Fieldwise
AGRONOMY NEWS FROM HUTCHINSONS
APRIL 2018

Beat black grass with spring barley

Spring barley establishment for better black grass control was up for discussion during a recent open day at Hutchinsons' Mollington black grass demonstration site near Banbury, Oxfordshire.

Spring barley is key to successful black grass control strategies and to hammer home its benefits, growers are urged to try higher seed rates this season to maximise crop competition.

Hutchinsons' has been researching control methods at its Black grass Centre of Excellence, at Brampton for eight years and all its knowledge and expertise is now being utilised at a number of regional centres, including the site at Mollington, just north of Banbury.

In 2016, Hutchinsons took on four fields of wet-lying silty clay loam on Roy Hall's 567ha Bourtonfield Farm, with the aim of reining in huge black grass numbers to more sustainable levels.

Local agronomist **Toby Kellie**, who covers large parts of the Cotswolds, says spring barley provides weeds with greater competition than other spring cereals, such as oats or wheat.


Toby Kellie
AGRONOMIST

Therefore, it will form the foundation of the Hutchinsons' strategy at Mollington, as the rotation switches away from autumn-sown cropping.

"The black grass situation here is horrendous, with up to 1,600 plants/m^2 ahead of oilseed rape last year. The best rotational solution we have is spring barley and it will be key in getting it under control," he explains.

Crop competition

While spring barley helps maximise black grass kill with glyphosate ahead of drilling, Mr Kellie says correct establishment also plays a critical role in maximising crop competition and subsequent black grass control.

Seed rate experiments in the first year at Mollington drilled spring barley at 250, 375 and 500 seeds/m^2. They also cross-drilled some plots twice at 90 degrees using rates of 250/125 (375 total), 250/250 (500), 375/125 (500) and 375/250 (625) seeds/m^2.

The higher conventional and cross-drilled seed rates of 500 seeds/m^2, or more, produced a better establishment percentage, plus more competition for the black grass. This ultimately led to fewer black grass heads/m^2 and a reduction in seed return.

"Seed rates have the biggest impact on success and the better control seen was purely down to suppression of the black grass," explains Mr Kellie.

Continue overleaf >>>

Fieldwise ViewPoint

Est. 1938 80 YEARS HUTCHINSONS Crop Production Specialists


Mike Hutchinson
HORTICULTURAL DIRECTOR

Health & Harmony

2018 is a milestone year for Hutchinsons, marking eight decades of service to UK agriculture.

In the recently published consultation on the future of UK farming, it is clear that DEFRA would like to see our agricultural industry move away from the principle of CAP support, despite successive reforms, in favour of payments targeted towards areas such as the environment, animal welfare and business investment, to drive diversified farm incomes and business efficiencies.

Continue overleaf >>>

Fieldwise ViewPoint

>>> DEFRA plans to administer payments in 2019 in mainly the same way as now, with some potential simplifications – this both for BPS and rural development programme schemes such as Countryside Stewardship. However, once Defra is **"free of the CAP"** as they put it, reductions to direct payments will commence.

The current policy will be replaced by one underpinned by 'public money for public goods'. **What could this mean for our industry?**

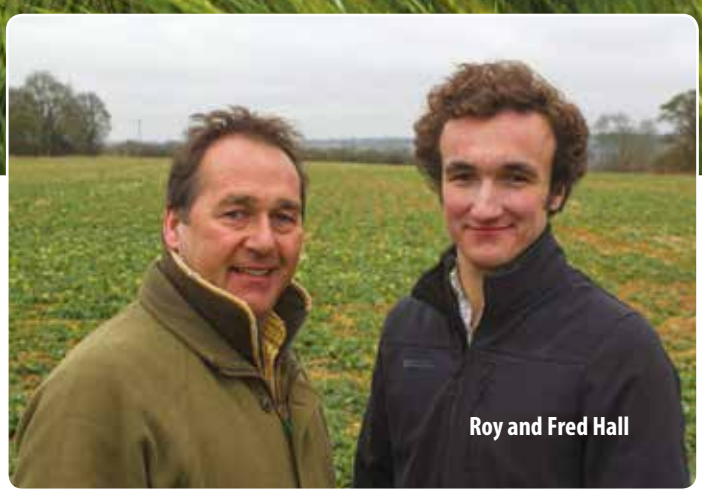
- Environmental enhancement and protection
- Better animal and plant health and animal welfare
- Improved productivity and competitiveness
- Preserving rural resilience and traditional farming and landscapes in the uplands
- Public access to the countryside
- Not public goods but still important; Risk management and resilience Fairness in the supply chain

Whilst profit for some businesses is not the main driver, succession, asset improvement and a desire to enhance the countryside are also important objectives. However, without the backing of a profitable business, investment for change can be difficult.

Access to sound, well tested advice will play an important part in an industry with less reliance from CAP support, to build a resilient and a sustainable future. Hutchinsons in their 80th year, are well placed to assist in the transition.

Mike Hutchinson

Mollington Black Grass Research Site


Roy and Fred Hall

>>> "Barley also doesn't have the same ability to increase grain numbers per ear in the same way as wheat, so the only way to increase yield is by increasing grain numbers per unit area and that is best achieved by establishing more plants."

Quality and lodging concerns

There are concerns about using such high seed rates on strong land due to increased lodging risk or screenings.

However, Mr Kellie argues that using the widely-accepted seed rate of 350 seed/m^2 for spring barley, growers rely solely on good establishment and tillering to produce crop competition and this is a risky strategy in a poor season.

"The point of increasing seed rates is to counter the very real issues of poorer seedbed quality, slugs and black grass" says Toby

"On these wetter, heavier soils 500 seeds sown establishes around 300 plants, so we actually have no more plants established than 350 seeds on lighter land achieves".

Having too many tillers on one anchorage point can also lead to increased lodging and where a spring turns dry – like in 2017 – stressed plants can drop tillers and produce poorer yields.

"We have the tools to manage thicker or forward crops by restricting early nutrition and applying PGRs, but you can't push thin crops forward. Perhaps try 400-450 seeds/m^2 initially and push up to 500 seeds/m^2 on your worst black grass land."

"Also, don't get yourself into premium contracts you might not be able to fulfil – aim for a high feed yield and any premium post-harvest is a bonus," says Mr Kellie.

Drill date

In addition to seed rate, Mr Kellie also warns growers against drilling spring barley too early in black grass situations, with poor establishment resulting in thinner crops and better conditions for the weed to flourish.

"It is all about getting the crop up and away quickly and if you drill into cold, wet soils too early, plants will struggle, lose vigour and ultimately, yield."

"Many will aim for a mid-March drill date, but seed-bed quality and soil temperature are much more important than calendar date. Ideally, wait until late March or early April – crops can still yield well if established late April too."

Farm success

The advice is something that host farmer Roy Hall and his son Fred have taken on board, with spring barley now making up 30-40% of his rotation which also includes winter wheat, oilseed rape, potatoes and beans.

Roy has pushed his seed rate up to 450 seeds/m^2 for the malting variety Explorer, which is grown on contract for Budweiser, to try and maximise black grass suppression.

Continue overleaf >>>

>>> "It allows for a dry time when you might get poor germination. We could go lower, but you aren't always guaranteed good establishment and our prime objective is reducing black grass."

"We didn't have a problem with bushel weight last year [at the higher seed rate] and all of it made specification, except a few tonnes that we over dried and failed the germination test," explains Roy.

Hutchinsons black grass trials at Mollington, Banbury

- Set up in 2016 to demonstrate black grass control techniques
- Trials show cultivation and drilling methods, rotation choice, spring crop agronomy and herbicide performance
- Aim is to significantly reduce the economic impact of black grass on a heavily infested site within five years
- Growers are invited to follow the journey from start to finish and learn how each strategy can work on their farm

The rapid improvements in black grass control seen at the regional sites are a direct result of the research pioneered at Hutchinsons' Brampton site. Grower visits to Brampton remain on hold, while continuing road construction restricts safe access, but research remains ongoing and it is hoped demonstrations of the site will resume from 2020.

Brampton is a whole field, rotational based research project and with the fundamentals of cultural control well established during its first 7 years, these are being consolidated with broad changes to cultivations and cropping choice.

Where safe to do so, the drilling dates of winter wheat are being gradually brought forward from the cultural optimum of late October in an effort to re-establish higher yield potentials.

The improvements in soil structure and performance seen at Brampton have led us to develop our 'Healthy Soils' Assessment service and this has been utilised to demonstrate soil improvements at the regional sites. It is reassuring that all elements of cultural weed control, soil management, cropping options and agronomic adjustments (like optimising seed rates) have transferred so convincingly to all the regional sites.

As soil movement is reduced, the utilisation of placement fertiliser is now under investigation to counter reduced mineralisation of nutrients during the establishment phase of the crop. This fits well with the central theme of black grass control, as more vigorous and evenly established crops compete more effectively with weeds.

The clear message from Brampton is that all the issues currently front of mind as we head toward Brexit; cost control, black grass control, improving soil health and resilience and increasing yield of crops across the rotation, are all compatible and achievable objectives.

Are you winning or losing the battle against black grass? Contact us for advice: **information@hlhltd.co.uk**

Fieldwise Answers

"How do I decide if I will get a financial benefit from precision farming?"

Matt Ward
(Services Leader) replies...

If you had asked about the adoption of any new agricultural technology, since Jethro Tull demonstrated his seed drill in the 18th Century, I would suggest that the answer remains the same. Trialling an area on your farm will help in the decision - the simplest design type for a field trial is by using demonstration strips within the field, comparing different practices or products.

We have used this technique widely to demonstrate the benefits (higher yields and improved black grass control) from variable seed rates and shown improved yields and quality as well as cost savings using variable fertiliser. I accept that with precision farming it would be more compelling if as many treatments as possible, including seed, fertiliser and crop protection products were varied on one half, while the remaining half of the field remained constant.

A trial of this type allows some measurements to be gathered to inform future management decisions, such as plant counts, weed counts and also, ultimately, yield. Traditionally, the measured data from individual strips are compared to one another and in an attempt to account for natural variability within the field, several measurements may be taken at various locations within a strip. The measurements for each strip are averaged and these averages are used to compare the treatments. Yield mapping makes this exercise much easier and more statistically robust, as we can analyse the raw data by using many more data points.

From the results, you can discover the yield advantage that you might expect from adopting precision farming techniques and the consequent financial gain. With this information you can estimate the payback period from your capital investment.

If you have a question or challenge about crop production issues you are facing on your own farm, please email us: information@hlhltd.co.uk and put 'Fieldwise Answers' in the title.

HEALTHY SOILS

Healthy Soils

- the key to unlocking yield

A focus on Healthy Soils and the impact it can have on crop performance is nothing new for Hutchinsons.

Over eight years ago work at the Brampton centre for black grass excellence explored the correlation between soil structure and management and weed control. This work led the way for cultural methods of black grass control that are now common practices on many of the UK's arable farms, bringing with it considerable crop performance benefits.

It is now widely accepted that good soil health is fundamental to agricultural productivity and sustainability. In order to actively manage soil resources for optimum crop performance, it is vital to be able to measure and monitor soil health, and this is where our bespoke Healthy Soils assessment comes into play, explains Andy Hoyles, Hutchinsons nutritional development manager.

"Our service is very different, in that it focusses on soil type and is centred on particular areas of fields – it is not about dragging a soil scanning machine with a quad bike over larger areas – it goes right down into the nitty gritty of what is really happening in the soil."

"It involves a physical, practical assessment – for example how does it feel, what does it smell like, and aggregate formation- backed up by scientific tests such as an active carbon index which represents how quickly carbon, or organic matter, is cycling through the soil profile."

When should a Healthy Soils audit be carried out?

Dick Neale, technical manager for Hutchinsons points out the importance of having a healthy soils assessment at the right time. "The key time to have soils tested is March – April, as this is when the soils are moist and biologically active, allowing for worm numbers to be measured etc."

"If soils are tested post-harvest they are usually too dry, and not representative of their real status. Many worms are inactive then and also without a crop in the ground it's not possible to see the impact of some roots."

"There is no doubt that Healthy Soils is high on the government's agenda as we head into an era of potential change to subsidies and this will require some form of benchmarking, so it's not a bad idea for growers to be one step ahead of the game and start an auditable trail now, to demonstrate soil improvement measures," says **Andy Hoyles**.

Benefits of Healthy Soils

- **Only report to give total and available nutrition**
- **Hands on, trained specialist assessment (not standard sample)**
- **Programmed approach to soil improvement**
- **Improved business performance from understanding soil**
- **Practical assessment for practical decision making**
- **Benchmarks soil baseline**
- **Improves soil through the rotation**

So how can this information help to improve yield potential?

A Healthy Soils audit looks at all of these components and using Hutchinsons' precision agronomy software Omnia, links the information to yield potential. Based on the information gathered, Omnia analyses the local field data and information alongside regional information to calculate a theoretical potential yield that should be achievable.

The variance between the potential yield and what is actually currently being achieved can then be explored to identify what are the critical limiting factors which need to be addressed.

The Hutchinsons Healthy Soils audit incorporates:

- **Cropping and Cultivations review** – crop rotations, cultivations, drainage. Key soil/field features picked up by aerial images.
- **Vess Test** –Visual Evaluation of Soil Structure to 1m depth.
- **Infiltration Asessment** - ability of water to permeate through soil profile, indicating any issues with structure, capping etc.
- **Soil Health & Texture test** - sand, silt and clay composition, while soil health is assessed using techniques such as the Solvita CO_2 burst test.
- **Key organisms & earthworm populations**
- **pH & macro & micro nutrients of total and available nutrients in measurements of kg/ha** - 3 assessments at soil surface, 150mm and 300mm depths

To find out more about Healthy Soils, view our website **www.healthysoils.co.uk** or contact us: healthysoils@hlhltd.co.uk

Fieldwise 2018 Agronomy Survey

Enter our 2018 agronomy survey for your opportunity to win:-

1st Prize: FREE 12 months agronomy advice to the value of £5,000

Plus, TWO runner-up prizes of 200ha of Omnia service and TWO Healthy Soils assessments to be won.

Hutchinsons would like to know the agronomy issues that are affecting your business and make sure that what we print in Fieldwise is most relevant to you. Please enter your farm details, complete the survey overleaf and during 2018, future editions of Fieldwise will address the most popular agronomy issues identified in our survey. For a chance to win, just complete and return this tear-off survey form.

TERMS & CONDITIONS: No purchase necessary. All entries received by **30th April 2018** will be entered into a draw, with the winners being notified after the Cereals 2018 event (13th-14th June). Agronomy services will be offered for one full growing season only. The prizes are for agronomy services and no cash prize alternatives are available. Runners up will receive EITHER a Healthy Soils assessment OR up to 200ha free Omnia precision including: mapping, variable application plans for seed and fertiliser, yield map analysis and Cost of Production analysis using Omnia's unique Multi Dimensional Analysis and advice from an Omnia specialist for 12 months. The company's decisions are final and no correspondence will be entered into. Values of quoted prizes are exclusive of VAT.

H L Hutchinson Ltd
Weasenham Lane
WISBECH
PE13 2RN

Business Reply Plus
Licence Number
RTGZ-YKZK-LUTA

2

Please enter your details here:

Name:

Position:

Trading Title:

Address:

Town:

County:

Postcode:

Tel. / Mobile:

Email:

Farm Size (hectares): .....

Your cropping details (ha):-

Wheat		Barley		OSR	
Sugar Beet		Potatoes		Legumes	
Pasture		Fruit		Other	
Protected Crops		Field Vegetables		..... (please specify)	

Do you currently use an agronomist: Yes ☐ No ☐

Name of agronomy company: .....

Privacy Notice: Here at Hutchinsons we take your privacy seriously and will only use your personal information to provide you with relevant information for the benefit of your individual agricultural requirements. However, from time to time we would like to contact you with details of our other services and carefully selected products, which may be of interest to you.

If you consent to us contacting you, please confirm your preferred method of communication: PHONE ☐ POST ☐ EMAIL ☐
We will never pass your details onto other 3rd parties and you have the right to opt-out of our marketing at any time.

Simply detach your completed survey, fold along the dotted lines, seal and return to us by post.

SEEDS, SOIL & CULTIVATION TECHNIQUES:

Q1: What are the main soil types on your farm?

Heavy: ____ %
Medium: ____ %
Light: ____ %
Organic: ____ %

Q2: What is your main cultivation technique? PLEASE TICK

Ploughing:
Shallow minimum tillage:
Deep minimum tillage:
Combination of the above:
Direct Drilling:

Q3: How often do you undertake soil health assessments on your farm? PLEASE TICK

Never:
Every 10 years:
Every 5 years:
More frequently:

CROP NUTRITION:

Q4: What is the main influence when deciding your farm's base (P, K & Mg) fertiliser programme? PLEASE TICK

Agronomist:
Fertiliser manual (RB209):
Fertiliser Supplier:
Other (please specify): .....

Q5: Do you apply micronutrients to your crops? PLEASE TICK

Never:
Routinely:
After tissue testing:
If visual symptoms seen:

HERBICIDES, PESTICIDES & FUNGICIDES:

Q6: What are your major grass-weed problems?

	TICK	RESISTANT?
Black Grass:		
Rye-grass:		
Wild oats:		
Brome:		
Annual meadow grass:		

Q7: What do you see as the biggest pest or disease threat on your farm in:-

Cereals: .....
OSR: .....

FIELDWISE NEWSLETTER:

Q8: Which 3 topics would you like to read more about in this newsletter? PLEASE TICK

a) Black grass control:
b) Disease / pest control:
c) Crop nutrition:
d) Soil management:
e) Precision farming:
f) Strategic agronomy advice (multi-year):
g) Farm business management:
h) Environmental stewardship:
i) Other (please specify): .....

Q9: Are Fieldwise articles generally... PLEASE TICK

Too long:
Too short:
About right length:

Q10: Having read a Fieldwise article, do you: PLEASE TICK

a) Discuss it with your agronomist:
b) Keep it for future reference:
c) Seek further information:
d) Visit our website to find out more:

GENERAL QUESTIONS:

Q11: Does your agronomist meet your requirements for advice in the following areas? PLEASE TICK

	Never	Sometimes	Always
Soil management/cultivation techniques			
Seeds			
Crop nutrition			
Herbicides, Pesticides and Fungicides?			
Precision farming			
Strategic agronomy advice (multi-year)			
Farm business management			
Environmental stewardship			
Manure management planning			

Q12: What is your attitude towards our Regional Trials Centre Open Days: PLEASE TICK

a) I usually attend
b) I'd like to attend but I'm too busy
c) I'd attend if they covered different topics
d) I attend other field open days
e) I don't go to field open days
f) What would you like to see there? (please specify)

.....

Q13: Precision Farming Techniques: Which applications of Precision Technology are you using / would you like to know more about?

PLEASE TICK ALL THAT APPLY

	I am using	I wish to know more about
Variable rate Seed		
Variable rate Lime, P & K		
Variable rate Nitrogen		
Variable rate Crop protection products		
Yield map analysis		
Cost of Production mapping		
Farm mapping using GPS techniques		
Not for me, thanks		

Q14: Social media: Do you use Social Media. If so, what are the top 3 that you use? *(e.g. Twitter, Facebook, Linked-In, Instagram etc.)* PLEASE SPECIFY

1) .....
2) .....
3) .....

I don't use social media

THANK YOU FOR COMPLETING THE SURVEY YOUR DETAILS WILL BE ENTERED IN TO OUR PRIZE DRAW

HUTCHINSONS

H L Hutchinson Limited • Weasenham Lane • Wisbech • Cambs. PE13 2RN
Tel: 01945 461177 • Fax: 01945 474837 • Email: information@hlhltd.co.uk
www.hlhltd.co.uk

Folding instructions: fold bottom section along dotted line up to meet middle section, wet gummed area at top of form and fold down.

Tim Kerr
FERTILISER MANAGER

Fieldwise Nutrition – Nitrogen Use Efficiency

Tim Kerr (Fertiliser Manager) **looks at the factors that contribute to Nitrogen Use Efficiency (NUE) and ways of alleviating losses from the soil.**

The Government's recently published 25-year Environment plan includes a section on working with farmers to use fertilisers efficiently. One action states that they will "work with the industry to encourage the use of low-emissions fertiliser."

It is difficult to find anyone promoting their own particular brand of **'high emission'** fertilisers, so what do we need to consider here?

A reasonable assumption is that all nitrogen fertilisers are 100% efficient before they are applied. For example, a tonne of 34.5% AN will contain 345kg of nitrogen – all of which could theoretically be utilised by a plant.

Losses start at application

However, inefficiencies start at application – although hopefully everything practical will be done to ensure fertiliser is applied accurately - right time, right place!

Losses through emissions can occur either as ammonia volatilisation or as nitrous oxide. Low emission fertilisers could certainly help reduce volatilisation. This loss mechanism is much more likely with urea but can be mitigated by the use of urease inhibitors. Indeed there is pending legislation in Germany that will mean all urea fertiliser that cannot be incorporated will have to be stabilised – and this would have to be a possible outcome in the UK in the future.

Emissions of nitrous oxide are more a function of poor (anaerobic) soil conditions rather than fertiliser type – therefore it would be more likely influenced by the soil heath index – another feature of the 25-year plan.

Hutchinsons, as a leading advisory business are already offering a **'Healthy Soils'** assessment that provides just such a soil health score (see the 'Healthy Soils' article on page 4 of this edition).

Standard Nitrogen Use Efficiency (NUE) of applied fertiliser is quoted in RB209 between 55 and 70% - so are we losing the remaining percentage and is this another area that low emission fertilisers can improve upon?

It is not that simple – the soil nitrogen cycle is a complex matrix of biological and chemical reactions – some of which could indeed lead to losses from the soil, whilst others maintain nitrogen in the soil in a variety of forms.

Mitigating the losses

Maintaining a good soil structure, encouraging microbial activity with considered cultivations and increasing organic matter levels will help to increase the amount of nitrogen retained by the soil. Consequently less will be lost – either as emissions or via leaching.

A 10 tonne crop of wheat, as a rule of thumb, will have an uptake of 240kg/ha of nitrogen. Oilseed rape and potatoes have a very similar requirement - an average of 5kg/ha per day through the growing season to meet crop demand.

At any given time and without the addition of nitrogen fertiliser, soil components such as humus, crop residues, and other organic matter and clay particles are likely to be holding more than the annual crop demand for any of these crops. However, the ability of the soil to release nitrogen into plant available forms is the limiting factor.

The main principle of using nitrogen fertilisers is to bridge the gap between soil supplied N and the crop's requirement.

Slow release foliar products

One valuable method of doing this is the judicial use of foliar applied N – something that the YEN wheat quality award winner, Sam Markillie refers to in the article on the back page.

We have been very pleased with the results from the use of slow release nitrogen foliar products – which are very safe to apply and demonstrate a high degree of NUE. In Mr Markillie's case, as a way of improving protein levels in milling wheat, but equally as an agronomically effective way of improving nitrogen uptake without inherent risks of losses.

Foliar applications are unlikely to ever completely replace soil applied fertilisers, however they do offer a very real possibility of replacing a proportion of "bagged" fertiliser. Switching the final dose of nitrogen from soil applied to foliar applied can improve both yield and quality without increasing overall input costs. These products are compatible with most pesticides and trace elements, potentially saving a pass as well.

Farming in the UK will undoubtedly be impacted by the 25-year Environment plan – but if we put our best foot forward now, we can continue to develop and improve our use of crop nutrition to a point where we are able to demonstrate that we are using fertilisers more efficiently and hopefully already meeting the government's goals.

Questions about this article?

Please email us:
information@hlhltd.co.uk

YEN growers show the way to top yield and quality

Hutchinsons-sponsored growers have scooped the top two places in the Yield Enhancement Network (YEN) wheat quality award, announced at the AHDB milling wheat conference.

Sam Markillie of Trinity Hall Farm near Wisbech won gold with his crop of Gallant that yielded 12.54t/ha and 14% protein, while silver went to Will Machin from New Farmweald Ltd in Oxfordshire for his 12t/ha crop of Skyfall, at 14.4% protein.

Winners were selected by NABIM judges from 24 YEN entrants who included Group 1 wheat varieties in the competition.

"It's an outstanding achievement; to get that sort of yield combined with high protein is the holy grail of wheat growing," **Dr Bob Bulmer** of Hutchinsons says.

Protein dilution is the biggest challenge for wheat quality when growing high-yielding crops, but it is one both growers managed to overcome with a keen eye on nutrient management and attention to detail.

Feed crops well

Regular soil analysis to determine background nutrient levels, plus fertiliser applications tailored closely to crop need through the season, characterise the winning approaches.

Mr Markillie is particularly keen to try different nitrogen strategies to manage protein dilution.

This includes splitting nitrogen use (totalling 276kg/ha) into six applications through the season, from early spring to the beginning of June, comprising solid and liquid forms to spread the risks associated with crop scorch and limited granular uptake in dry conditions.

"We want to time applications closer to when crops need nitrogen to produce yield and protein, rather than just putting more on early for canopy growth."

Key to later applications was use of slow-release long chained urea polymers with the T2 and T3 fungicides. "It's utilised much more efficiently by plants and is safe to use, with no scorch risk, when applied during the day."

Mr Machin's approach was slightly more conventional, with his YEN plot receiving manganese in the autumn, 30kg N/ha as ammonium sulphate, plus two equal doses of urea (80kg N/ha) in March and April. An additional 30kg N/ha was applied to the ear in June to maximise grain protein.

"Both growers applied modest amounts of bagged nitrogen considering the yields and quality achieved, so a lot of the success is down to soil management," comments Dr Bulmer. "Fertile soil is part of this, but so is producing soil structure and crop growth that allows nutrients to be accessed efficiently."

"There is also a 'farmer factor' whereby some farmers are able to achieve quality more reliably than others."

Mr Markillie's YEN entry was from a 14.1ha whole field (including headlands) of silty clay loam sown after spring beans, while Mr Machin's was a 2ha plot (no headlands) after oilseed rape on more variable soil (heavier clay to Cotswold brash). Both used non-inversion disc-based machines as primary cultivators.

Keeping healthy

Maintaining healthy crops for as long as possible is another major driver of yield and quality.

Both growers reflect this in their disease control strategies, which were based around four main fungicide sprays, plus an intermediary T1.5 spray applied due to concerns of an extended gap between T1 and T2 treatments.

"Our YEN fungicide programme is fairly representative of what we do elsewhere on the farm. We want to benchmark ourselves accurately and economically by not doing anything too different or special on the YEN field," says Mr Markillie.

Mr Machin also treated his YEN trial in largely the same way as his other wheats, apart from the inclusion of an additional T1.5 spray.

"We wouldn't normally use a T1.5, but we couldn't guarantee the gap between T1 and T2 would be less than four weeks, so decided it would be worthwhile."

Mr Markillie adds: "YEN has inspired us to be more focussed at what we do. We get a lot of support from Hutchinsons and our independent agronomist, but YEN also provides access to a bigger pool of talent we can call on for advice."

Interested in entering your own wheat crop in a YEN project this season? Please read updates on our website www.hlhltd.co.uk and email Dr Bob Bulmer at information@hlhltd.co.uk