



David Howard (Hutchinsons Head of ICM)

Early rust fungicide well worthwhile

After a Hutchinsons trial last year revealed significant yield benefits from the T0 fungicide, head of integrated crop management **David Howard** discusses what we can learn for this spring.

Of all main wheat fungicides, the T0 is often where growers look for savings, focussing instead on T1 and flag leaf sprays, where the return on investment is usually more significant.

While this may be possible when early disease pressure is very low, changing pathogens and increasingly unpredictable weather strengthen the case for T0 sprays to become standard for early disease - notably rust - management.

This was evident in a 2022 Hutchinsons/ BASF trial at Terrington,

Norfolk, where, under high yellow rust pressure, a 1.5 t/ha yield benefit was attributed to the T0 in KWS Kinetic (4 for yellow rust). The trial compared a full programme (T1-T3) with and without a metconazole-based T0.

Considering the historical average yield response from T0s is nearer 0.1 t/ha, the Terrington result is unexpected, but highlights the variability long-term averages can mask, and how challenging rust management can be once it builds in crops. Crop management must therefore be adapted to every season and situation.

Stop rust early

Last year, monthly temperatures from January onwards were around 2°C above average, with weather tracking data showing most areas experienced 70-80 days between January and July where temperatures were optimum for yellow rust (10-15°C).

Under such conditions, disease cycles faster, multiplies and reinfects crops more rapidly, keeping pressure high, resulting in clear benefits from reducing inoculum early.





Traditionally, many growers target GS 30 for applying T0s, however there is greater flexibility at this timing and a slightly wider window of GS 25-30 should be used where pressure is high.

This reduces chances of weather delays rolling T0 sprays into T1, and gives the much-needed treatment gap to lower inoculum pressure and allow T1s to be less curative and more protectant (where chemistry is most effective). In very high pressure areas, or varieties where disease has become established, consider a pre-T0 fungicide from post-tillering (GS 20+).

Remember though, some products cannot be applied before GS 30, so check with your agronomist.

Biostimulants could benefit early disease control at T0, or before, where fungicide options are more limited. However, they are only protectant, helping plants resist disease rather than controlling disease inoculum on leaves, so need supporting with fungicides.

Don't overlook Septoria

Some growers may have turned away from using T0s to manage Septoria after chlorothalonil's withdrawal, but there are benefits from keeping Septoria in check and buying flexibility towards T1.

This is particularly true in earlier-sown wheats, higher risk regions, and more susceptible varieties. But given crops were generally slightly earlier drilled this season, have high biomass, and received significant rainfall, Septoria cannot be discounted.

Metconazole has some Septoria activity, although folpet offers greater protection. Avoid primary azoles as they are likely to feature in later fungicide applications.

Recent seasons have highlighted how quickly disease can increase from a seemingly low base, reinforcing the need to support genetics with a robust fungicide programme tailored to crops and seasons.

Your Hutchinsons agronomist will be happy to recommend a suitable early disease control programme for you, or contact us: information@hlhlt.co.uk

> Disease management is a 'numbers game' whereby effective early control has benefits throughout the season. This was evident at Terrington, with less disease infection observed on all main leaves, culminating in 8-10% less yellow rust on the flag leaf where a T0 was applied.

We should not, and cannot, expect later sprays to do all the work. In the same trial, where no T0 was applied and a strong rust-active T1 was used to knock disease back, it still did not perform as well as where a T0 was used.

With rust seeming to be becoming more virulent and agronomic factors like later drilling and significant early nitrogen favouring its proliferation, early disease control assumes even greater importance. This only increases if/when we lose key rust actives, such as tebuconazole.

Sizing up 2023 risk

Accurately predicting weather and disease pressure is hard, but at the time of writing, autumn-sown crops have established well with big biomass, which could increase disease pressure, although frosts will counter rust risk.

The variety spectrum in the East has some rust weakness, which can be a threat given generally higher yellow rust pressure here. Many varieties, such as Skyfall (3 for yellow rust), are grown for flexibility and market reasons, but we must be aware of the risks. KWS Dawsum is another to watch, as it is lower down the AHDB rust watch list than its disease score suggests. Equally, there were issues in KWS Extase last year, which need monitoring, especially if reducing inputs.

Omnia's disease risk assessment tool is a good starting point for highlighting risk, based on variety scores, drilling date and long-term average weather data. From March, it will be updated fortnightly to reflect actual weather.

Tailor-made T0

T0 sprays should be tailored to disease requirements. Although rust is generally the focus, the T0 can reduce Septoria pressure. Metconazole or tebuconazole are preferred where rust needs rapidly knocking out, while strobilurins such as azoxystrobin or pyraclostrobin, offer longer-lasting protection, but less curative activity.

Trials highlight ways of maximizing maize production on marginal sites

Harvest results from the Carlisle Maize Regional Technology Centre highlighted valuable findings to help growers maximize the output of maize grown both under film and open ground in more marginal growing conditions. **Jim Clark**, Hutchinsons agronomist responsible for the trials, takes us through the key outcomes.



Jim Clark
(Hutchinsons Agronomist)

With over 17 different varieties in the trials, results this year were pleasing despite the dry spring. Most crops picked up with the June rain and generally they performed better than expected, but very early maturing varieties finished early resulting in high DM but lower starch.

Varieties

Breeders such as Bayer are entering the marketplace with varieties like **DKC 3218** an early driller, with a big plant type, big cob and early to mature.

The most popular variety for Hutchinsons continues to be **P7034** from Corteva (Pioneer), a consistently good all-rounder, bred specifically for the cooler maritime locations found here in the UK. It delivered a good fresh and dry weight yield, 54.50t/ha and 17.88 t/ha respectively with high starch levels (30.90 %) that are more rumen-degradable and allow shorter clamp to feeding time.

Prospect did well again in the open and is our recommended variety for the north west for open sowing. It yielded fresh weight 32.13t/ha, dry matter 12.56t/ha and starch 29.10%.

Nutritional boost

Starter fertiliser trials, are now in their third year. Where farms use organic manures, it is a way to reduce growing

costs as it encourages plants to put down roots and scavenge for P&K.

The results (below) show increased dry and fresh matter yields with starter fertilisers. Lower starch levels were a result of those crops being further forward and ripening earlier as they had picked up available P&K when the rain came and progressed through growth stages faster.

Narrow film trials

Of particular note was the trial of crops established under a narrow-row version of a 100% starch-based film, Samco Bio, now in use across Europe. Whilst more expensive than conventional wide row film, it was interesting to see how well the maize crop performed under it, and we will continue to look at it.

“We have seen about a 10% increase in costs for growing maize both in the open and under film, so it is more important than ever to take good advice on growing techniques and variety choice.”

Keep up to date with all Hutchinsons crop trial activity online – see www.hlhlt.co.uk



Newtown Maize trials

Hutchinsons established a series of maize trials in Wales for the first time this year, by kind permission of Roger Hughes of Argoed Farm, Newtown, Powys, reviewing how new and established varieties perform on a western marginal site with different FAO's.

“Early maturing varieties are key here, but to maintain yield and quality, maize needs to come off early to get cover crops in,” explains agronomist Edward Porter.

“For this first year we looked at visual comparison of cob size and height of the plant as an indication of yield potential. General time to harvest was based on the maturity of the plant on the 29th September.”

“It was a good year for maize performance; the standout varieties were Prospect and Debalto. P7179, a new early variety from Pioneer matured early, but didn't show the yield potential of the others. Ability was later to mature and yielded well.”

“Next year we will look at starter fertilisers, comparing DAP to micro fertiliser such as Primary P. As there is an application of manures, P levels are getting quite high, and with concern on the impact to the wider environment of phosphate in water courses, applying smaller but more plant available amounts of P is important.”

“We will also look shall at biostimulants that will help with nitrogen use efficiency, rooting and general plant health.”



VARIETY AND NUTRITIONAL PRODUCT	PLOT WEIGHT (KG)	FRESH WEIGHT (T/HA)	FRESH WEIGHT (T/ACRE)	DRY MATTER (%)	DRY MATTER (T/HA)	ME	STARCH (%)	CRUDE PROTEIN	AMMONIA N	NDF (G/KG)
P7034	436	54.50	22.06	32.8	17.88	10.20	30.90	7.40	3.30	412.00
P7034 + Primary P	456	57.00	23.07	30.2	17.21	10.90	31.60	7.10	3.20	426.00
P7034 + Biolite	492	61.50	24.89	34.6	21.28	10.80	31.40	6.40	5.00	381.00

Healthy soil ... so exactly what does that mean?

Hutchinsons has been delivering its Healthy Soils Assessment service since 2016 and in that time the overall understanding of what goes into making a soil healthy has increased massively – as **Dick Neale** (Technical Manager) explains.



Dick Neale (Hutchinsons
Technical Manager)

Shared knowledge, research, observation, plus a clear increase in grower interest have all combined to accelerate the learnings and engagement across the industry.

Everyone now appreciates that soil is a living, breathing entity and that microbiology and increasing microbial biomass is as important an objective as increasing organic matter.

Our healthy soils assessment, Gold soil test and now the combination of these with TerraMap soil mapping in **TerraMap Gold** are vital components in creating a starting point of information with which to make clear decisions on what future interventions may be needed, be they physical, chemical or biological.

The Hutchinsons healthy soils assessment has identified some clear common denominators in the past seven years...

- The seeding zone of seedbeds tends to be overworked
- Overworking leaves seedbeds at risk from slaking during heavy rain events
- Slaking or capping of the seedbed creates anaerobic conditions in the seeded zone and severely impairs crop establishment
- Poor infiltration of surface rainfall due to capping is incorrectly identified as poor drainage and addressed via deeper tillage passes.

Modern tillage machinery can create good seedbeds quickly, but problem grassweeds such as black grass or ryegrass require delayed drilling to be practised for good cultural control.

The two elements of delayed drilling and early creation of finely worked seedbeds are rarely compatible, frequently leading to capped and anaerobic seedbeds.

The assessment of baseline issues and the farming requirements like grassweed control allows us to work with customers in addressing all issues beyond just having a focus on healthy soil or just achieving good weed control, a plan allows all elements to be positively impacted at the same time.

Soil structure and the soil's own innate ability to maintain a resilient structure is a combination of factors, but understanding that soil moving implements never create good soil structure is both a major and key shift in understanding.

Good soil structure is created via natural processes, the building of aggregates by microbiology, binding of these together via growing roots and creation of burrows by worms, all together creating stable resilient soil, with good gas exchange, water movement and storage.

Soil moving implements change this structure, and always in a negative way for the long term. However, farming soil damages soil and cultivation interventions are frequently needed to address problems such as compaction at depth, or shallow compaction.

Assessment of compaction depth is a vital component in good soil management ...shallow compaction is not addressed appropriately by deep tillage. In all cases, tillage can be used and frequently should be used to remove a structural problem where

identified, but tillage does not create good soil structure, natural processes do that, tillage only improves or removes a structural problem in the short term, long term the issue will return if other interventions are not used in combination.

Deep tillage breaks up natural soil structures and produces a 'soft' loose structure which is easily recompacted via the passage of heavy machines during the farming year. The recompacted soil is again deep tilled to alleviate the compaction facilitated by the original deep tillage ...we have to break the cycle but doing that successfully again requires a plan centred on an assessed baseline for your farm, a plan that transitions to an agreed approach, a plan that anticipates both the positives and potential negatives of the transition period, a long term plan that incorporates all the elements for resilient and healthy soil.

Questions about this article?

Contact us:

information@hlhlt.co.uk

Vital elements

- Soil assessment
- Gold test
- Utilisation of cover and catch crops
- Appropriate cultivation when required
- Understanding of chemical, biological and physical impacts on soil structure
- Initiating processes to cycle nutrients within the soil
- Never lose focus of growing strong and healthy cash crops.

Are we likely to see more BYDV in cereal crops this spring?

Neil Watson (Technical Manager) answers...

In short, the answer is most likely to be yes, primarily because of several converging factors. Indeed, for some of the very earliest drilled crops we are already seeing the classical symptoms.

Fieldwise Answers



Neil Watson (Hutchinsons Technical Manager)

What determines inherent risk?

• Crop drilling date

• **Early drilled crops** are at greater risk than later drilled ones, primarily due to being exposed to the threat over a longer period. The prolonged summer dry spell made many more willing to drill early to avoid being caught out by a wet autumn. Remember crops can remain at risk until growth stage 31 (first node), beyond which it is generally thought not worth treating crops.

• When aphids start to move into crops, over what period and how rapidly they then build

• Aphid movement into crops was a few weeks behind last year and the long-term average (as illustrated below for the Bird cherry oat aphid from the Rothamsted site, table 1). **However, they continued to move in over a more prolonged period** as autumn temperatures remained conducive for aphid flight (above 11°C).

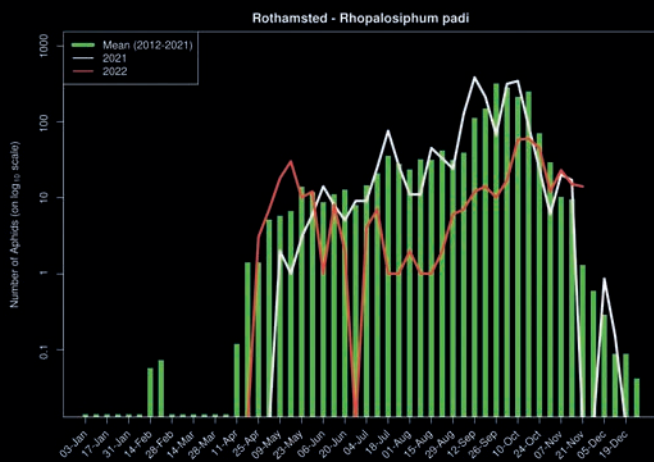


Table 1 Source: Rothamsted insect survey data. Bird Cherry Oat Aphid numbers.

• **Autumn temperatures dictate how rapidly colonies can build and how rapidly reinfection can occur.** This is amply illustrated by data from the met office recently released, Notice how much warmer each month in the autumn was relative to the long-term norm (Table 2).

Is this rise in UK temperatures down to global warming and more likely to be the norm than the exception in future years? Who knows, but the met office is already predicting 2023 is likely to be warmer than 2022.

Frosts in December will have led to some mortality in the aphid population. The anomaly map below illustrates this very point. Although I doubt one month alone will be sufficient to arrest the carry over of surviving colonies into the spring.

Met Office

Yearly UK climate summary up to 31 December 2022 (compared to 1991-2020)

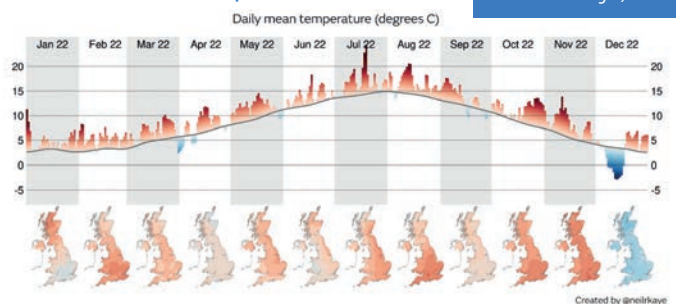


Table 2 Source: The Met Office. The anomaly maps at the base of the table show month by month variation across the country compared to the long-term norm. The line above shows the actual variation for the UK in terms of actual day degrees above that norm. All bar December was considerably above the long-term average.

• The numbers carrying virus

• Slightly lower than last year, yet still not a reason to be complacent.

• The other key factors to consider in terms of risk

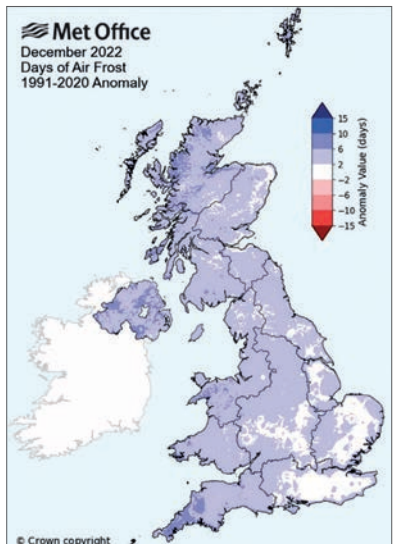
- Anything that is likely to yellow the crop.
 - Running short of nitrogen in the spring from advanced crops and low levels of remaining soil residual nitrogen
 - Manganese deficiency
 - Herbicide damage, from the pre-em. Warm autumn temperatures causing temporary yellowing from rapid uptake.

Much of the damage from BDYV has already been done due to all the factors mentioned, however remember crops are still at risk up until first node, so be prepared to act if aphids are still being found.

Also be conscious that the survival of colonies from the autumn will also pose a risk to our spring cereals, in particular the early drilled ones!

Questions about BYDV in crops this spring? Contact us: information@hlhld.co.uk

Table 3 Source: The Met Office. The anomaly maps showing an increase in December in the number of air frosts.



Environmental seed mix choices. What's the right one for my situation?



Matt Powell (Environmental Services Specialist)

Matt Powell, Hutchinsons northern environmental services specialist gives his advice on choosing the best seed mixes for this spring.

The environmental seed market can be very generic and confusing, so it is important to focus on some key objectives for some of the most popular options. A range of options and mix types across a farm will help increase biodiversity, and may become part of future IPM strategies.

Working closely with farmers and agronomists Hutchinsons has developed a range of bespoke environmental seed mixes that help tackle weeds or soil conditions but are also easy to manage.

To support these, we have also developed agronomic management sheets for each mix with advice on sowing rates and dates, the best seed bed preparation, nutrition and weed control.

All these mixes have been tried and tested at field scale on our Environmental Trial Site near Warboys, Cambridgeshire.

Seed mixes

AB9 Winter Bird Food

There are 4 mixes to choose from to suit a range of scenario's based on geography, ease of management, cost, longevity of mix. Having some 2-year mixes reduces establishment costs, and helps spread the risk of poor establishment in any one season.

AB8 Flower rich margins

There are both long term perennial mixes available for AB8 providing

increased diversity, ideal for areas to be taken out of production for the long term or there are cheaper shorter term options.

AB 15 Two year Legume

This is a useful tool for arable or break cropping where there are weed control or soil health issues. There are two options, one with and one without ryegrass. The latter being the preferred choice where competition with grassweeds is required.

GS4 Herb Rich Sward

GS4 is another useful option for resting arable areas with weed or soil issues or incorporating livestock into the system. Legume and clover based forage can provide a valuable and high quality source of protein when ensiled, with the added bonus of little to no nitrogen inputs.

We are developing a GS4 style mix minus grass to help rejuvenate exiting grassland whilst keeping establishment costs down for use with SFI intermediate grassland standard- requirement for 15% of the agreement to be herbal leys.

AB1 nectar flower mix. This provides a good reliable nectar source that is rotational, so is an ideal mix for short term sites, and could be used as buffer strips next to existing features.

As a result of the dry conditions last year we have trialled several mixes at the Warboys site and have now developed a dry weather mix with C4 varieties.

Top tips for choosing the right environmental seed mix

1. Choose the correct location
 - a. Identify areas of least productive value - e.g. field corners or boundaries, these areas will also most likely create connectivity to existing features.
2. Maximise income potential from your land
 - a. Identify areas that potentially need a rest from the rotation or a break crop
 - b. Choose your option and subsequent mix that complements the rotation or intended break i.e. are you remediating soil issues and improving soil health, or break cropping to control weeds or lengthen the rotation for transferable crop pest/disease?
3. Consider what environmental feature could be created, enhanced, protected, or connected and select a CS option & or enviro mix.
4. Select a variety of mixes/options to create a range of habitat types increasing diversity, this can be spring or winter sown mixes, flowering and vegetative mixtures.
5. Plan how long you intend to keep the option in that location and choose your mix accordingly.
6. Treat the area like you would any other crop, establishment is key, fine tilth and appropriate P K & pH are vital to getting good establishment, a stale seed bed is also essential in reducing weed burden and subsequent need to use herbicides.

For more detailed help and advice contact your agronomist or the environmental services team: enviro@hlh ltd.co.uk

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

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