Fieldwise
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Crop Production Specialists
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SFI – making an action plan

The Sustainable Farming Incentive (SFI) 2023 is out of the bag. As many farmers across the country look at what options are available to them, ***Georgina Wallis****, Hutchinsons Head of Environmental Services visits a 228ha mixed farm in Northamptonshire to hatch a plan of 'Action.'*

Georgina Wallis
(Hutchinsons Head of Environmental Services)

At this farm, the SFI is going to be utilised on land which is already out of 'traditional production'. The client has been out of an environmental scheme since 2014 and subsequently is now looking to enter back into a scheme, on the proviso that it will offer some flexibility and practicality for years to come.

It is important to remember that success in any agri-environment scheme comes from fitting the scheme around the farm rather than the farm around the scheme and being realistic with desired outcomes.

So this opened two options for this farm; either mid -tier Countryside Stewardship or the Sustainable Farming Incentive (SFI) for 2023, which opened in mid-September.

Based on the additional flexibility offered within the SFI, this is a better option for this farm over the mid-tier Countryside Stewardship agreement. There are 23 actions within the SFI to consider.

As the SFI is not competitive, there is no issue with early commitment, especially around the establishment of winter cover crops. It is worth noting that the rules do however give 12 months to establish the mix.

The agreement length is also slightly shorter; three years with SFI but 5 years with mid-tier. There is also the attraction within the SFI of a management payment. This is worth £20/ha for up to 50ha. Given this farm size at 228ha, this works out at the maximum annual payment of £1,000.

Working through the various SFI actions available, soil analysis and the production of a soil management plan is already being done, so that is £1,400 towards the cost of this.

Similarly, the farm is already utilising winter cover crops, and although the payment is not particularly substantial, does go towards plugging the gap of seed costs.

There are ample hedgerows on this farm, and not all of them have been entered into the scheme to allow ongoing flexibility.

However, there is some money to be had for the management and assessment of hedgerows and hedgerow trees within the SFI - this is not an option to be hung up on here as it makes up a small proportion of the total value.

This farm is already carrying out Integrated pest management (IPM) as part of the service from its Hutchinsons agronomist, so it makes sense to utilise the IPM plan giving an annual payment just shy of £1,000.

The farm is also looking to improve its public image with regular visitors to the site in the form of business units, so flower rich margins, blocks or infield strips provide a good visual and habitat, plus nectar and beneficials within the field.

Some money is available for the management and assessment of hedgerows within the SFI.

The 'no insecticides' action has not been applied for here. After discussions with the agronomist, it was decided the risk/reward was out of sync for this action on this farm, with too much risk associated with not using insecticide.

However, the nutrient management plan can be well implemented as it is already produced annually by the agronomist. Combined with the soil management plan, this creates a practical document to refer to in terms of improving soil health.

Utilising the legume fallow, which can now be rotational, provides an opportunity to use this as a break crop, improve fertility and as part of a grass weed control strategy.

The farm has historically utilised winter bird food options through ELS, so is interested in bringing those back into a scheme for 2023.

The grassy field corner option is also a great addition to the 2023 SFI offer as it provides an option for those fiddly field corners which are too small to drill with a mix or perhaps unsuitable for standard cropping. This option allows natural regeneration so there is no need in most cases to seed.

The farm also bolsters several grass buffer strips on the arable land. These are primarily unproductive strips next to hedges, ditches and environmental features and offer a network across the farm to join up habitat. Consider areas on the farm which are already out of production which fit well within the SFI.

Finally, we have also made use of the low input grassland option with 10ha of permanent grass used to graze some beef cattle which are produced and sold locally.

So bringing together all the actions considered above, this tops the amount for this farm through SFI payments, to a nice annual income of £28,064.

Although this payment is not equal to the farmers annual BPS income, this scenario hopefully shows the farm is already carrying out several actions which allow for ongoing productive and sustainable farming on this holding.

Key messages for entering SFI Actions in 2023

- **There are a range of options, so pick and choose what suits your farm or what you may already be doing**
- **There is no min or maximum area**
- **Keep it simple**
- **Build-up, rather than over committing, as you can only reduce actions to 50% of original commitment**
- **Future actions for 2024:**
- **Reduced tillage**
- **Precision farming - soil and nutrient mapping.**

If you would like advice around making your own action plan, contact our environmental specialists: enviro@hlhltd.co.uk

All about the Spuds

Sharing best practice and the latest developments in potatoes

***The Hutchinsons Potato Demonstration Day**, held at A.H. Worth, Holbeach, Lincolnshire, this summer focused on some of the main concerns currently facing potato growers.*

Darryl Shailes
(Hutchinsons Root Crop Technical Manager)

Crop safety of post emergence herbicides, tolerance, and resistance to potato cyst nematodes in new varieties, an in-furrow and foliar nutrition trial, plus updates about ongoing research on wireworm were some of the topics covered on this well-attended day.

Hutchinsons root crop technical manager **Darryl Shailes** led the day and took visitors through the challenges of post-emergence weed control in potatoes, noting that safety issues are variety specific and can be affected by climatic conditions.

The plots were planted on June 8th, and herbicides applied when the crops were between 15-25cm in height, following best practice by spraying in the evening.

"Some of the varieties have had some damage, so we will continue to monitor them to see whether they grow away from the damage."

Moving on to the in-furrow and foliar nutrition trials, these were aimed at helping growers combat some of the rises in agricultural input prices, alongside environmental concerns, and the need for improved soil health.

The trials were planted in soils that had been sown with a clover and buckwheat cover crop, which after destruction was followed by a bed former, and 160kg/ha of base N, and a range of in-furrow and foliar treatments were demonstrated.

Richard Daubney of Farmacy commented: "We are assessing whether these semi-mainstream products can do a similar job with newer fertilisers and soil amendments, but it is too early in the season to be able to see any differences and all products will go through the Hutchinsons validation process before being recommended on-farm."

PCN tolerance and resistance trials

Introducing the PCN varietal resistance trial, **Michael Rodger** of Richard Austin Agriculture and **Simon Faulkner** of SDF Agriculture explained that the background PCN level for the field was 16 eggs/gram, and on creating the plots, this was then broken down into eggs/g per plot, which ranged from 0.5-20 eggs/g of soil. These details will enable an accurate population final / population initial (pf/pi) count to be calculated for each variety after harvest.

The trial is monitoring 24 varieties, each selected for its resistance status, with **Maris Peer** being the control variety. Plots were divided into two, with one side being treated with Nemathorin (30kg/Ha) the other without. Planting was done on 19 April and both plots irrigated.

Mr Faulkner observed that varieties such as **Paradox** are showing resistance as well as a degree of tolerance. **Amanda** also showed quite good tolerance, but in general the canopies were better where the soil had been treated with Nemathorin.

Results will not be seen until after harvest when pf/pi will have been done, until then the observations can only reflect tolerance to PCN.

He reminded delegates not to confuse 'tolerance' with 'resistance', explaining that they are not linked.

"Tolerant means that a particular variety can still grow well even when under considerable pressure from PCN; so better canopies are only showing the level of tolerance. This is normally accounted for due to their extensive root system.

"When a variety is resistant, it means that the nematode's multiplication is reduced or prevented, reducing viable numbers of cysts forming.

It is a long-term strategy because the yield in that crop may be reduced if the variety is not tolerant."

Tolerant varieties can result in significant increases in PCN, he said, noting that the ideal is to have a resistant variety with a degree of tolerance.

Of the varieties in the trial, he pointed out the new crisping variety **Cinderella**, which has resistance to both PCN species present in GB, Globodera rostochiensis and G. pallida, looked to be relatively tolerant too.

"This variety has relatively stable sugars and should go to mid-term storage."

Packing variety **Karelia** has also been bred for resistance for both PCN species, and **Buster** is another useful variety as it needs less N inputs than many others, noting that the reason the canopy was still small may be because it is a late maturing variety.

"All these plots will be taken to harvest, and we will then analyse the final population of PCN so that a pf/pi can be calculated.

"A yield will be calculated from the plants removed from the plots and the tubers size graded into mid-size (<45mm), bakers (65-85mm) and ware," he said.

"There is a proposal to store the prepack varieties in a commercial cold store at 3°C and the processing / chipping varieties in a warm store at 8°C. There can then be some assessment on dormancy and quality stability during storage."

Practical management of wireworm

The first step to controlling wireworm is understanding the pest and its life cycle and undertaking a thorough risk assessment, monitoring any potential build-up of the pest ahead of planting a potato crop, said **Martyn Cox** of CUPGRA.

Land that has been in long runs of stewardship, grass, or in min-till with near permanent vegetation is at the highest risk, he said.

"Include the surrounding area, and any nearby permanent grass, such as riverbanks and irrigation reservoirs or meadows increases risk. Surface water increases humidity and risk."

Talking about the life cycle, he explained that the oldest larvae pupate July-August for two to three weeks and the new adults remain underground until the next spring.

"Once active, they emerge in April, lay eggs in May and June, then die, adults live for less than a year. Nonetheless, adult trapping gives an indication of potential egg-laying risks."

Adult identification is more reliable because for larvae it can be difficult/impossible to identify to a species, although identification to genus is possible.

Ploughing reduces risk a little, but timing is crucial, he emphasised.

"Autumn cultivation with discs after a cereal crop can damage the pupae or adults and expose them to predation, and it can also reduce the potential for survival of juvenile larvae.

"However, if cultivating in December or January, it will not affect wireworm populations because they are deep underground."

He pointed out that all varieties get damaged, the range observed in trials is often 30-40 percent damage in the best-case scenario, and up to 90 percent in the worst. Severity is also worse in the most susceptible ones.

"There has been no standard way of assessing damage, which makes it impossible to compare across different work. Assessing severity of damage should be done in proportion with the surface area," said Mr Cox.

The fresh packing trade has the lowest tolerance of wireworm damage and early lifted crops for processing is the safest option.

"Glycoalkaloids and sugar levels have been considered major factors, but recent work has shown this is unreliable. We have seen the same level of damage in varieties with very different glycoalkaloid and sugar profiles, so it is back to the drawing board.

"CUPGRA work this year is testing a matrix of glycoalkaloids and sugar levels in a range of varieties and will hopefully identify the genetics behind those which are less susceptible to wireworm damage."

Keep up to date with news about our crop trials via our website: www.hutchinsons.co.uk

Nitrogen alternatives look positive

*Early indications look positive for nitrogen alternatives from 2023 trial results, as **Jennie Watson** (Hutchinsons Development Manager) reveals.*

***Jennie Watson** (Hutchinsons Development Manager)*

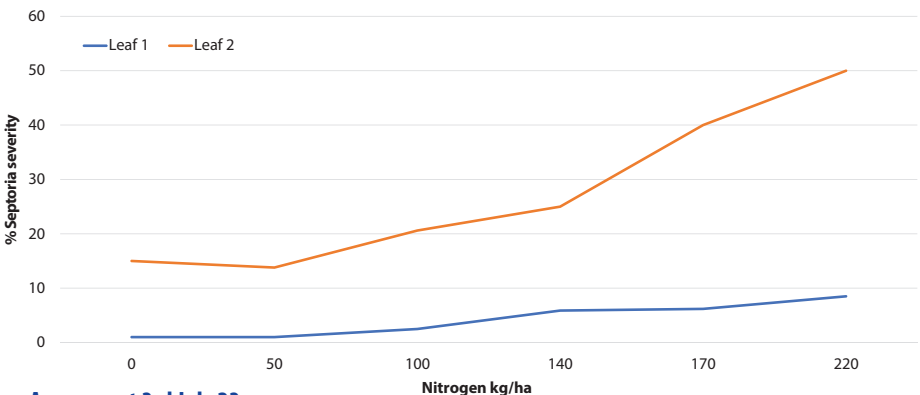
This season we have continued to build on our learnings from previous work, having established that when we look to replace synthetic nitrogen with biological or chemical alternatives, we are working within a relatively narrow band of total nitrogen delivered to the crop.

Crops need a base amount of nitrogen to be delivered in the early spring to build biomass and the use of nitrogen in this period is relatively efficient. We then have the other end of the band, where we are applying nitrogen to chase yield, at which point the conversion of nitrogen into yield can be highly inefficient and potentially detrimental with lush growth resulting in increased levels of disease (see graph 1).

In between building foundation biomass and crops satisfied with nitrogen we have been exploring the efficiency of products such as **Utrisha N**, a biological nitrogen fixation product from Corteva, **R Leaf** a photocatalyst from Crop Intellect and methylated ureas, **N Durance** and **Persist N**.

Initial data from nutrient use efficiency (NUE) tramline trials located on our network of Helix farms in Fife, Northumberland and Wiltshire highlight a positive response to reducing the farm standard rate of nitrogen and topping up with Utrisha N, R Leaf or methylated ureas, N Durance or Persist N, applied to winter wheat in the spring.

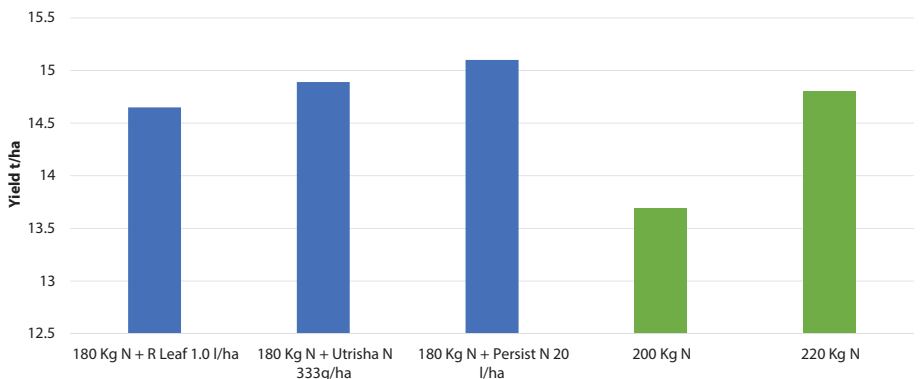
Severity of Septoria elevated by higher levels of Nitrogen



Assessment 3rd July 23, LSD Leaf 1 0.59%, Leaf 2 3.31%

Graph 1; 2023 HLH replicated NUE trial, Suffolk.

Yield response to Nitrogen alternatives



Graph 2; Yield data from Helix Fife 2023

Interestingly, an application of the biological nitrogen fixation product Utrisha N gave a one tonne yield response at Helix Northumberland when applied to a field of Skyscraper in the autumn. This highlights opportunities to utilise biological alternatives outside of the traditional spring nitrogen application window.

In our small plot work we have tested further alternative products and taken the level of assessments a step further to gain deeper insight into how the building blocks of yield are being impacted by these nitrogen alternatives. From early analysis, it is clear we can prove that the products are having an impact, particularly when we look at them alone in plots with zero nitrogen and measure attributes such as chlorophyll content, tiller retention and grains per ear. However, this has not consistently come through in yield and we will take time over the coming months to analyse the detail including the grain analysis, to get a greater understanding of when, where, and how to utilise these products to greatest effect.

Product substitution is only one part of our NUE development work, drawing on our valuable experience and knowledge in soils and nutrition we work to ensure these products are applied in conditions to optimise all nutrient use, to reduce limitations from underlying soil or nutritional challenges.

We hope to explain our 2023 nutrition trials in more detail in a future Fieldwise Nutrition Special Extra issue.

Residual herbicides ...dotting the **i's** and crossing the **T's**

*As **Dick Neale** (Hutchinsons Technical Manager) reminds us, October is a critical month for optimising the effectiveness of our weed control programs.*

***Dick Neale** (Hutchinsons Technical Manager)*

October is the month above all others when, moisture permitting, the grassweeds come alive. You can almost set your watch by the emergence of black grass, in significant numbers, around the 7th October.

That is why not drilling before the 15th October is so critical, having delayed drilling into October, there is little point in then going 5 days too early and actually risk drilling into the most active emergence period.

Trials and field experience in recent years continually demonstrate that a sequencing of product is more effective than a single, large pre-emergence stack.

Observation and identification of the individual grassweed or emergence pattern is vitally important in selecting the appropriate mixtures of actives and most effective timings. Rye grass and soft brome for example can continuously germinate or have distinct spring germination periods, Single pre-em treatments cannot provide a long enough period of control.

Mixing modes of action is also of great importance with three modes of action as a minimum requirement.

Moisture of course is a vital component in getting residual herbicides to work at their best **…they do like moisture.**

At the time of writing, rainfall has been sporadic with significant moisture present in some soils while others are a dust bowl, at least in the upper horizon, after a week of 30-degree temperatures.

Individually you can only work with what you have, if it is bone dry in the upper soil then weed seed or volunteer seed emergence will be minimal and the stale seedbed impact will be poor until rain arrives. The arrival of that rain is always the fear as October looms close …once started, will it stop?

This is where we must watch the longer-term forecasts for blocks of weather and hold our nerve wherever possible. Dare I predict that the second half of September is forecast, as I write, to be a damp affair but with improving and drying conditions as we progress through October. On paper the ideal scenario for good early weed emergence for spraying off pre the drills rolling from mid-October …I do hope they are right!

Using the Omnia climate module

Utilising data from our Omnia climate module currently shows soil moisture content in the upper zone varies significantly depending on location, 35% moisture being typical for southern areas while 65% is more typical for northern England, with Scotland somewhere between the two.

The Omnia climate module also predicts 10 days ahead and currently shows that soil conditions in Northen England will get dryer for that period, while southern areas will see increasing soil moisture and Scotland will largely remain unchanged. Once confident in the system, it really does help drive decisions with a high degree of certainty.

Confidence in the approach taken is key. As stated, sequencing of residual herbicides is generally far more efficacious than a single pre-em stack, but the big pre-em stack is often chosen for fear of not being able to spray that second or even third time. This is most likely driven by the expectation of not being able to access wet tramlines during the latter half of November, so this is a specific area to address with seedbed stability via good soil aggregate stability, to allow rainfall infiltration, and strong tramline integrity. In this area I still must question the widespread practice of tramline subsoiling; the one specific area we will traverse 7-10 times in the season, and we make it the softest part of the field to depth, rutting almost always extends to the depth of soil cultivation.

If you have questions about maximising the effects of residual herbicides, contact us: information@hutchinsons.co.uk