



What to do at T2

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In the face of high disease pressure and recent dry weather, crop production technical lead, Dr Paul Fogg gives an update on the current situation and how to manage T2 sprays accordingly.

Yellow rust

Yellow rust has again grabbed the headlines this year, with early season fungicide programmes planned around varietal susceptibility. Of the Recommended List varieties, only Costello, KWS Crispin and KWS Siskin offer seedling resistance and should also remain clean at the adult stage. Marston does too but this isn't currently listed. Any rust found in these varieties should be reported

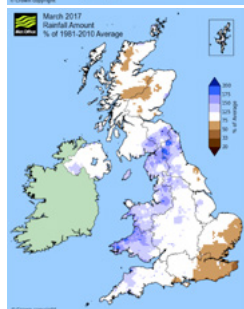
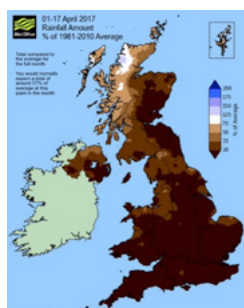


Figure 1: National rainfall for March and April (01-17) as % of the long term average (1981 – 2010)

to NIAB with samples collected and sent to UK Cereal Pathogen Virulence Survey (UKCPVS). Other varieties are also being monitored more closely this year, in particular those where there has been a recent change to their susceptibility at the seedling stage. On more susceptible varieties, pre-T0 and T0 sprays have been more than justified and in some cases where rust has been recycling particularly quickly, an additional spray to carry the crop through to T1 has been needed.

Rainfall

Another headline has been the lack of rainfall, with much of the UK receiving significantly below average amounts during March and April (Figure 1). Many crops, in particular those on lighter soils or late sown, with less well established root systems are starting to show signs of stress. The dry conditions have also had a direct impact on septoria tritici pressure, which although still present has generally

been confined to lower leaves. T1 fungicides should have been applied recently or be planned in (see [My Technical Brief March 2017](#)), so the focus now turns to the T2 strategy. With 42% of the green leaf area at flowering attributed to leaf 2 and the flag leaf and 65% of the final yield coming from the flag leaf and ear, it's critical that yield potential isn't compromised at this timing.

T2 approach

On average, two spray SDHI programmes give an economic return on investment (Figure 2) and their use at T2 is still the best strategy in order to maintain green leaf area during the key grain filling period and ultimately protect yield. Certain fungicide active ingredients can help with water use efficiency, which may help alleviate stress. Similarly, foliar trace elements and nutritional products can help carry crops through stress periods, helping to keep the plant healthy and minimise tiller loss.

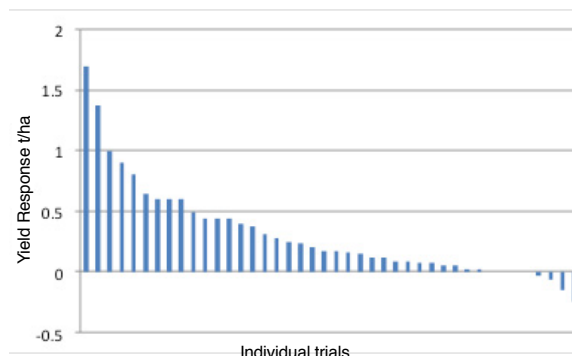


Figure 2: Advantage of two SDHI fungicides (BBCH 32 & 39 SDHI compared to triazole BBCH32 & SDHI BBCH39). Source: Frontier trials across a range of varieties 2012, 2013 and 2014.

In 2016, the weather in late spring and early summer had a significant influence, with low levels of solar radiation ultimately influencing final yields. Knowing what the weather will bring during May and June 2017 is still an unknown, but the plan should still be to invest in crops to keep them in the best possible health in order to maximise gross output which will ultimately reduce the cost per tonne of production.

“To maintain green leaf area during the grain filling period and ultimately protect yield, a two spray SDHI programme is still the best strategy at T2.”



Dr Paul Fogg
Crop production technical lead



Optimising oilseed profits

The area of oilseed rape reduced for a fifth consecutive year this season to a thirteen year low, resulting in the UK crop struggling to meet demand. National crop nutrition technical manager, Edward Downing, seed commercial assistant, Chris Piggott and oilseeds trading manager, Philip Kimber explain how to make the most of this year's crop and encourage us to consider OSR as an option next season.

Fulfilling this year's potential

As oilseed rape crops come towards the end of flowering they generally look full of potential this year. The larger canopies this spring prompted some growers to cut back on pre-flowering nitrogen applications, whilst others struggled to apply enough nitrogen before the height of the crop and early flowering prevented applications.

It's understandable that some growers have cut back on nitrogen, but even in a 'normal' season OSR is often limited in reaching its potential by insufficient nitrogen later in the growing season. As well as building crop canopy, nitrogen is required to maintain canopy greenness and function to increase seed size and subsequent yield.

Added to this, OSR's fertiliser ratio could be as low as 1.5 this year which would justify another 50kg N/ha based on the bigger return on fertiliser investment. RB209 is based on 2.5.

Foliar feeding

Unfortunately, it's now too late to apply solid fertiliser or UAN liquid, but you can still apply a foliar nitrogen product for immediate crop uptake. Applying Oilseed Extra, a specially formulated foliar nitrogen and micronutrient product, through normal spray nozzles after petal fall will provide the extra nitrogen needed to maximise crop potential. It can be applied during flowering, tank mixed with fungicides but yield responses are significantly smaller at this timing, probably because flowers are coated and are subsequently shed.



"Don't underestimate the need for sufficient nitrogen even with the big canopies this year, especially with the dry conditions so far this spring."

Edward Downing
National crop nutrition technical manager



Most OSR crops will respond to an application of Oilseed Extra this year, especially those that have received a sub-optimal nitrogen rate. This nitrogen will keep pods and leaves photosynthesising as long as possible, increasing seed size and yield.

In five years of Frontier trials, Oilseed Extra produced consistent, positive yield responses (average 0.52t/ha) when applied in addition to a standard base fertiliser programme (200kgs/ha of nitrogen).

The results were particularly impressive in 2011, with a yield increase of 0.81t/ha. Conditions then were similar to this year, with crops struggling to take up enough nitrogen from the very dry soils. Tissue testing at the mid flowering stage confirmed low nitrogen levels, at 3.14% compared to the ideal 4.5%. If OSR runs out of nitrogen during the pod filling stage it will senesce prematurely and impact yield potential significantly. To assess the nitrogen level of your crop, take a tissue test at mid to end of flowering.

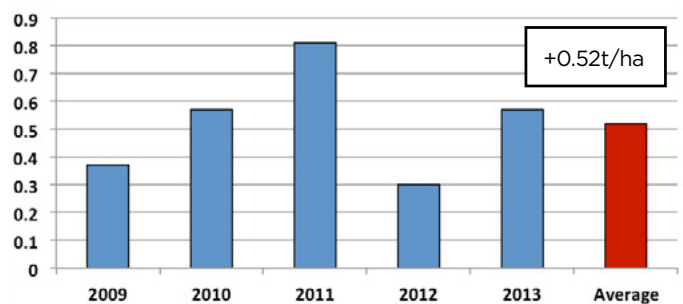


Figure 1: Average yield increase (t/ha) above the base programme from 200lts/ha Oilseed Extra (40kgs N/ha) in Frontier trials 2009 - 2013

Market outlook

Global production of oilseeds remains at a record high. US plantings of soybeans are likely to exceed 90 million acres for the first time this year and coupled with a record Brazilian soybean crop of 110 million tonnes, this will boost global ending stocks to over 85 million tonnes. However, the story is more complex than one of massive supply. The increase in production is due to continuously increasing demand and the impact of any failure to produce these crops could yet have a dramatic impact on values. The market is therefore closely focused on weather patterns and any events which could disrupt production. South American bean crops are close to completing their harvest and some attention has been paid to the dry and cool temperatures across Europe which has already compromised yield potential. In Canada, high precipitation and snow have also hampered canola plantings. August will be a significant month in North America, as this is the critical growth stage for soybean development which could be dramatically impacted by dry conditions. A few months have yet to pass before we can determine the next major move, but ongoing weather events and production numbers will keep the market volatile for some time to come.

Considering OSR for next year's rotation

With continuing uncertainty around insecticidal seed treatment options, growers must make every effort to establish crops that grow quickly through the vulnerable early growth stages. Drilling, emergence and early development establish the yield potential of your crop; get it wrong at this stage and it may never catch up. Selecting the right varietal characteristics to match your intended drilling window together with rapid establishment will influence disease and canopy management requirements throughout the life of the crop.

Drilling time

Moisture is the largest factor influencing drilling timings. Soil that is free from compaction allows unrestricted tap root development and better access to deeper moisture. The cultivation and drilling system must provide good seed-to-soil contact, improving germination consistency and promoting early vigour. Drilling in dry conditions will slow emergence, increasing the risk of flea beetle damage occurring. Going early in previous seasons has allowed rapid development in some areas of the country. Where pest pressure is high, the presence of moisture is likely to provide the best chance of establishing a good crop.

Variety choice

With hybrid and conventional options available, variety choice can be matched to planned drilling dates and establishment expectations. The highest yielding variety on the AHDB list is currently Elgar, which suits early to mid drilling. As a conventional variety, seed rates would be around 100 seeds/m², but in areas of low pest pressure and good conditions this could be reduced further. Other high yielding conventional varieties such as Flamingo allow later drilling as they move faster in autumn so can be drilled where early growth is essential.

Some hybrids are also suited to early drilling. Look for a slower developing variety with a more prostrate growth habit. Where hybrids really shine is in the later drilling slot, or where seedbed conditions aren't perfect. The faster development is most

exaggerated in DK Extrovert which has consistently shown good autumn vigour even when sown later than planned. 50 seeds/m² is advised, although as with conventional varieties, this can be reduced slightly in the best conditions.

Clearfield

Clearfield varieties are all hybrids and some show similar attributes to the best of the standard double low varieties. DK Impression CL has pod shatter resistance and excellent resistance to stem canker and light leaf spot, on par with the top Recommended List varieties. It was also the highest yielding Clearfield variety in a recent NIAB trial.

The added benefit is that Clearfield varieties are tolerant to imidazoline chemistry which is far more effective at controlling problematic weeds such as charlock, runch and hedge mustard. These weeds may elevate erucic acid content, so controlling them in areas with higher levels is crucial. Volunteers could also be a factor contributing to increased erucic acid and these are susceptible to imazamox, further reducing the risk. Imazamox also extends the effective use window of metazachlor. Usually effective weed control is achieved pre-emergence, but Clearfield herbicides can be used in a truly post emergence scenario, three to six weeks from emergence. This lowers pressure on workload at a typically busy time of year.

Clearfield varieties are also an interesting option when it comes to establishment. Where high rates of sulfonylurea (SU) have been used, establishment has been more even and faster than any other conventional or hybrid variety. This is because of their tolerance to imidazoline chemistry, which is from the same family as the SU ALS-inhibiting group.

When taking all of these factors into account, the minimal yield differential seen on a trial scale is usually reversed where stress from weed burdens or SU residues is experienced on farm.

Seed treatments and insect control

With no insecticide seed treatment currently available, growers must make every effort to establish crops that grow quickly through the vulnerable early growth stages. Foliar insecticides are available to help manage early insect pressure, including cabbage stem flea beetle, rape winter stem weevil and turnip sawfly larvae. Use full rates of the more active pyrethroids and ensure good coverage. Monitor the effectiveness of any insecticide application and avoid repeat spraying if control of the target pest is poor due to resistance. Consider a nutrient seed treatment to enhance early rooting capability. Phosphite based seed treatments such as Prosper ST can aid root development and help mitigate poorer conditions by increasing root mass and reducing the risk of the plant not reaching moisture at depth.

"A few months have yet to pass but ongoing weather events and production numbers will keep the market volatile for some time to come."

Philip Kimber
Oilseeds trading manager





Are soil borne pests impacting your yields?

When running an agricultural business, it's natural to take most notice of the problems we can physically see. Black-grass is an obvious example, and one that many growers are attempting to manage more effectively with a whole range of chemical, biological and cultural techniques. Often just as damaging as black-grass in terms of yield and quality of commercial agricultural production are soil borne pests and specifically nematodes, but these are more likely to go unnoticed. Clive Wood, Kings northern technical advisor encourages us to embrace soil borne pest control in just the same way as black-grass.

Symptoms and causes

We often look with interest at how our European farming colleagues are embracing cover crops in various rotations, but it's important that these remain simply observations. We need to focus on the UK climate, soil types, crop choices and pest problems which are quite different to those in mainland Europe. In winter particularly, our UK climate has been consistently milder and wetter on average over the last ten years, producing conditions conducive to soil borne pests which are, to some extent, controlled overseas by colder winters.

Free living nematode problems are often associated with lighter sandy soils and intensive cropping situations such as carrots, potatoes and sugar beet. Increasingly, however, Frontier agronomists are requesting tests of other suspect areas within more full bodied soils at altitude. The results of these tests are supporting their suspicions, with high populations of root lesion nematodes, spiral and pin nematodes, and occasional but very concerning populations of root knot nematodes being found.

The severity of damage from these pests can be influenced by soil moisture, soil temperature and plant growth stage. As well as causing direct damage, a number of nematode species are facilitators of other viruses, such as verticillium wilt, which can create major problems within arable rotations and especially seed potato growing areas of the UK.

Often seen as hotspots in the field, soil borne pest issues can be confused with nutrient deficiencies, so it's best to seek expert advice on any areas of concern. Where hotspots are present, the outer edge should be tested for maximum activity.

Control

As with many farming challenges, a multitude of management techniques is a more reliable approach than one single method. Machinery choice, cultivation techniques and cover cropping in

partnership with insecticides are the primary options to reduce and restrict nematode numbers and movement, although use of insecticides will undoubtedly come under increased pressure in future.

Root knot nematodes are not common to the UK. They are much more of a problem in intensive cropping rotations in mainland Europe, but often their appearance in UK soil test results can be traced to a field hygiene issue and movement from farm to farm of imported products such as stock feed. Movement of contracting machinery between fields and farms should never be underestimated as an effective method of spreading soil borne pests to fields that were previously uncontaminated. It's essential to take care and ensure equipment is cleaned down thoroughly.

When it comes to cultivations, attention to detail is important. Light, fluffy soils allow better movement for FLN to graze roots, whereas populations are less challenging where consolidation is firm and even.

In arable rotations, there is a need to control more than one nematode species. The life cycles of FLN, BCN and PCN all need to be carefully understood. Growers might assume that particular seed mixes and crop species can be used to biologically control nematodes, only to be disappointed that though they might control one species effectively, they have unfortunately simultaneously increased the population of others. Again this emphasises the need for expert advice; when the concept and management of nematodes is understood, growers quickly start to see impressive results on farm.



As part of a full management programme, biofumigation with cover crops is incredibly effective at reducing nematode populations.



Cover crops

Over the last five years, Kings has been heavily involved in the research and development of cover crops for many different applications. During our investigations and by working closely with a number of seed breeders in Holland and Germany, it became apparent that a lot of seed sold by these companies is intended to assist the control of various nematode species in crops grown in intense, high value production situations. Cover crops are a valuable tool in controlling nematode issues in the UK, as well as helping to improve soil condition for future crops.

If carried out correctly and incorporated quickly as part of a full management programme, biofumigation with cover crops can be an incredibly effective way to reduce PCN and FLN and keep numbers at a low threshold within the rotation. This is the process of growing a brassica type crop to produce isothiocyanate gasses and mixing it into the soil immediately after chopping or macerating. It's not uncommon for growers using the biofumigation method for the first time to disbelieve the results and request a retest, which only confirms the dramatic reduction in PCN numbers for the second time. Trials have shown the biofumigation method to reduce populations of root knot nematodes by 91%, pin nematodes by 84% and lesion nematodes by 100% after just one year.

Farmers are often faced with PCN and FLN issues in the same field and including a multi resistant species of oil radish in a biofumigation crop helps on both counts. This promotes root grazing by the FLN species, but removes the opportunity for nematodes to multiply. Populations are therefore reduced whilst growing a good canopy and producing a large amount of biomass to provide the most effective biofumigation crop for controlling the PCN population.

Oil radish is similarly useful for BCN control. Proven multi resistant varieties develop quickly with strong leafy growth, a deep rooting system, good dry matter yield and effective protection against erosion. BCN populations have been reduced by up to 90% in trials.

Taking appropriate action to reduce these pest challenges leads to increased crop output and more control over the financial return of the farm. With good planning, accurate soil testing and the correct advice from Kings and Frontier experts, it's possible to implement an integrated management plan to dramatically reduce soil borne pest species.



Cover crops are a valuable tool in controlling nematode issues as well as helping to improve soil condition for future crops.

Nematode species

- Potato cyst nematode (PCN) - invades potato roots to feed. Can damage small areas or cause complete crop failure
- Beet cyst nematode (BCN) – feeds on roots, can kill seedlings before emergence and reduce yields
- Free living nematode (FLN) – feeds on roots
- Root lesion nematode - inflicts severe root grazing and facilitates development of disease
- Root knot nematode - direct root grazing, damage seen as galls or swollen root systems
- Needle nematode - direct root grazing and virus transfer
- Stubby root nematode - punctures roots and leaves a feeding straw that blocks the root and creates a swollen bulb type. Root unable to function when nematode moves to the next plant.
- Spiral nematode - direct root feeding
- Pin nematode – causes root lesions.

“As well as causing direct damage, a number of nematode species are facilitators of various viruses which can create major problems in arable rotations.”



Clive Wood
Kings northern technical advisor



The amount of UK wheat achieving the full milling specification reached a thirteen year high last year according to AHDB. The area of milling wheat grown has increased considerably again since then and hitting the full quality specification will be essential to achieve premiums come harvest time. As growers focus on this season's 13% protein target, Edward Downing, national crop nutrition technical manager and Chris Piggott, seed commercial assistant, advise on the best approach to nutrition and planning for next year's crop.

Over the last seven years, the average milling group 1 protein is 12.9% for all wheat samples analysed through Frontier labs (Table 1). With a 12% increase in milling wheat area compared to last year (43% vs 31%), growers must now aim to achieve over 13%, as opportunities to market sub 13% grain will be fewer this year.

	2016	2015	2014	2013	2012	2011	2010
Group 1	13.2	12.7	12.3	13.0	13.3	13.0	12.8
Group 2	12.4	12.2	11.8	12.4	12.9	12.7	12.3
Group 3	11.5	11.0	10.8	11.5	12.1	11.3	10.9
Group 4	11.2	10.8	10.6	11.3	11.8	11.2	11.0

Table 1: Average protein performance for all wheat samples analysed through Frontier labs 2010-2016



"A well timed late foliar nitrogen application is often essential to achieve high grain proteins, particularly in high yielding years."

Edward Downing
National crop nutrition technical manager

Base nitrogen programme

A well timed late foliar nitrogen application is often essential to achieve high grain proteins, particularly in high yielding years, but they can only raise protein levels by around 0.5-0.75%, so appropriate base programmes are vital. Base fertiliser product choice can influence grain protein, with urea based programmes generally producing grain with lower protein than an equivalent ammonium nitrate (AN) programme.

Solid or UAN applications should be targeted to produce a minimum protein of 12.5%, with the foliar application then taking it over the 13% target. This means more nitrogen will be needed than the optimal dose for yield, as milling varieties tend to produce 12% protein at the optimum nitrogen rate for yield, versus 11% for feed varieties. To achieve 12.5% protein from the base programme, the influence of yield performance, soil nitrogen supply and the efficiency of fertiliser uptake need to be understood.

Protein influencing factors

The amount of nitrogen removed in the grain at 12.5% protein is shown in Table 2 alongside total uptake required to achieve this; this is what the crop must take up, not the amount to apply. Each extra tonne requires nearly 30kgs/ha of nitrogen to be taken up to maintain the protein level. This is a combination of nitrogen supplied by the soil and the proportion of applied nitrogen that the crop actually takes up. Soil nitrogen levels can vary significantly based on previous crop, manure use, soil organic matter levels, winter rainfall and soil temperatures. Mineral N testing can help, but is often only useful when levels are above 120kgs N/ha. Fertiliser recommendations are based on a 60% uptake efficiency but this can be similarly variable, moving significantly higher in favourable situations, or lower if soil and weather restrict rooting and nutrient uptake.

Yield performance (t/ha)	N removal at 12.5% protein (kg N/ha)	Total N uptake at 12.5% protein (kg N/ha)
8	149	219
9	168	247
10	186	274
11	205	302
12	224	329

Table 2: Amount of nitrogen removed in the grain at 12.5% protein and total uptake required to achieve this.



Adequate nutrition is essential to achieve good yield and protein levels this harvest

Planning for next year

This year's crop may still be in the ground, but autumn drilling will soon be upon us and good planning is key to success. One of the first and most important decisions is choosing the right variety. The final selection will affect every other aspect of the crop, from drilling through to crop management and marketing. It's essential to ensure the best option is chosen to fit the needs of the land, the grower and the business, taking into account factors such as disease pressures, soil type, timings and end markets. The chosen variety has a large impact on profitability and is the cornerstone to the decision making that will subsequently take place on the farm.

With only a recent shift towards quality wheat, growing for the milling market has typically been more limited in variety choice. Some recent introductions have narrowed the yield gap to the feed varieties, notably Skyfall and more recently, KWS Siskin. Growers now have more choices that could potentially be better suited to their farm situation. KWS Siskin brought feed wheat yield with a very good all round disease resistance profile. It lacked slightly on grain quality, not quite reaching the Cordiale standards which have long been favoured by the miller. It still tops the quality wheat sector for yield, but should be seen as more suited to the lower protein market rather than full spec group 2.

KWS Zyatt

Having now received full NABIM approval, KWS Zyatt sits at the top of the group 1 section of the Recommended List and has had full support from domestic flour mills. It's no secret that Cordiale and Solstice have been the benchmark for flour quality and that newer group 1 varieties struggle to match them. This is where KWS Zyatt really shines.

Suitable for a variety of baking applications, its versatility creates lasting demand from a miller. Backing of a named variety should support the group 1 demand and give growers confidence in its marketability. Grain quality aside, KWS Zyatt also has a very positive balance of agronomic characteristics, with excellent resistance to yellow rust and septoria tritici, stiff straw and maturity on par with Skyfall. It will also suit being grown as a second wheat, as it carries the Pch1 gene for eyespot resistance as well as being 8% higher yielding than Gallant when grown as a second wheat. With positive attributes for both the agronomic and grain quality elements, KWS Zyatt should be considered by all milling wheat growers.

With all this potential variation, understanding your own situation is essential. Consider your yields, associated grain proteins and nitrogen rates over the last 5-10 years and then assess potential yield for this season. This isn't easy but monitoring crops in the key growth period, from early May to the end of June, will provide a steer. Reviewing canopy maps from SOYL, tissue testing for nitrogen via lab analysis or using the Yara N-Tester can help to fine tune fertiliser applications. Remember that you must comply with Nmax limits within the NVZ rules.

The importance of sulphur

As well as nitrogen, milling wheat crops must take up enough sulphur. This helps crops to fully use the applied nitrogen to optimise yield and quality as, along with nitrogen, it is the main constituent of protein. Trials work has also shown it reduces the risk of harmful acrylamide formation when bread is baked. Applications should be at least 50kgs/ha SO₃; recent work has shown a little more could be needed (60-75kgs/ha SO₃).

Application split

Most milling wheat growers use a three split fertiliser programme and a foliar ear application. However, moving to a four way split offers the benefit of reducing the rate of the final application, which can then potentially be delayed further until full flag leaf emergence for greater protein enhancement. It also provides a longer period to evaluate seasonal conditions which means the final application can be omitted if yield potential appears to be reducing, lowering the risk of grain protein dilution.

A well timed foliar nitrogen application will give that final protein lift to reach the 13% target, but products should be chosen carefully. The protein lift from foliar urea, for example, can vary significantly with weather conditions, it is not very rainfast and scorch can be an issue. In contrast, Multi N has performed consistently in all weather conditions and its lower use rate, excellent rainfastness and low scorch risk have made it very popular on farm.

For specific advice on variety selection and nutrition, speak to your local Frontier contact.

“Variety choice has a large impact on profitability and is the cornerstone to the decision making that will subsequently take place on the farm.”

Chris Piggott
Seed commercial assistant:





Since the introduction of the greening element to the Basic Payment Scheme, the area allocated to growing leguminous crops, namely peas and beans, has increased by 89% according to Defra. Now proposed changes to Ecological Focus Areas (EFA) could again have a dramatic effect on the crops grown to meet scheme requirements. While many may see this as a challenge, Kings eastern technical advisor, Charlotte Helliwell, encourages us to embrace the opportunities.

Proposed changes

The potential changes have arisen from the European Commission adopting a Delegated Act on the 'simplification' of greening measures in 2015. Two years later, it's still in the consultation stages, but EU agriculture commissioner Phil Hogan has confirmed his intention to bring forward a total ban on pesticides on EFA land. There has been much opposition from member states, including France, Greece, Poland, Portugal, Sweden and the UK, but changes could come into force as early as 2018 if they are approved. This means that we'll still be affected, despite the UK's looming departure from the EU following the Brexit vote.

This could have a considerable impact on crops chosen for EFAs in future. Many growers have adopted peas and beans to meet requirements in recent years, but if the proposal to ban pesticide use on these crops from the point of drilling through to harvest is passed, growing these crops will undoubtedly be untenable.

The overall decision on the proposed ban is due to be announced in mid 2017.

Continuing to meet greening obligations

Some of the other simplification proposals include the removal of sowing deadlines for both catch and cover crops and there is ongoing focus on soil health and water quality. This could present some great opportunities to make good of the changes.

With this in mind, the growing shift towards including green cover crops within the rotation could increase even more rapidly. It's worth considering now what you wish to achieve from your EFA areas if the proposal does go ahead. With ongoing research and development into a range of different varieties, the greening proposals could have some long term positives.

As detailed in table 1, green cover crops offer opportunities to help tackle soil borne pests, feed beneficial biota, improve soil structure, capture nutrients and fix nitrogen.

Objective	Crops
Nitrogen recycling and reduced leaching Capture excess N to reduce leaching and release in future cash crop	<ul style="list-style-type: none"> • Radish oat mix • Kings EFA mix • Kings Soil Structure mix
Soil structure Reduce compaction, improve drainage and rooting. Min till/direct drill	<ul style="list-style-type: none"> • Kings Soil Structure mix • Oil radish, Tillage radish + oat mix • Radish and oat mix
Soil health Promote healthy soil biota, fix N and increase organic matter	<ul style="list-style-type: none"> • Kings EFA 2 mix • Rye and vetch mix • EFA Soil Vitality mix
Nematode reduction Reduce soil borne pests such as beet cyst nematode and potato cyst nematode	<ul style="list-style-type: none"> • Radish and oat mix • Kings EFA 1 mix
Biofumigation Reduce potato cyst nematode and soil-borne diseases	<ul style="list-style-type: none"> • Biofumigation + oat mix • Defender oil radish + oat mix • Biofumigation mustard + oat mix

Table 1: Green cover crops suited to achieving various objectives

Speak to your local Kings or Frontier advisor to find out how green cover crops could benefit your business as well as meet scheme requirements.

"An ongoing focus on soil health and water quality could present some great opportunities to make good of the changes."

Charlotte Helliwell
Kings eastern technical advisor

