Arable Crop Report
March 2017

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Prepared for: AHDB Cereals & Oilseeds

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Summary

Overview

The vast majority of crops have come into the spring in good condition and yield prospects at this stage in the season look promising. There are few weed, pest or disease issues to report.

Spring crops

A slow start was made to the spring drilling campaign as a result of heavy rainfall in late February / early March leaving soils too wet to access for spray applications to control weeds prior to drilling or for cultivations. However, drier conditions at the end of the month allowed soils to dry out, preparations to start and drilling to commence. By the end of the month an estimated 20% of the UK spring wheat, 20% of the spring barley and just under 30% of the spring oat area had been drilled, with most progress made in the south of the UK. Occasional crops on the lightest land were drilled in mid-February (before the rain) and these crops had one to two true leaves (GS 11-12) by the end of the month. Those crops drilled earlier in March were just emerging, whilst the majority had only just been drilled. Pre-emergence herbicides were applied or are due to be applied post drilling, focusing mainly on black-grass control.

Winter wheat

Crop development is ahead of recent years, with 55% of crops tillering, 36% of crops at the leaf sheath erect (GS 30), and a small number of forward crops having the first node detectable (GS 31). Weeds were well controlled by autumn herbicide programmes and black-grass levels within crops are lower than recent years. Wheat bulb fly (WBF) damage was seen in the Eastern region in wheat crops following sugar beet with bare patches reported in affected fields, although WBF levels were low elsewhere. Barley Yellow Dwarf Virus (BYDV) and gout fly levels were also low. Septoria, yellow rust and mildew were found at low levels in most crops. Eyespot is more prevalent than in recent years and, where necessary, will be targeted with T1 fungicide application.

Winter barley

Crop development is just ahead of recent years with just over half of the crops tillering, 40% of crops having the leaf sheath erect (GS 30) and around 8% of crops having the first node detectable (GS 31) by the end of the month. There were few weed, pest or disease issues, with both grass and broad-leaved weeds well controlled by autumn herbicides. Pest levels were low with crops able to withstand any slug grazing. Disease levels were low, with net blotch, Rhynchosporium and mildew present at low levels, and most crops waiting until the T1 timing for their first fungicide application.

Winter oats

At the end of March typical winter oat crops were tillering, with occasional forward crops reaching stem elongation (GS 30) by the end of the month. As with other cereal crops, weed, pest and disease pressure was low.

Winter oilseed rape

Crop development is ahead of recent years with just over 60% of crops at the green bud stage (GS 3,3) by the end of March, and a further 35% of crops at the yellow bud stage (GS 3,7), with occasional crops just starting to flower. In most cases both grass and broad-leaved weeds were well controlled. Cabbage stem flea beetle (CSFB) larvae were present at variable levels in many crops, but on the whole had not caused visual crop effects, except from in the Eastern region where some plant losses were reported. Pigeons were active during March, although most crops were sufficiently well established to recover from pigeon damage. Pollen beetle levels were below treatment threshold. Phoma and light leaf spot were commonly.
found in crops at low levels and where required a fungicide, often with growth regulatory activity, was applied for control.
Weather

*Weather data is provided by the Met Office and covers Great Britain – England, Scotland and Wales.*

The weather in March was variable with periods of heavy rain interspersed with more settled weather with associated mild days and cold nights. The GB monthly rainfall averaged 57 mm which is close to normal, with most rainfall falling in the first and the third week of the month. There was regional variation with the North West and Wales receiving over 80 mm of rainfall, whilst the Eastern region and the South East received around 30 mm over the month. Cumulative GB rainfall is in line with the long term average, but below that of this time last year (Figure 1).

![Figure 1 GB cumulative from the beginning of September to end of March (for the past 3 years) compared to the long term average.](image)

Air temperatures were warmer than normal, averaging 8°C which is two degrees above normal. Daytime temperatures were often mild, but there were some cooler night time temperatures. Maximum temperatures for the month typically averaged around 12°C, whilst minimum temperatures typically ranged between 2-5 °C, averaging 4 °C. Maximum temperatures were often warmer in the south and east of the UK, for example in the Eastern region, maximum temperatures reached 14°C and minimum temperatures did not fall much below 4°C. In contrast in Scotland, maximum average air temperatures struggled to get above 12°C during the month with minimum temperatures falling close freezing during mid-March (Figure 2).
Soils sat wet during the early part of the month, which caused some delays to field work, and started to turn drier towards the end of the month, allowing progress to be made with spring drilling. Soil Moisture Deficits (SMD’s) at the end of the month averaged 8 mm, ranging from 16 mm in the Eastern region to 5 mm in the North West which is below average (Table 1).

**Table 1 Comparison of soil moisture deficits at the end of March in 2017 compared to recent years and the five year average.**

<table>
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<th>Region</th>
<th>End March 2012 (mm)</th>
<th>End March 2013 (mm)</th>
<th>End March 2014 (mm)</th>
<th>End March 2015 (mm)</th>
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</table>

**NB: SMD data for Scotland is not included in this table as comparison data for five years is not available.**

**Spring Cropping**

The drilling of spring crops started in earnest at the end of March as soil conditions dried sufficiently to allow access for spray applications, cultivations and drilling. The wet weather in late February early March meant that the start of drilling was slightly delayed due to inability to access fields. This caused delays in applying pre-drilling glyphosate for the control of weeds prior to drilling, which then had knock on effects on the timing of cultivations and drilling. However, good drying conditions at the end of the month allowed spray applications to be made and the first crops to be drilled. The main bulk of spring crop
drilling is expected to take place in early April as more of the heavier soil types become accessible, assuming weather conditions remain settled.

Where spring cereals are being used as an approach to manage known black-grass issues, it is preferable to drill slightly later in the spring (mid-April). This is to allow spring flushes of black-grass to emerge and either be sprayed off or cultivated prior to the establishment of the crop. This is particularly important in spring crops that have limited chemical control options available post planting.

Cultivation method used for establishment of spring cereals varied depending on soil type, with heavier land tending to be ploughed and pressed in the autumn and left over winter with the aim to minimise the number of spring cultivation passes. This approach also minimises soil disturbance to minimise spring black-grass emergence in the spring crop. The approach also means that a narrower drilling window is needed on these heavy soils to get the crop established (less time is needed for spring cultivations on potentially wet soils). Some spring ploughing has taken place on the lighter soil types, with a small proportion being min-tilled or direct drilled.

In the majority of cases it has been possible for farmers to create good seedbeds. Where fields are wet they are just waiting for conditions to improve, rather than creating poor seed beds. Soil conditions have been such that the majority of crops drilled in March were rolled post drilling to consolidate the seed beds aiding establishment and herbicide efficacy.

**Selection of spring crops**

There are a number of spring crops available to farmers, and decisions about which spring crops to drill depend on a number of factors including crop rotation, soil type, crop gross margin, weed burden, previous cropping and availability of labour and machinery. Trends in spring cropping this season are discussed below:

- **Spring cereal crops** have proved popular this year. The greatest increases in the spring cropping area are seen in the east of the UK and Yorkshire and Humber, predominantly due to farmers using spring cropping as a tool for black-grass (and occasionally rye grass) management. Also, to replace some failed oilseed rape crops in the Eastern region that were affected by cabbage stem flea beetle (CSFB) damage. **Spring barley** remains a popular choice, partly due to the fact that this crop is seen by farmers as a straightforward crop to grow that produces a good gross margin relative to other spring crops and is competitive against black-grass.

- **Spring beans and peas** are expected to be less popular option this year, mainly due to the fact that more farmers are more aware of other Greening options so are no longer growing the crop just to meet their greening requirements. Peas also tend to be seen as a difficult crop to grow by farmers, as they are vulnerable to wet conditions and also are prone to lodging so require careful management.

- There has also been some increase in interest in growing **linseed** in the south and east of the UK this season, again as part of the black-grass management strategy. Linseed does require careful nitrogen management to avoid lodging and can be difficult to harvest, although if grown correctly linseed can be a profitable break crop.

- **Sugar beet** has also increased in popularity this year, driven by demand from British sugar for more sugar beet growers around their factories.
**Spring Wheat**

Drilling progress and crop development

By the end of March an estimated 20% of the planned spring wheat area was drilled. The majority of activity took place on light land in the regions from Yorkshire south. The earliest sown crops have one to two true leaves (GS 11-12), whilst the majority of those crops sown to date are just starting to emerge.

Weed control on heavier soils where grass weeds are a risk is typically based around pre-emergence herbicides such as flufenacet and diflufenican (Liberator) and pendimethalin. Whilst broad-leaved weed control is reliant on post emergence herbicides. Spring wheat growers are particularly reliant on cultural measures for weed control in spring wheat due to the lack of herbicides available compared to in winter wheat. As such, farmers are making use of cultural control measures where possible such as delaying drilling as long as possible to try and avoid the spring flush of black-grass, using a high seed rate and rolling post drilling to consolidate the seedbed and provide a good surface for pre-emergence herbicides to work most effectively.

**Spring barley**

Drilling progress and crop development

Spring barley drilling began from mid-March onwards, with an estimated 20% of the UK spring barley area drilled by the end of March. This is behind recent years where 30-40% of the spring barley area had been drilled by the end of March but ahead of the 2013 and 2014 where about 15% of the planned area had been drilled (Figure 3). The wet soil conditions in early March were the main reason for the slow drilling progress. Growth stages are dependent on drilling time with the majority of crops either just drilled and chitting or just starting to emerge. There were a small number of crops drilled in February that have two true leaves (GS 12).

![Figure 3 Drilling progress of spring barley at the end of March 2017 compared to previous 5 years.](image)
Spring oats

Drilling progress and crop development

A good start was made to spring oat drilling by the end of March, with just under 30% of the UK area drilled to date. Drilling was between 65-70% complete in the south of the UK, and just starting elsewhere. Cultivations before oats tend to focus around the traditional method of ploughing with a small proportion of crops either min-tilled or direct drilled.

At the end of March, the most forward crops, those drilled in February, had the first true leaves (GS 11), whilst typical crops were just chitting or emerging.

Spring oilseed rape

Drilling of spring oilseed rape is yet to start.

Winter wheat

Crop Development

The majority of winter wheat crops have come through the winter with few plant losses and most crops are going into April in very good condition and crop yield potential looks promising. Crop development is ahead of recent years, with 55% of crops undergoing tillering, 36% of crops at leaf sheath erect (GS 30), and just under 10% of crops having the first node detectable (GS 31).

Figure 4 Winter wheat crop development at the end of March 2017 and comparison to previous years. NB: No data was collected for March 2016.
Weeds

Autumn herbicide treatments proved effective in controlling grass and broad-leaved weeds with weed pressure low at the end of March in the majority of crops.

Black-grass numbers in crops were lower than recent years, although spring germination of black-grass started in late March which may require treatment. Spring applications of mesosulfuron-methyl and iodosulfuron-methyl-sodium e.g. Atlantis/Pacifia or pyroxsulam and flupyrsulfuron-methyl-sodium e.g. Unite were applied or are due to be applied once average day temperatures are warm enough, for grass and broad-leaved weed control where needed. The weeds they are targeting tend to be relatively small and are actively growing, which should aid the efficacy of these applications. Certain fields with a history of a high black-grass burden have very dense patches of black-grass that will struggle to be controlled with spring herbicides and as such these patches may be sprayed off with glyphosate to try and reduce seed return. Cultural controls also play a role in spring black-grass control with hand roudging the worst affected patches also an option considered by some farmers.

Other grass weeds such as brome and ryegrass were well controlled where contact acting herbicides were applied in the autumn. Additional herbicides targeting grass weeds that have come through autumn herbicide programmes such as annual meadow grass, brome, ryegrass and wild oats are due to be applied where needed.

The main broad-leaved weeds remain to be treated in the spring include mayweed, groundsel, cleavers and poppies. Early spring treatments for broad-leaved weeds are based around florasulam based products and crops are expected to be treated at GS 30 or 31 (early stem elongation to first node detectable) depending on the number and size of the weeds within the crop.

Other weeds such as charlock and runch and the polygynums, in particular knotgrass and bindweed were also beginning to emerge and were typically at the cotyledon to 1 leaf stage by the end of March.

Bur Chervil (Anthriscus caucalis) has been reported on a number of farms this season, indicating that it is becoming more of a concern. It is typically associated with sandy soil types, but has also been seen on farms with heavier soils.

Pests

Slugs were active throughout March, although damage is minimal and unlikely to have yield implications on well-established crops.

The AHDB 2016 Wheat bulb fly (WBF) survey (based on egg counts in soil samples taken from high risk sites in September) indicated that overall 2016/17 was expected to be a low-risk year for wheat bulb fly (WBF), with the low egg numbers for 2016 making 2016/17 amongst the lowest-risk years for this pest since records began in 1984. WBF egg hatch takes place between January and March, this year with low egg numbers there were corresponding low levels of WBF damage across most regions at the end of March. The exception to this was in the Eastern region where in certain wheat fields following sugar beet WBF has caused deadheart symptoms and bare patches were becoming evident in fields, which will result in some localised yield losses. There are no chemical controls available for WBF due to the loss of authorisations for egg-hatch (chlorpyrifos) and deadheart (dimethoate) sprays, with cultural measures such as rolling (up to GS 30), and applying early nitrogen to boost crop growth the key control measures available. Nationally impacts from this pest are insignificant.

Aphid levels were low in the autumn and as such there were few reports of Barley Yellow Dwarf Virus (BYDV) symptoms to date.

Gout fly damage levels were is low and unlikely to affect yield.
Disease

**Septoria** can be found in the majority of crops, with incidence and severity lower in late drilled crops compared to early drilled crops. Early September sown crops in particular have high levels of infection and in some cases it is considered necessary to apply fungicides at T0 (GS 30) to provide some control of the disease early in the season. These applications will be made as affected crops reach GS 30 (the first were applied in the last week of March, with more applications planned for early April). Typical programmes are based around a multi-site product such as chlorothalonil, folpet or mancozeb for Septoria protection, with a triazole or strobilurn added where there is yellow rust present.

**Yellow rust** symptoms on susceptible varieties were frequently observed from mid-March, although infection levels remain lower than those observed during the same period in 2016. As a result there was a reduction in the requirement for pre-T0 fungicides for yellow rust control as compared to 2016. A move towards more resistant varieties, or the use of seed treatments on susceptible varieties is thought to have contributed to the reduction in severity of symptoms this season.

**Mildew** was present on the lower leaves of many crops, although this disease was not particularly active in the majority of cases. Towards the end of the month as temperatures rose mildew severity started to increase in susceptible varieties such as Leeds and Claire (AHDB mildew resistance ratings of 3 and 5 out of a possible 9 respectively). In most cases specific control will not be required at T0 and can be left until T1.

**Eyespot** levels were higher than in recent years, being most common in second wheats and in varieties such as Leeds which has an AHDB eyespot resistance rating of 4 out of a possible 9. Where eyespot levels are high, typical treatments will be based around boscalid + epoxiconazole e.g. Tracker or prothioconazole at T1.

**Crop nutrition**

The first spring nitrogen applications were applied during the last week of March and will continue into early April. Crops tend to be a good colour, with little evidence of deficiencies, aided by increased nitrogen mineralisation over winter which increased the availability of nitrogen for crop uptake over winter. As a result of the warmer temperatures and increased nitrogen uptake there are some thick crops which will require a robust PGR such as clormequat and trinexapac-ethyl (Moddus), normally applied as a split dose at the T0 and T1 fungicide timings.

Some crops on organic soils showed signs of manganese and copper deficiency, these were corrected with during the month as weather conditions allowed.

**Winter barley**

**Crop development**

Crops overwintered well largely due to a relatively dry, mild winter and crops look lush and green following applications of spring nitrogen. Crop development is just ahead of recent years with just over half of the crops still tillering, 40% of crops having the leaf sheath erect (GS 30) and around 8% of crops having the first node detectable (GS 31) by the end of the month. (Figure 5).
Weeds
Autumn residual herbicides have worked well and overall both grass and broad-leaved weed levels remain low.

Black-grass control from autumn herbicides was reasonable, although there are some dense black-grass patches within fields that escaped autumn treatment which will need to be sprayed off with glyphosate to reduce the seed burden for the following year.

Contact acting herbicides e.g. Axial (pinoxaden) are due to be applied for control of other grass weeds such as ryegrass or wild oats where required. Spring emerging broad-leaved weeds such as charlock, runc, cleavers and chickweed will be controlled at the T1 timing, with herbicide options typically focused around fluroxypyr, florasulam and clopyralid based products.

Pests
Very few issues to date. Aphid levels are currently low and BYDV symptoms are not currently visible. Slug damage is low.

Disease
Disease pressure is low, although net blotch, mildew, brown rust and rynchosporium are all present in crops, mainly at low levels. Crops showing the highest levels of mildew tend to be those that were sown early and have thick, lush growth, or those crops grown on lighter land where manganese deficiency was an issue and required treatment. Where multiple diseases are present a minority of crops may receive early T0 fungicides, but in the majority of cases incidence and severity is sufficiently low that treatment will wait until planned T1 timings.

Crop nutrition
The first nitrogen applications were made during March, and crops have responded well to these with the majority looking a healthy green colour. Where the first nitrogen applications to crops were delayed due

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*Figure 5 Winter barley crop development at the end of March 2017 and comparison to previous years. NB: No data was collected for March 2016.*
to wet soils, crops showed signs of yellowing by mid-March. However, these crops recovered well once nitrogen was applied. Some thick, lush crops will require a robust PGR programme to reduce lodging risk.

**Winter oats**

**Crop development**

Crops have come through the winter well with few plant losses. At the end of March typical crops were tillering with crops in the south and east of the UK tending to be at the later stages of tillering (GS 29), whilst crops further north tended to be at early tillering (GS 23). More forward crops had reached stem elongation (GS 30), with more backward crops just starting to tiller (GS 21).

**Weeds**

Autumn residual herbicides worked well at controlling both grass and broad-leaved weeds and the overall weed burden in crops is low. Early spring flushes of cleavers, charlock, poppies, mayweed and volunteer oilseed rape were starting to emerge in crops by the end of March and control will be based around sulfonyl urea herbicides, often applied in the same tank mix as plant growth regulators (PGRs).

**Pests**

No issues to date. Aphid numbers remained low and there are no Barley Yellow Dwarf Virus (BYDV) symptoms reported.

Slugs were not an issue in the vast majority of crops and crops were well able to grow away from slug damage.

**Disease**

Mildew was the main disease present in crops, with symptoms mainly confined to older leaves. As yet no treatment has been required, although where a mildewicide is needed, this will be applied along with planned PGR’s.

**Winter oilseed rape**

**Crop development**

By the end of March just over 60% of crops were at the green bud stage (GS 3,3), with just around 35% of crops at the yellow bud stage (GS 3,7). More backward crops had the flower buds enclosed (GS 3,1) (Figure 6). There were occasional crops that had just started flowering.
Figure 6 Winter oilseed rape crop development at the end of March 2017 and comparison to previous years. NB: No data was collected for March 2016.

Weeds

Autumn-applied herbicides worked well in controlling grass and broad-leaved weeds, aided by crops having large canopies which allow them to compete with weeds.

Overall, black-grass was well controlled by a combination of residual autumn herbicides and additional treatments of propyzamide, propyzamide + aminopyralid or carbetamide. In black-grass affected fields crops still tend to have some surviving black-grass below the crop canopy that will remain uncontrolled.

Most crops were treated for mayweed and cleaver control in early March with a herbicide based around clopyralid and/or picloram. The rapid progress through the growth stages from early March meant that a number of crops missed planned applications of Galera due to a combination of delays caused by wet soils in early March and crops reaching the cut of growth stage (flower buds visible - GS 3,3) before applications could be made.

Pests

Cabbage stem flea beetle (CSFB) larvae are present in many crops, but on the whole have not caused visual crop effects to date. The exception to this is in the Eastern region where CSFB larvae have caused sufficient damage to result in the death of smaller plants, thinning out crops.

Pollen beetle levels are low and currently below treatment threshold. The treatment threshold varies depending on plant number per m², the higher the plant number/m², the lower the number of pollen beetles needed/plant to reach threshold. For example if there are less than 30 plants/m² the threshold is 25 pollen beetles per plant, whilst if there are more than 70 plants/m² the threshold is 7 pollen beetles per plant.

Pigeons were the main pest issue in the past month and have knocked crops back, but where canopies were large it has led to little in the way of crop losses. Overall damage caused by pigeons is relatively low compared to damage seen in the past at this time of year.

Turnip yellows virus (TuYV) levels were low and of no major concern.
Disease

*Phoma* and **light leaf spot** were commonly found in crops at low levels at the end of March. Spring fungicides, with growth regulation activity such as tebuconazole were applied to the vast majority of crops for the control of light leaf spot. Where crops were particularly thick and well advanced then stronger growth regulators such as metconazole + mepiquat chloride (e.g. Caryx) and difenoconazole + paclobutrazol (e.g. Toprex) were applied along with the spring fungicide application.

There have been reports of crops showing signs of **club root** with a small number likely to have yield impacts as a result of club root.

**Crop Nutrition**

Crops have grown rapidly throughout March and have large crop canopies and will need careful canopy management through nitrogen timing and use of PGR active fungicides to reduce lodging risk. The wet ground conditions during late February and early March prevented many growers from applying early nitrogen which helped with managing the oilseed rape canopy by delaying the first nitrogen application. Final doses of nitrogen are due to be applied before crops get to tall to allow spreading.

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<tr>
<th>Sarah Wynn</th>
<th>Rebecca Carter</th>
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<tr>
<td>ADAS Boxworth</td>
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<td>Direct dial: 01954 268249</td>
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