Real Results Pioneers

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> *"Yield is king. Compromise that and you increase cost of production."*

No compromise in blackgrass battle

Experience has shaped a multi-tool blackgrass strategy at Troston Farms in Suffolk, with crop productivity the key priority. *CPM* visits to find out how it's developed and what part new chemistry will play.

By Tom Allen-Stevens

You can see to a line where the Skyscraper winter wheat stops and the spring-sown Mulika starts. But it's a job to tell which one looks the better crop.

"We drilled as much as we could late in the autumn, but in the end, I asked myself whether it was worth mauling in a winter wheat in late November and lost my nerve. We pulled the stumps and decided to come back in the spring," says Edward Vipond.

We're standing in his "failure field", one he knows is bad for blackgrass. It's been the site of bruising lessons that have helped shape a strategy against the grassweed across the 1500ha Troston Farms Edward manages near Bury St Edmunds, owned by the Claas family.

This year, as well as the two-tone wheat, there's a tramline in the same field that's received a pre-emergence dose of Luximo (cinmethylin), the new blackgrass herbicide from BASF — Troston Farms is one of four in the UK selected for the on-farm trials. The programme is part of the company's wider Real Results initiative that involves around 50 farmers across the country who carry out tramline trials with the latest chemistry. This is compared with the farm's standard best practice treatment and the results are put through a fair degree of scientific scrutiny to ensure a result that's 'real' (see panel on p13).

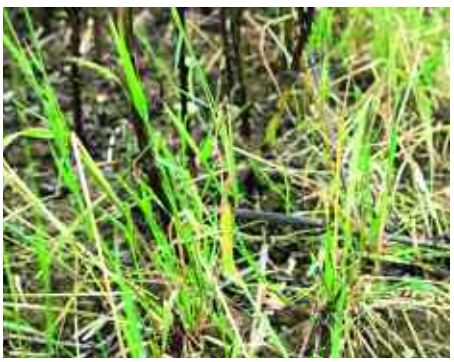
Patches of blackgrass

CPM last visited in 2019 when the 28ha field was in spring beans. At that point, several patches of blackgrass were clearly evident in areas that hadn't been sprayed out with glyphosate when the grassweed appeared in the previous wheat crop. Patch-spraying and roguing are part of the anti-blackgrass strategy, and Edward's learned through experience not to skimp on areas treated.

With late October firmly fixed as the drilling date in autumn 2019 to allow enough time to flush out the problem, the weather closed in and forced Edward into a spring crop.

"It was the first year we hadn't managed to drill our winter wheat and we put this field into spring barley. Generally, we struggle with spring cropping on our heavy land, but this crop performed — we sold it well and achieved a good margin. In terms of blackgrass control, it was a big win.

"The problem is that we applied the same process last autumn. We know to be



With no oilseed rape in the rotation, and beans proving to be an inconsistent crop, it's a struggle to retain the white-straw percentage in the rotation.

patient and not drill a bad blackgrass field until mid-October, but it turned into a wet month. We finally got into it in mid-November, but that was scary late. We drilled as much of the field as we dared and then left it, coming back in the spring."

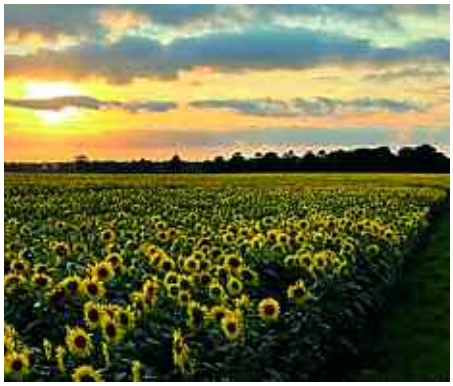
Delayed drilling and rotation are two cornerstones of a strategy against blackgrass that's keeping it under control. But Edward admits the cropping options he has are posing a challenge. "Oilseed rape has come out of the rotation — we don't have a solution to cabbage stem flea beetle, despite trying a number of innovative methods. To grow it half-cocked is not an option," he says.

Cultivations are based on a Sumo Quattro and Väderstad Rexius Twin, with depth adjusted to the task in hand.

"But we're struggling to retain the white-straw percentage in the rotation, especially on the heavier land. Beans are great for the soil but only produce a good return once in every three years, and aren't a good crop for blackgrass. Without OSR we're working into a tighter band of autumn cultivations."

Edward carefully considers the risk associated with different cropping options. As well as heavy clay, the farm has lighter soils, including Breckland blow-away sand. Here, sugar beet and maize feature in the rotation — the latter grown for an anaerobic digester. This also receives whole-crop rye, which proves a good option for blackgrass control, he says.

"Maize and sugar beet are high risk on our light land. In 2017, for example, they yielded 62t/ha and more than 90t/ha respectively, returning a good margin. But in the drought of 2018, we achieved just 22t/ha and 58t/ha. The cost was no different and they're expensive crops to grow — maize costs £340/ha not including fixed costs."



Sunflowers have proved a success, costing just £56/ha in input costs to grow.

One success story, however, has been sunflowers. Grown initially on a 6.5ha field of failed OSR in 2019, the crop now has an established place in the rotation with ▸

Hope for new chemistry in the grassweed numbers game

Although drilled very late in autumn, a pre-emergence herbicide was applied to the trial field of Skyscraper winter wheat, named 70 acres, before winter closed in.

"The field received our routine cultivations and stale seedbed, including two applications of glyphosate — the second just before drilling," reports Edward.

"The pre-em herbicide was applied two weeks after drilling — still pre-emergence of the crop — and we applied Luximo to one tramline. I'm impressed with what I've seen so far — it does appear to have done a better job than our farm-standard approach."

BASF is hopeful that Luximo will be available for use this autumn but growers should plan to manage their grassweeds with existing products in 2021. BASF UK and Ireland head of business development Steve Dennis advises growers to drill "as late as you dare but apply the pre-em herbicide as early as you can.

"The key aspect of blackgrass management is that it's a numbers game — you want to have as few survivors to take out with the chemistry as you can achieve. Ideally that's zero tolerance, and the right strategy is one that uses as many different techniques to get as close to that as possible."

Over 20 years of experience with Crystal (flufenacet+ pendimethalin) has shown it's currently the best residual blackgrass product on the market, he maintains. "But trials indicate its performance reduces the longer you leave spraying after drilling. My advice is that today is always a better day to spray than tomorrow, provided weather conditions allow," he notes.

"Although Luximo has not yet received approval for use, we now have some really good data on its efficacy from trials across the UK, which are indicating on average a 20% points lift in overall performance over flufenacet. Significantly, it's showing good performance on ryegrass — 26% points uplift for better control. We'll do another year of trials and are confident it will be available as one of the tools for growers to battle blackgrass and improve crop performance in 2022."

Within the two-tone wheat field – Mulika on the headland with Skyscaper reaching to the horizon – a tramline has received a pre-em dose of Luximo.

Troston Farms 2021 Real Results trials – 70 acres

	BASF	Farm Standard
Previous crop	Spring barley	
Pre-drilling cultivation (August)	Sumo Quattro (deep non-inversion) fb Väderstad Rexius Twin (shallow)	
Pre-drilling spray (August) (November)	Glyphosate (2.0 l/ha) Glyphosate (2.0 l/ha)	
Drill (11 Nov)	Väderstad Rapid	
Variety and seed rate	Skyscraper @ 208kg/ha (475 seeds/m^2)	
Pre-emergence herbicide (26 Nov)	Luximo-based	Crystal (4.0 l/ha) + diflufenican (0.1 l/ha)

Luximo contains cinmethylin. Information on rates and formulation partners will be made available once the product has received full approval for use on UK farms. Crystal – flufenacet+ pendimethalin; Glyphosate formulation used contains 360g/l ai.

Edward Vipond uses every tool to keep blackgrass from becoming a problem.

The ten aspects of an effective blackgrass battle strategy

- **Measurement and roguing** – good reconnaissance gauges whether your efforts are making a difference.
- **Resistance management** – getting a seed sample tested is an important first step in assessing the level of resistance you're up against.
- **Reducing spread** – blackgrass multiplies quickly, so a focus on activities that can cause it to spread ensures this is minimised.
- **Soil health** –blackgrass thrives in cold, wet soil conditions, so improving the long-term health of your soil will work against it.
- **Rotation** – the aim is to deplete as much of the seedbank as possible – it's the battle behind enemy lines.
- **Cultivations** – the real key is to know when you should bury it, and when you should just leave it alone.
- **Establishment** – the general principle is to try to avoid disturbing weed seeds when drilling.
- **Spray Application** – the most uniform application will be achieved on smooth seedbeds, at low windspeeds, and low forward speeds.
- **Chemical control** – while over-reliance on herbicides has led to resistance, the right herbicide choices can make a huge difference to success.
- **R&D** – Brand new modes of action in partnership with what growers have learnt about cultural control give us all a fighting chance of finally being able to regain control over problem weeds.

▸ 40ha grown each year. "They cost just £56/ha to grow for the seed and one pre-em herbicide. There's no fertiliser and the pollinators go mad for them. If the crop comes to nothing, that's not a huge sum to lose. But I've a contract in place, linked to OSR, and the price went up £60/t this year. In terms of margin, the crop costs 8% of the growing costs of sugar beet and 13% of the growing costs of combining rye, keeping the cost of production fairly low," says Edward.

With a late harvest, he recognises the crop's not a solution for the heavier land — soil health is an aspect he won't compromise. "Soil health and structure go hand-in-hand and if these aren't looked after, the blackgrass burden builds. We routinely mole plough and much of the land receives pig manure to build organic matter. Cover crops are reserved for lighter soils as drilling into them on heavy land can cause more problems than they solve."

When it comes to cultivations, Edward resists the move into direct drilling. "Yield is king. Compromise that and you increase cost of production. I'm aware there's a pain barrier you go through as soils adjust but wonder if it's worth the cost and whether it's the right solution for heavy land.

"There's also the aspect of surface compaction. I'm a believer in tramlinology, and we keep trafficking to a minimum, but there are always indents to take out."

His cultivations are based on a Sumo Quattro and Väderstad Rexius Twin, with depth adjusted to the task in hand. The plough doesn't feature on heavy land to keep buried blackgrass where it is — there have been costly mistakes in the past.

"We drill with a Väderstad Rapid, or switch to a Kverneland tine drill if conditions turn wet. If we want minimum disturbance, such as in the spring, we'll take the discs out of play. But there's nothing better on the market for seed placement, and establishment is such an important aspect, both for overall productivity and for blackgrass control," says Edward.

He also finds it's a good tool to achieve a "billiard-table finish", with an even seedbed for the pre-em herbicide another part of the strategy in the battle against blackgrass. "Spray application is so important to get right. We use a water conditioner with glyphosate, keep water rates up for the pre-em at 200 l/ha and use nozzles angled alternately forwards and backwards to maximise coverage. We've also just taken delivery of a new 36m Horsch Leeb sprayer with a clever boom that follows the contours — we had a demonstration and it's very impressive."

Finally, leaving no stone unturned, the Troston team pay close attention to blackgrass seed hygiene, regularly blowing down the combine to minimise spread.

Looking forward, introducing 2-3 year grass leys, selling the forage to a nearby calf finisher, may be a solution to the rotation conundrum. There are also 8ha in AB15 stewardship two-year sown legume fallow. The returns are "not exciting", says Edward, but there are benefits across the rotation, as well as for blackgrass control.

"We didn't actually have much blackgrass this year, but I know I have plenty in the seedbank and you have to use every tool to keep it from becoming a problem. You simply can't afford to compromise productivity," he notes. ■

The Real Results Circle

BASF's Real Results Circle farmer-led trials are now in their fifth year. The initiative is focused on working with 50 farmers to conduct field-scale trials on their own farms using their own kit and management systems. The trials are all assessed using ADAS' Agronomics tool which delivers statistical confidence to tramline, or field-wide treatment comparisons — an important part of Real Results.

In this series we follow the journey, thinking and results from farmers involved in the programme. The features also look at some in-depth related topics, such as SDHI performance and data capture and use.

We want farmers to share their knowledge and conduct on-farm trials. By coming together to face challenges as one, we can find out what really works and shape the future of UK agriculture.

To keep in touch with the progress of these growers and the trials, go to *www.basfrealresults.co.uk* or scan the QR code to visit the all-new, cereal fungicide virtual trial, offering a 360° map to compare plots.

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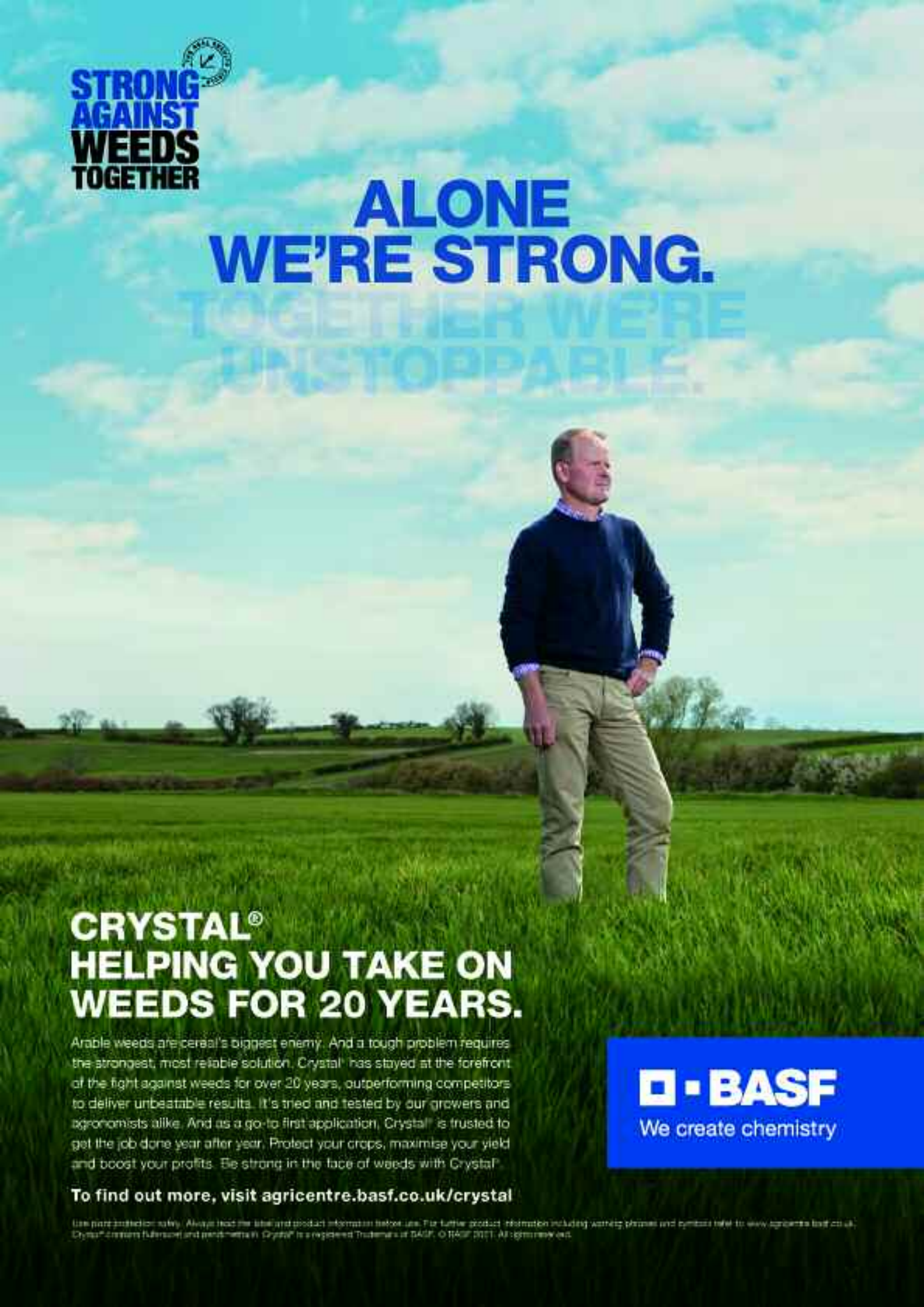
THE REAL RESULTS CIRCLE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