CLIMATE CHANGE CHAMPIONS

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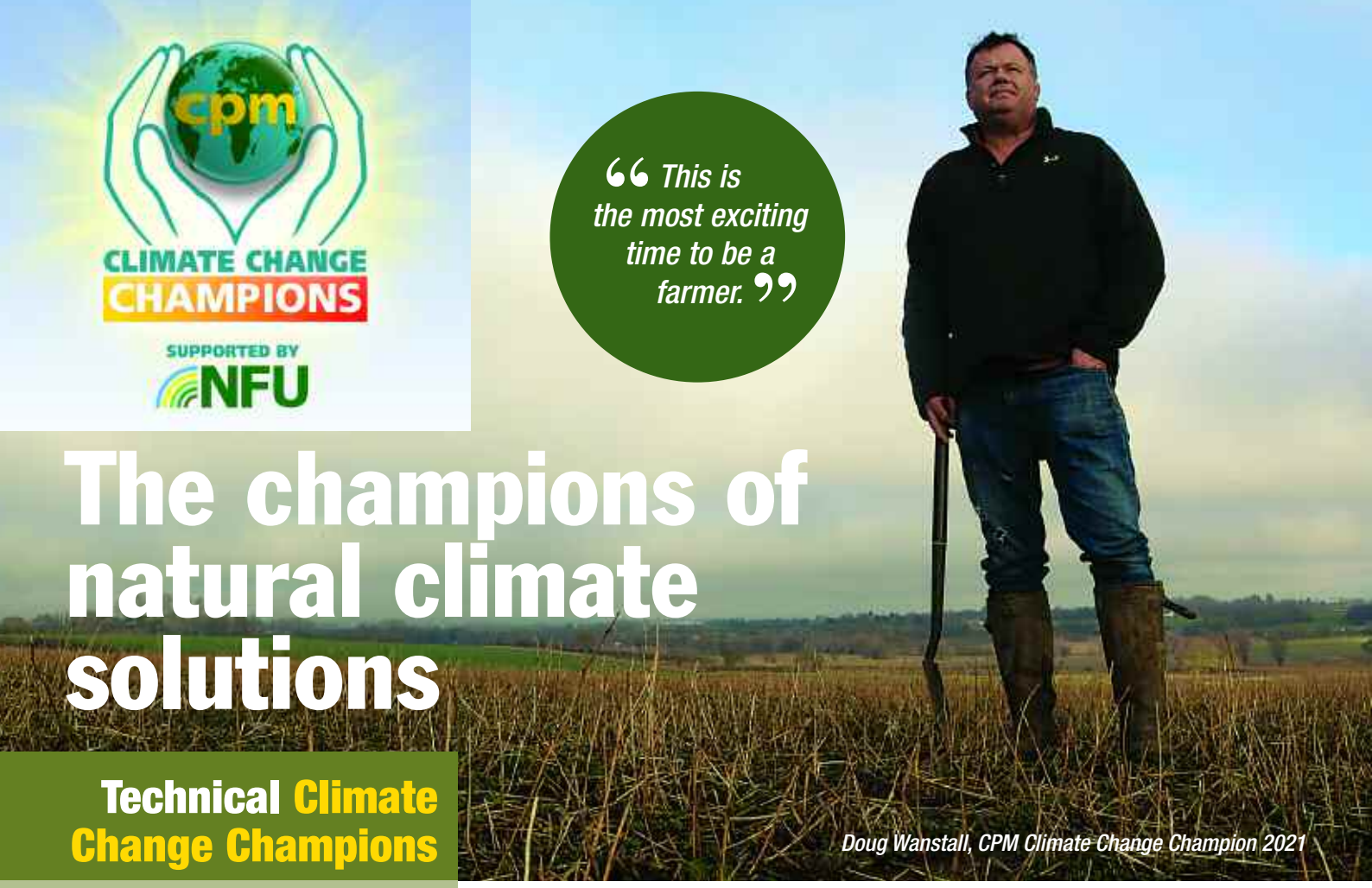
> *"This is the most exciting time to be a farmer."*



Doug Wanstall, CPM Climate Change Champion 2021

The champions of natural climate solutions

Technical Climate Change Champions

While world leaders gathered in Glasgow during COP26 to ponder over policy designed to reduce global warming, *CPM* brought together nine leading arable farmers who are already delivering solutions into an industry round table discussion.

By Tom Allen-Stevens

Farmers are part of the solution to climate change and are already making a clear contribution towards the effort to limit global warming to 1.5°C. This was the message delivered to DEFRA Minister of State Victoria Prentis, who joined nine leading arable farmers at last month's *CPM* Climate Change Champions Round Table event in Hampshire.

The event, timed to coincide with the COP26 climate change conference in Glasgow, brought together 26 farmers, industry leaders and the NFU to explore the practices in crop production that make a palpable difference to UK Agriculture's net emissions.

"Farmers are not part of the problem — they offer the solution," noted NFU deputy president Stuart Roberts. "This is the most exciting time to be a farmer — I genuinely believe that. But it's also the most frightening time to be a farmer. There's a lot of uncertainty and requests for help. We must turn these into excitement and progress."

Sequestering carbon

Stuart noted that every Climate Change Champion is significantly carbon negative, with a net balance that sequesters large amounts of carbon. This means they represent the farmers who are doing the "heavy lifting" to address society's addiction to fossil fuels, he said. "People also need to be fed and we should be doing our bit for biodiversity. What's fantastic is that these farmers are doing all three."

The nine farmers presented their views to the minister on how they're achieving net zero, and policy steps needed to accelerate the pathway towards that goal. Kent grower Doug Wanstall was voted overall Climate Change Champion 2021 by *CPM* readers, an accolade announced by Victoria Prentis.

Doug's cropping includes lucerne, believed to draw large amounts of carbon down deep into the soil. He's also recently started Re-Generation Earth, a business set up to help farmers who sequester carbon benefit financially. A key aspect of this is an agroforestry venture designed around a fast-growing hybrid type of tree.

Noting the rush for new technologies aimed at drawing CO_2 from the atmosphere, Doug highlighted "a better, more natural form of direct air capture, something that nature has been practising for millennia — photosynthesis", adding that better, regenerative farm practices could sequester as much as 16% of all UK emissions.

"The Woodland Carbon Code simply won't provide the liquidity of carbon offsets required to drive the investment in good quality carbon-sequestration projects. We don't need taxpayer money, though. All I ask is that the Government engages with the UK Carbon Code of Conduct — help us bring groups together to start to make a difference," he said.

Climate Change Champion runner-up Mike Purnell of Southill Estate, Beds, pointed ▸

The round table event brought together 26 farmers, industry leaders and the NFU to explore the practices in crop production that make a palpable difference to UK Agriculture's net emissions.

SEED TREATMENTS LAY THE FOUNDATION TO MAXIMISE CROP YIELD AND QUALITY

DON'T UNDERESTIMATE THE NEED FOR A SEED TREATMENT

VIBRANCE® Duo is registered for use as a seed treatment on spring barley, spring wheat and spring oats.

Seed and soil-borne pathogens present the first risk in the cropping year. They have the potential to significantly reduce the number of healthy plants able to establish and are a long-term risk to yield and quality.

The use of a seed treatment is the only way to control most seed and soil-borne diseases such as loose smut and leaf stripe. The presence and impact of these diseases is often not seen until ear emergence when it is too late to control them and they can easily spread and infect neighbouring crops.

If untreated seed is routinely grown and re-sown these diseases can multiply exponentially potentially resulting in complete crop loss after just a few generations.

BUILDING A RESILIENT CROP WITH VIBRANCE DUO

In addition to controlling seed and soil-borne diseases, establishing good root structures can build a more resilient crop which is important in spring cereals. When you purchase your seed, you don't know what conditions your seed will be drilled into, or the weather for the remainder of the season. Recent seasons have seen extremes of weather including dry spring conditions which can lead to plant stress. This can be a particular challenge on typically lighter soil types used for growing malting barley.

Control seed & soil-borne disease + Increase rooting + Improve establishment = Crop resilience to maximise potential

TRIALS INSIGHTS

A strong root structure provides better access to nutrients and water leading to improved plant health and vigour.

Shropshire, LAUREATE spring barley, light land, drilled 23rd March 2020 and assessed 14th May 2020.

Improved establishment on typical malting barley light land.

Newark, Nottinghamshire, LAUREATE spring barley drilled 3rd April 2020 and assessed 16th April 2020.

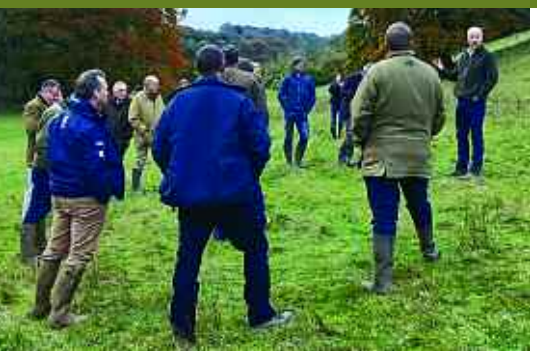
GREEN LEAF RETENTION IN MALTING SPRING BARLEY

Improved establishment and rooting with VIBRANCE Duo with better green leaf retention and plant health.

Blue and green areas = Higher green leaf retention **Yellow and red areas** = Lower green leaf retention

Source: ADAS Dorset, LAUREATE spring barley, chalk soil, drilled 28th March 2020 and assessed 31st May 2020.

FIND OUT MORE AT www.syngenta.co.uk/choosing-seed-treatment-spring-crops



The event was kindly hosted by Faccombe Estates in Hants and estate director Al Brooks (right) showed attendees how he follows an "edge-to-edge asset approach" to a low-carbon community.

▸ out that tree-planting has its place, but the approach currently taken is driving a view that "farming is bad". This, he said, will lead to a reduction in domestic food production and a rise in imports from parts of the world with a questionable environmental record.

Mike follows practices such as companion cropping, intercropping and drilling into a white clover understorey to reduce dependence on fertiliser while maintaining yields. "Responsible food production is part of the solution to the climate crisis. It's the answer to biodiversity and ecosystem gains and the only path that can both feed the population and improve the natural environment. Please listen to farmers," he said.

Jake Freestone, of Overbury Enterprises, Worcester, echoed these thoughts, adding "we can produce healthy, nutritious food reducing costs to the NHS by farming in a more regenerative way and actually adding a lot more benefit to wider society."

A thriving microbial community drives the active carbon cycle in Jake's soils. His soil-savvy practices not only sequester an impressive carbon balance but increase nitrogen fertiliser use efficiency (NfUE) to as much as 82%. "How can you as a Government support us and address the red tape that's involved?" he asked the minister. "We need to be able to look at holistic farming approaches."

Manager of the Lockerley Estate in Hampshire, Craig Livingstone, spoke of the "pain that is involved with change", spelling out the challenges arable farmers are facing and noting that it's the pioneering farmers who have shouldered the risk and shown the way forward through practices such as regenerative agriculture.

"We know that within farming businesses, for a multitude of reasons, it's far from simple. And I urge Government to take note — much of the heavy lifting has already been done here," he said. Craig has used the best of technology, combined with a recalibration of ideas within the team at Lockerley to effect change. "I'm incredibly optimistic British farmers will lead the way in this space — ambition, action and acceleration form the order of the day."

Cambridgeshire farmer Thomas Gent was keen to point out the work and innovation from young farmers with interesting ideas looking to push the boundaries. "I do genuinely think this is probably the most exciting time ever to be a farmer," he said.

Regenerative practices

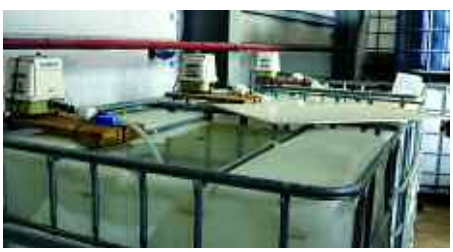
His family farm was one of the first in the UK to follow regenerative practices, has insect farming among one of its most recent new ventures, and is now one of the first to produce certified soil-carbon offsets. "I hope schemes like this, and there are many more coming online, are going to be used and encouraged by the Government. An innovative and entrepreneurial spirit is something that's going to push us into the next phase of agriculture."

This is a sentiment Andy Bason of Newhouse Farm in Hampshire also stressed to the minister. "What we need from you, and our Government, is a way to better utilise our skills and join the dots to set out a format for other farmers to work with. Because for me, I've done nothing radical on my farm, so it's a format that can be rolled out across the whole country."

Andy is another grower for whom NfUE is a key focus, and he has been taking part in on-farm trials with CF Fertilisers aimed at improving it. A gradual reduction in cultivations has also resulted in a 1% increase in soil organic matter over six years.

On-farm R&D was a theme presented by Tim May of the Kingsclere Estate, Hants, pointing out it's the thought-leaders who take the "hard knocks" that others learn from. "But it's important to remember this level of R&D doesn't come for free. This work takes time and resources away from our many other activities," he pointed out.

Tim partners with other farmers across the



Regenerative agriculture practices, such as biological treatments used by Jake Freestone, underpin farming systems that sequester carbon.

Doug Wanstall's cropping includes lucerne, believed to draw large amounts of carbon down deep into the soil.

estate running a series of enterprises that promote a circular economy of productivity and soil improvement — a system he's successfully pioneered and promotes to others. "The more this work is de-risked, the more we're going to do it — that's the type of people we are. So our message is don't forget to support us, the thought leaders, as we're the ones leading the way to more sustainable farming systems."

Fourth generation Leicestershire grower Will Oliver noted his family has invested significantly in a system that's delivering considerable soil organic matter improvements and reductions in synthetic inputs. "I would love to have great great great grandkids farming the same soil that I am today," he said.

A state-of-the-art poultry unit, complete with geothermal heat pumps and solar panels, are among the changes Will has ushered in, keeping a close eye on the figures. "I'm using a lot of data now, that we've managed to collate over the past six years, which justifies every single decision I make on the farm. I can back up every decision with actual data, which makes life a lot simpler."

In Oxon, James Taylor is bringing the benefits of a farm-based biogas plant to his soils, improving organic matter and significantly lowering synthetic inputs. "A good example of this has been the rye-based forage crop I grow, which has up to seven different plant species," he noted.

"The crop not only produces biomass for energy production, but also has three different types of flowering plants to feed our insects, three leguminous species for organic nitrogen production, and the diversity in the crop has dramatically reduced our chemical and fertiliser inputs whilst capturing carbon from the atmosphere."

The farm lies in Victoria Prentis' constituency and she offered to visit, adding that all the farmers deserve "canonisation" for their carbon-negative systems. "I want to applaud all nine of this year's Climate Change Champion finalists, and the many ▸

SIMPLY FOLLOWING HIGH YIELDING RECOMMENDATIONS CAN OFTEN CREATE SOME COLOURFUL LANGUAGE.

LET'S FACE IT, ACHIEVING MAXIMUM YIELDS ISN'T SIMPLY A NUMBERS GAME.

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INTELLIGENT SEED BREEDING FOR
FORWARD THINKING FARMERS.

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Industry must work together for net zero drive

More detail on how the industry can help followed the farmers' presentations. Dr Sajjad Awan spoke about the 75 NfUE trials **CF Fertilisers** has co-ordinated across the UK during 2021. The results from these trials showed that by measuring soil mineral Nitrogen (SMN) using the N-Min test, nearly three-quarters of the farmers achieved reductions in N use with no loss of yield. "The most important aspect is measurement of the additionally available N in the soil — if you guessed it or didn't consider it at all, what hope do you have of using N efficiently?" By paying attention to detail 80-90% NfUE is "perfectly achievable", he added

Soil measurement was also highlighted by Andrew Richards of **Agrii**, who has been working with UKCEH assessing various soils across the UK, and in particular the soil organic carbon (SOC). "Some measurements don't take depth into account, or bulk density or stone content. If we're going to get people to pay for the carbon in the soil, we need a level of confidence in the figures." The project is working towards a standard protocol for testing soils.

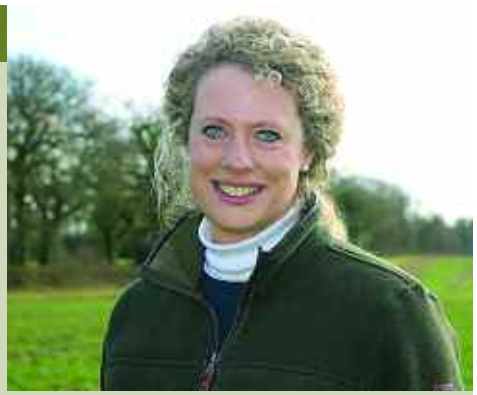
Piero Torassa of **BKT** brought the focus to care of the soil. He explained how the company is using three-dimensional footprint testing to evaluate all elements of how a tyre achieves traction with the soil in order to deliver more efficient field operations with less damage. "The first one is the depth, which is why we're developing low pressure tyres with higher load capability. But the length accounts for about 90% of the traction, so a wider tyre is not always the best choice."

Mike Green of **BASF** pointed out that carbon is only released from farm produce after it leaves a farm, so farmers should be considered in terms of the total plant carbon they capture. "The advantage with arable cropping is on a yearly basis we're also producing food and fuel. We shouldn't be giving that up because it's incredibly efficient — farmers mix CO_2 and sunlight into stored carbon. One unit of natural debt, in terms of crop inputs, delivers six units of output."

Emma Ralph of **Interagro** raised the subject of microplastics used in agriculture. "We've made sure that all of our products are biodegradable. We must have a joined-up, collaborative approach in all areas of how we support farmers. We do need an industry standard so that we're all working to very similar goals."

Ben Scott Robinson of **Small Robot Company** blamed many of the problems associated with agriculture on an over-simplification of the farming system. New technology developed by the company studies each individual plant in a field and acts on that information. "Once you understand the reality of what happens at a per-plant level, you can start to allow things to happen which we'd currently consider completely impossible."

John Burgess of **KWS** pointed out that providing the solutions for climate change start with the choice of seed. "Studies suggest that hybrid rye, for example, is a crop that needs as little as 45% of the N of winter wheat, depending on type, and just 33% of the fungicide use."



Emma Ralph of Interago called for a joined-up, collaborative approach.

Green finance can help fund the changes farmers can make — **Lloyds Bank** has a £5bn Clean Growth Finance initiative across the group offering discounted lending for sustainable projects, explained the bank's Ben Makowiecki. But uncertainty over issues such as carbon calculators, ELMs and tree-planting are holding farmers back. "We can offer thought leadership, but what we really need is action. These champion farmers are actually doing the practical things. Getting out to the rest of the industry what they're doing is what's really going to help," he said.

▸ farmers around the country taking steps to reduce greenhouse gas emissions. I've been so impressed by the energy and enthusiasm around climate-responsible farming and about how responsible food production is part of the solution, not the problem. This is every bit as exciting as what's being discussed at COP26.

"The Government's Clean Growth Strategy and the 25 Year Environment Plan set out our environmental ambitions, and our approach to achieving them. These farmers and others like them play such a huge role in achieving these ambitions and show we can lead the way in this field," she said. ■

• To watch the event in full, go to *www.cpm-magazine.co.uk/climatechangechampions*

Step forward to save the planet

The quest is on to find the Climate Change Champions of 2022 — those arable farmers who have already made marked progress towards Net Zero. We believe those individuals currently have their eyes set on this very page. All you have to do is step forward and nominate yourself.

Throughout 2022, we will be profiling in *CPM* a shortlist of candidates, selected from those nominees by a judging panel. The campaign is supported by NFU, and supports its goal of achieving Net Zero by 2040. Specifically, we're looking for arable farmers with:

- **Inspirational ideas** – more than anything, this is the opportunity for those with innovative practices or novel thinking to come forward and show how these help the journey towards Net Zero.
- **Productivity push** – those using a wide variety of techniques to enhance productivity and deliver the same output or more, and those working smarter to use fewer inputs.
- **Cultivation care** – those using measures to build soil organic matter and lock carbon into the land, which may involve cultivation practice, a change in rotation or alternative land use.
- **Bio-based boldness** – farmers who have implemented measures or activities that positively displace the use of fossil fuel or other causes of greenhouse gas (GHG) emissions elsewhere in society. Examples include anaerobic digesters, solar and wind and alternative uses for agricultural products that lock up carbon.

To find out more, and to nominate yourself for Climate Change Champions 2022, go to *www.cpm-magazine.co.uk/climatechangechampions.* Nominations close 31 Jan 2022.

CPM would like to thank our sponsors, leading agricultural suppliers who have a credible Net Zero aspiration and are working with farmers in a partnership approach to meet this ambitious goal.