

# Real Results Pioneers

 **BASF**  
We create chemistry

“If we can replicate that 13t/ha yield across more of the farm that would be fantastic.”

## Resilience replaces risk

**Starting a new farming business in Northumberland comes with its challenges, but taking trusted advice, guided by sound on-farm trials and a commitment to the long term are reaping rewards. CPM finds out.**

*By Tom Allen-Stevens*

**The opportunity to take on a new farm and turn it into a success is one most progressive growers would relish. It's one that's come to Richard Cockcroft and his brother Stephen at Bowsden Hall Farm just outside Berwick-upon-Tweed, Northumberland.**

While Stephen looks after the livestock side of the business — 50 Shorthorn suckler cows and 35 store cattle along with 1400 ewes — Richard manages the 680ha of arable. “Dad is a partner in the business but remains on the family farm in Yorkshire,” Richard explains. “We're lucky that he's allowed us to make the management decisions ourselves, while always being on the end of the phone for advice.”

It's trusted advice along with on-farm R&D that are helping Richard manage the risks associated with the unfamiliar land the family purchased in 2015. The average wheat yield is around 9t/ha, but his involvement in the Yield Enhancement Network (YEN) and on-farm trials are showing the potential of his clay loam soils is far greater. For the past five years, he's been one of the 50 BASF Real Results farmers carrying out tramline trials with the latest fungicide chemistry and putting the results through a fair degree of scientific scrutiny to ensure a result that's 'real' (see panel on p24).

### Maximising the yield

“While the Real Results trial is on some of the better soil, maximising the yield on the poorer land is the bigger challenge, which last season's weather proved,” says Richard. “We had some later drilled second wheat yield just 5t/ha as a result of the wet weather having a big effect on crop establishment. So the yield range was vast last season.”

To discuss progress, Richard's joined on a web call by Suzanne Horn, agronomist with Alnwick Farming Consultants, and local agronomy manager for BASF, Neil Thomson. “The biggest challenge we've had to face since moving up here is the geographical change,” explains Richard. “With earlier drilling and later harvests, there's a smaller window to get the workload done.”

Winter cropping — wheat, oilseed rape and oats — dominates the arable area, while the farm is a member of the local vining pea group and there's a small area of spring barley. While the dry springs have been an additional issue to manage in recent years, these are offset to a certain extent by sea frets — heavy dews that come in as a result of the farm's proximity to the coast.

These have their own challenges, though, as Suzanne explains. “With the past few seasons of dry springs, we haven't been faced with a testing septoria year, and with our proximity to the coast and fast cycling of yellow rust, this disease has been more prevalent.

“Tebuconazole offers cost-effective control at the early T0 fungicide timing, bringing in the use of strobilurins and SDHI protectant ▶



*The clay loam soils are capable of high yields, but there's a narrow window to get the workload done.*

# TARGET EARLY FOR SPRING WILD OAT CONTROL

- > Target wild oats early to stop competition
- > Adapt AXIAL® Pro application rates to weed size
- > Scout out and identify wild oat populations
- > Use application techniques to achieve best possible results

**TARGETING WILD OATS EARLY AND WHILST THEY ARE STILL SMALL WILL PROVE MORE COST EFFECTIVE TO ACHIEVE HIGH LEVELS OF CONTROL THIS SPRING.**

Results of new trials last season - with a similar weather pattern to this year - showed treatment with AXIAL Pro at growth stage 25-29 achieved 100% control from rates of 0.5 l/ha, compared to a rate of 0.8 l/ha required to achieve the same results when weeds had increased in size to GS 32-33 and the crop GS 37-39.

Syngenta grassweed technical manager, Georgina Wood, advocates the earlier treatment reduces the damaging yield effects of competition. It also enables growers and agronomists to tailor rates and application techniques more effectively.



Assess wild oat weed sizes to tailor AXIAL Pro application rates, advises Georgina Wood

"Achieving as high a level of control as possible is essential, since wild oats are more competitive than blackgrass and seeds can remain in the seedbank for longer. Effective control strategies also reduce the risk of herbicide resistance developing," she advised.

## GROWTH STAGES

The trials in Warwickshire highlighted why the early timing is effective since both the weeds and crop were at the same growth stage for the initial application. However, by the time of the later application the crop had extended significantly, to four to six growth stages ahead - and that could impinge on control.

"Early treatment of spring germinating wild oats, whilst the crop is also still relatively open, enables most effective targeting of sprays and facilitates lower application rates to achieve the desired high levels of control.

"Where overwintered wild oats have been identified in the crop, the rates will need to be higher, to control the stronger weeds and their more waxy leaf coatings, particularly at the later application timings," she added.



Find out how new application techniques can better target wild oats this spring

## APPLICATION RESEARCH

Application research has shown the importance of the highly systemic AXIAL Pro when weeds are partially shaded by the crop canopy during spraying - achieving faster and more complete control than fenoxaprop-p-ethyl under comparable conditions. It also reinforces the advice to treat when weeds are actively growing to get the best activity, advised Miss Wood.

For herbicide sequencing programmes, Miss Wood points out that where AXIAL Pro is used first, it can be followed up by a hormone or sulfonylurea treatment after just seven days. However, if the hormone or sulfonylurea treatment is applied first, an interval of 21 days must be left before AXIAL Pro application.

"With the later application that's likely to mean the wild oat target would have grown significantly larger, requiring higher application rates for control." It is also worth noting that growers can still control weeds such as cleavers, cranesbill and fumitory when they are quite large.

## TESTING TIMES

Visit [www.syngenta.co.uk/wild-oats](http://www.syngenta.co.uk/wild-oats) to find out more about wild oat management and test your ID skills

## A Real Result expected for high potential crops

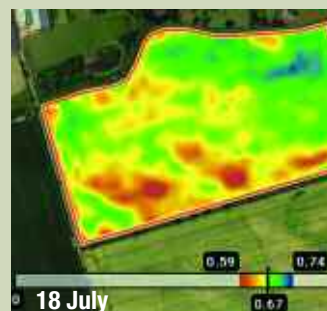
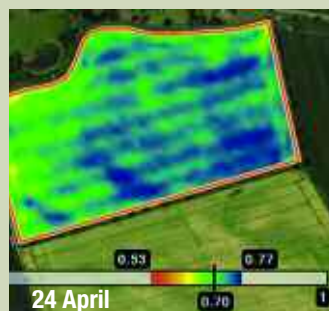
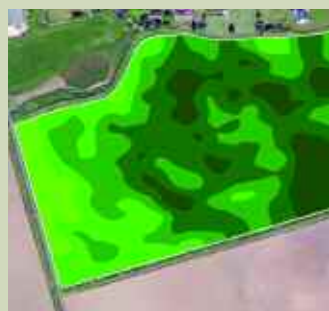
Richard's been involved with the Real Results Circle since it started, and for him, it's not just about tweaking the system to achieve every last bit of yield from his wheat crop. "What I enjoy is the discussion with other growers," he says. "You also get early access to new products and can see how they fit into the farm."

For the past two years, Revystar XE has featured as the T2 application compared against the farm standard in the tramline trials (see table below). "Ascra is the current farm standard on crops with high potential," notes Suzzane.

"On the high-yielding crops, it's not worth risking anything other than a leading fungicide, so it's been useful to see how Revystar compares. In neither year have we really seen a disease pressure that would show a difference in yield, despite having crops that started the spring with excellent potential. In a more tricky season, I'd expect the greater curative activity from the newer azole to really make its mark."

The trial in 2020 pitched a standard and a low rate of Revystar applied at T2 against the farm standard treatment. NDVI images were taken through the season while xarvio Powerzone brings in data over 15 years to show areas of greatest potential. While these picked out in-field variations, they ran across the tramlines, according to an analysis carried out by ADAS, so should not bias the treatment comparison. However, there were no visible differences in NDVI between the treatments.

Yield data taken from the combine were analysed using ADAS' Agronomics tool, which delivers statistical confidence to tramline or field-wide treatment comparisons. The effect of this was to show a yield increase of 0.25t/ha for the Revystar standard rate over the competitor programme and 0.19t/ha where the Revystar rate was reduced. The differences were not statistically different, however, and could have



A xarvio Powerzone map (left) and NDVI images highlight the field variation, but there's little difference between treatments.

been caused by soil variation, for example.

"You wouldn't expect to see much difference before flag leaf, but the weather broke as soon as the T2 spray was applied and we received 240mm in June, July and August," recalls Neil. "I think that's where the extra longevity protection has paid off with Revystar — I inspected the crop on 23 July and the area treated with Revystar was green from top to bottom and it was exceptionally thick."

Richard agrees that green leaf area retention is where the high potential crops will benefit from Revystar. "From what I saw in New Zealand, the difference in ramularia control in barley, for example, was incredible. In our trial in 2019 you could see the difference in the Revystar-treated strip. I think its use will really pay in a high disease-pressure year."

A field of Parkin will get the Real Results scrutiny this year, variably drilled on 13 Sept at the slightly lower average rate of 250kg/ha. "It's too early to decide specific

treatments that'll be applied, but this crop has potential, so I'm willing to invest to protect that," says Richard.

The BASF treatments delivered a yield improvement of 0.19-0.25t/ha over the competitor programme (centre two strips).



### Bowsden Hall Farm 2020 Real Results trials – School field

	BASF standard	BASF low	Competitor
T0 (07 April)	Tebuconazole (0.22 l/ha)		
T1 (26 April)	Elatus Era (1 l/ha) + CTL (1 l/ha)		
T2 (19 May)	Revystar XE (1 l/ha)	Revystar XE (0.8 l/ha)	Ascra (1.2 l/ha) + folpet (1 l/ha)
T3 (09 June)	Proline 275 (0.35 l/ha) + tebuconazole (0.5 l/ha)		
Calculated yield (t/ha)	<b>15.47</b>	<b>15.41</b>	<b>15.22</b>
Diff req'd for 90% confidence	<b>(±0.42)</b>	<b>(±0.480)</b>	
Thousand grain weight (g)	<b>57.7</b>	<b>57.1</b>	<b>58.7</b>
Specific weight (kg/hl)	<b>79.4</b>	<b>78.9</b>	<b>79.9</b>

Variety – Gleam @300 seeds/m<sup>2</sup> drilled on 13 Sept; Previous crop – vining peas; the yield shown is for the treatment strips only, excluding wheelings and calculated using ADAS Agronomics. In this trial the yield difference would need to exceed 0.42-0.48t/ha for statistical significance at the 90% confidence level. Elatus Era contains benzovindiflupyr+ prothioconazole; CTL – chlorothalonil; Ascra – bixafen+ fluopyram+ prothioconazole; Revystar XE – fluxapyroxad+ mefentrifluconazole; Proline – prothioconazole.

# SECURING THE BEST SPRING CEREAL START



Well-entrenched weeds in ground destined for spring cereals make first class early management vital for the best crop performance and least weed seed return this season.

## PRIORITISE PRE-PLANTING WEED CONTROL

Established weeds must be eliminated ahead of drilling to safeguard spring cereal performance and rotational weed control.

## USE THE MOST ACTIVE GLYPHOSATE FORMULATIONS

Modern formulations optimised to work under challenging conditions are essential for the best low temperature glyphosate uptake and activity.

## TAKE ENOUGH TIME AND CARE IN SPRAYING

Putting as much attention to detail into glyphosate rates and spraying practice as any pre-em application will pay dividends.

## DRILL BY CONDITIONS NOT CALENDAR DATE

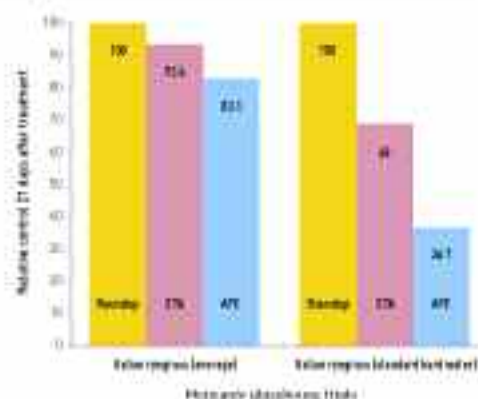
Seedbeds that are fine and warm enough for the best establishment and residual weed control are well worth waiting for.

## CONSIDER PRE-EMERGENCE GLYPHOSATE

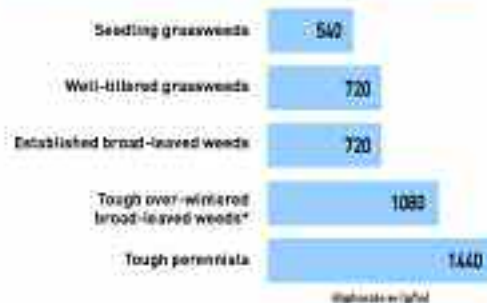
An approved glyphosate in the pre-em mix can be very valuable in dealing with any emerged weeds in the seedbed.

## PERFORMANCE WARNING

Lower levels of performance can be expected from the most popular (APEI) replacements for traditional (ETA) glyphosate formulations now withdrawn from UK use.



## Recommended Early Spring Glyphosate Rates



## STEWARDSHIP

To minimise the risk of resistance development it is important to spray ahead of weed stem extension and appreciate that no amount of adjuvant will make-up for insufficient glyphosate.

For further information, visit [www.cropscience.bayer.co.uk/roundup](http://www.cropscience.bayer.co.uk/roundup), or call 0800 1147022 for technical enquiries.

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Neil Thomson warns that going too early with the T0 fungicide application may result in extending the gap between the T1 and T2.

▶ products at later timings. Septoria is still our main focus for disease programs in wheat, although you can rely more on disease ratings than you can with yellow rust.

There's a fair spread of varieties across the 360ha of wheat — Gleam, KWS Extase, KWS Parkin, RGT Saki, LG Spotlight and LG Skyscraper are in the ground. "We've dropped KWS Barrel, which yielded very well, but its low septoria score makes it too high risk," says Richard. "Likewise soft Group 4 Monroe yields well in this region and weighs like lead, but broke down to yellow rust. Meanwhile Parkin has come in new for its early drilling and early harvest."

Neil notes that having varieties with better disease scores helps with managing the risk, but should be put in perspective with drilling date. "It's not uncommon in this area to harvest a variety close to its birthday. So when you're drilling early and harvesting late, you can probably shave a point or two off its disease scores when you're deciding how to manage it.

"In the spring you have to take care not to go too early with the T0 fungicide spray, which can be tempting where yellow rust is a threat. The danger is that the T1 then goes on too early, which extends the gap between



There's a long-term aim of moving more towards achieving soils that can be direct drilled.

## 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](http://www.basfrealresults.co.uk)



the T1 and T2 applications. Only the newer chemistry is effective if you get into a curative situation on septoria."

### New Zealand tour

The climate and soils of Northumberland are not quite up to the productivity level Richard found on the Innovation Tour of New Zealand farms arranged by BASF in 2018. He was one of 15 lucky Real Results farmers who 'scanned the can' and were taken on the two-week tour round some of the highest-yielding cereal farms in the world. "It was really interesting to see how farms had adapted following the removal of subsidy 30 years ago," he notes.

"But what struck me on world wheat winner Mike Solari's farm is that he achieves these yields with relatively low seed rates and plant counts, and he's not afraid to apply a T4 fungicide spray to extend the grain-fill period."

Richard doesn't have to look too far to find record-breaking wheat crops, however, with the title reclaimed from New Zealand in 2015 by local grower Rod Smith. Just next door lies a farm under the management of McGregor Farms, who work closely with BASF, and like Bowsden Hall Farm, one that's been part of YEN for several years.

Neil's been comparing results through the reports and the 37 different criteria on which the results are bench-marked. "The similarities between the two crops are remarkable — Gleam and Jackal, drilled and harvested at almost exactly the same time on very similar soils," he notes.

"McGregor Farms ranked seventh in the 168 YEN entries, with a yield of 14.5t/ha, with a yield potential ranking 19th, while Bowsden Hall came 15th with 13.3t/ha and a yield potential ranking 31st. Richard's crop had 629 ears/m<sup>2</sup> with 37 grains/ear, while the

higher-yielding crop put out 404 ears/m<sup>2</sup> with 70 grains/ear."

Richard confirms he's reviewing seed rates, which are variably applied according to maps prepared by SOYL. "If we can replicate that 13t/ha yield across more of the farm that would be fantastic. I think the biggest contributor, though, was early drilling — we got in before the rains came."

Hand-in-hand with early drilling comes the risk of lodging, and this could have been exacerbated by Richard's N policy. "The Real Results field was given a four-way nitrogen split three weeks apart starting first half of March to front load the applications and utilise any rainfall for the crop. It was a calculation that paid off with the April/May dry periods which are becoming a regular weather pattern most seasons now."

Although it turned dry, Suzanne recommended sticking with a full PGR programme, and it was a policy that worked, she notes. "We started with Moddus (trinexapac-ethyl) and chlormequat at T0, and switched to Canopy (prohexadione-calcium+ mepiquat chloride) with chlormequat at T1, with Cerone (2-chloroethylphosphonic acid) applied at flag leaf. It was an exceptionally thick crop but it stood and maintained its potential."



Although the yield was impressive, lowering the seed rate could further improve performance.



*On 23 July the area treated with Revystar was green from top to bottom and was exceptionally thick.*

Feeding into this has been the farm's soil-improvement programme. "We've introduced bed-and-breakfast pigs alongside the livestock and three-year leys on some of the poorer land. These measures help to build life into the soils with additional chicken muck we buy in," Richard explains.

"Our YEN report shows a soil organic matter level of 5.7% which I'm pleased with — we don't yet have a good history of metrics across the whole farm, but I feel we're heading in the right direction. It's a long-term process with the aim of moving more towards achieving soils we can direct drill.

"We also invest in drainage

every year, trying to get the fundamentals right, while using various precision farming techniques allow us to enhance yield and maximise profit margin," he adds.

The on-farm trials and Real Results are showing Richard where the potential lies, although he accepts not every part of the farm can perform to the level these achieve. "With Suzanne's advice, we tailor our management and spend depending on what yield potential we expect and can adapt throughout the season depending on what the weather may throw at us," he notes.

"We have various Countryside Stewardship schemes across the farm providing wildlife habitats for farmland birds and environmental benefits on the more unproductive parts of the farm. Depending what becomes available through the ELM Scheme, this may be an option for other less productive areas.

"The long-term goals are to improve our soils through management to do more reduced tillage and increase organic matter. We want to continue integrating the livestock side of the business, that complements the arable side and should allow reduced use of artificial fertilisers. This will reduce our risk exposure as the UK moves away from subsidies and ensure a more productive, resilient future," Richard concludes. ■



*On-farm oilseed rape demo trials, running on Richard's farm for the past three years, in 2020 compared different Clearfield varieties including InVigor 1166 CL and 1266 CL, while in 2019 compared at seed rates of 20-60 seeds/m<sup>2</sup>. The plot established at the lowest rate of 20 seeds/m<sup>2</sup> outyielded the 60 seeds/m<sup>2</sup> by 1t/ha, reports Neil, while Caryx (mepiquat chloride+ metconazole) proved an essential tool to prevent lodging.*



## HEALTHY SOILS

[healthysoils.co.uk](http://healthysoils.co.uk)

### Bespoke strategic expertise

The Healthy Soils assessment inspects every aspect of the soil to identify limiting factors. Findings are delivered in a bespoke report, enabling grower and agronomist to collaborate and create tailored strategies that improve soils, change farm practices and optimise crop performance.

For more information on Healthy Soils or to book an assessment call

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