

Regional Technology Centres show excellent wheat yields

Dr Bob Bulmer (Hutchinsons Trials and Research Manager) and Colin Button (Seeds Manager) review the performance of wheat varieties across Hutchinsons Regional Technology Centres this summer.

Every year, harvest results bring surprises; both good and not so good! This year is no exception, with wheat yields at surprisingly high levels on many farms, even with the late and protracted last phase of harvest.

As you will have seen in the press, the World Record was broken with a yield of 16.5 tonnes/ha. (On a small plot scale, Hutchinsons' trials actually surpassed this with a plot yield equivalent at our Ludlow site of 17.16 t/ha for 'Lili'!) Farm results have been generally very good the length and breadth of the UK, thanks to the combination of favourable growing conditions and sound agronomy practices.

In our trial work, responses to disease control at 1.77t/ha have been slightly below the long term average, but this figure hides some significant variations from site to site (see Figure 1). The average response to fungicide was 2.93t/ha at Ludlow in Shropshire and 0.86t/ha at the Badwell Ash site in Suffolk, which was one of the driest sites this year. Septoria was the main disease at all of the sites, yellow rust was present at all of the sites, even Cornwall, but it only had a yield impact on the very susceptible varieties.

The most noticeable feature of this season was that the response to the T1 fungicide was large - this is unusual and it reflects the declining curative effect of fungicide treatments.

Group 1 and 2 results

Growers have been encouraged to consider moving to produce high yields of more "quality wheats", the Group 1 and 2 types, gaining more value and possibly accessing potential export markets as well.

Winter Wheat Varieties Mean of all sites – Harvest 2015
Yield (t/ha) +/- Fungicide treatment

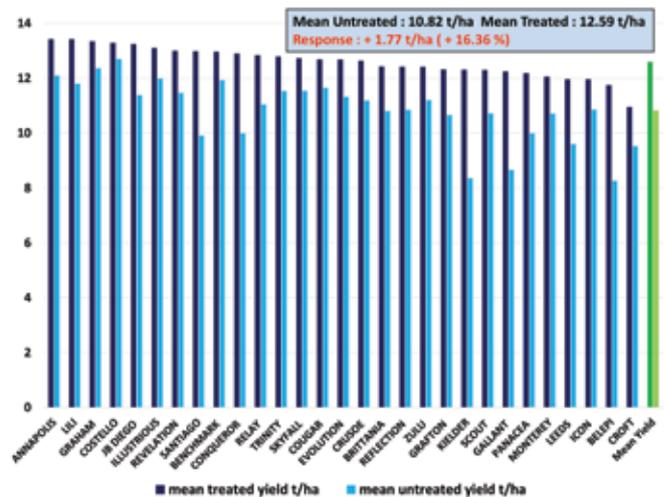


Figure 1: Winter Wheat Varieties Mean of all sites – Harvest 2015

We are still waiting for the protein results from some of the nitrogen management plots and it will be interesting to see if it is possible to have both high yields and high protein levels. Producing yield and quality will be one of the aspects of crop management that we will be demonstrating in 2016.

Analysing the results from a set of trials such as our RTC sites from across the country is an interesting exercise. In our results, 'LILI' has shown itself to be a great choice for a range of situations, giving a consistent performance across different soil types and fertility as well as location, (north, west and east). Indeed, it ranked in the top 5 varieties on 5/8 sites.

In the chart above, 'Anapolis', a Saaten Union feed wheat variety, has taken pole position in the average of all sites. As a result, it is a variety which we will feature more in 2016 and is ideal for later sowing after maize, for example.

>>> Some more statistics from the 8 national sites:

The range of yield differences between the top position and the bottom in our trials is worth noting.

This ranges from 2.20 t/ha to 4.38 t/ha and a mean of 2.77 t/ha.

LILI in first place on 3/8 sites

JB Diego in 2nd place on 2/8 sites

Graham (Candidate variety) in 3rd place on 2/8 sites

Lili and Graham both feature well in the AHDB results as well and the presence of JB Diego is no surprise, as it has shown consistent performance over a number of years.

Whilst the chart of our trial results shows 'Reflection' as middle ranking, it is in joint lead on the AHDB results to date and was the variety used by Tim Lamyman in his 16.5t/ha yield performance in the Yield Enhancement Network (YEN) project. In reality, these facts all indicate high level performance, however please do bear in mind the straw length of Reflection is very short, which may not suit growers where wheat straw is a requirement and the short straw could also make this variety less competitive with black grass.



The lesson overall is that getting the best from the site (farm location, soil type and fertility) means attention to detail over your variety choice is worthwhile, and the selection should also be linked to the market for which you are growing.

Talking to your market outlet, your agronomist and seed specialist will help you make the best decisions to suit your individual circumstances.

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 Yellows 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.

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 influence how 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 and soils are moist. These conditions normally occur from November onwards. In contrast carbetamide, being more water soluble than propyzamide, can be applied at a reduced rate in drier conditions from the 3 leaf stage of the crop from mid-September onwards. Trials work on adjuvants has also indicated that the addition of adjuvants based on silicon wetters with 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 the latter 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. Recent work by Dow Agrosiences has shown that the use of grass buffer strips (12m better than 6m) and min till techniques will reduce the amount of propyzamide 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 fluzafop or propaquizafop to residual products has also been shown to increase consistency. Relatively recently we have seen the arrival of another new active ingredient to the graminicide market, clethodim. 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 led to a number of guidelines on the use of this product being produced last autumn in order to minimise any risk to the crop. These included a reduction in the window of application up to the end of October, limitations on tank mixes and sequence restrictions with other crop protection products. At present we are awaiting finalisation of any changes to these guidelines for this autumn, following a number of trials during the 2014/15 season. 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.

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. New label clopyralid plus picloram (MAPP 16413) has now lost its autumn clearance and can only be applied from 1st March 2016 in line with straight clopyralid. Disposal, storage and use of old label product (MAPP 11961) ended on 30 September, 2015.

The potential impact of the DWD has increased the need for alternative active ingredients in oilseed rape and Hutchinsons are actively involved in trialling these materials this season, as well as amending the use of current actives. We will keep our customers informed of developments as they occur, to ensure we continue to maintain the level of weed control needed in this important crop in the future. In the meantime, our current range of products should be used with care to maintain efficacy and ensure they remain available. Consult your Hutchinsons agronomist for best advice.

OSR Disease Control Plans

As for disease control, once again high levels of Phoma Leaf Spot and Light Leaf Spot were detected in the HGCA Crop Monitor Survey last spring (see Figure 1 – courtesy of AHDB) and many crops are likely to be infected by both diseases this autumn.

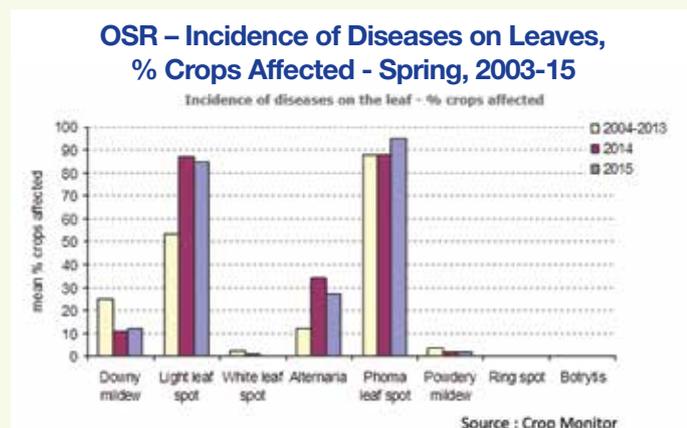


Figure 1: OSR – Incidence of Diseases

Autumn Phoma risk forecasts, available from Rothamsted Research Station, are based on region / incidence of Phoma canker last season and rainfall in September and October. Phoma spores need 20 days or more rain from August 1st in order to mature on stubble. More rainfall than this then causes release of mature spores, which are then able to infect the crop – if there is a minimum of 4 hours leaf wetness.

From infection, it takes an accumulated mean temperature of 120 day degrees (i.e. 6 days at 20°C, or 10 days at 12°C) for a mature spore to produce the characteristic leaf spot, from which the mycelium will migrate down the petiole of the leaf and into the central stem. At low temperatures, this migration may be only 1mm per day. 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. Priority should be given to spraying small plants with high susceptibility to Phoma, where there is a shorter distance for the mycelium to travel before reaching the stem. Growers should consult the AHDB recommended lists for information on disease resistance of key varieties.

Phoma or Light Leaf Spot?

Sprays applied for Phoma control will also inhibit the other key autumn disease, Light Leaf Spot. 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. Risk forecasts for Light Leaf Spot in the autumn (again available on the Rothamsted website) are based on region, amount of pod disease the previous summer and deviation from the 30 year mean summer temperature and all indications are that the risk is high this autumn.

Symptoms shown are large, mealy blotches on the leaves, with a pinkish white centre and white spore droplets around the edge of the lesion. It may be necessary to incubate them for a couple days in a plastic bag for these droplets to develop. 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 or difenoconazole. However if growth manipulation is needed in more forward/thicker crops, then metconazole or tebuconazole based products will be more appropriate. A new growth regulating product which was launched last season based on metconazole and the cereal growth regulator mepiquat chloride has recently received 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.

Last autumn saw the launch of a new fungicide for oilseed rape based on penthiopyrad and picoxystrobin. Trials have shown excellent control of both Phoma and Light Leaf Spot combined with a unique effect on roots, considerably increasing root mass enabling better uptake of nutrients and potentially better growth in a dry spring, through increased water scavenging.

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 it is believed that this disease can reduce yield by up to 30%. A unique nationwide survey of UK oilseed rape crops carried out last season by Hutchinsons agronomists in conjunction with Bayer Crop Science showed how widespread the disease was, finding that 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 in oilseed rape (except for very limited use under a recent emergency authorisation in four counties of England), this autumn requires a change in strategy for aphid control. Last season, in addition to pymetrozine, clearance was 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 shown that the addition of an adjuvant based on orange oil considerably improved aphid control and reduced TuYV infection. There is also the possibility of other insecticides effective on aphids gaining clearance for autumn application to oilseed rape. 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 crop this autumn.

HUTCHINSONS

Your Invitation to Hutchinsons Winter Technical Farmer Conference - 2015

More Science - More Yield



Thursday 19th November

East of England Showground, Peterborough PE2 6XE

Hutchinsons is convinced of the importance of scientific research in the future of sustainable farming. As a company, our on-going objective is to find solutions for many of the agronomic challenges which currently limit UK yields. We aim to achieve this by continuing to work closely with a range of science partners and R & D organisations, to turn innovative scientific initiatives into practical solutions that make a real difference to growers in the field. The long term research and development work at our Regional Technology Centres and National Black Grass Centre of Excellence are prime examples of this, where practical knowledge and positive results continue to be achieved.

The goal of our 2015 conference, through innovative ideas and engaging with key industry experts, is to help you understand how the practical application of the latest information, advice and technology can boost the yield potential and profitability of your arable crops.

What will you learn?

- Managing soils to deliver higher yielding crops
- Successfully converting solar energy into cereal profits
- Maintaining access to soil moisture in unpredictable weather
- Updates from the 'Yield Enhancement Network' and how participating growers are achieving individual breakthroughs in crop yield plateaus.

Plus:

- Access to a range of informative technical stands and helpful industry experts
- An invaluable opportunity to network with other like-minded growers
- Easy access from the A1, A47, A14 and A605 major trunk roads
- Coffee on arrival and hot refreshments provided for lunch.

Yes, I wish to attend

Thursday 19th November

East of England Showground, Peterborough PE2 6XE

Tickets will be despatched (by the end of October) to the address details that you provide.

(N.B Due to the popularity of our previous events, for 2015 we can only offer tickets to farmers.)

Farm Business Name: _____

Address Details: _____

Delegates applying for tickets (please list all): _____

Mobile: _____

Telephone: _____

Email: _____

Please tick if you would like to receive information about our services in future, by post by email by telephone or by text message

Winter Technical Farmer Conference:

Please use this tear-off reply card to apply for your tickets and return either by fax (01945 474837) or by post. Simply tick to confirm your attendance, then complete your business and delegate details below:

Post Code: _____

REGISTER NOW!

To apply for your Conference tickets online, please visit our website: www.hlhltd.co.uk

“More Science- More Yield”

Jeremy Macklin (Hutchinsons Director of Technology and Innovation) gives a preview of our forthcoming farmer conference and warmly invites you to attend.

With the 2014-15 growing season mostly concluded, we hope you have had a successful and profitable harvest. Focus now turns to the next growing season and as part of that we would like to invite you to our Winter Technical Farmer Conference, which will be held in Peterborough on 19th November this year.

We have a very distinguished set of speakers who will unveil their thoughts about the leading scientific innovations coming to UK farming.

The conference will continue to focus on the increase of yields in arable crops, in line with our support for the Yield Enhancement Network (YEN) project. This competition is helping drive farming practices to achieve new record yields and our conference programme includes interviews with these growers, allowing you to consider how you might benefit from their experience.

The creation of yield depends upon a series of interrelated factors - **soil, sunlight and water** - and 2015 is the UN year of soils. We are delighted therefore that our speakers include:-

- > **Prof Achim Dobermann**, director of Rothamsted Research and a leading soil scientist, who will share his assessments of the current state of British soils. Achim's insights will shed new light on the changes you might be able to make in the management of your soil and in your cultivation practices
- > **Prof Roger Sylvester-Bradley**, who is one of the leading crop physiologists in Britain, and he will

explain how to improve the harnessing of solar energy in the growing of your arable crops

- > **Prof Tim Osborn**, (University of East Anglia) a leading UK expert in climate change, who will offer his thoughts on how the anticipated changes will affect water availability – an increasingly scarce and valuable resource
- > **Andy Brown**, (Anglian Water - Director of Sustainability) will add practical insights in to how water will be managed in the future.

We hope these papers will enable you to take away a number of new ideas of how you might better optimise your crops' utilisation of the three principal resources that ultimately determine yield.

Each presenter will be paired with our own internal experts, who will translate the thoughts and reflections of the



academic speakers to apply them to UK growing systems, helping you gain maximum benefit from the conference.

This is an ideal opportunity to hear from the UK's leading arable specialists, and to discuss their research programmes and future plans with other growers during the conference. You will also be able to meet and talk to experts on the fifteen technical institute stands who will also be attending the conference.

Details of how to book your place online or by post are printed in this issue and we look forward to seeing you in Peterborough on 19th November.

Conference **Agenda**

- 9.30am** Registration and coffee, plus opportunity to visit stands and demonstrations
- 10.00am** Welcome and Introduction
- 10.15am** Managing soils to deliver higher yields Prof Achim Dobermann (Rothamsted Research) & Dick Neale (Hutchinsons)
- 11.05am** Converting solar energy into cereal profits (1) Prof Roger Sylvester-Bradley (ADAS)
- 11.25am** Coffee Break
- 11.55am** Converting solar energy into cereal profits (2) Dr David Ellerton (Hutchinsons)
- 12.15pm** Predictable water in unpredictable weather Prof Tim Osborn (UEA), Andy Brown (Anglian Water) & Dr Bob Bulmer (Hutchinsons)
- 1.05pm** Questions and closing remarks
- 1.15pm - 2.15pm Lunch** There will be a range of technical stands located in the refreshments area for delegates to visit.
- 3.00pm** CONFERENCE CLOSES

BASIS & NRoSO CPD points will be available.

Business Reply Plus
Licence Number
RTGZ-YKZK-LUTA

2

Marketing Department
H L Hutchinson Ltd.
Weasenham Lane
WISBECH
PE13 2RN



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 roadshow which covers 'sprayer care and technology' and 'adjuvants', along with the popular 'topical update' session.

The course this autumn and winter 2015/16 is titled 'Sprayer Care & Technology' and will be awarded 10 CPD points for NROSO members (plus 5 CPD points for BASIS members).

This latest course will cover the following three main topics:

Sprayer Care & New Technology

Many sprayers are already tested annually as part of the NSTS scheme. It is a legal requirement that ALL 'spray equipment' in use (with the exception of

ADVANCE NOTICE

- NROSO Spray Operator training 2015/16: "Sprayer Care & Technology"

hand held machines) will be examined once before 26th November 2016, again before 26th November 2020 and then periodically thereafter.

Ongoing sprayer maintenance is essential to keep spray equipment running efficiently and safely, as well as alleviating the cost of potential repairs at the testing stage.

Using video to demonstrate and provide topics for discussion, this section of the NROSO course will cover:

- The aspects that the NSTS examiner will inspect when a sprayer is tested.
- Demonstrate what the operator should check as part of a regular maintenance procedure.
- Look at the machine calibration, how often this should be carried out and the calculations that are involved, to ensure that the product will be applied accurately.

The new technology section covers equipment that is available to make the spray operation more efficient, accurate, safer and less stressful for the operator:

- Reviewing global positioning satellites (GPS) and real time kinematics (RTK)
- Considering automatic systems to help with shut off, steering, headland assistance, washing, tank filling, boom height adjustment and boom lighting.

Topical Update

- Recognising the new Classification, Labelling and Packaging (CLP) pictograms and discussing the timeline for introduction.
- Extension of Authorisation for Minor Uses (EAMUs) and what these mean for the grower in terms of responsibility and administration.
- The possible loss of agrochemical products classed as 'endocrine disruptors' and the implications of this for UK crop protection.
- Rodenticide Stewardship.
- Legislation around the purchase of products after 'Grandfather Rights'.
- Material Safety Data Sheets (MSDS) and a possible future shift towards these being removed from product packaging but being made available online.

Adjuvants

- Looking at the definition of an adjuvant and how these differ from pesticides.
- Studying the modes of action of different adjuvants that enable them to be of benefit to the spray solution.

Hutchinsons are very pleased to support this valuable initiative and will again be running interactive NROSO training workshops on arable crops and fruit. Operators will have the opportunity to share tips and solutions that work for them and gather best practice techniques from their colleagues and others attending the event, which they can adopt for the future. Details of our autumn and winter spray operator training programme, of over 65 road show events nationwide, are currently being finalised. If you enjoyed one of our courses last year, 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.

Yield Enhancement Network (YEN) – Record Yields

Dr Bob Bulmer gives an update on the YEN competition and looks forward to the final results which will be announced in November.

A month ago it was generally thought that achieving winter wheat yields above 14.5t/ha would be very challenging and that getting anywhere near the New Zealand World record of 15.7t/ha would be an almost impossible task. The New Zealand record was particularly daunting because light levels and the availability of water are much higher there compared to the UK and there are not the restrictions on the amount of nitrogen that can be applied to their crops.

How much things have changed in a month. There are now two new world record claims of above 16.5t/ha of winter wheat, an incredible achievement for the farmers concerned and the UK. This result is double the National Average of 8t/ha. Other entrants in the YEN competition have been equally impressive, with one farm producing an incredibly consistent performance of 14.03t/ha, which is the mean of eleven fields. Four fields of 'Evolution' on this particular farm yielded between 14.9t/ha and 15.6t/ha.

We are eagerly anticipating the results of the YEN competition in November, when individual performances will be analysed and we will get more detail on the factors that have affected crop performance.

The YEN competition is in its third year this year and it is impressive how the contest is stimulating innovative thinking. One farmer who grows cereals on very sandy drought prone soil opted to grow hybrid rye, to try to maximise his chances of being the closest to the 'predicted yield potential'. The predicted yield potential for this field was 13.9t/ha because of the low amount of available water from the soil. The Rye crop yielded 11t/ha and this is one of the best performances against yield potential that has been submitted so far. This links in well with the main objective of the YEN, which is to maximise the yield of cereals on specific sites with different constraints on yield performance.

There has also been the opportunity this year to gather contestants together to give them the opportunity to network and to compare ideas. Ideas were exchanged in this meeting on how to make better use of the main resources that drive yield: water and light.

Described elsewhere in this issue, Hutchinsons Winter Technical Farmer Conference on 19th November will provide more detail on improving yields through the better utilisation of light and water.



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