



## Adding value to your farm: Sharing knowledge in 2021

Stuart Hill (Head of Technology and Innovation) introduces our knowledge transfer opportunities for 2021.

As we know, Corona virus rules and restrictions challenged the traditional approach to demonstration last year. This allowed an opportunity to be more innovative in our approach with the use of online seminars, videos and podcasts in the Fieldwise 'LIVE' format to demonstrate the important and exciting developments at Helix farms and Regional trial centres. Ultimately the topics and technologies we cover have to add value to you as growers and answer the 'so what' questions.

This year presents a different challenge again, in that the restrictions as we move through the spring and summer will, fingers crossed, be relaxing. It is vitally important we take into account risk and therefore our demonstrations will take various formats, such as Fieldwise LIVE, individual tours, small groups and in some instances structured open days.

We can use all these together and rest assured whichever delivery approach is used, we will always have your safety in mind.

We are in a dynamic period of farming brought on by evolving politics, Brexit, disruptive markets and technologies, transparency, financial instability, soils focus and the need to address climate change. All these factors link together to evolve solutions and this is at the core of the Helix concept and our Helix farms.

### Helix concept and farms:

Helix is all about adding value to the grower, financial and environmental and consequently sustainability. The aim is to develop new technologies that deliver more precise data that, along with agronomy interpretation and knowledge, then deliver added value advice.

There are **five focus areas** that we are concentrating on and asking ourselves what are the key challenges in these areas. These are **data and sustainability, improving soils, optimising nutrition, genetic benefits and integrated crop management**, which encompasses climate and environment.

Early farm scale development takes place at our Helix national development farm over in Northamptonshire, courtesy of Andrew Pitts. Further development and demonstrations are delivered at our emerging Helix regional farms, of which we currently we have four - these are Helix East, Helix North, Helix Borders and Helix Central. Further farms will come on board over the next 2 years.



> In conjunction we are monitoring the increasingly more strategic relationship between the grower and agronomist and how agronomy evolves into a more transparent, targeted, efficient and justified approach.

The first stage on farm is understanding the farm's current strategic position. Therefore, key criteria such as productivity, nutrition status, environment, soils, to name but a few, are key measurements as a start point. Achievable targets can then be agreed and a strategy put in place to accomplish those targets.

This last year has seen the development and introduction of technologies such as the climate system, TerraMap soil and nutrition mapping, BYDV, blight and growth stage prediction models, a field diary / scout app and cost of production mapping. Ultimately these need a central system to work through and that is where the **Omnia** platform comes in.

This year we are continuing to investigate and develop novel biological seed treatments and crop protection, Nitrogen and phosphate use efficiency, nutrition technologies, a farm planning tool, carbon mapping and improvement, integrated crop management techniques and transparency, along with increasingly targeted agronomy and yield prediction.

We will continue to demonstrate a combination of the technologies delivered last year, alongside the new developments, at our Helix regional farms - so there are plenty of exciting options to see. Fieldwise LIVE will again bring this development to life for you on our websites and social media platforms, so keep an eye on the Hutchinsons and helixfarms websites to keep up to date.

### Regional trial centres:

The Regional trial centres will contain a varied combination of small plot and larger block trials, which help to underpin our broader farm scale work at the Helix farms.

Our theme this year will be around Carbon and ultimately how we can improve carbon sequestration and management. Carbon is impacted by many aspects of crop production and these challenges are focus areas at our Helix farms.

All of the regional centres have winter wheat variety trials linked into a fungicide programme. This enables bespoke agronomy and also allows us to discuss risk management related to cropping choice, rotation and variety choice - all part of Integrated Crop Management.

We are researching seed rate influences on establishment, subsequent crop management and the impact on yield. This includes assessment of Hybrid wheat and blends, in comparison to conventional varieties.

There are also centres working on soils and nutrition, both a significant part of the overall carbon jigsaw.

As with Helix technology farms, you can see regular video updates from the Regional trial centres as part of Fieldwise LIVE on our websites and social media. This is a great opportunity to try different methods of demonstration and allow for greater discussion on these very important areas for farm sustainability. Fingers crossed, restrictions permitting, we look forward to seeing you during the year.

Follow progress at our demonstration sites via **Fieldwise Live** – view all the latest information on our websites [www.helixfarm.co.uk](http://www.helixfarm.co.uk) & [www.hlhlt.co.uk](http://www.hlhlt.co.uk)

### Helix Demonstration Farms and Regional Trial Centres 2021

- 1 Carlisle
- 2 Alnwick
- 3 Warden Farming, Grayingham
- 4 Trevone
- 5 Ludlow
- 6 Harleston
- 7 Stowbridge
- 8 Fenland Potato Demonstration
- 9 Sutton Bonington
- 10 Brassica Demonstration
- 11  National Technology Farm
- 12  East Demonstration Farm
- 13  North Demonstration Farm (NEW)
- 14  Central Demonstration Farm (NEW)
- 15  Borders Demonstration Farm (NEW)



# Devising Spring Barley Disease Control Strategies



Dr David Ellerton (Hutchinsons  
Technical Development Director)

**While wet weather in autumn 2019 severely restricted drilling of many winter crops, resulting in a large increase in the area of spring barley, the acreage this season is likely to go back to previous levels. In this article Dr David Ellerton, Hutchinsons technical development director, discusses optimum strategies for disease control in this spring's crop, as well as guidance on fungicides in winter barley.**

The first step in devising a disease control programme involves ascertaining the varieties' susceptibility to disease. The table below of disease ratings of the likely top spring barley varieties this season, based on seed certification, shows that many of the varieties are particularly susceptible to both Rhynchosporium and brown rust. While mildew resistance ratings are high for most varieties, it is known that spring barley is generally more susceptible to abiotic spotting / Ramularia than winter varieties, although official ratings are not yet available.

For spring barley, as with winter barley, early protection of developing tillers from disease is crucial, as barley is less able than wheat to compensate for early tiller damage and ear number is a vital component of final yield.

## T1 timing

Although some spring barley crops may need an early T0 fungicide up to early tillering, particularly for mildew, disease control will generally start in the latter stages of tillering up to the beginning of stem extension (GS 25-30), to ensure maximum tiller survival.

The T1 spray timing in spring barley protects crops from early developing disease and usually accounts for about 40% of the final yield response to fungicide programmes.

Where Rhynchosporium is a problem, then ideally sprays should contain prothioconazole, often in combination with tebuconazole for rust control, since many varieties are at risk from both diseases. Inclusion of an SDHI such as fluxapyroxad, benzovindiflupyr or bixafen, will give additional disease control, as well as offering physiological benefits such

as increased rooting and higher water use efficiency - which could well be crucial if we experience a dry summer as happened in 2020. Addition of strobilurin fungicides, such as azoxystrobin or pyraclostrobin, will also give physiological benefits as well as help control rust in particular.

Inclusion of a multi-site active such as folpet, will help protect against early Rhynchosporium and in particular Ramularia, where resistance has been identified to other actives. Recent trials have also shown the benefit of additional biostimulants such as **Scyon** on Ramularia.

A more recent option is the triazole, mefentrifluconazole (**Revysol**) which, in combination with fluxapyroxad, has been shown to have broad spectrum activity against barley diseases including Ramularia. However, Ramularia control is generally more important at the later T2 timing.

Inclusion of a specific active for mildew control may also be necessary, based around cyflufenamid or proquinazid, particularly in the variety Propino.

## T2 timing

The T2 timing in spring barley is crucial, generally contributing about 60% of the final fungicide response, and is normally applied from GS 39-45 (flag leaf emergence to booting). Product selection will be similar to the T1 timing and is aimed at protecting against later developing diseases.

As mentioned earlier, it should also routinely include a multi-site product such as folpet +/- a biostimulant such as Scyon to protect against Ramularia. A key benefit of this late spray is to maximise specific weights and Thousand Grain Weights (TGW), as well as minimise screenings.

Crops sown from mid-April will experience a shorter growing season and may only require a single spray usually around GS 32.

Responses to fungicide programmes will clearly be governed by disease pressure, drill date and variety. As such, programmes should be tailored accordingly in accordance with the principles of ICM.

**Your Hutchinsons agronomist will be happy recommend a suitable programme for you, or contact us: [information@hlhlt.co.uk](mailto:information@hlhlt.co.uk)**

## Spring Barley - Key Seed Varieties & Disease Ratings, Harvest, 2020 (England & Wales)

| VARIETY      | MILDEW | BROWN RUST | RHYNCHOSPORIUM |
|--------------|--------|------------|----------------|
| RGT Planet   | 9      | 5          | 5              |
| Laureate     | 9      | 5          | 6              |
| LG Diablo    | 9      | 5          | 5              |
| Propino      | 6      | 5          | 5              |
| SY Tungsten  | 9      | 4          | 4              |
| Hacker       | -      | 5          | -              |
| SY Splendor  | 9      | 3          | 4              |
| RGT Asteroid | 9      | 5          | 4              |

# Working together for Countryside Stewardship success

Signing up for Countryside Stewardship (CSS) is the best preparation for joining ELMs, as well as providing a viable, guaranteed source of income as BPS begins to reduce this year - advises Hannah Joy, Environmental Services specialist with Hutchinsons.



**Hannah Joy** (Environmental Services Specialist)



**Jim Woodward** (Farmacy Agronomist)

Despite the uncertainty around the detail of ELMs and what it may look like, CSS offers a valuable stepping stone for the transition. By getting ahead of the game, it puts growers in the best position possible to fully optimise ELMs as the detail evolves. Uptake of CSS has been and will continue to be high, so it is essential to make any application as competitive as possible. Whilst much of the CSS information has remained the same, some changes have been made to this year's applications. This makes it more important than ever to ensure that applications are most competitive, to ensure that all aspects of the farm from cropping through to capital items have been considered.

**Bringing an environmental expert onto the farm is an excellent way of ensuring that every option has been considered, and involving an agronomist means that the options are fully integrated within the whole farm system and rotation. This approach is recommended by John Adams of P Adams & Sons Farms.**

Mr Adams runs a mixed dairy and cropping enterprise on the river Deben near Felixstowe, and he talks through his experience of putting together a mid tier application for the CSS:

Our approach has always been sympathetic to balancing food production and the environment. We are a 'traditional' farm and love to see birds and bees across the farm. In fact, we grow 2ha's of bumble bee mix specifically for the family bee hives.

We have been in ELS for 10 years, which has incorporated the margins along the river and marshlands, but we really needed to look at what else we could do to prepare our farming business to be in the best position possible with regards to profitability and care for the environment as we head into an uncertain future.

Knowing CSS applications are competitive, we needed to ensure that our application was put together as well as possible in order for us to gain the most points.

Jim Woodward of Farmacy helped us with our ELS applications and has worked closely with us over the years. He suggested a meeting with Hannah Joy, Hutchinsons environmental services expert.

Hannah explained the relevant options for mid-tier and helped us to identify the various areas on the farm where we would meet these. The starting point was to define which areas were the most productive, keep those in cropping, and take out the areas that were not consistently performing.

Jim was able to do this for us using Omnia's yield performance mapping capability, which clearly illustrated areas of fields down by the marshes which were badly infested with black-grass and just weren't performing.

Following Hannah's advice, these will be taken out of cropping and put into a two-year fallow with a grass ley. Taking this approach not only provides clear environmental benefits, but will also allow us the chance to get on top of the black-grass and longer-term benefits to soil health, so it's a win-win situation.

John believes the input of both specialist and agronomist is the key to a successful CSS application and also for managing any changes going forward.

## Key dates for this year's Countryside Stewardship application window:

**28th May** – late date to request a CS mid-tier paper application pack by email or phone.

**28th May** – last date to request approval for management options for priority habitats and species.

**6 weeks before submission of application** – minimum period to allow for Catchment Sensitive farming approval visit requests and/or approval.

**30th June (midnight)** – deadline for application pack requests online.

**30th July** – SUBMISSION DEADLINE with supporting information.

To find out more about the Environmental Services available from Hutchinsons, please visit our website: [www.hlhltd.co.uk](http://www.hlhltd.co.uk)

**Cam Murray** (Northern Technical Manager) looks at the herbicide options for use in spring oats, removing harmful weed competition without damaging the crop itself.

Weed control management in all crops is a tricky business, grassweeds and some particular broadleaf weeds can have a detrimental effect on crop yields. The trick is to remove this competition and not cause any undue harm to the treated crop.

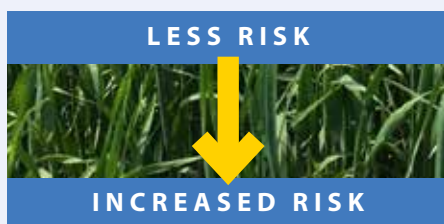
As a rule, winter crops are much hardier and can withstand more aggressive mixtures, however our spring crops are softer in nature and spring oats in particular are an especially sensitive crop. In assessing the coming season what options do we have for spring oats?

#### Rules of engagement

1. Herbicides must be applied on their own for crop safety
2. Mixtures of herbicides and PGR's are unsupported and will cause significant crop issues
3. SU/ALS chemistry although registered is the most aggressive and potentially higher risk on the crop (see image 1. above)
4. Hormone chemistry is significantly lower risk; however, it takes mixtures to cover all the bases.

#### Weed Active ingredients preferred list post emergence.

1. Florasulam
2. Fluroxypyr
3. Mecoprop P
4. Tribenuron
5. Dicamba
6. Metsulfuron



Spring weed control is often a challenge that has to fit into a tight application window of both weed growth stage, crop growth stage and the impacts of weather. So, what are some of the key weeds we are targeting?

This is not an exhaustive list; however, these are generally some of the most common culprits we see in arable rotation.

#### Spring Broad leaf weed germinators of note

|             |                        |
|-------------|------------------------|
| Cleavers    | Black Bindweed         |
| Knotgrass   | Charlock               |
| Fumitory    | Common field speedwell |
| Chickweed   | Redshank               |
| Mayweed     | Fat hen                |
| Field Pansy | Groundsel              |

#### In respect to mixtures:

**Florasulam** - good on cleavers/chickweed/mayweed and brings in brassica weeds

**Fluroxypyr** - excellent on cleavers /black bindweed/chickweed

**Mecoprop P** - wide range of BL weeds however strong on Fat hen / reasonable on Fumitory

**Tribenuron** - softest of the SU actives – brings in brassica weeds / fumitory and Polygonums

**Metsulfuron** - broad spectrum weed control – will not control ALS resistant chickweed or mayweed – hardest active for the crop to withstand.

**Grassweeds** - In general terms, the use of herbicides in spring crops to get control of grassweeds is both dubious and questionable all in the same breath. Whereas annual meadow grass can be problematic, it does not cause any yield penalties compared to grassweeds in a winter crop.

Image 1. Untreated on the right - straight SU on left.



# Spring Oats

## Effective Herbicide and Cultural Grassweed Control



Cam Murray  
(Northern Technical Manager)

### Using spring cereals as a method of reducing grassweeds:

Growing spring crops for cultural control of problematic grassweeds such as Black-grass, Ryegrass and Bromes has a much more reasoned rationale behind it and using higher seed rates to combat seed return, is both proven and makes perfect, viable sense.

That said, sowing date is critical to this success – do not be tempted to sow the spring cereal too early, aim to sow circa mid-March, and utilise glyphosate to create a stale seedbed, to ensure a clean start.

Work carried out at Rothamsted Research shows what can be achieved by this cultural control measure. (See Fig.2).

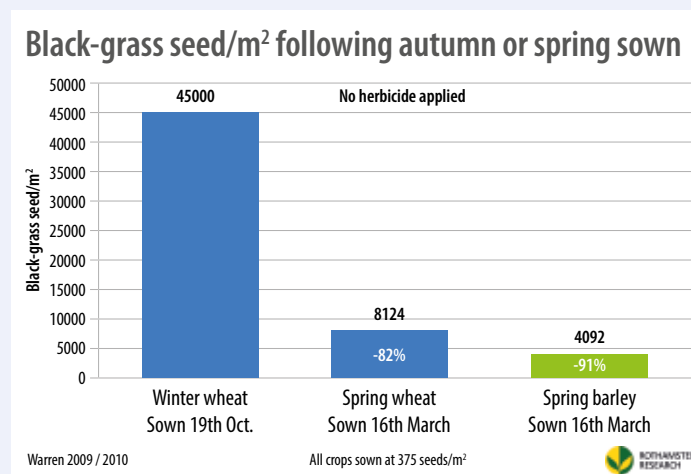


Figure 2 – Black-grass seed/m<sup>2</sup> following autumn or spring sown cereals

**So, what is the best spring crop?** – well from the Rothamsted Research results, spring barley is very effective, however spring oats are also effective in suppressing grass weed seed return.

Remember if growing spring oats for the first time – they are more sensitive to stress than other spring cereals and need to be treated carefully, to avoid a check in growth – vigorous growth is vital to achieve the best impact in stifling grassweeds.

#### Questions about this article?

Please contact us: [information@hlhlt.co.uk](mailto:information@hlhlt.co.uk)



# The Grand Nitrogen Steeplechase

In the spirit of the Grand National, Tim Kerr (Hutchinsons Nutrition Manager) gives top tips for fine-tuning fertiliser use and choosing the best foliar nitrogen.



Tim Kerr  
(Hutchinsons Fertiliser Manager)

## “Gambling is the father of mischief”

– so the quote goes, but it feels like a safe bet that the majority of growers would know how much nitrogen they have applied, or plan to apply, to each crop – and probably each field.

**Are we applying what the crop needs?** – the simple answer is no – the amount being applied should provide the quantity of nitrogen needed to bridge the gap between what the soil will supply during the growing season and what the growing crop will utilise and also to meet the nutrient requirement to achieve optimum yield potential.

Which raises two hurdles ... **How do we know what the soil will supply and what is the yield potential?**

You might not feel it, but we are spoilt having our national fertiliser manual – **RB209** – the authors have reviewed thousands of trials, crunched all the data and present us with simple effective guidelines. Included are adjustments for yield potential of major crops and details on how to arrive at an index for the soil nitrogen status – helping us to estimate what the soil will provide.

RB209 provides generic answers to these questions, but all guidelines need interpretation, and the more we focus on **Nitrogen Use Efficiency (NUE)**, the more questions we are asked about fine-tuning nitrogen recommendations.

FOR EXAMPLE:

**1. If we improve our NUE do we reduce the amount of nitrogen that we need to apply?** – yes, increasing the efficiency of nitrogen fertilisers reduces the amount needed to achieve a given yield. Therefore, improving NUE will deliver potential savings in cost of production.

Improving NUE can also increase yield potential (if other components of yield are not limiting). Let us say you have an NUE of 60% and can improve this by 10%. For winter wheat it could simply reduce the nitrogen requirement by 20kg per ha, or increase yield potential by 1 tonne per ha. Clearly, the increased yield potential would outweigh the potential saving in fertiliser.

**2. Can applying foliar nitrogen improve overall NUE?** – again the answer is yes, with caveats. For most crops without nitrogen fixing capabilities, nitrogen uptake will be mainly via the roots. Above ground biomass can absorb nutrients, but root architecture has evolved to maximise uptake of water and nutrients. However, if you bypass the soil and apply foliar nutrients, you inevitably get nitrogen to the target quicker and without it getting involved in the soil nitrogen cycle. A combination of approaches is likely to be the best.

**Choice of product is vital** – some liquid forms of nitrogen can scorch crops when applied. Foliar urea can be effective, as it can be taken up very quickly by the leaf, however being absorbed so quickly can damage plant cells.

Controlling the rate of nitrogen uptake is preferable to avoid leaf scorch and also to supply N to the plant over a longer period than urea.

Products such as **Persist-N** and **N-Durance 28** supply crop-safe nitrogen largely in the compatible Amine form, which is particularly effective when the crop is at peak growth and soil supplies temporarily dry up. We have experienced extended dry periods through recent springs – and these products help to maintain nitrogen supply in the absence of rain, when soil applied fertiliser is unlikely to be taken up quickly enough to avoid loss of yield potential.

**The odds are, that taking into account the season and adapting your nitrogen regime to reflect crop demand will be help improve your NUE - if in doubt please consult your FACTS qualified advisor, (not your turf accountant).**

For more information on any of our products or services, please contact your local Hutchinsons agronomist, or contact us at:

## HUTCHINSONS



### Crop Production Specialists

H L Hutchinson Limited • Weasenham Lane  
Wisbech • Cambridgeshire PE13 2RN

Tel: 01945 461177

Fax: 01945 474837

Email: [information@hlh ltd.co.uk](mailto:information@hlh ltd.co.uk)

 @Hutchinsons\_Ag  HLHutchinsons

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2020/21 CPD Points Allocation reference numbers:  
NRoSO NO468211f • BASIS CP/100416/2021/g