technicalbrief
NEWS AND CROP PRODUCTION ADVICE FROM FRONTIER

frontier

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Surge in spring cropping

More growers than usual will be growing spring crops this season, either by choice or as a result of circumstances forced on them by our climate. With many new to spring cropping (or at least a little 'rusty'!) what are the specific agronomic and marketing considerations for the key crops?

Spring barley

Management
Drilling into a seed bed that is warming up will encourage rapid germination. Pest damage can cause problems in early drilled crops. If grassweeds are likely to be present then pre-emergence herbicide is vital. Apply chlorotoluron + diflufenican (this requires the grower to have a copy of the relevant EAMU on farm). Before application check that variety is tolerant to chlorotoluron. Broad leaved weeds can be dealt with at the late tillering stage with either a sulphonylurea (metsulfuron-methyl + tribenuron or thifensulfuron-methyl) + hbn or mecoprop. If poppies have been difficult to control in the past, and resistance is suspected, consider adding MCPA.

Disease control usually revolves around a two spray programme. In some seasons, and especially in the north, an early T0 has proved valuable. SDHI chemistry such as bixafen, fluxapyroxad or penthiopyrad (subject to approval) will all give good disease control when used in partner with triazole and/or strobilurin. Remember, products containing fluxapyroxad must NOT be used on malting barley as there is no IOB approval as yet. Ramularia can often be a problem later in the season in spring barley. The addition of chlorothalonil at the T2 timing has proved beneficial. Do check the label to ensure the brand you use has approval for use on spring barley.

Marketing
The UK spring malting barley acreage will increase significantly, which will likely result in supply out stripping demand. Farmers planning spring malting barley are recommended to market at least part of their crop using risk management tools such as the Frontier grain pools, forward-contracting or a storage scheme. These can help with both pricing and managing grain movement at harvest. Given this likely increase in spring barley, targeting yield on heavy land is likely to be the best approach, as malting premium will be under pressure. That way if low grain nitrogens are still achieved then any premium can still be applied, but yield hasn't been compromised.

In this month's issue

Spring peas

Management
These are very sensitive to compaction. Although direct drilling and min-till are becoming more popular, soil conditions must be right if this approach is to be used to establish peas. Otherwise, land should be ploughed. Seed must be covered by at least 3cm of soil. This is particularly important as pre-emergence herbicides are an important component of achieving good weed control and successful establishment. An imazamox/pendimethalin + clomazone/linuron mixture will cover a wide range of the key broad leaved weeds.

Wet summers encourage foliar diseases such as leaf and pod spot and botrytis. Apply the first fungicide at the earliest sign of disease and follow up 21 days later. Boscalid + pyraclostrobin or chlorothalonil + pyrimethanil will give broad spectrum cover. Weevils, pea aphid and pea moth are all pests that can commonly be found. Thresholds are available for each pest and appropriate insecticides should be applied. The most common disorder caused by lack of micronutrients is marsh spot (manganese deficiency). The deficiency causes brown spots to form in the centre of the peas and is most common on organic/ alkaline soils. If this is not managed it will reduce the quality of the peas and result in them only being suitable for feed.

Marketing
Buyback contracts are available for all marrowfat varieties but seed supply is tight. In many areas, farmers could consider growing either yellow or large blue peas. Where growers are able to grow blue peas it's important to ensure the varieties chosen are suitable for micronising i.e. the colour needs to be consistently green and with minimal staining visible at harvest - otherwise penalty clauses may be incurred. Yellow peas offer farmers the advantage of avoiding these penalty clauses for staining.

Spring beans

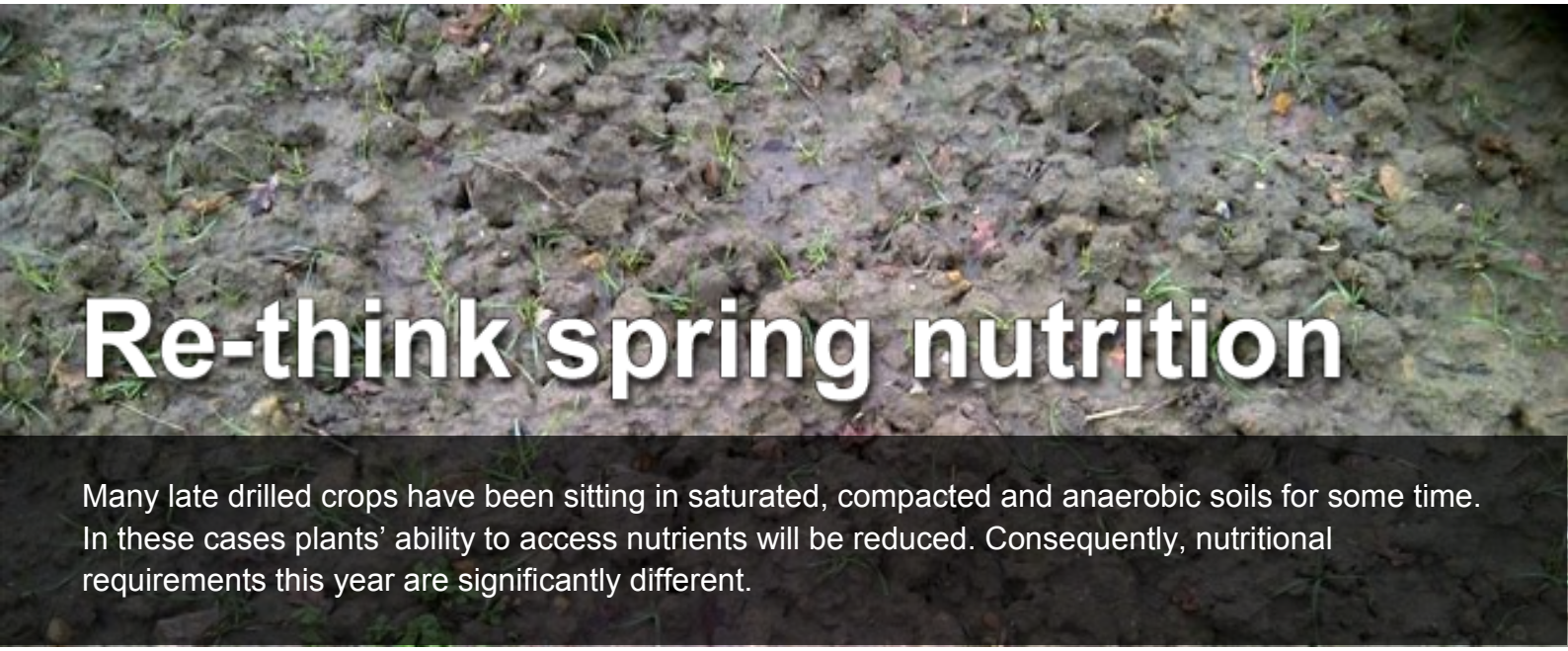
Management
Successful spring bean establishment is very weather dependent. Weed control can be affected by soil moisture (or lack of) at the time of application of pre-emergence applications. Where weeds are present, glyphosate applied prior to drilling will aid control of grassweeds and perennial weeds.

Options for weed control in spring field beans are limited both pre and post emergence. Pre-emergence residual herbicides work best if applied to soils with adequate soil moisture. Unless conditions at application are ideal (moist fine seed beds), it is unlikely that pre-emergence products will give full control of weeds.

Residual products are ineffective on highly organic soils, and some are damaging on gravelly or very light soil types. Ensure seed is well covered with soil in order to avoid crop damage from herbicides and avoid applying just prior to heavy rain or to very cloddy seed beds. Apply as soon as possible after drilling to avoid the bean plumule getting too close to the soil surface at application. An imazamox/pendimethalin + clomazone/linuron mixture will cover a wide range of broad leaved weeds. Bentazone is the only post-emergence active for use in spring beans for broad leaved weed control.

Downy mildew can be a problem in spring beans and the co-formulated product of metalaxyl + chlorothalonil has been revoked for use on spring beans with a sell out date of 31 May 2013, prior to a use up date of 31 May 2014. Current spring bean varieties do not have high levels of downy mildew resistance. Where there is a history of downy mildew on the farm and beans are being grown fewer than five years since the last bean crop, it is advisable to use a seed dressing. Work is underway on a submission for an extension on the use of metalaxyl on field beans - with advice to tank-mix with another effective downy mildew fungicide. However, this is unlikely to be available until early May, 2013.

Marketing
UK spring bean area is likely to at least double that of 2012. This additional tonnage will see the premium of beans to wheat under pressure. Frontier expects to see this trading around £35/t differential. However, even at these levels it's a great starting point for marketing the crop, especially when there are opportunities for additional human consumption premiums. At lower market levels, there will be demand from domestic compounders (switching from soya bean meal).



Re-think spring nutrition

Many late drilled crops have been sitting in saturated, compacted and anaerobic soils for some time. In these cases plants' ability to access nutrients will be reduced. Consequently, nutritional requirements this year are significantly different.

When to apply?

There is a need for early nutrition this year but this should only begin when soil conditions reach around 8°C. Below that, there is minimal microbial activity and plant growth requires oxygen in the soil as well as moisture. Water levels in soils need to fall to allow oxygen back in, otherwise nitrate will be lost.

Crops mainly use nitrogen as nitrate and conversion of ammonium ions to nitrate (nitrification) also requires soil temperatures to be around 7 to 8°C.

NB: Urea is highly soluble and, if applied to waterlogged soils, could leach before converting into the 'safe' ammonium form.

Nitrate is highly mobile in soil and efficient use will not be achieved until soil conditions are suitable for spreading.

Go early, little and often

Although soil nitrogen levels were higher than usual in autumn 2012, **significant losses have been measured during the winter period**. This has led to between 20 to 30kg N/ha less than is normally seen at this time of year. Even following oilseed rape crops, soil nitrogen levels have been recorded at index 0. And following cereals, they are in the mid to lower part of the index.

These measurements (taken to 90cm depth) show only part of the problem. This is because early season growth this year is taking place only in the first 20 to 30cm of soil. Usually by now roots are down to around 40 or 50cms depth and therefore have access to a larger area of soil and nutrients than they do this season. Consider an early, small application of nitrogen at the onset of spring growth. This will aid early development while limiting the risk of losses from leaching on very wet soils.

This is a year when mineral nitrogen testing could be very valuable not just to identify fields high in soil nitrogen but also those fields very low in nitrogen where an early boost will be essential. Plan to apply a small quantity of nitrogen when conditions allow, 30 – 35kg/ha for cereals and 35 to 45kg/ha on oilseed rape. Although this may increase workload, it will pay dividends if crops achieve good early growth.

Encouraging rooting

With restricted rooting this year all crops will struggle to take up nutrients and this will be compounded on lower index soils. Soil conditions are severely restricting root development leading to nutrients being sought from smaller volumes of soil.

Every effort should be made to try to increase root growth:

1) Ensure crops can access water soluble phosphate

Roots require phosphate in order to grow and they seek this out in soluble form from the soil. This year, restricted rooting means plants will only be able to access a smaller volume of soil - potentially reducing their phosphate uptake.

An early application of ammonium phosphate (e.g. DAP or NPK(S) is advisable.

If a foliar spray is required (for speed of effect) then a product containing phosphate is the best choice in low index soils. Nothing will replace phosphate that is applied in fertiliser form but where speed is necessary, foliar treatment at the two-three leaf stage may give some benefit.

2) Stimulate root growth with phosphite

Although chemically similar to phosphate, **phosphite is a growth stimulant**. Best results are achieved when used as a seed dressing; but when there is adequate green leaf, foliar phosphite will stimulate root growth by helping the plant scavenge for nutrients. This could give your crop a much needed boost this spring. Phosphite does not replace phosphate and indeed if applied in soils where phosphate levels are very low then the crop will search in vain for phosphate. However, in normal soil indices (2-3) rooting will be stimulated by phosphite, allowing a greater area of roots to look for the phosphate.

3) Consider PGRs to assist with rooting

Another way to help rooting is the use of added value PGRs (trinexapac and prohexadione Ca). These should be applied pre GS31, though crops should be free from stress and have 1-2 tillers. Although these are giberellic acid inhibitors to shorten crops, used now they stimulate auxins which are the drivers of greater root development. This will also help in the continuing development of tillers, whose primordia are already set down.

What is clear is that, after a poor start crops will require tender loving care in order to maximise their output.

Fungicide strategy for winter wheat

Spring of 2013 will be challenging for growers who will be faced with a wide range of crop development with everything from 1 leaf, through to plants that are well-tillered. It will be important to ensure that crops are treated on a field-by-field basis.

Putting a plan together

If disease (yellow rust) builds rapidly there may be a requirement for a very early fungicide application prior to the usual T0 (GS30) application. However, this has not been the case yet and only susceptible varieties, such as Oakley, would require treatment.

Most varieties will require a T0 (GS30) fungicide. Not only does this give some flexibility when the T1 timing is reached, it also helps keep disease levels down. Apply a triazole (epoxiconazole + chlorothalonil or tebuconazole + chlorothalonil co-formulation).

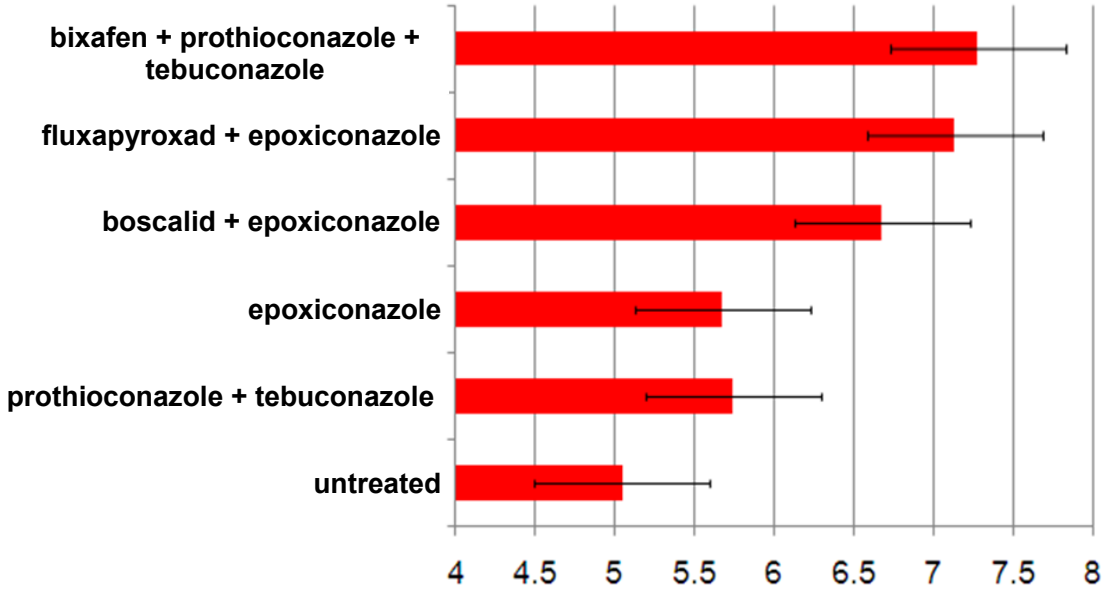
Watch out for disease building

Put SDHIs in your plan

As GS31-32 approaches and leaf 3 is emerging apply SDHI fungicide - fluxapyroxad, penthiopyrad (subject to approval), bixafen or boscalid. Results from Frontier's trials have shown the value of these fungicides when applied at T1 and T2. At Haywold, there were significant yield benefits from changing from a straight triazole to SDHI chemistry at T1. Moving from the older SDHI (boscalid), to newer SDHIs also significantly increased yields.

SDHI should always be applied in combination with a triazole, prothioconazole + tebuconazole or epoxiconazole. As the efficacy of triazole fungicides gradually declines it is important to use as many of the fungicide groups in mixture. Apply chlorothalonil (but not with bixafen products as it can be antagonistic). The benefits of applying pyraclostrobin were also evident in 2012. If eyespot is the main target then it may be appropriate to use a robust rate of boscalid + epoxiconazole. Although there is now some evidence that fluxapyroxad and penthiopyrad have eyespot activity.

T2 fungicide should be applied as the flag leaf emerges. Base this around triazole + either fluxapyroxad or bixafen. Pyraclostrobin applied at T2 will provide valuable additional cover against late season rusts. Last season there was still some evidence of a small contribution to septoria control.



With 18 varieties on the Recommended List having a score of 5 or less for brown rust then a hot summer could prove problematical for some varieties if robust fungicide programmes are not applied.

If there is a long gap between T1 and T2, as happened in 2012, there may be a requirement for an additional spray at around GS33 so that fungicide cover is maintained.

The new SHDI fungicides are predominantly protectant so work best when applied to relatively clean crops and a top up will maintain protection. The final application should usually be applied at GS59-69. It provides additional foliar top up against disease and also activity against fusarium. Robust rates of prothioconazole + tebuconazole are required. 2012 was unusual in that further yield responses were recorded from a trial that received a T4 application. Yields ranged from 0.2 to 0.7 t/ha depending upon product choice. However, unless we see another late wet season this will not be a routine application.

Dealing with backward crops

The above describes what might be most suitable for a reasonably 'normal' crop. What about those more backward crops? The main difference will be at the early timings. The T0 and T1 fungicides could be combined into one unless disease develops early. However, very backward crops tend to be susceptible to mildew which will require treating.

A plant with few leaves needs protecting as much as possible, as the effects of disease can be more devastating than on larger crops. As the crop approaches T2 then it is likely that it will have caught up in development. All plants respond to day length in the same way and the more backward crops will go rapidly through the growth stages.

Avoid complex tank mixing

With autumn herbicide applications being delayed there will be a temptation to try to tank mix a large number of products. Whilst many products are compatible with each other, avoid very complex mixes. If applying grassweed herbicides then check any tank mix lists carefully. Crops that are struggling this spring are particularly susceptible to damage.

In addition to four trials centres, Frontier now has a network of 18 local demonstration sites around the UK. Many of these sites open throughout the season for farmer meetings and events. We use the sites and the events we organise at them to share technical information and advice with farmers.

The events section of the Frontier website carries up to date information about all forthcoming events: www.frontierag.co.uk/news-and-events

We often 'live tweet' during events. Follow us on twitter to share the conversation: @frontierag /#frontierevents

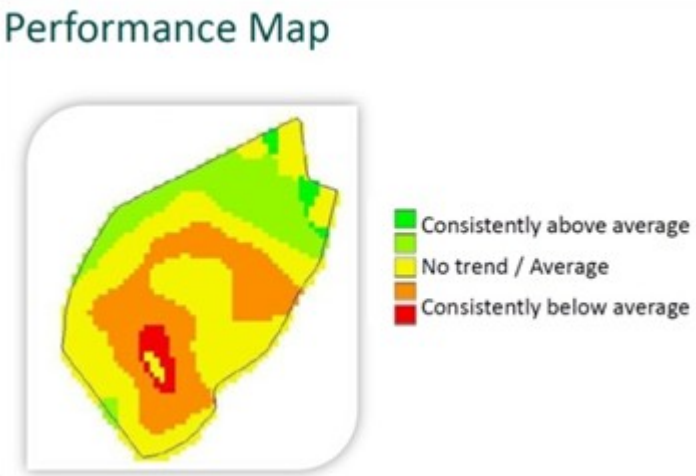
Demonstration sites	
1	Old Meldrum – Ellon (Tarves)
2	Rhynd (Perth)
3	Coldstream
4	Cockle Park
5	Aldbrough
6	Riseholme
7	Ashbourne
8	Ruddington
9	Kettering
10	Gressenhall
11	Brampton
12	Walsham le Willows
13	Ledbury
14	Stow-on-the-Wold
15	Birch
16	Wrotham
17	Malshanger
18	Blandford Forum
Trials sites	
1	Thirsk
2	Haywold
3	Cammeringham
4	Horningsea

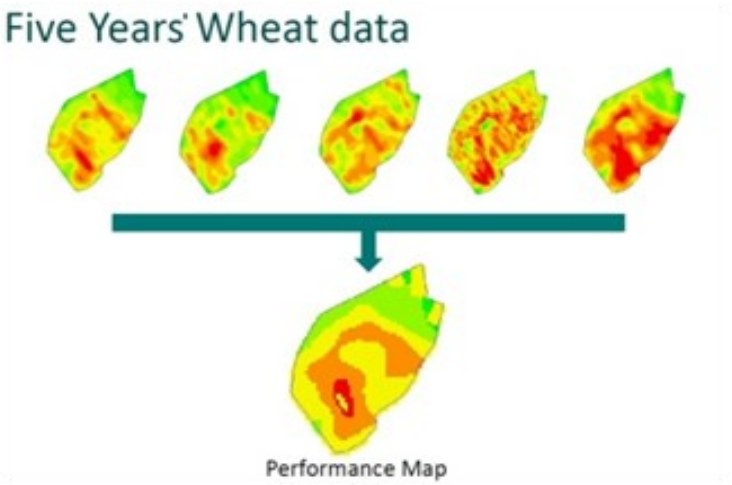
Yield map goldmine?

Did you know that our colleagues at SOYL have developed a clever new digital tool that will take yield maps built up over the years and turn them into one simple map summary of your land?

Many farmers are now sitting on up to 12 harvests' worth of yield information. However, making real use of this data and accurately analysing it to measure in field variation has been impossible, until now. SOYL's performance mapping tool takes years and years of complex yield data and analyses the various layers to identify long term trends. The final trend map is then used as the starting point for a range of investigative options to eliminate or manage variability in yield caused by a range of factors. These include compaction, drainage issues, soil depth/ texture and low levels of organic matter.

SOYL has already demonstrated that the service will more than pay for itself - often four-fold. It's a relatively low cost way of making great use of information that has already been generated. To find out more about the service contact the team at SOYL: 01635 204190 / info@soyl.co.uk





Cover crops - a good spring choice?

After an extremely difficult and wet season, cover crops could provide a spring cropping solution for growers whose winter crops have failed and where it is still proving difficult to establish combinable crops.

With good advice and careful management, spring sown cover crops can be used to address some or all of these points:

- Absorb excess moisture from the soil during the summer
- Prepare the ground for a good entry into wheat or oilseed rape in August/September
- Help correct some soil structure problems
- Smother weeds/help with blackgrass
- Catch any nitrogen left in the soil and/or 'fix'' some N into the soil through the use of a legume

- Add back in some much needed organic matter
- Put some vitality/life back into the soil.

A well established cover crop can do all the above... and maybe more:

- Some species of cover crop can be used on potato and beet farms to reduce nematodes. Potato Cyst Nematode (PCN) in potatoes and Beet Cyst Nematode (BCN) in beet. However, to do this specific varieties are required
- Some species can provide a quick, useful forage crop.

Paul Brown from Kings Game Cover and Conservation Crops is an expert advisor on the selection and establishment of cover crops. He says "These crops need appropriate and specific agronomic care. They need to be established well, with an adequate seed rate and chopped/incorporated properly and in plenty of time.

"But used correctly, they could provide a great alternative crop delivering soil benefits this spring."

What crops are available?

1. Mustard. Cheap and easy. Beware of placing this in a rape rotation. It is quick growing and will catch nitrogen and add large amounts of organic matter. In a beet or potato rotation it can be used to reduce PCN or BCN. Oil radish is another option here.

2. Vetch. This crop will be of particular interest this spring. It will grow faster than clover and 'fix' a high amount of nitrogen. It is easy to grow and produces high levels of organic matter. This is ideal before a rape crop. Beware of placing it before a wheat crop as it might offer too much nitrogen!

3. Vetch/Mustard mix. This will be useful before many winter cereal crops. It reduces the amount of N from a pure vetch crop, plus it adds organic matter and has a deeper rooting system, improving drainage.

4. Westerwolds. If a grower has a use for quick and large bulk forage, Westerwolds annual ryegrass is ideal. It is very fast growing. This seed delivers a silage crop in just 10/12 weeks from April sowing.

Find out more from your local Frontier agronomist or by contacting Kings directly:

South of Stoke on Trent/Nottingham/Lincoln - Paul Brown, 07970 220761

North of the above - Clive Wood, 07970 097523

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Always take professional advice before making crop production decisions. Frontier has a team of over 100 professional agronomists, backed by a technical support team and network of trials and demonstration sites. To arrange to speak to an agronomist get in touch with us today info@frontierag.co.uk or call 0800 227 445.

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