perennial fertility lays and crop variety blends (areas where the UK is seen as leading), the visitors stressed that maximising the economic and soil health benefits of these lays requires effective grazing management, citing evidence that the largest 'kick-up' in carbon sequestration often occurs only when animals are introduced.

Key takeaways

- Focus internal resources on the mindset shift ("the paddock between our ears") before making major machinery investments
- Integrate livestock into arable rotations to generate early cash flow and recover input costs, thereby mitigating crop risk
- Utilise flexible, low-cost temporary electric fencing to implement holistic grazing management principles, ensuring adequate rest periods for plants
- Establish peer-to-peer networks focused on building trust, encouraging open discussion of failures, and sharing economic benchmarks (e.g. machinery overhead costs)
- Maintain a flexible, context-

specific approach; strategic use of occasional shallow tillage to address soil issues should not be rejected dogmatically

"If you don't get that right within this space, then no matter what type of seed drill you've got or no matter how fancy your pasture mix is, you won't really get too far ahead." — Michael Gooden, President of Vic No Till

Digging deeper

The power of peer-to-peer learning and mindset change

Vic No Till was founded around 2002 following the implementation of early direct drilling technology in Australia. Its mission is "farmers helping farmers" to create collaborative spaces for learning and growth. The organisation views the single most important factor for success as the farmer's attitude — the "paddock between our ears" — and therefore organises practical, hands-on field days and events designed to facilitate effective communication. These events encourage farmers to discuss opinions and feelings, which ultimately builds trust and bonding necessary for making difficult changes.

Vic No Till's focus on building a strong supportive network directly combats the fear often introduced by traditional external advisors, such as agronomists, who might discourage farmers from reducing inputs by suggesting they "will go broke if you do that". The organisation also works to keep long-term members engaged by expanding conversations into human health, nutrient density and the economics of healthy eating.

UK Practices: Flexibility and On-Farm Experimentation

The international delegation was highly impressed by the openness and willingness of UK farmers to share both their successes and failures, fostering a "two-way street of knowledge exchange".

A key observation was the prevalence of on-farm experimentation. Farmers showed the delegation numerous trials, allowing them to compare treatments ("left versus right") and hone their observational skills. This practice fosters a vital understanding of how systems work in specific soil contexts. This flexibility was evident in the approach to tillage:

"Tillage is a tool and we need to be looking at using it strategically." — Michael Gooden, President of Vic No Till

The Australians noted that even long-term no-till farmers were experimenting with shallow ploughing to proactively deal with compaction, weed issues, or to mitigate the future risk of glyphosate removal. This adaptability demonstrated that UK farmers were not being dogmatic about continuous no-till.

Livestock integration: The 'easy wins' for UK arable

Michael Gooden noted his surprise at the low level of genuine livestock integration within UK cropping systems, stating that animals were often kept on separate parts of the farm. The Australian experience, supported by examples like Gabe Brown's transition, shows that the largest increase in carbon sequestration often follows the introduction of livestock alongside other regenerative practices.

Extra benefits from herbal leys?

The UK is seen as a leader in incorporating herbal leys into arable rotations, which significantly improves soil structure, root depth and prevents compaction. However, the economic and biological benefits of these leys are maximised by introducing grazing. Grazing provides:

- Enterprise diversity and reduced crop risk (input costs recovered via grazing income).
- Improved cash flow (selling animals sooner than grain harvest).
- A mechanism for inoculation and enhanced nutrient cycling. To manage this on large arable fields, the delegation recommended the use of temporary electric fencing (such as Kiwi Tech or adapted setups), which is low cost, highly flexible and allows farmers to implement good grazing management (adequate rest periods) without hindering cropping operations.

Global Markets, Biodiversity and Carbon

The UK was praised for its robust direct-to-market grain systems (like Wildfarmed), which provide viable scale, milling capacity and premium prices for regenerative produce — a structure not yet common in Australia.

Regarding environmental schemes, the visitors were impressed by the UK's SFI programme's focus on increasing biodiversity, noting the widespread adoption of wildflower strips and thick grass margins. While acknowledging that subsidies incentivised this high level of ecological integration, there was curiosity as to whether the associated rules and regulations might be stifling innovation. They hoped that support would continue post-funding, recognising that these practices also deliver economic benefits, such as reducing nitrates in waterways.

In comparison, Australia operates a regulated soil carbon market, which is considered a high-standard methodology, although farmer uptake has been surprisingly low. The visitors expressed concern about the accuracy and long-term verification of carbon credits in unregulated markets.

Watch the video on YouTube

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YORKSHIRE
THE QUIET FARMING REVOLUTION

WRITTEN BY MARK HATTON

For the last 19 years, I've been very fortunate to have been able to call Yorkshire home.

Across the broad sweep of the Yorkshire Wolds, the upland fringes of the Pennines and the deep, fertile soils of the Vale of York, farming has always been shaped by both landscape and necessity. Today, however, Yorkshire agriculture finds itself in the midst of a quieter but far more profound transformation. Driven by economic pressure, environmental responsibility and a renewed understanding of soil and biology, farmers across the county are embracing regenerative practices that challenge long-held assumptions about how land should be worked and how food should be produced. Nowhere is this more evident than in the rapid uptake of direct drilling and low-disturbance systems in arable rotations, alongside the reimagining of livestock management through grazing strategies that restore, rather than deplete, the land.

In Yorkshire's arable heartlands, regenerative thinking has moved well beyond being a niche interest. Direct drilling, once viewed with suspicion, is now widely recognised as a practical tool for rebuilding soil structure, retaining moisture and reducing both labour and input costs. From heavy clay to lighter chalk and sand, growers are discovering that by disturbing less and keeping the soil covered, they are encouraging fungal networks, improving infiltration and unlocking nutrients that had been tied up by years of intensive cultivation. Multi-species cover crops, once trialled on small areas, are now being woven into whole rotations, providing living roots in the ground for longer, capturing carbon and feeding soil biology between cash crops. The result is not just healthier soils, but crops that show greater resilience to drought, waterlogging and disease.

Yet regenerative agriculture in Yorkshire is not confined to arable fields. Across the county's mixed and livestock farms, a parallel revolution is under way. Grazing management is being transformed through the use of rotational and mob-grazing systems that mimic natural grazing patterns. By allowing grass and herbal leys adequate rest periods, farmers are building deeper root systems, improving soil organic matter and increasing forage production without relying on ever-higher fertiliser applications. Cattle and sheep are becoming tools for soil regeneration, trampling organic matter back into the sward and cycling nutrients through dung and urine. For many producers, the benefits are tangible: healthier animals, reduced feed bills and grass that keeps growing when conventional systems would be running short.

What unites these approaches, whether on arable or livestock farms, is a shift in mindset. Regenerative farming asks producers to work with natural processes rather than against them. It prioritises soil as a living ecosystem, values diversity above uniformity and measures success not only in yield, but in resilience and long-term viability. In a region as large and varied as Yorkshire, this flexibility is crucial. There is no single regenerative blueprint, but there is a growing willingness among farmers to experiment, observe and adapt.

That spirit of innovation is not limited to what happens in the field. Yorkshire is also home to some of the UK's most progressive agricultural machinery manufacturers, many of whom are playing a key role in the shift towards lower-disturbance and regenerative systems. Companies such as Agriweld,

Grange Machinery, Ryetec and Sumo are all based in the region, designing and building equipment that reflects the real-world needs of modern farmers. From strip-till and direct drills to low-disturbance cultivation tools and precision application technology, Yorkshire-built machinery is helping farmers reduce passes, protect soil structure and cut fuel and labour costs. The close relationship between these manufacturers and local farming businesses creates a powerful feedback loop, where practical experience on Yorkshire farms directly influences the next generation of equipment.

At the heart of this momentum sits the Yorkshire Agricultural Society (YAS), an institution that has long been a cornerstone of the county's farming community. Best known for delivering the Great Yorkshire Show, the Society's influence reaches far beyond a few days in Harrogate each summer. Through its year-round programme of events, education and industry engagement, it plays a vital role in connecting farmers with new ideas, technologies and one another. In an era when agriculture faces unprecedented change – from post-Brexit policy shifts to the pressures of climate and public scrutiny – the Society provides a stable platform for discussion, debate and progress.

A central part of that mission is its Future Farmers programme, which is nurturing the next generation of Yorkshire agricultural leaders. YAS Future Farmers brings together young people from across the region, providing them with networking opportunities, business insight, technical knowledge and exposure to innovative farming systems. Many of those involved are already actively engaged in regenerative practices on their own farms or in their professional roles, whether that means trialling cover crops, adopting new grazing strategies or analysing data to improve efficiency and reduce inputs. By giving these future decision-makers a voice and a network, the Yorkshire Agricultural Society is ensuring that progressive, regenerative thinking becomes embedded in the county's agricultural DNA.

All of these strands – regenerative practice, engineering innovation, institutional support and generational renewal – will come together at the forthcoming Yorkshire Agricultural Conference on 28 January. Set against a backdrop of shifting policy and tightening margins, the Conference promises to be a focal point for discussion about how Yorkshire farming can remain both competitive and sustainable. With sessions expected to cover soil health, grazing systems, technology and the economics of low-input farming, it will provide a timely opportunity for farmers to take stock, compare experiences and chart a course for the years ahead.

For a county that has always punched above its weight in British agriculture, Yorkshire's current embrace of regenerative farming feels less like a radical departure and more like a natural evolution. Rooted in a deep respect for land and livestock, but informed by modern science, farmer-led innovation and home-grown engineering, it is shaping a future in which productivity and stewardship go hand in hand. As our Farmer Focus contributors will attest to, Yorkshire is not just adapting to change, it is helping to lead it.

THE YORKSHIRE AGRICULTURAL SOCIETY

The Yorkshire Agricultural Society (YAS) is best known for organising the Great Yorkshire Show each July but perhaps is lesser known for the work it does throughout the rest of the year

The new Yorkshire Farming Conference, taking place on Wednesday 28 January at the Great Yorkshire Showground, will help to change that. YAS is organising this major event for the first time, in collaboration with its Farming Networks, as part of its annual circa £500,000 investment to deliver support and promote agriculture and rural industries across Yorkshire and the North of England.

Aimed at everyone working in agriculture, the Conference features a full programme of inspiring talks and workshops, covering everything from farming smarter, policy implications and strengthening supply chains, to the world of livestock showing and wellbeing support. A packed trade show will also mean farmers can scope out new machinery and technology, speak to rural advisory and professional service providers about a range of issues, and find out more about support available to them.

Allister Nixon, CEO of YAS, said: "Tickets are on sale now for the Conference, which will spotlight big topics with leading lights from across farming. It is an event for everyone in the industry, backed by a trade show

Allister Nixon, CEO of YAS

and with a full day to make connections with others in farming, hear and take part in topical talks and find out more about what YAS offers."

A registered charity, founded in 1837, YAS was established to promote agriculture in Yorkshire, and its first objective was to run a major agricultural event. The Great Yorkshire Show was born as a touring show at sites across Yorkshire, with the first show held in Fulford, York, in 1838. This remained the case until 1951, when the show took place for the first time at its new permanent home, the Great Yorkshire Showground in Harrogate.

This investment to purchase the Showground and the subsequent establishment of its Showground businesses (Fodder, The Great Yorkshire Events Centre, Pavilions of Harrogate and Harrogate Caravan Park), whose profits are invested back into the charity, helps YAS to flourish. What's more, an independent analysis in 2019 found that businesses and events held at the Great Yorkshire Showground contributed £73.7 million to the economy.

With these firm foundations, YAS's work has grown considerably over recent decades. YAS supports and promotes the farming industry through events, training, grants, bursaries, scholarships, education, scientific research, practical support and stakeholder engagement. It does much of this work through its Farming Networks.

Future Farmers of Yorkshire is the group for forward-thinking farmers, vets and industry supporters, which offers events and activities to promote professional development and provide networking opportunities.

The Farmer Scientist Network brings together scientists and farmers to explore how science and technology can both solve practical problems on farms and underpin innovation in agriculture for future generations.

The Yorkshire Food, Farming and Rural Network is made up of local stakeholder groups, representing different areas of the region, to identify and feed back issues and concerns to government.

The Yorkshire Rural Support Network connects farming organisations, charities and voluntary agencies that work with and support Yorkshire's farming community by promoting and providing sources of help – practical, financial, medical and emotional – to those who live in farming and rural communities.

The Women in Farming Network brings women from farming and related industries together in the spirit of celebration, support and collaboration.

YAS also offers the Goodall Agri-Development Pathway, a fully-funded training programme to develop farming's next generation, open to those aged 23-40 who work in farming and allied industries in the North of England.

Since 1980, YAS has supported professional development in farming by sponsoring Nuffield Farming Scholarships, which enable farmers to travel internationally, report back on an industry issue and inform progressive change.

Its education programme includes Countryside Days, offering hands-on activities all about farming, food and the countryside to thousands of schoolchildren, free of charge, at the Great Yorkshire Showground over two days in June.

YAS small grants are available to individuals and organisations to: support and promote agriculture, rural and allied industries throughout the North; advance and encourage agricultural research and greater understanding and empathy with farming and the countryside; and, to advance and encourage the protection and sustainability of the environment.

The Tye Trophy, awarded by YAS at the Great Yorkshire Show, recognises conservation and environmental improvements in commercially successful farms and is judged across the North.

Tickets for the Yorkshire Farming Conference, priced £25 + VAT, are available to purchase in advance only, online at yorkshirefarmingconference.co.uk. A discount is available for group bookings of 10 or more. Tickets can also be purchased in-person, subject to availability, from Russells farm machinery outlets in Boroughbridge, Eggborough, Malton and Northallerton. BASIS and NroSo (CPD) points can be claimed at the event.

The Great Yorkshire Showground

Yorkshire

FARMER FOCUS PHIL ROWBOTTOM

A FIVE-YEAR JOURNEY INTO DIRECT DRILLING

Phil Rowbottom - Woolley, West Yorkshire.

It's been five years now. Five years since we parked up the plough and put our faith in direct drilling. It's a big leap of faith, I can tell you. You go from a nice, clean, ploughed field to drilling into what looks like a right mess of stubble and trash. It's not an easy transition to make, mentally. You've got to trust the system, trust the drill, and then, to a certain extent, walk away until March.

Of course, you're not really walking away. There's still spraying to be done, and you're constantly watching and wondering. But that initial shock of seeing your wheat coming up through all that stubble…it takes some getting used to. But it does.

We're now heading into our fifth harvest from direct-drilled crops, and I can honestly say, I don't think we'll ever go back. There would have to be a very strong reason to bring the plough out of the nettles, and I can't for the life of me think what that would be.

When you get a spade in the ground, you can see the difference. The soil is different; it's got a bit of a sponginess to it, a bit of life. It's friable, it breaks up, and you can see the wormholes and the root channels. We've had no metal through this land for over five years, and the soil is thanking us for it. I know some of the neighbours still lean on the gate and scratch their heads, wondering what on earth we're up to, but I'm convinced we're on the right track.

We're using cover crops to do the cultivation for us now. This year, we've got a mix of black oats, radish, vetch and a bit of ryegrass in our overwinter cover. We've upped the seed rate and the mix to get a good, thick cover, and it's doing a fantastic job. The radish, in particular, is brilliant. I dug up a taproot the other day that was as long as my arm. It's blasting through any old plough pans and creating drainage channels deep into the subsoil. It's amazing what a plant can do.

We've also got some sainfoin that's been in the ground for three years now. It's had all sorts thrown at it – Roundup, weedkillers, you name it – but it just won't die. I'm not bothered, to be honest; it's a fantastic plant. It's got a massive, woody taproot that goes down for feet and it's doing a brilliant job of improving the soil structure. It's also great for the bees.

Speaking of bees, our beekeeper has had a fantastic year. He's got nearly 100 hives on the farm, and he made 12 tonnes of honey this summer. It's great to see. We've got more and more food available for them now, with the buckwheat, vetch and other things we're growing in our cover crops. It's a nice little by-product of the system.

One thing we're not growing this year is oilseed rape. There's hardly any rape grown in the area now. Ten years ago, we were putting 5,000 tonnes of it into the store. This year, it was 300 tonnes. The flea beetle and the loss of neonicotinoids have just made it an impossible crop to grow. It's a shame, but we've had to adapt.

We're using the Sustainable Farming Incentive (SFI) to help us with the transition. We're in a scheme that pays us for using cover crops and for having a certain amount of our land in bird-friendly habitats. It's helping to bridge the gap and it's encouraging us to do the right thing. We're seeing more skylarks on the farm now than I've seen in years, which is fantastic. It's a sign that we're doing something right.

But it's not all plain sailing. The government and the policymakers don't make it easy for us. They come up with these grand schemes and ideas, but they don't seem to understand the reality of farming. They don't seem to get that we're running businesses, and we need to make a profit to survive. They're quick to ban chemicals and impose new rules, but they're not so quick to provide us with viable alternatives.

The government has also announced an uplift on the inheritance tax threshold, but it doesn't address all our concerns. For many family farms, especially those with significant land holdings, it still means facing substantial tax bills when we pass the business on to the next generation. We've spent generations building these businesses, investing in the land, improving the soil, and now there's still uncertainty about whether our children will be able to afford to keep the farm in the family. It's not just about the tax itself – it's about the principle. Farming is a long-term business, and these sudden policy shifts create real anxiety for families planning their futures.

The whole glyphosate debate is a prime example. How many times does it have to be tested and declared safe? And yet, the pressure to ban it is relentless. If we lose glyphosate, it will be a disaster for no-till farming. We need it to control our cover crops and to manage our weeds. There's talk of mechanical weeding, and I'm looking into it, but it's not a simple solution. It would mean changing our row widths, and I'm not sure if it would be as effective.

It's a constant battle. But we're farmers, and we're used to that. We're a resilient bunch; we have to be. We're always looking for new ideas, new techniques, new ways of doing things. That's what makes it interesting. That's what keeps us going.

And it's not just about farming. It's about the lifestyle. The move to direct drilling has given me more time. I'm not spending all autumn sitting on a tractor seat, ploughing and cultivating. I've got more time to spend on other aspects of the overall business, more time with the family, more time to enjoy life. And you can't put a price on that.

Yorkshire

FARMER FOCUS ANGUS GOWTHORPE

A FARMER'S REFLECTIONS: RESILIENCE IN THE FIELD AND PRIDE IN THE HERD

Angus Gowthorpe, Approach Farm, Riccall, York.

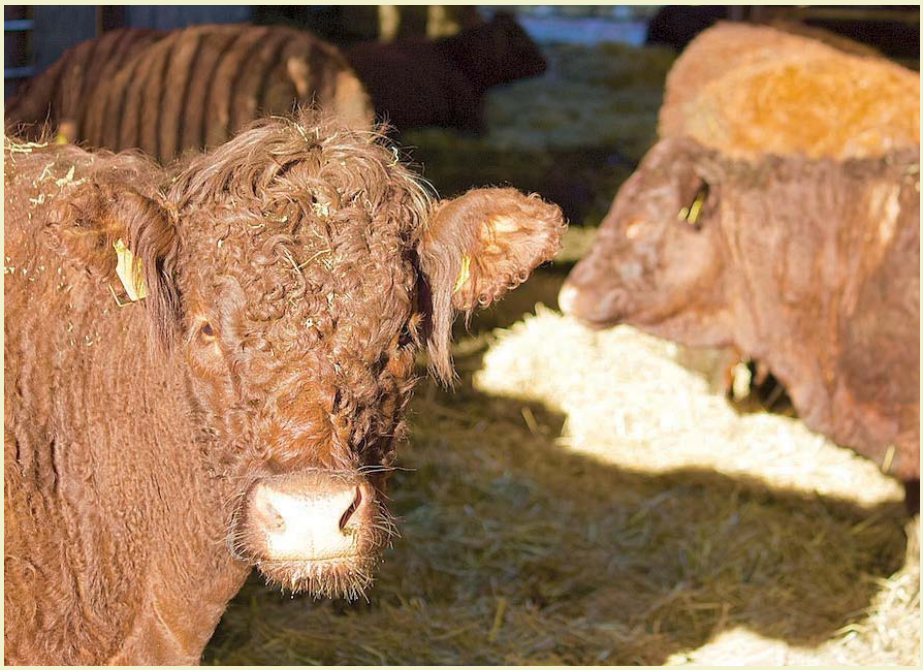
As we settle into 2026, it's a natural time to reflect on the year that has just passed here at Approach Farm. 2025 tested our resilience, particularly on the arable side, but it also brought immense pride through the continued success of our livestock enterprise. The story of last year is one of contrasts – of challenges posed by Mother Nature, and the rewards of careful breeding and management. It's also a year that has been overshadowed by concerns about inheritance tax and the future viability of family farms like ours. As I write this in early January, with the winter crops established and the new year stretching ahead, it's worth taking stock of what we learned, what we achieved, and what the future might hold.

The arable enterprise: A tale of two seasons

Our arable operation, spanning around 330 acres, is a rotation of wheat, barley, beans and oilseed rape. When people ask about last year's harvest, it's a nuanced story. The actual combining process was relatively straightforward: the weather held, and the machinery ran well. The real damage was done much earlier in the season. The prolonged period of high temperatures and dry weather in the run-up to harvest hit the crops hard, significantly reducing potential yields. It's a stark reminder that so much of our success is determined by factors entirely out of our control. You can do everything right, but you can't make it rain. The heat stress affected grain fill, particularly in the wheat, and we saw yields that were well below what we had anticipated when the crops were looking promising in the spring.

Despite the disappointing yields, we press on with renewed determination. Autumn planting is a time for restored optimism and an opportunity to implement improvements to our farming system. This year, we've been putting our Horizon drill through its paces, and it has been a game-changer for us. The move to direct drilling has been a learning curve, but we are convinced it's the right direction for the health of our soils and the long-term sustainability of the farm. The Horizon drill has performed exceptionally well, allowing us to establish the winter crops in good time, even with the variable conditions we experienced. The precision of the machine, combined with its ability to handle residues effectively, has given us confidence that we're on the right track.

We're hopeful that this investment in soil health will pay dividends in the years to come, building more resilience into our system to better withstand the kind of weather extremes we saw last summer. Direct drilling reduces soil disturbance, which helps to preserve soil structure and organic matter. Over time, this should improve water retention and nutrient cycling, making the crops more resilient to both drought and excess moisture. It's a long-term strategy, and we're playing the long game. The commodity prices remain challenging, but we're exploring every avenue to



add value to our production, whether through The Green Farm Collective marketing scheme or other new markets for our grain.

Grassland and livestock: The Approach Farm herd

While the arable enterprise pays the bills, our true passion lies with our livestock. The farm is home to the Approach Farm herd of pedigree Salers cattle, a breed we have been dedicated to since 2010. We were initially drawn to the Salers for their hardiness, maternal qualities and docile nature, and they have proven to be the perfect fit for our system. They are a breed that thrives in our environment, requiring minimal inputs while producing cattle of exceptional quality.

We run a herd of around 45 championship-winning breeding females, and our focus is squarely on producing top-quality genetics. The show ring is an important part of our calendar, providing a valuable benchmark for our breeding programme and an opportunity to showcase what we believe to be some of the finest Salers cattle in the country. Over the years, the Approach Farm herd has enjoyed considerable success at major shows, including the Great Yorkshire and Lincolnshire shows. These accolades are a testament to our rigorous breeding philosophy, which combines carefully selected AI sires with top-quality stock bulls, to produce cattle that are not only show-winners but also commercially relevant, with excellent conformation, growth rates and performance traits.

Our breeding programme is underpinned by a commitment to genetic improvement, selecting sires that complement our herd and move us toward our breeding objectives. We're looking for cattle that are correct to the breed standard, with excellent maternal traits, good growth potential and the ability to convert forage efficiently. The grassland enterprise is crucial to our system: we dedicate approximately 85 acres to forage production, ensuring our herd has access to high-quality feed year-round. This integrated approach – combining grassland management with careful breeding – is key to our success.

Seeing our cattle perform well in the show ring is a source of immense pride, but the real satisfaction comes from seeing them thrive in their new homes, whether that's in other pedigree herds or in commercial suckler operations. We know that we are contributing to the improvement of this fantastic breed and providing customers with cattle that will perform for them. The herd is more than just a business; it's a family passion that involves everyone on the farm. From the daily chores to the excitement of the show ring, the cattle are the heart and soul of Approach Farm.

Looking forward

Farming is a life of constant challenges, from unpredictable weather and volatile markets to the ever-present burden of regulation and the ongoing threat of disease. Yet it is also a life of immense rewards. The satisfaction of a well-established crop, the pride in a championship-winning cow and the privilege of being custodians of this small part of the British countryside are what keep us going. As we look to the year ahead, we do so with a sense of realism about the challenges, but also with an unwavering optimism for the future of our farm and our industry. We're committed to continuous improvement, to sustainable farming practices and to producing the best livestock and crops we possibly can: that's what Approach Farm is all about.

Yorkshire

FARMER FOCUS JAMES PICK

RESILIENCE, ROOTS, AND REGENERATION IN NORTH YORKSHIRE

By James Pick - H. Sutton and Son

Standing on the cliff tops a few miles south of Filey, looking out over the North Sea, you quickly realize that farming here is as much about managing the elements as it is about managing the soil.

I'm James Pick, H. Sutton and Son, a three-generation family farm, and like many of you reading Direct Driller, our journey over the last few years has been one of constant evolution, trial, error, and a fair bit of soul-searching about what it means to farm "conventionally" in a changing world.

Our operation is built on a foundation of diversity. We manage approximately 240 hectares of arable land alongside a significant potato enterprise, ranging from 155 to 180 hectares and a finishing unit for about 60 Aberdeen Angus cattle. Our soils are a real mixed bag, predominantly silty clay loams but with pockets of everything from sandy loam to high organic matter peat. It's glacial deposit land, which means we're often dealing with everything from golf-ball-sized stones to rocks that require a pallet tine to shift. This variability is one of our biggest hurdles; what works on the cliff tops might be a disaster just a few miles inland.

The Potato Conundrum

Potatoes have transformed this business over the last 20 years, but they also present our biggest challenge when it comes to soil health.

The move was a necessary evolution, growing potatoes on contract, we wanted to push further into the environmental and regenerative space, But let's be honest: potatoes and "no-till" aren't natural bedfellows. We've been part of the Potato LITE (Low-Intensity Tillage Enhancement) program, testing everything from conventional setups to direct planters. While we've found that a full direct-planting system isn't yet viable on the bulk of our stony land due to quality and storage concerns, it has fundamentally changed our mindset. We're constantly looking for that "middle ground" where we can maintain the quality required for long-term storage while minimizing the mechanical impact on our soil structure.

Moving Away from the Plough

We haven't pulled a plough through our soil in probably three years. It's still there, sat at the back of the shed like a museum piece, but I don't see us going back. We used to work land at 14 inches; now, the thought of the fuel and the structural damage that causes makes me wince. The transition wasn't just about saving diesel; it was about recognizing that our soils were becoming increasingly fragile.

Instead, we've leaned heavily into cover crops. For the last five years, every single acre destined for a spring crop has been put into an overwinter cover. It's not just about "doing the right thing" for the environment; it's about resilience. This year was a perfect example. While the yields weren't record-breaking, they were steady and better than expected. Why? Because our well-managed land, the stuff that's had regular manure and cover crops now has the water-holding capacity to cope with the dry spells. We spread 8,000 to 9,000 tonnes of manure a year, and the difference in organic matter is where the real "dividends" are paid. When the sun is beating down and the potatoes are threatening to "shut down" at 25°C, that extra moisture in the soil profile is the difference between a crop that survives and one that thrives.

Tech, Tines, and Timing

On the cereal side, we've been running a four-metre Horsch Sprinter for about five years. I'm a bit of a machinery geek at heart, and finding the right setup for our "high mag" soils that like to cap has been a process.

We've settled on three-inch Dutch openers as a happy medium. We tend to err on the side of caution with higher seed ratesit's our insurance policy against a heavy inch of rain right after drilling that can seal the surface.

The tech has been a game-changer, but it's a double-edged sword. With GPS and modern LED lighting, there's no longer the excuse of "I can't see, I'm going home." I've found myself drilling until midnight more often than my girlfriend would probably like! But that accuracy knowing your AB lines are consistent across every tractor and every pass is vital for minimizing compaction, which is the silent killer on these silty loams. We're also looking at the next evolution of our spraying setup, moving from a 28-metre to a 36-metre boom to further reduce our footprint and improve efficiency during those narrow weather windows.

The Nuffield Influence and Global Perspectives

A lot of my drive for change came from my time as a Nuffield Scholar. Traveling through Canada, the US, Australia, and Europe opened my eyes to what's possible when you stop looking at the farm as a factory and start looking at it as an ecosystem. I remember drinking beer with a soil scientist in Wisconsin proper dairy country and talking for hours about soil biology. He was absolutely nuts, but his insights into how biology drives chemistry were revolutionary for me.

Those conversations are the reason I can't just "farm by the book" anymore. If I didn't have a say in moving this farm toward a more ecological and sustainable future, I wouldn't have lasted three years back home. I'm incredibly lucky that my dad and granddad have been supportive of this shift. In many family farms, the first time the son makes a real decision is when the father passes away. Here, we've had those difficult conversations about inheritance and the future of the business early on, which has allowed us to move forward as a cohesive unit.

Looking Ahead to 2026

As we look toward the 2026 season, the challenges aren't going away. We're still experimenting, I'm currently trying to source a maize header to try some grain maize on our lighter, sandy land. It's a risk, and we might be messing about in the mud in November, but that's the nature of the beast. We're also looking at how we can better integrate our livestock into the arable rotation, perhaps through more diverse legume fallows or grazing cover crops.

The biggest joy for me is still watching things grow. There's nothing quite like the race of a wheat crop through its growth stages in the spring or seeing the transformation of a potato canopy from one week to the next. We'll keep attacking the challenges with positivity, driving the family farm forward in a way that's both ecologically sound and financially viable. We're not just growing crops; we're building a legacy. After all, we're only as good as the land we leave for the next generation.

CARBON, SIMPLE OR COMPLEX?

Written by George Hepburn and Olivia Bye from Aiva Fertilisers

A simple topic made to be complex, carbon underlies the health and value of our soil ecosystems. Building reservoirs of carbon, and the variety of options available is where things become shrouded.

The sliding scale of carbon begins at its simplest form, molasses. Components of sugar are organic carbon atoms, a simple source of energy for biological processes. The levels of fructose, sucrose and glucose vary between sources, ultimately determining their digestibility and longevity in the soil for biology. Levels of fructose and glucose are important for metabolism and the production of energy, while the counterpart, sucrose, is considered more stable and is responsible for energy transport and storage.

Molasses, being a simple source of energy for biology, encourages a rapid growth of bacteria, leading to a primary peak and subsequent troughs in the population. For the modern farmer, creating a bloom of bacteria is not the end goal, as creating a balanced ratio of bacteria to fungi is more desired under the overarching goal of building reserves of soil carbon, for whole farm resilience. Molasses will get you a quick reaction that reaches the halfway line, but to get to your goal, stacking a simple and more complex sugar will help achieve a more sustainable level of growth under a healthier soil environment.

More complex carbons can be farmyard manure, fish hydrolysate along with amino, humic and fulvic acids. These create the foundation of any good soil community by feeding a range of biology, with a longer soil persistency, creating a wider soil food web which will reward a farmer with richer soil health benefits. Proteins common in legume residues or fish hydrolysates, and in turn amino acids, can help supply nitrogen to the plant in a more organic form. Sea2Soil displays impressive levels of fish proteins, amino acids and trace elements. This technology allows farmers to skip a step in the amino acid to protein pathway, ensuring the plant does not exhaust itself in the process, leaving more energy for yield building. It's a key example of why your choice of carbon is important for a farm's unique end goal.

Simple to Complex Organic Matter		
Bacterial foods (alkaline enzymes)	Sugar Amino acids	Unbranched carbon chains Unbranched sugars with N (NH2 – Amide Group)
Bacteria and Fungi compete for these foods	Protein Lipopolysaccharides Hormones	2 or more (can be 1,000s) amino acids bonded together. Can be branched. Branched, P04 Long protein chains, cyclical
Fungal foods (acidic enzymes)	Ulmic acids Fulmic acids Humic acids	High branched, rings More highly branched, tan Extremely branched, complex, brown in colour

Using compost or brewing a compost tea can multiply the microbial populations native to your soil. Brewing with multiple food additives supplies the energy needed for rapid

Source	Complexity	Longevity	Benefits
Humic acid	Complex	Long	Soil health, nutrient availability
Fulvic acid	Complex	Intermediate	Nutrient availability & uptake. Increases photosynthesis
Compost	Intermediate	intermediate	Inoculation, soil health
Molasses	Simple	Very low	Quick start
Hydrolysates	Intermediate	Low	Nutrient availability

reproduction and produces a probiotic tea to stimulate the soil. The quality of compost and its final inoculant depend on the variety of food and the maturity of the compost components.

On the further end of the scale are the components of soil humus: humic, fulvic and ulmic acids. While they are not a direct, nor rapid, food source for soil biology in the same capacity as a simple sugar, the carbon structures and processes they influence are long-term life sources and habitat fabrication for all matter of micro and macro soil biology. For cation exchange capacity, soil aggregation and pH buffering humic acids are to thank while efficient nutrient availability and uptake are attributed to fulvic acids. Introducing humic and fulvic acids as a complex source can aid in building longer-term mechanisms needed for the soil food web to cycle minerals, nutrients and water itself, which is often compromised in modern agriculture with regular synthetic fertiliser and pesticide applications.

Understanding the varying components of carbon sources, we can now differentiate between using different sources as a targeted application, at the right time, to achieve a farm-focused goal. Frequent use of the same simple carbon sources can be detrimental as well as counterintuitive to crop health. When a simple sugar source is the dominant feed for biology, to buffer their feed sources, biology will search and utilise any free nitrogen in the soil. Outweighing the carbon-to-nitrogen ratio in the soil temporarily immobilises nitrogen for the crop. The respiration spike adjacent to the increase in simple sugars can consume oxygen at an unsustainable rate, which can be damaging to soil biology and ultimately plant root networks.

The product pyramid for each level of complexity of carbon sources would begin with simple molasses products, then molasses bases + additions and up through into more fermented products. It is at this point that the products move away from being simple molasses and into being complex carbon sources however care needs to be taken to verify the claims of what some of these products contain, and in what ratios. Humic/fulvic content, aminograms and trace element breakdowns should be available to view and whilst there will be variation in organic products, this shouldn't allow for claims of content that can't be challenged.

Incorporating a single or sporadic sugar/carbon source does not suffice to build soil resilience. The main argument is that integrating a variety of carbon sources, each with a specific role within a carefully managed system, enables carbon to function optimally and supports the reduction of other inputs, ultimately resulting in a more resilient soil environment.

You may not be able to see the benefit of these additions in terms of immediate crop affects, but the investment in the soil will pay back the farm in resilience heading into the 2026 season and beyond.

HOW **HEALTHY SOIL** PROTECTS WATER AND PROFITS

Building soil health is one of the best ways to improve the resilience, profitability and sustainability of farming systems

The Soil and Water Health Day, organised in collaboration with Hutchinsons, the Ribble Rivers Trust and Mersey Rivers Trust, explored the practical steps farmers can take to improve soil health and protect watercourses, featuring in-field demonstrations and expert presentations.

Among the speakers was Hutchinsons' head of soils, Jade Prince, who highlighted analysis of one field at the host farm, F A Ollerton & Sons near Wigan, which showed the value of just five key nutrients (nitrogen, phosphorus, potassium, magnesium and sulphur) in the top 15cm of soil alone, was worth the equivalent of £13,000/ha.

"That field, which was a silty loam over clay subsoil, wasn't particularly unusual or high in nutrients, so it illustrates just some of the value that's in our soils. Protecting that by ensuring nutrients are retained, not lost to the environment, is a win-win situation for farmers and water quality," she said.

Cover crop benefits

Maintaining living roots in the soil throughout the year was one of the best ways to protect soils and avoid leaching of key nutrients, such as nitrogen and phosphorus, over the wettest winter months, Ms Prince continued.

That could be done with either a commercial crop, or an overwinter multi-species cover, funding for which was available through some water companies, as well as existing Sustainable Farming Incentive (SFI) agreements.

Matt Powell, Hutchinsons' northern environmental services specialist, encouraged any farmers growing cover crops to complete a biomass evaluation to better understand exactly what nutrients had been captured within it, and help plan nutrition programmes for the following crop.

Assessment of one multi-species cover crop showed it contained around £80/ha worth of nutrients alone, before accounting for the value of any other benefits to soil structure, organic matter and reduced leaching losses. Estimating what proportion of those captured nutrients would be available to the following crop depended on individual situations and termination method, whether that be with glyphosate or grazing, he noted.

"For example, if cover is put through an animal, we can estimate about 30% of nitrogen is likely to be removed within the animal, and around 30% of the nitrogen returned through faeces or urine is typically lost through volatilisation. From this, we can predict how much nitrogen might actually be available to the following crop after grazing, compared with terminating using glyphosate."

Interestingly, although total nutrient return from glyphosate termination was generally higher over three years, those crop residues would take time to break down and release nutrients. Whereas for year one, nutrients were more plant-available when material had first passed through an animal, he noted.

"The key is to think carefully about what you're doing and your main objectives, then decide what management practices can best achieve those."

Other tips to help improve soil health and protect water include:

- Dig holes to assess soils and identify any potential compaction or other structural issues that may limit infiltration, drainage and water holding capacity, potentially increasing runoff risk - a simple slake test can be used to assess aggregate stability
- Consider a more detailed analysis of soil chemistry, physics and biology, such as a Healthy Soils Gold test, to make more informed management decisions - all three are interlinked and should not be considered in isolation
- Review cultivations and only do what is required - moving less soil helps build organic matter, natural structuring and aggregate stability. It also helps reduce machinery overhead costs
- If soils are hard to work, consider potential causes e.g. poor drainage, or a high calcium:magnesium ratio (high magnesium content can make soils dense and sticky). Applying gypsum can help improve workability and water infiltration in high mag soils

- Avoid leaving ground bare by growing catch and cover crops where possible to reduce the risk of nutrient leaching and soil erosion. Think carefully about what you want a cover crop to do and how best to achieve that
- Explore potential funding options for adopting measures that improve soils and protect water (e.g. from water companies, SFI).

Work together

Farm advisors from the Ribble Rivers Trust and Mersey Rivers Trust encouraged farmers to work together to help tackle the farming-related challenges around water quality, by forming cluster groups that could work with experts and share best practice.

Covering an area of 752 square miles, the Ribble and Douglas catchment contains more than 3,479 miles (5,600 km) of watercourses and a diverse range of habitats, so a collaborative approach was essential, speakers said.

Heather Whalley and Beth Wood from the Ribble Rivers Trust explained how the Trust works with farmers to not only benefit the environment, but fundamentally help farm businesses. With a diverse range of farm businesses across the Ribble and Douglas catchments, facing many challenges, Trust farm advisors offer free and confidential advice about farmyard infrastructure, soil and nutrient management, watercourse fencing, hedgerow restoration, riparian woodlands and more. As well as identifying opportunities, RRT farm advisors would also look for funding to deliver these interventions, they said.

"I can't wait to work with Douglas farmers, and I am keen to visit as many farms as possible to work with them and help secure funding for their business," said RRT farm advisor, Beth Wood. "So please get in touch for a farm report and also join our Douglas Farm group."

The Mersey Rivers Trust's Paul Moseley and Ryan Teare presented on two ongoing projects: Water Net Gain, and the Lowland Agricultural Peat Pilot, being delivered across the Alt and Crossens catchments.

The Water Net Gain project is investigating how on-land water storage can enhance both agricultural resilience and river health. As part of this proposed scheme, currently at the farm-survey stage, farmers and landowners may receive payments for installing new ponds, refurbishing existing infrastructure, and managing these features on their land.

The Lowland Agricultural Peat Pilot focuses on making unproductive peat viable again by exploring "wetter farming" options across the Alt–Crossens peat deposits. This involves monitoring peat conditions and conducting paludiculture (farming on wet peatlands) trials to assess sustainable, profitable land-use

FARMER FOCUS |THE GENT FAMILY

THREE GENERATIONS, THINKING TOGETHER

The Gent family has been farming in South Lincolnshire for four generations, but while the mission of growing food remains the same, the world around has changed beyond recognition.

The Gents have been practicing no-till farming on their 800-hectare family farm since 2008. Today they operate under the Gentle Farming brand, born out of a desire to bridge the gap between regenerative practices on the ground and the opportunities this brings in the wider world. By focusing on soil health, carbon sequestration and nature, the aim is to turn environmental stewardship into tangible value.

This is slightly different to other Farmer Focus articles as Tony Gent, Edward Gent and Thomas Gent have each written a section that together illustrate the family's total vision.

Section 1: The transition to no-till farming

By Tony Gent

We are now entering our 18th year since moving away from intensive cultivation. Previously, our system relied on a heavy fleet of equipment ploughs, discs, subsoilers, power harrows and heavy presses, all supported by three Caterpillar Challengers totalling nearly 1,000hp. Within the first two years of our transition, we disposed of this entire fleet. This move immediately slashed running costs, ended the cycle of constant reinvestment in wear and tear and stopped the unnecessary movement of soil.

We replaced that entire inventory with a single John Deere 750A, utilising an existing 200hp tractor. Later, we upgraded to a Weaving GD drill for its even lower soil disturbance and superior slot-closing technology. The overhead cost savings alone provide a compelling argument for the no-till approach.

The early years were not without challenges. In wet autumns and late springs, our silt-based 30% clay soil, which had been degraded by years of intensive cultivation, proved difficult, particularly in low-lying areas. At the time, there was very little local expertise on managing no-till in heavy, wet soils within a maritime climate. We had to learn as we went.

We soon discovered that leaving heavy amounts of chopped straw on the surface wasn't working for us. We needed to assist soil drainage by introducing air, but it was vital to do so without inverting the soil or compromising the emerging biological recovery. To solve this, we devised very low-disturbance shallow loosening tines and vertical wavy turbo discs. These tools allowed us to aerate the soil with absolute minimum surface disruption. The results were transformative: a massive increase in worm counts and microbial activity, which quickly led to robust yields that matched our previous cultivated averages.

One of the most significant shifts has been in how our land handles water. In a no-till system, the soil develops a firm, "honeycomb" structure. This allows water to pass through efficiently without being retained; the soil remains firm rather than becoming "globular" or saturated.

In contrast, cultivation creates a "sponging" effect. The water isn't draining; it is simply filling the artificial air pockets created by machinery, turning the soil into a structureless

bog, often sitting on an impervious "pan" created by the tools themselves. With no-till, clean surface water can now follow natural gradients to lower areas, where it can be managed with targeted, gravel-to-the-surface drainage in specific spots.

Recently, we have observed much better hairy root development closer to the surface. We believe this is due to a buildup of nutrients that are no longer being diluted by deep mixing. Because the nutrition is concentrated where the plant naturally explores, the crop doesn't have to expend energy searching for what it needs.

Even in drought conditions, we've seen excellent establishment and record yields. The improved capillary action of undisturbed soil keeps the profile damp, ensuring that access to water is rarely an issue.

The benefits of no-till are clear: significantly lower costs, consistently improved yields in weather extremes and a farming system that is truly sustainable. With nearly two decades of experience in soil loosening, cover cropping and nutrient management, we now know this transition doesn't have to take 18 years. We now are in a position to help other farmers

navigate this change much faster than we did.

Section 2: Drainage and collaboration

By Edward Gent

In the Fens, drainage isn't just a part of land management; it is the fundamental requirement for everything we do. Our unique geography means that water management is a constant, uphill battle. Following a recent succession of exceedingly wet winters, this winter so far being an exception, it became painfully obvious that our existing infrastructure was struggling. We recognised an urgent need to repair, modernise and extend our network of field drains.

Historically, we have always relied on external contractors for this type of work. Like many farms, we simply lacked the specialised machinery and the spare manpower to handle drainage ourselves. However, we began to encounter a recurring problem: the nature of our drainage needs was often fragmented. While contractors are well-suited for large-scale field installations, it is increasingly difficult to get them to site for small jobs addressing isolated low areas, fixing wet headlands or installing short, strategic runs. These small but critical tasks are often low priority for large-scale operators and led to a never-ending list of small puddles that hampered our yields.

We decided to invest in a comprehensive drainage suite, including a tractor-mounted chain trencher, a laser level for precision grading and a stone cart for efficient backfilling. Because the capital investment and labour requirements were significant, we took the plunge in partnership with a neighbour. This partnership allowed us to share the financial burden of high-spec machinery and support each other with manpower.

I believe this type of collaboration between farmers is becoming essential. As the costs of machinery and inputs continue to soar, the go-it-alone mentality is becoming less sustainable. We must be strategic about where we invest our capital, and sharing high-value assets is a logical way to access modern technology without over-leveraging the business. This venture has been a resounding success for both of us. It has given us the autonomy to react quickly to drainage issues as they arise, ensuring

our land remains in peak condition and our crops have the best possible environment to thrive.

Section 3: The new frontier – Why farmers must become marketers

By Thomas Gent

For decades, the "perfect" farmer was the one who kept their head down, their rows straight and their sheds full. We were taught to be masters of production, not masters of the market. But as we navigate a post-subsidy landscape and volatile input prices, being a good grower is no longer enough. Now, more than ever, it is essential for farmers and estates to embrace marketing not as a "fluff" exercise, but as a core business strategy.

In the current global supply chain, the value isn't held by the person who grows the crop, it is held by the person who owns the brand. The disparity is staggering. For example, in a standard £1.20 supermarket loaf, the farmer's share for the wheat is often less than a few pence. In the coffee industry, the gap is even wider: a farmer might receive just 1p to 5p for the beans in a £4.50 latte.

As farmers, we have historically been price-takers, but there is a path to becoming price-makers. The real big win isn't just doing one thing: it's the combination of working together with local farms to slash costs while simultaneously pooling our marketing abilities to find premiums.

If we collaborate on farming activities, sharing machinery, labour or input buying to drive our cost of production down, and then layer a collective marketing budget on top to promote our farming brands, we change the game entirely. We move from being a faceless commodity at the bottom of the chain to an indispensable brand that the market actually demands.

I'm incredibly optimistic about this. In fact, some of the work we did in 2025 proved this model to me. We achieved premiums for crops that I honestly didn't think were possible, simply by having a strong, recognisable brand and the data to back it up. It showed me that when you stop selling commodities and start selling a solution, the market responds.

I truly believe the next few years hold enormous potential for those of us willing to collaborate. I would love to hear from other farmers who think the same.

Conclusion

The Gent family's journey highlights a powerful truth: the future of agriculture lies at the intersection of hard-won experience and bold innovation. By integrating the perspectives of three generations, Gentle Farming creates a total vision that balances foundational soil health with the practicalities of modern land-management and the strategic necessity of branding. This multigenerational approach transforms the farm from a traditional producer into a resilient, market-ready business where history informs the future.

However, as this article makes clear, the vision must extend beyond the family gate. In an era of rising costs and volatile markets, the go-it-alone mentality is no longer a viable path to success. The proven success of shared drainage projects and collaborative marketing efforts show that working with neighbours is not just a logistical convenience, but a core strategy for survival.

By pooling resources, labour and brand power, farmers can shift from being passive price-takers to empowered price-makers. Moving forward, this spirit of collaboration, both within the family and across the wider farming community, will be the defining factor in building a sustainable, profitable and meaningful legacy for the generations to come.

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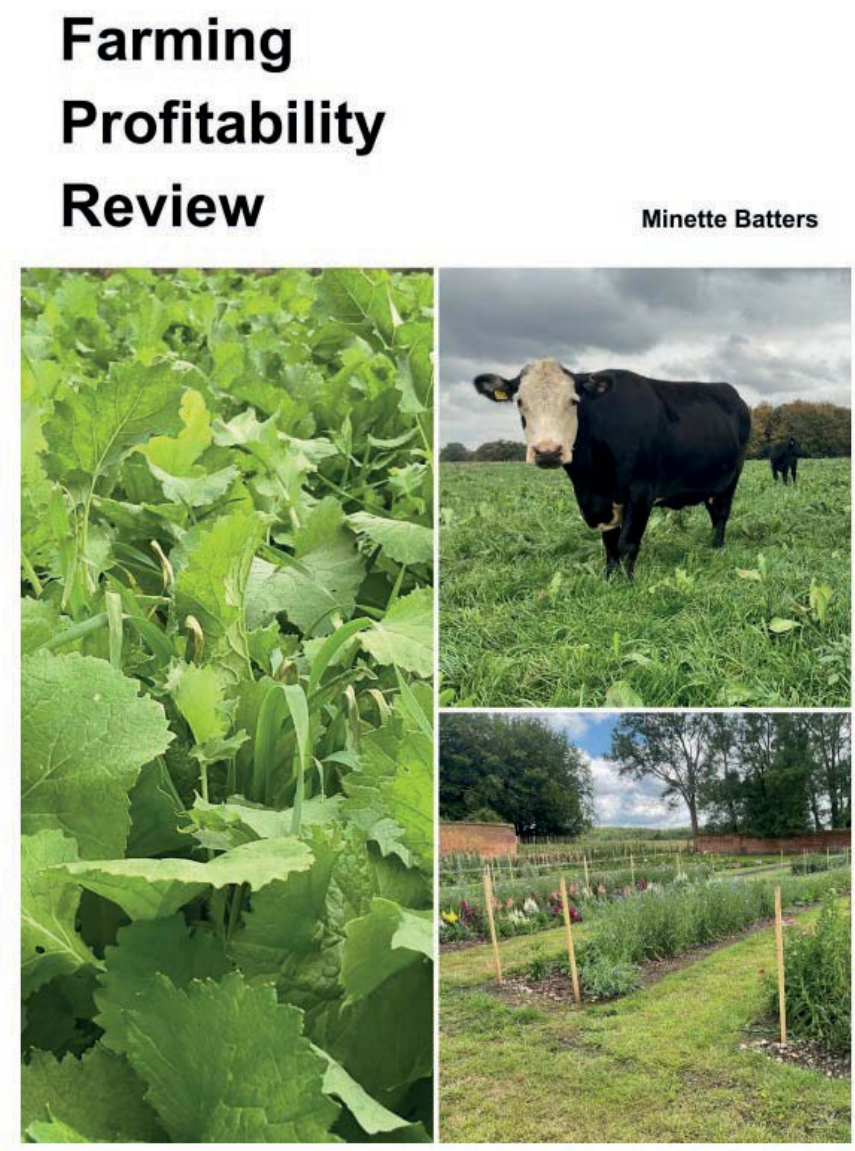
SOILSHOT APPROACH KEY TO PROFITABLE, RESILIENT FARMING

The much-awaited report from Minette Batters on farm profitability was released by Defra shortly before Christmas. Tom Allen-Stevens summarises what it means for soil pioneers.

Building soil health at pace is central to improving the resilience and long-term profitability of English farming, according to the Farming Profitability Review led by Baroness Minette Batters. It calls for a renewed focus on what she describes as a "SOILSHOT" approach. Farmer-led networks conducting on-farm trials should be adopted as an effective way to put this approach into practice.

The review, commissioned by Defra and published in December, drew on more than 100 submissions from across farming, the supply chain, academia and industry. This included evidence from the Agriculture Productivity Group (APG), a cross-industry group focused on improving farm productivity and soil health. The group argues that improving soil function is no longer a peripheral environmental ambition. It's a foundational requirement for a competitive farming sector facing rising input costs, climate volatility and growing policy uncertainty.

While the 155-page review document ranges widely across regulation, supply chains and skills, soil is repeatedly identified as the system's weakest point – and its greatest opportunity. Healthy soils are described as "the bedrock of farm productivity", warning that decades of degradation have left many businesses exposed to yield volatility, poor nutrient efficiency and declining margins.



Minette introduces the SOILSHOT concept as a practical rallying point rather than a new scheme or label. Its objective is simple: to accelerate the restoration of soil health across England by aligning measurement, management and incentives behind outcomes that improve both productivity and environmental performance.

Crucially, Minette avoids treating soil improvement as an abstract or ideological goal. Instead, she links soil function directly to business resilience – particularly the ability of farms to cope with weather extremes, reduce reliance on purchased inputs and make better use of nutrients already in the system.

The review notes that many farmers are already moving in this direction, adopting practices such as reduced cultivation, cover cropping, organic amendments and more diverse rotations. However, it highlights concerns that progress remains patchy, slowed by inconsistent advice, weak benchmarking and a lack of confidence that soil-focused approaches will be recognised and rewarded by markets or policy.

"Against [a] backdrop of huge cost pressures, farmers and growers in

England are being asked to do more to be compliant with environmental legislation and regulation, with less funding and no certainty," notes Minette. She calls for clearer signals and better coordination across government, advisers and supply chains to support change, responding to concerns that farmers are saddled with carrying the "risk of transition".

The review draws on evidence suggesting soil health should be treated as an economic asset rather than a compliance issue. This highlights the need for practical, farmer-led measurement that links soil condition to performance indicators such as yield stability, nutrient use efficiency and input costs, rather than relying solely on compliance metrics or one-off tests.

The review stresses that soil improvement must be outcomes-focused, not prescriptive. It warns against rigid rule-making that could discourage innovation or fail to account for regional differences in soil type, climate and farming system. Instead, Minette argues for a framework that rewards progress and learning, recognising that rebuilding soil health is a long-term process rather than a quick fix.

The SOILSHOT approach is positioned within the review as a unifying principle – a way of aligning environmental ambition with commercial reality. By improving soil structure, biology and organic matter, the review suggests farms can reduce exposure to volatile fertiliser prices, improve water infiltration and retention, and stabilise yields in increasingly unpredictable seasons.

Figure 15. Structure of the UK agricultural industry

of the UK land total in 2024).

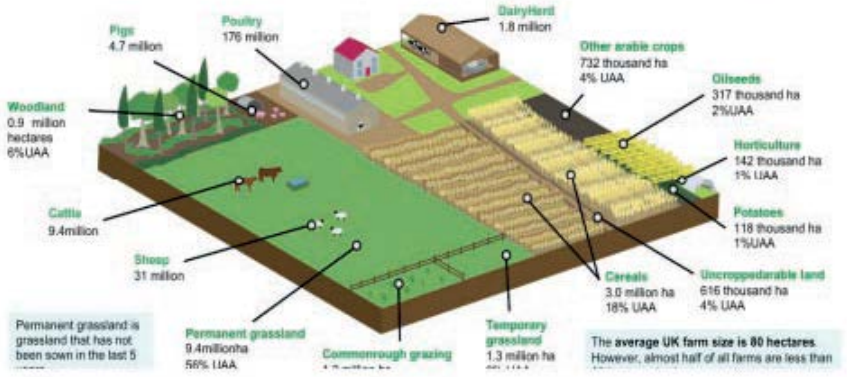
The Utilised Agricultural Area (UAA) includes arable and horticultural crops, uncropped arable land, land for outdoor pigs, temporary grassland, permanent grassland and common rough grazing.

Total UAA has remained between **17 and 18 million hectares (ha) since 2000**.

Total croppable area consists of cereals, oilseeds, potatoes, other arable crops, horticultural crops, uncropped arable land and temporary grassland.

In 2024, the total croppable area was 6.2 million ha, around 1/3 of the UAA.

In England in 2024, 100,000 ha of agricultural land were used to grow miscanthus, short rotation coppice and maize for renewable energy generation/anaerobic digestion. 7,000 ha of agricultural land were covered with solar panels, with 50% of this land still being used for agricultural production or grazing.



Importantly, the report also links soil health to the wider credibility of agriculture. Minette argues that demonstrating progress on soils provides a tangible, evidence-based way for farming to show it is delivering public value, strengthening trust with policymakers, consumers and supply chains.

However, the review is clear that delivery will depend on collaboration beyond government alone. Farmer-led innovation, trusted advice and robust on-farm evidence are all identified through evidence submissions as essential to making SOILSHOT more than just a slogan.

This is where independent networks and practical knowledge exchange are seen as critical. Peer-to-peer learning, real-world trials and transparent sharing of results are endorsed as more effective than top-down instruction in driving change at scale.

The review concludes that if soil health can be placed at the heart of both policy and business decision-making, it offers one of the most credible routes to closing the productivity gap while meeting environmental goals. But it cautions that momentum will be lost unless farmers are supported with the tools, confidence and evidence needed to act.

Five ways to help deliver SOILSHOT

The Farming Profitability Review points to clear gaps between ambition and delivery on soil health, and notes the contribution of farmer-led innovation. Five practical roles emerge that will help translate SOILSHOT into action:

1. Farmer-led evidence

Building a credible evidence base rooted in commercial reality is key to delivery. It's not enough just to make improvements to soil health – if progress is to be meaningful it must be measured.

Gathering baseline indices on organic matter, for example, is a good start. This is now incorporated into the Sustainable Farming Incentive (SFI) for those lucky enough to have an agreement, and there are other options available to baseline and start to benchmark progress.

The Soil Health scorecard developed through AHDB's GREATsoils initiative has developed this approach, capturing metrics from a visual assessment (VESS) and earthworm count. The Defra-funded TRUTH Project (Thriving Roots Underpinning Total soil Health) is taking this one step further. Led by BOFIN, scientists are working with farmers to develop metrics to understand root health and soil microbial communities.

The project is one example of on-farm trials that link soil health metrics directly to yield stability, nutrient efficiency and margins. The aim of the support that BOFIN provides is to give farmers meaningful results that can be utilised in a commercial sense as well as benchmarked.

2. Outcome-focused measurement

SOILSHOT looks to move on from one-off soil tests and compliance metrics as the means to measure soil health. The aim is to develop practical benchmarking that farmers trust, focusing on change over time. But that requires large amounts of data-gathering, which, with soil and root health, can be expensive and time-consuming both to gather and assess.

As part of the TRUTH project, 20 Root Rangers are developing Shovelomics as a quick-and-easy in-field measurement for wheat roots. The PES Sensor is a device that delivers a range of soil metrics in the field in just five minutes. The Root Rangers are helping to calibrate this to measure soil microbial communities in more detail.

Meanwhile BOFIN has developed the Trialist App to quickly capture and log essential metrics from on-farm trials. Within this is the Wheat Plant Counter – point your phone at your crop and it will draw a virtual quadrat, then count the plants within it, saving many hours of counting plants by hand.

3. Peer-to-peer learning

Countless studies have shown that farmers learn best from other farmers. It's why The Farming Forum and the Farmer Focus pieces in this magazine have been such a massive success. What's more, adoption of new techniques in agriculture can be slow. An arable farm has just one chance each year to assess the results of a new practice. You have to be sure before you make the change, and drawing on others' experience becomes essential.

Spaces for farmers to share what works and what doesn't and accelerate adoption through real experiences rather than prescriptive advice. AHDB does this well, through Monitor Farm groups, meetings and get togethers. Cereals, Groundswell and other events present great opportunities to meet farmers, share experiences and be inspired. The Farming Forum does this well through issue-specific sections.

Online, the knowledge is there, but can be hard to find on platforms such as Facebook and X. BOFIN has now brought a number of specialised communities together on The Farming Forum and WhatsApp. In particular, the Soil Circle has several hundred members, most of whom are farmers, where trialist results are shared and openly discussed.

But if farming is to progress, and farmers learn best from other farmers, someone has to adopt the technology and trial it in the first place. That's why BOFIN trialists are paid to pioneer new approaches – over the past two years around 100 farmers have received almost £500,000 for the on-farm trials they undertake.

4. Bridging policy and practice

If soil health is to be considered as building a national asset to improve productivity rather than a compliance issue, there must be an honest broker between farmers and policymakers. This ensures SOILSHOT delivery reflects on-farm complexity and avoids the unintended consequences that can result from regulation.

All too often the job is left to the NFU, but Defra has shown it is also open to co-development of policy direct with practising farmers, for example through the SFI Tests and Trials.

This makes the roles of farming pioneers, and the data they accrue, critical to how policy develops. Projects like TRUTH not only allow a good evidence base to be built, but provide the route direct to policymakers to deliver the outcomes. BOFIN is now represented on panels and podiums at conferences and events as well as round tables, and as consultees on research reviews. This brings a sense of purpose to the work of on-farm trialists, beyond the improvement of good farm practice.

5. Linking soil to profitability

While the involvement of policymakers is critical, SOILSHOT delivery cannot rely solely on the public purse. What's more the opportunity and potential benefits for other stakeholders and private finance are huge.

Markets need confidence, however – if they are to invest in farming practices on the basis of building soil health, either through premium brands or carbon capture, they have to trust the farmers who deliver it.

Commercial companies, working with a group of trialist farmers, offer the opportunity to build that trust. Done well, an on-farm trial not only delivers robust metrics at an affordable price, it fosters a relationship, and a connection from the product on the supermarket shelf to the very soil that nurtured it. It's also scalable – a trial can start small, but the farmer-led practices that may lie at its heart can resonate out to others, so availability of the produce grows with the market.

There are examples, such as Wildfarmed, of brands that have captured this potential, but these form very much a niche. SOILSHOT offers the opportunity to put far more trust in what can be achieved, with profits shared by commerce and farmers alike.

- For more on the TRUTH project, progress and updates from other BOFIN projects, see BOFIN Insight, distributed with this issue of Direct Driller.
- The Farming Profitability Review can be read in full at https://www.gov.uk/government/publications/farming-profitability-review-2025-an-independent-review

DRILL MANUFACTURERS IN FOCUS...

AMAZONE

TREATING COVER CROPS WITH THE RESPECT THEY DESERVE

Comprehensive evaluation at AMAZONE's Wambergen Trials Centre has shown that drilling cover crops pays dividends in terms of establishment success and getting the best return on their investment.

Establishing diverse cover crop mixes brings huge benefits to soil health. This multipronged approach improves soil structure, enhances root formation, increases soil organic matter, provides pollinators with a food source, adds nutrient value by nitrogen fixing, returns green manure to the seedbed and helps balance soil moisture content. Having a crop growing year-round means that soil moisture is being actively managed and a good crop canopy prevents excessive evaporation in a dry spell. However, rather than using a complex mix of seed sizes and species, sowing individual seed varieties from a number of different hoppers removes the risk of desegregation through settling in the hopper as well as keeping input costs down by not having to buy in a premixed crop.

Broadcasting small seeds, such as mustard, during a post-combine pass with a Catros compact disc harrow and a GreenDrill catch crop seeder box can be very effective. However, research shows that for optimum results, each seed type needs to be planted at the depth appropriate to the seed size and also in accordance with the level of seedbed moisture present. This highlights the importance of MultiBin/ MultiShoot drills, such as the Cirrus Grand or Condor 02.

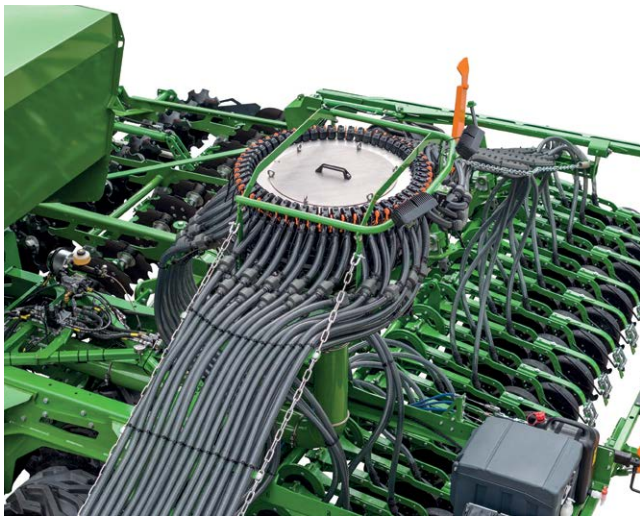
So what is the definition of a MultiBin drill? Here the hopper is split into multiple individual segments, up to as many as 5, which enable the simultaneous metering of multiple materials depending on the drill model. These separate metering systems can be calibrated individually and be set to run from a variable rate application map and with automatic headland shut-off. It's not just multiple seed varieties that can be sown using MultiBin, seed and a starter fertiliser can also be placed down the spout, or a micro-granular herbicide applied during drilling.

Flexibility is the name of the game and MultiShoot offers the ability to sow the seed from these hoppers at different sowing depths. Take, for example, the Cirrus 03-2CC. Here the 4,500 litre hopper is split in a ratio of 50:40:10 and the drill has a row of deep placement coulters working in the unconsolidated ground ahead of the tyre packer roller, a conventional seeding coulter behind the roller as well as a catch crop seeder box for micro-fertilisers,

small seeds, slug pellets or a granular herbicide. The front deep placement coulters are ideal for planting beans to add organic N to the seedbed. The rear catch crop seeder box can be set for broadcasting full width ahead of the covering harrow or drilling in the row or alternate rows via the seeding coulters. Each of the main hoppers can be set to send a proportion of the seed rate to either set of coulters, so, for example, a split of fertiliser - some applied deep up front, followed by some down the spout with the seed thus boosting early seedling development and then improving root development later on as the plant searches out the deep-placed P.

The farm invested in a 9 metre Cirrus Grand, complete with split hopper, in 2024 and so, following harvest 2025, has drilled their cover crops across the farm

One such advocate of establishing cover crops by drilling is Robert Davidson Farms Ltd. as, even after the extremely dry establishment conditions endured this year, has seen a good crop canopy developing on their heavy clay soils at Peldon in Essex. The farm invested in a 9 metre Cirrus Grand, complete with split hopper, in 2024 and so, following harvest 2025, has drilled their cover crops across



the farm. James Faulkner, Farms Director explains the rationale behind their decision, 'Up until this year we had been using either our CatrosXL 5003-2TX with a GreenDrill 501 or a deeper work cultivator and Biodrill to broadcast the covers but felt that drilling direct would give much better results as we were consistently losing too much moisture by working the soils,' he goes on to add 'We can cover so much ground so quickly, putting them in with the drill is no problem and the establishment behind the drill has been excellent, achieving a good canopy and these will be kept going until the land goes into maize in the spring'.

Another positive of modern drill technology enjoyed by Robert Davidson Farms Ltd. is the MultiSwitch distribution head which, with its individual row control, means that seed wastage on the headland caused by over-drilling is kept to as little as 1%. V-Compensation means that the longer seed pipes are fed earlier than the shorter pipes thus evening up the ins and outs. However, individual row control means that, not only can the tramline width and the tractor wheeling width be set at the press of a button, the system can also stop and start any row you choose to enable rape drilling to be done on 50 cm row widths with a companion plant planted in between whilst returning to 16.6 cm for cereals. And now, following on from the introduction of EasyTram, that same head can be used for putting in tramlines at an angle to the drilling to prevent erosion as well as sowing multiple tramlines for use by slurry tankers and inter-row hoes alongside any width of main spraying tramlines.

As cover cropping becomes an increasingly important tool in seedbed management, getting the best return from the time and money invested in paramount and so growers should look at all establishment permutations in order to achieve the best results.

AMAZONE

FARMER FOCUS
ANNA JACKSON

As I listen to Frank Sinatra whilst typing this, I'm reminded of the simpler days when farming was just farming: no phones, no computers and certainly no .gov website that does my absolute head in. I grew up on a farm that was run by my grandad and dad, a relationship that was harmonious most of the time. The farm was happy, the staff were happy (for the most part) and we took time to admire the landscapes and changing seasons around us. Since I've taken on the farm there has been little time for landscape viewing. I feel like I've been run off my feet lately finding a multitude of pipelines and cables so that, during fencing this winter, we don't hit the Northern Power cable (again).

I've made a few bold changes on the farm, including stopping ordering sheep feed, a subject that's still brought up with uncertainty every winter without question. However, I have stuck to my guns and as we enter our third lambing using pasture-fed only, so far each year the lambing has improved. I usually move the mineral bar into the field around now so that they have the right amount of minerals leading up to Christmas and they rotate around herbal leys and crops until lambing so we have more than enough food for them. Just keeping my fingers crossed that it doesn't snow.

I've decided this year to sell my sheep in lamb boxes via the TinyShop app. Customers can easily buy through the app and they come and collect, so it makes it hassle-free for me. I've been waiting for a platform where farmers can sell directly from the farm without losing any profit, something I'm very passionate about.

Sheep have been the main focus this winter, a statement I never thought I'd say. We had a slight miscalculation with our winter wheat and someone (naming no names) put the seed rate up to double by accident, leading to a supremely luscious crop of wheat. This, as most of you will know, has its downfall and if I don't get sheep on there pronto we have a huge risk of disease in the crop. Getting sheep to certain areas of the farm has been tricky with only a wheelbarrow fencer and my limited number of sheep. So, making friends with more sheep farmers is my main goal for 2026.

Our primary aim is to graze all the cover crops. Speaking of which, we had our most successful cover crop ever! On this farm we class a successful cover crop by the height of the cover. Usually, our height is 0cm but this year it's at least 3cm, even 6cm in some places. So, the bar isn't very high, but we are chuffed. I've been dabbling in different seed mixtures and looking up old seed purchases that my grandad and great grandad made to see what crops work with our soil and which were profitable for them. So far, the mixture that's worked best is spring beans, herbal mix and linseed. When I took over, we had an abundance of seed all over. I consolidated it all into steel hoppers and used most of it for covers, which has saved us a ton of money.

Our primary income will hopefully come from Wildfarmed this year if we hit protein but it seems very scary to put all our eggs in one basket. They have supported us immensely with local grower groups and walks and we've learnt from other farms. Our main goal

this year is hitting protein and making sure our oats make weight. We will be using SAPs again to measure N and nutrients. My overall aim is to try and reduce N every year, as we have done for the last five years. But if anyone knows a secret ingredient to hit protein with less N, I'm all ears. We are moving towards foliar in a significant way; each year we are tweaking the recipe to try and find the perfect mixture.

This winter we are carrying on with our fencing grant from the government, and you'd think after three years of fencing every winter we'd be pros by now. However, every year we start again and forget everything we learnt from the previous year. We've been using Clipex fencing and so far I can highly recommend it. They are easy to push into the ground, with a sleek design and very easy to clip into place. However, this advice comes with caution: I am a millennial farmer and have never fenced with wooden posts, so I'm probably not the best person to give advice!

Looking forward, the plan is to keep costs low and margins high; I want my first year in farming to at least make a little bit of money. As a woman, I feel a lot of pressure to do this because truth be told, there just aren't many female arable farmers around. But I'm determined to do us proud and try my damn hardest to make farming work in this unruly economy.

@farmerannajackson @thepinkpigfarm

FARMER FOCUS
NEIL WHITE

I think my new approach when beginning to write farming content may be to copy and paste the following statement: "We seem to be in a time of great change. We try and formulate a business plan while facing the constant moving targets of the markets and government regulation." That just never seems to change.

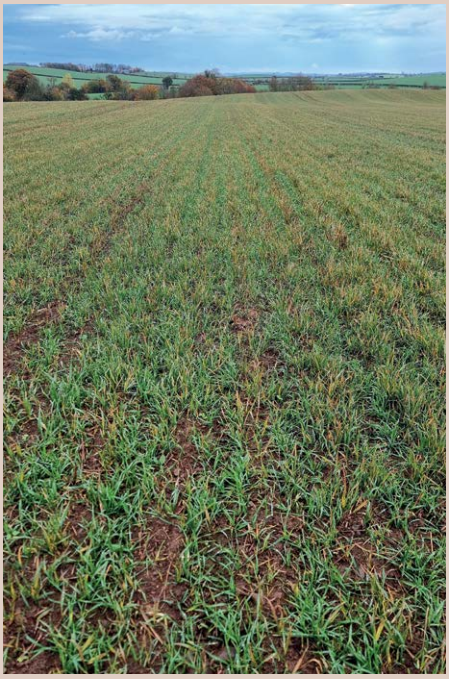
We have been "lucky" in some ways in Scotland because ScotGov doesn't have the knowhow or budget to change the flawed computer system that controls our agricultural support. It's slowly developed into a policy to fit a computer system not an industry, and the "computer says no" approach is stopping any progress. If your system fits the computer system you are fine. If not, it's just bad luck.

On the treadmill of constantly refreshing machinery and keeping control of maintenance costs, I recently looked at replacing my drilling tractor. I admit this tractor is a good spec 234hp

machine, but when pricing, I made the mistake of converting the retail price into something I produce. I didn't use feed wheat or milling oats but malting barley, a so-called premium product here in Scotland. It would take all the output from 1588 tonnes of that premium product to buy the tractor, therein lies one massive problem. I won't do that comparison again.

We have been lucky with the weather in this area again this year, avoiding the most extreme drought conditions and having a good harvest overall. Some very big wheat and oilseed yields have cushioned the blow of falling prices. Oats and pulses were also good but malting barley has again thrown up challenges. I direct drilled all my crops again this year, which are: winter barley, winter oilseed, winter wheat, spring beans, spring oats and spring barley. This was the second year running after phasing out the plough and combi drill completely a few years back. I am now seeing bigger yields than ever in wheat, oilseed and beans but the barley has had difficult conditions, making a comparison difficult. The spring barley yields this year, amazingly, were good despite six weeks of no precipitation at a key stage.

The problem arose with the nitrogen. I put down some N, P and K with the drill at sowing and then the balance after emergence, but even that proved too late this year. Normally, yield would dilute the nitrogen content but, whether it was residual nitrogen or bagged, it was taken up too late. The drill preserved the moisture, and I had a good even crop to start with but the lack of moisture after that meant the fertiliser sat on the top, producing some higher nitrogen spring barley, which isn't the plan. The barley following a cover crop with a biomass of around 20t/ha had a slight problem: the grazing caused some poaching on lower heavier soils, and this baked



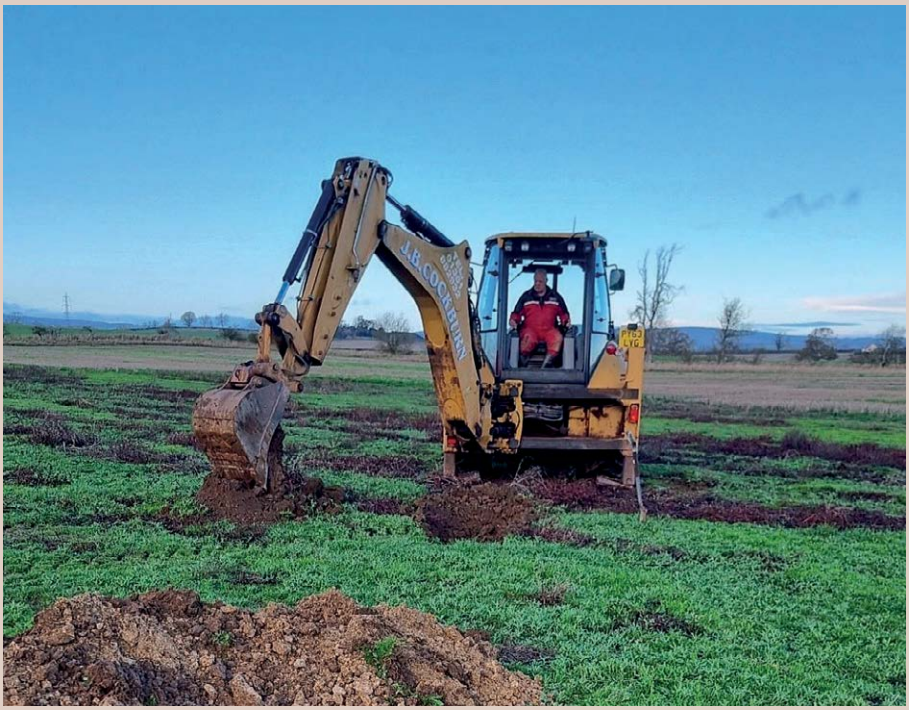
a little when the weather dried up before sowing. The temptation is always to run through with some form of cultivation but those who did didn't see any benefit; they just lost moisture. We are about to put the sheep onto one cover crop this month so I'm hoping for drier conditions underfoot.

I tried a seaweed extract trial over five tramlines in two spring barley fields this year. Two applications of 5l/ha: one at three leaves and then another three weeks later. I was expecting a visual colour difference in the crop but that didn't happen. The yield maps in one field did show a slight increase in yield and I am hoping to do more trials this year to come to a better conclusion on its benefits.

The spring oats suffered from a stormy few days before harvest, which caused around one fifth of the crop to shed and end up on the ground. This created a problem with the following direct-drilled wheat crop as the dry conditions made a chit very difficult and the oats seemed to take over after seeding. I think the saving grace was the application of chicken muck prior to sowing, which helped the wheat

grow through after the oats were sprayed off.

It is obvious to me that my soils are becoming less variable and more resilient with my direct drill system, although not totally extreme-weather proof yet. You can notice the difference in texture, and with the penetrometer, the lack of compaction is noticeable and really heartening to see. Some fields haven't had any form of cultivation for around eight years, and they are noticeably easier to drill and are producing consistently good yields.



Drainage is still a priority, and I have been eyeing up an area prone to flooding for a while, hoping the jetter would fix the issue. An exploratory dig revealed all kinds of problems, with most drains completely full of silt and clay, so a new system looks to be more cost effective and a necessary investment. The drains we were finding from the two systems in that field were mostly hand dug and some are nine or 10 feet down. It blows my mind the effort required to lay these drains every 10 yards across all my fields. From someone who can't muster the enthusiasm to dig my own garden, I thank these men for their skill and true resilience; I don't suppose they needed to go to the gym too often. The very first systems they put in must have made a huge difference to farming in this area. The more recent ones installed in the 80s were done by digger but they don't have such detailed maps. We now use our drone to picture the system after it is backfilled and that becomes the map. Good drainage is so important, and I am lucky that my father used drainage grants to put newer systems into most fields whenever it was possible. The second most important thing may be lime spreading. I have found the lack of winter ploughing gives me a larger window of opportunity to get lime onto stubbles over the winter months and that is paying off.

Malting barley has caused many problems again this year, with high nitrogen and screenings of up to 40% causing rejections or delaying uplift on many farms, mostly to the north of me. The response from the trade has been very poor: some changing contracts just before harvest and reducing the overall tonnage collected from many farms. Admittedly, the whisky industry is in a difficult period, but it still makes a huge quantity of product every year and its price doesn't fall with demand. However, ours does. We need a fair-trade price and a contract that reflects the risk. We wrestle with the contradiction that quality and sustainability are key selling points, but the market buys on price and will buy inferior-quality imported goods because the margin is better. And all this while telling farming to "green up" its production methods. Equivalence is a word we should enforce more often. We are proud of our high standards. Nothing should come into this country that hasn't been produced to UK standards or higher. We need to fix the supply chain; it just doesn't work for the UK production priorities of quality, traceability, low carbon and provenance.

AGRONOMIST IN FOCUS...

LOUISE PENN FROM CERES RURAL

SETTING GOALS FOR 2026

For the first time in what feels like a long while, I am genuinely looking forward to the spring agronomy season ahead.

The last few years have been tough. Awfully wet winters have led to poor establishment, delayed drilling, crop walking running right into December – and in some cases January – and crops that, frankly, have been pretty uninspiring to look at. By the time we reached the New Year, both farmers and agronomists were exhausted. There was little time to recharge, reflect on the season just gone, or properly plan for the one ahead.

This winter feels different. Conditions have been kinder, autumns more manageable, and crops – particularly those established early with minimal disturbance – are looking more settled. There is a sense of cautious optimism creeping back in, and that makes this a good moment to pause and think intentionally about the year ahead.

The value of the New Year

The New Year is a big thing for me personally. I see it as an opportunity to reset, reflect and set some goals. That might involve a few mind maps, lists or even the odd vision board as I set my intentions for 2026. While that may sound like more of a "girl thing", and I appreciate that many farmers see their year as running from harvest to harvest rather than January to December, Christmas is often the only real breathing space in the farming calendar.

It's the one time of year when there is a chance to step back, think (or overthink), and ask some bigger questions.

So I challenge you – whether you are a farmer, agronomist or consultant – to put aside just half an hour. Put pen to paper. Farming life moves in cycles and the seasons roll by incredibly quickly. That makes it even more important to be

intentional with your time, your decisions and your direction.

Start by reflecting on the past year. What went well? What didn't? What would you repeat, and what would you do differently? Don't beat yourself up about the things that were outside of your control – the weather and the wheat price will always have a say. But there is value in honest reflection.

Next, set some goals for the year ahead. I like to cover all aspects of life – career, business, health and personal development – but for farming businesses this might include financial targets, workload balance, soil improvement goals or furthering your knowledge on a specific subject. Make them SMART: specific, measurable, achievable, relevant and time-bound.

(To improve my knowledge of regenerative agriculture I will attend a farm walk or webinar once a month, and aim to host a farm walk on my farm by the end of the year.)

It's also important to accept that we can't do everything at once. Most of us realistically have capacity for two or three big focuses in any one year. Identify what really matters. That might be finally sorting the yard, tightening up cost control, improving soil structure on your weakest fields or starting the diversification idea you've been talking about for years.

Once you've done that, communicate it to your family and others on the farm.

The agronomist relationship

One of the most important people to communicate your goals and intentions to is your agronomist.

There aren't many other consultancy relationships that last for years, involve fortnightly meetings and often weekly – sometimes daily – conversations. Agronomy is a unique relationship, and the results you get are heavily dependent on the quality of communication.

I'm very lucky to work with some fantastic clients, and growing the best crops we can together rarely feels like work. Where I see the most success is where the farmer and agronomist are genuinely working as a team. Managing expectations for the potential of the crop is just as important as product choice or timing. But that only works if goals, constraints and priorities are clearly communicated.

If you want your agronomist to deliver advice that aligns with your intentions and outcomes, you have to put the time aside to tell them what those are.

What that conversation might look like

So what should those conversations actually include?

First, reflect on the previous year together. Review yield results, establishment success, problem weeds, disease pressure and any available data. Yield maps, soil tests and field notes all add valuable context.

Second, set clear goals for the year ahead. This might include variable cost budgets, target yields, workload priorities or specific soil and system improvements. In direct drilling and regenerative systems, success often comes from consistency and long-term thinking rather than chasing short-term gains.

Third, identify ongoing issues and put strategies in place to address them. Brome control, for example, may involve cultural measures such as sterile strips, topping margins and drilling date decisions, alongside careful walking and targeted chemistry. Persistently underperforming fields might need a different approach entirely – digging soil pits, assessing structure, reviewing traffic management, or carrying out soil, tissue or SAP testing to understand what is really limiting performance.

Fourth, plan trials for the spring. Focus on areas where you lack confidence or knowledge, or where new technology could add value. This might be nutrition strategies, reduced rates, biostimulants, companion cropping or alternative establishment approaches. Trials don't need to be perfect or replicated to be useful – they just need to be observed and noted.

Fifth, clearly communicate who is responsible for what. With the increasing role of technology, mapping, data entry and compliance, clarity matters more than ever. Knowing who is doing soil sampling, uploading recommendations or recording applications avoids frustration later on.

Sixth, build a clear nutrition plan. This should include a full N, P and K strategy, but also consider micronutrients and biological function. Tissue and SAP testing can be particularly valuable in low disturbance systems where nutrient cycling and availability don't always follow conventional assumptions.

Finally, review environmental scheme obligations and how they interact with spring operations. Integrating these early avoids conflict later.

As the saying goes, if you fail to plan, you are planning to fail.

Challenge Yourself in 2026

I would also encourage you to make 2026 the year you challenge yourself.

I'm always encouraging clients to try something new or do something slightly differently. If you do exactly the same thing across every acre, every year, it can take a long time to learn anything meaningful. One of the unique privileges of farming is that you can manage every field – or even every tramline – differently if you choose.

Just imagine if, at each farming operation, you did something slightly different on a small area. By the end of the year, you would know far more about what works best on your soils. This doesn't have to be a formal trial. It might be noting that one half of a field was rolled twice, that a more diverse cover crop mix was drilled in one area or that an alternative nutrition approach was used. Even a simple note on your phone can be enough.

There are some genuinely exciting developments coming through in farming, from emerging technology to data integration and AI. But these only add value if we remain open to change, curious and willing to test ideas for ourselves.

So make 2026 the year you sit down with your agronomist, set some clear goals, and challenge yourself to change things up a little. I'm confident you won't regret it.

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