



Winter Wheat variety choice

Dr Bob Bulmer (Hutchinsons Trials Manager) and **David Bouch** (Hutchinsons Seeds Manager - Designate) review wheat variety results from 9 Hutchinsons trial sites, located across the country from Cornwall up to Balgonie in Scotland, together with AHDB measured performance to date.

The 2016 season has proven to be a very testing year for winter wheat varieties. Fungal diseases, particularly Septoria and Yellow Rust, have had a major impact on yield this year and responses to fungicides have been much higher this year compared to 2015 (see Figure 1). Fungicide treated yields have been lower this year compared to the vintage year of 2015. Light levels have been less than optimum in 2016 and localised waterlogging has also contributed to a poorer yield result over all.

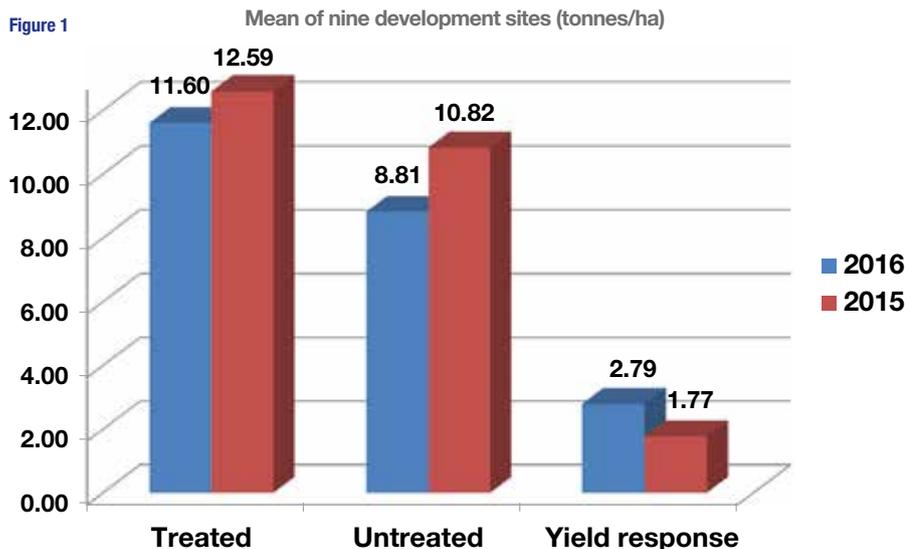
Differences between varieties in response to disease control have

been very significant this year. Using the Hutchinsons site at Ludlow, Shropshire (see Figure 2, page 2) as an example, the fungicide response of Graham at this site was 0.8 t/ha compared to Cordiale 7.9t/ha. Disease resistance and straw strength - effectively ease of management, should be part of the decision making process when choosing varieties. This is particularly relevant if sprayer capacity is limited, or the unit is very spread out.

Variety performance

Reflection has performed well, despite a very testing season where high levels of Yellow Rust threatened its very acceptable yields and quality

Winter wheat yield and response to fungicides in 2016 compared to 2015



Early indications are that Wheat Bulb Fly will be low risk in 2016

Early indications from the AHDB wheat bulb fly (WBF) survey, conducted by ADAS, show that the 2016/17 season will be low risk nationally.

This is good news since we have lost chlorpyrifos for egg hatch sprays, on top of the loss of dimethoate, leaving just the seed dressings, and cultural control measures available. The latter include drilling early (except blackgrass situations), avoiding deep drilling, increasing seed rates to accommodate field losses, and early top dressings to aid recovery in the spring.

So far, the 20 of the 30 sites sampled show average counts for Boxworth (East) 90 eggs/m², and High Mowthorpe 84 eggs/m², which put both areas in the low category. However there are always sites with higher counts and we do need to be mindful of these situations and farms with a history of issues. Although no sites are at very high risk, 5 have come back as medium to high risk.

General advice is that crops drilled in November and December in to medium risk 100 eggs/m² or above would benefit from a seed dressing, and crops drilled in January at levels below this would also benefit from seed dressings.

For those drilling spring cereals, only one seed dressing is approved and these crops would benefit from seed treatment, when being sown into risk situations such as following late lift beet.

Ask your Hutchinsons agronomist for further details of the potential risks in your own area.

grain samples. However, its yield has remained close to its 5 year average and growers who traditionally suffer little with Yellow Rust pressures should have confidence in its ability, as will those who have historically grown similarly pressured varieties (of which there are many) with regular success.

Evolution has had a very good year and is an option for growers whose varieties have struggled in a high pressure Yellow Rust geography.

Graham has performed very well and will be key again next autumn, with greater availability. Its Septoria score of 7 places it in a strong position alongside **KWS Siskin**, as varieties that offer exceptional untreated yield and in a climate where every assistance to growers is of benefit.

Continue overleaf >>>

Winter Wheat Varieties Ludlow 2015/16 Yield (t/ha) +/- Fungicide treatment

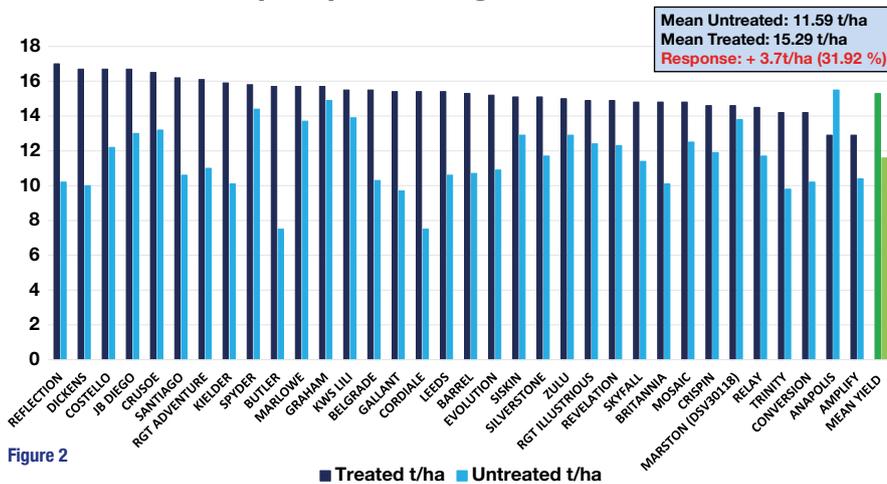


Figure 2

>>> **Skyfall** has had a marginally poorer season to date, but has still increased its 5 year mean with more results to be reported (101). In fact, the outstanding results are predominantly for the North where it has been a very strong performer. It is still widely appreciated by both grower and consumer alike and there can be little reason for not continuing to grow such a variety. It performs well on all soil types, has OWBM resistance (the only group one variety in the Recommended List to do so), good standing ability, excellent Fusarium

resistance and is one of the earlier maturing varieties available.

KWS Kerrin offers a high potential but with slightly poorer Septoria resistance than its contemporaries. However, its out and out pure yield performance with OWBM resistance will undoubtedly create an interest in the latter part of this year, when new varieties are being considered for autumn 2017.

Shabras from Syngenta has had a good year with good Septoria (6) and Yellow Rust (9) resistance. It is the earliest candidate variety available

next year and looks to have a potential place in the rotation.

LG Sundance has attributes to succeed, as shown this season where it has outperformed its 5 year average and looks to have very capable second wheat abilities. With OWBM resistance, a potential 7 for Septoria, plus good Yellow Rust resistance and with no real foliar weaknesses, it can offer a soft group 4 alternative to the older varieties currently available.

RAGT Knightsbridge also offers potential in this area and has seen a limited availability this autumn, so we can have a greater commercial appreciation in time for next year.

Finally, **Costello** still offers greater grain quality than any other feed wheat, by a significant distance. It also has the highest Kg/hL weight of any variety currently available. It does not offer out and out yield, but it does offer peace of mind and its disease resistance is very solid, with only eyespot score a weakness.

When selecting varieties, attention to detail is important. Talking to your market outlet, your agronomist and seed specialist will always help you make the best decisions to suit your own, individual circumstances.

Advance notice – NRoSO Spray Operator training 2016/17 “Pedestrian, Protection, Pellets”

NRoSO (National Register of Spray Operators) annual training events are a major source of professional update training for operators and enable an ongoing awareness of best practice regarding pesticide application.

This year members are invited to participate in an interactive training event which covers ‘Hand held applicators’, ‘PPE’ and ‘Slug pellet applicator testing’, along with the popular ‘Current issues’ session.

The course this autumn and winter 2016/17 is titled ‘**Pedestrian, Protection, Pellets**’ and will be awarded 10 CPD points for NRoSO members (plus 6 CPD points for BASIS members).

This latest event is divided into four sections:

The first section is **PPE (Personal Protective Equipment)**. This section will cover the best practice requirements for the selection, use, maintenance and disposal of a wide range of PPE.

The second section is **Slug Pellet Applicator Testing**. This section will look at the requirements of the NSTS Slug Pellet Applicator Test.

The third section of the workshop is **Hand-Held Applicators**. This section considers common types of hand-held applicators and how they should be correctly checked, calibrated and operated. Trainers will also clarify operator certification requirements and other legal obligations.

The final section is the **Current Issues** section. This covers items that are in the news and that are considered to be worth discussing in more detail to enable an understanding of how they affect each sprayer operator.

By the end of the **Current Issues** section of this workshop, delegates will:

- Be aware of changes to product label information regarding fields of use.
- Be aware of the new ‘BeeConnected’ web-based tool for use by farmers, sprayer operators and beekeepers.
- Be updated on information relating to specific active substances.
- Be updated on the current situation regarding endocrine disruptors.
- Be aware of aquatic buffer zone requirements.
- Be aware of pesticide application equipment testing requirements.



- Be able to identify operator certification requirements for commonly used pesticide application equipment.

Hutchinsons are very pleased to continue to support this valuable initiative and will be offering interactive NRoSO training workshops on arable crops and fruit. During the session operators will have the opportunity to gather best practice techniques from their colleagues and others attending the event, which they can adopt themselves for the future.

Details of our autumn and winter spray operator training programme, of over 60 road show events nationwide, are currently being finalised. If you attended one of our courses last time, please look out for your invitation, or ask your agronomist for further details. A full schedule of events and an opportunity to book places online will appear on the Hutchinsons website in due course.

Late Autumn Weed and Disease Control Options in Oilseed Rape

Despite the relatively low price of oilseed rape at present, the crop remains one of the most useful and profitable combinable break crops available to UK growers, so it makes economic sense to optimise yield and profitability.

Weed control plays a crucial part in maintaining yield potential, but with limited herbicide options in the spring, late autumn offers the best opportunity to get on top of problem grasses and broad leaved weeds. In addition, October is often the best time to control two key diseases in oilseed rape - Phoma and Light Leaf Spot, as well as reduce the levels of the aphid transmitted Turnip Yellow Virus

Dr David Ellerton (Hutchinsons Technical Development Director) explains late autumn weed and disease control strategies in oilseed rape and discusses the best ways to minimise the environmental impact of herbicide applications.

Late Autumn Herbicide Options

Most late autumn options for weed control in oilseed rape revolve around two key active ingredients, propyzamide and carbetamide. Although each active offers the potential of good grass weed control (including those resistant to ALS and ACCase products), both are very sensitive to environmental conditions, particularly propyzamide, which influences whether they achieve optimum efficacy. Both products give best control when applied to small weeds with roots close to the surface. Propyzamide should be applied from 1st October providing the crop has 3 leaves, although it works best when soil temperatures are low (8°C) and declining (this improves persistence of control) and soils are moist (this improves efficacy). These conditions normally occur from November onwards.

In contrast carbetamide, being more water soluble than propyzamide, can be applied in drier conditions earlier in the season although it works best if there is moisture in the seedbed. To reflect this fact, the Crawler (carbetamide) label has been amended to allow the product to be used as a single full dose pre or post emergence of the crop until the end of February, or as a split dose pre emergence followed by a second split up to the 3 leaf stage of the crop. Trials work on adjuvants has also

indicated that the addition of silicon based wetters to the straight products give a more even distribution through the soil profile, leading to improved efficacy in many cases.

Another consideration when applying both these products is that they are frequently detected in water above the limits set under the Drinking Water Directive (DWD). Under the Voluntary Initiative, guidelines are available to minimise the risk of these actives finding their way into water.

These guidelines show the importance of balancing the need for spraying in the right conditions for maximum efficacy, with minimising the risk of the products entering water. The key guidelines for reducing the risk are respecting a 5m no spray zone next to water courses, not applying if heavy rainfall is expected within 48 hours and preferably avoiding use if the drains are flowing, or are likely to flow in the near future. Trials have also shown that the use of grass buffer strips (12m better than 6m) and min till techniques will reduce the amount of product lost by surface run off, or drain flow.

Further information on water issues may be found at www.voluntaryinitiative.org.uk

To optimise grass weed control, the addition of a suitable graminicide such as fluazifop, quizalofop or propaquizafop to residual products has also been shown to increase consistency. However the latest addition to the graminicide market, clethodim, should not be added to residual herbicides. This product has shown good activity on a wide range of grass weeds, including annual meadow grass, wild oats, ryegrass, bromes and

difficult to control black grass. However, concerns over crop safety has led to a number of stewardship guidelines on the use of this product being produced in order to minimise any risk to the crop. These include a reduction in the window of application up to the end of October, or the 15th October for earlier flowering varieties (6 or above on the AHDB variety list), limitations on tank mixes and sequence restrictions with other crop protection products. Ensure you contact your Hutchinsons group agronomist in order to use the product most effectively, whilst optimising crop safety.

While carbetamide and propyzamide can give excellent grass weed control, they both have limited efficacy on most broad leaved weeds, except for a few weeds such as chickweed and speedwells. To increase its spectrum on broad leaved weeds, propyzamide is also available co- formulated with aminopyralid. The addition of this latter active will not impact on grass weed control but will add additional broad leaved weeds such as mayweed, common poppy and sowthistle and will also improve control of groundsel, field pansy and forget me not, amongst other weeds.

Unlike straight propyzamide, this product is not cleared for use on winter beans and key restrictions are that only cereals can be sown as a following crop and that rape straw must not be removed from the field after harvest unless it is destined for burning, heat or electricity production. It is essential that treated rape straw is not used for feeding animals, as animal bedding, or for composting or mulching.

Where Clearfield varieties have been sown, products based on imazamox plus metazachlor or the newly registered imazamox plus quinmerac may be applied before the nine leaf stage of the crop. These give control of a wide range of broad leaved weeds



including charlock, runch and hedge mustard up to the 4 leaf stage of the weed and volunteer rape to 6 leaves. However it is vital to only treat Clearfield varieties of oilseed rape, or crop loss will occur. Other actives available for broad leaved weed control later in the autumn, particularly charlock, include bifenox which has an EAMU for use in oilseed rape.

The potential impact of the DWD has increased the need to ensure our current range of products are used with care to maintain efficacy, while at the same time ensuring they remain available to the market. Consult your Hutchinsons agronomist for best advice on achieving this balance.

OSR Disease Control Plans

High levels of Phoma Leaf Spot/canker and Light Leaf Spot were detected in a large number of crops last season and many crops are likely to be infected by both diseases this autumn.



Growers' first line of defence should be to choose a variety which shows good resistance to both of these diseases by consulting the AHDB recommended lists for information. The importance of this approach was highlighted by the AHDB at this summer's Cereals Event, looking at the relative risk of growing a range of varieties, assessing their agronomic merit, including disease resistance and seasonal yield variations. As part of the process of reducing disease risk in oilseed rape, Hutchinsons are involved with the University of Hertford and a number of breeders in projects designed to increase the durability of varietal disease resistance and progress will be communicated to growers via newsletters and at our trial site open days next summer.

To help decide fungicide timings this autumn, Phoma risk forecasts will be available from Rothamsted Research. It is essential to control the disease before it reaches the stem, as control then becomes almost impossible and stem cankers will result later in the season.

All rape crops should be monitored and fungicides applied once crops have reached a threshold of 10-20% of plants infected with Phoma leaf spot and the risk forecast will indicate when this is likely to occur. Priority should then be given to spraying small plants with high susceptibility to Phoma.

Phoma or Light Leaf Spot?

Sprays applied for Phoma control will also inhibit the other key autumn disease, Light Leaf Spot and there is some information to show that this disease may be building earlier in the season than originally thought, even if symptoms are not obvious. If no spray has been applied for Phoma, then a routine protectant fungicide should be applied for Light Leaf Spot in late October, or early November - although symptoms are often not found in crops until late November, or December. Even if a Phoma spray has been applied, a second spray may also be required,

particularly if development of Phoma leaf spots have prompted very early application of the first fungicide. Risk forecasts for Light Leaf Spot in the autumn are available on the Rothamsted website and all indications are that the risk is likely to be high this autumn.

Although traditionally Light Leaf Spot was a disease of Scotland and the North of England, more recently the disease is frequently being found in the south of the country.

Where disease control is the main issue, fungicides should be based around active ingredients such as prothioconazole, tebuconazole, prochloraz/propiconazole, picoxystrobin/penthiopyrad or difenoconazole. However if growth manipulation as well as disease control is needed in more forward/thicker crops, then metconazole or tebuconazole based products will be more appropriate. An alternative to these in particularly thick, forward crops is a growth regulating product based on metconazole and the cereal growth regulator mepiquat chloride which has

clearance for autumn application for use in forward crops. For maximum benefit, it should be applied from the 4-6 leaf stage to actively growing crops during September/October and in ADAS trials this product has been shown to prevent early stem growth reducing crop height, increase root collar diameter and also increase root mass and length both in the autumn and into spring

In more backward crops or crops on particularly light land, consideration should be given to the relatively new fungicide based on penthiopyrad and picoxystrobin. Trials have shown excellent control of both Phoma and Light Leaf Spot combined with an ability to considerably increase root mass enabling better uptake of nutrients and potentially better growth in a dry spring, through increased water scavenging. Uniquely, this is achieved without a reduction in crop size above ground.

Turnip Yellows Virus (TuYV)

The other disease that can establish in the autumn is Turnip Yellows Virus (TuYV) which is spread by the peach-potato aphid (*Myzus persicae*). TuYV shows up as a yellowing and purpling of the leaves and can reduce yield by up to 30%. A unique nationwide survey of UK oilseed rape crops carried out recently by Hutchinsons agronomists in conjunction with Bayer Crop Science showed how widespread the disease was, finding that crops in England on average had 63 % leaf infection with TuYV, while the figure for Scotland was 32%.

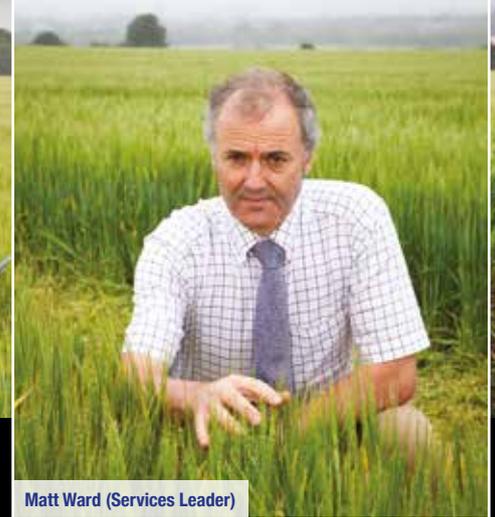
Control in recent years has been based mainly around insecticidal seed dressings, since the aphid has shown resistance to most commonly used insecticides such as pyrethroids and pirimicarb.

Since neonicotinoid seed dressings are no longer available for use in oilseed rape, for many this autumn requires a change in strategy for aphid control. In addition to pymetrozine, clearance has been granted for the use of thiacloprid in the autumn for the control of aphids in oilseed rape. Both these actives will give good control of resistant aphids. Hutchinsons trials have also shown that the addition of an adjuvant based on orange oil considerably improved aphid control and reduced TuYV infection.

Your Hutchinsons agronomist will be able to keep you updated on changes to product clearances and advise you on the correct choice of pest and disease control options for your crops this autumn.

Varying the seed rate in spring cereals to help combat black grass

Following the second year of varying seed rates in spring cereals, **Matt Ward (Services Leader)** reports on the findings from Brampton in spring wheat and spring barley crops.



Matt Ward (Services Leader)

Our trials at Brampton in 2015 indicated that increasing seed rates in spring barley gave an improvement in reduced black grass seed return. Higher seed rates did not always lead to highest gross margin; however, it was preferable to using a too low seed rate which gave the lowest gross margins and poorest black grass control.

For 2016, in a field called 'Harty & Wrights', we set out to test whether we could replicate the results from the previous year, but we were also keen to see whether we would get a similar response in spring wheat, so the field was divided into half spring barley and half spring wheat.

Unlike spring barley, spring wheat is not a very competitive crop; neither are there the herbicide choices that are available in spring barley. However, spring wheat does have more markets than spring barley and as a spring crop does still give us a head start in the battle against black grass numbers.

For both crops, seed rates of 350, 450 and 550 seeds per square metre were drilled across different soil type zones – to evaluate the effect both on crop yield and resulting black grass levels. (See results in Table 1.)

Table 1: Impact of different spring cereal seed rates

	Seeds/m ²	Ears/m ²	Black grass/m ²	Yield t/ha
Spring Wheat	550	555	4	8.55
	450	498	7	8.50
	350	497	8	8.45
Spring Barley	550	920	6	8.70
	450	900	7	8.90
	350	760	8	8.50

This year, in both crops, we found that there was not much difference between seed rates, as seedbed and soil conditions were better than in 2015. Similarly to the findings from the previous year, there were

differences with regard to the black grass levels, particularly where establishment was patchier at the lower seed rates.

As we expected, 550 spring barley seeds per square metre established a more even crop canopy and was suppressing black grass levels well. The area sown at the lowest seed rate had more inconsistent establishment, creating a more open canopy where black grass thrived. This was equally true in the spring wheat, despite this being in an area with a relatively low black grass burden.

This year the relatively low black grass numbers in 'Harty & Wrights' have meant little observable differences in yield. However, in other Hutchinsons' trials, at various sites around the country, this has not been the case and the disadvantages from exceeding optimum seed rates were only slight, compared with those resulting from using below optimum seed rates.

On a practical level, although spring barley has shown to be more competitive than spring wheat, where wheat is being considered for logistical reasons then it is essential not to skimp on the seed to maximise crop competition.

Spring wheat should not be dismissed, but rather than just committing to growing another wheat crop, fields should be individually managed by carefully selecting the most appropriate crop for the situation.

If black grass levels are very high, then perhaps the right crop choice is spring barley. Where black grass levels are not quite as bad, then maybe that is where spring wheat might well fit in.

Remember, the dual aims are growing the crop for yield and also trying to achieve the best black grass control that you can.



Increased seed rate delivers outstanding black grass suppression

Keith Potter (Farm Manager for Simon Collins at G Collins (Farms) Ltd) had 80 acres of land with a heavy black grass infestation that had reached crisis levels.

The farm rotation of 1st and 2nd wheats plus winter oilseed rape had led to a decline in herbicide performance, where resistant black grass now dominates. A new plan was required – which came from the Hutchinsons spring barley work at Brampton, adopting higher seed rates.

"We knew we had to change," Keith commented "and we had spring barley ready to go in at 300-325 seeds/m². Our Hutchinsons agronomist, Simon Trenary, advised us to increase the seed rate to 450-500 seeds/m². At this level it would smother what black grass did emerge in the crop after our over-winter stale seedbed and glyphosate spray-offs. We used the higher seed rate across the whole field – it is a fairly even soil type and sits on top of the Salisbury Plain."

For Simon the crop took a little more managing, "We adjusted PGR inputs to keep the crop standing, especially as we put an extra 20Kg of N to ensure better grain fill. The fungicide programme was a simple T1 and T2 and it looked fantastic all the way through."

"Very good black grass suppression was achieved, with minimal seed return and crop yields were excellent at around 8.5-9.0t/ha," said Keith. "I like to be all drilled up in the autumn, but realise this has been a great result from a spring crop. I'll have to resist temptation and manage the black grass problem fields using this technique – it's proven extremely effective."

Grassweed control - the writing is on the wall

Dick Neale (Hutchinsons Technical Manager) urges growers to fully engage with the serious issue of grassweed control, if we are to achieve greater cereal yields.



Dick Neale (Hutchinsons Technical Manager)

The impact of grass weed infestation should be fresh in everyone's minds, with combine yield meters dropping by 2-3t/ha every time a patch of black grass was encountered during harvest 2016.

Cultivations have been underway for some time, but many soils have been sucked dry by the departing crop to a good depth. Golden stubbles are a clear sign that there is insufficient moisture to germinate weed or volunteer seeds and the lack of moisture is still a major concern for many newly planted winter oilseed rape crops. Of course the UK is frequently a country of contrasts when it comes to weather and in general the west and north have had sufficient moisture and maybe too much for some.

Stale seed beds are being prepared as fast as possible but with few harvest wheelings to deal with, and where insufficient moisture is available, in reality not cultivating at all and leaving the weed seeds on the surface would have been of more value. Stale seedbeds cannot work without moisture - and for grassweeds, significant levels of moisture are required.

Vital to delay drilling

Delayed drilling is now widely accepted as vital in the battle against black grass in particular, but equally improves residual performance against Ryegrass and bromes. Drilling after 15th October means, that for many, the seedbed will receive a full extra month of weathering and this must be allowed for in the seedbed preparation process. Working seedbeds down too fine, too fast will leave them at risk from wet conditions during October; some weathering need should be maintained in shallow worked seedbeds - this can often mean do nothing, when the natural urge is for a further pass of a cultivator. Extended dry periods always provoke the view that "when rain starts it won't

stop!" and as we draw nearer to October, wetter weather is more likely, but that is the whole point. Wetter seedbeds, cooler weather and shorter daylight hours all improve the performance of the residuals and see reducing numbers of grassweeds emerging.

Getting it drilled in September pre rain will not change the fact that the bulk of black grass emergence will occur in the first half of October. If you think your September flush was impressive, in October the emergence will be 3 or 4 times greater and we have to be realistic with our expectations for herbicide performance. Residuals will only deliver the required control with pre drilling emerging grass weed populations of less than 200 plants/m².

With populations as they now are, anything drilled pre October 15th will have 600+ black grass plants emerging into the herbicide. In a good year you may expect 80% control from the residual stack, leaving you 120 plants/m² - Atlantis at 50% control leaves you 60 plants/m².

The crucial point to make here is that 60 plants equates to a 25% yield loss and while that figure is established via trial plot work, it transfers directly to what we see via the combine in commercial crops. Looking at the long term perspective, with an average of 4 surviving tillers per plant, you will put back 24,000 seeds/m² ...yes, you read that correctly, 24,000!

Engage with the issue

I entitled this piece 'the writing is on the wall' and with drilling of winter wheat already underway in known black grass fields from the 12th September, you can see why. The problem of black grass, bromes, ryegrass and wild oats is not going to go away anytime soon, unless we all engage with the seriousness of the issue and the science of control.

The various cultural tools have been widely discussed, researched and

reported. I can think of few other subjects where the arable industry in the UK is fundamentally now in total agreement regarding the parameters needed to control black grass and other grassweeds in a sustainable long term approach.

One thing is abundantly clear - allowing high seed numbers to return to the soil, deep non-inversion tillage, or continuous ploughing, coupled with September sowing of autumn cereals into dry seedbeds will fail, fail and fail again.

The understanding of soil science, mechanics and biological processes is vital in the long term success of managing weed seed banks, drainage and crop health. Continual deep movement of soils is not the sustainable way forward - the need to move soil to depth is largely a response to having moved it to depth in the first place. However, a move to surface tillage or no til will not work without an understanding of soil processes that influence the passage of both roots and water through the soil, or the storage and exchange of nutrition within the soil.

All of these above elements must be combined in the move toward long term weed seed-bank control, enhanced crop health and achieving greater yields.

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

HUTCHINSONS

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

Tel: 01945 461177

Fax: 01945 474837

Email: information@hlh ltd.co.uk

www.hlh ltd.co.uk