



# AHDB Arable Crop Report

Authors: Sarah Wynn, Emily Mason and Luchia Garcia-Perez

10 December 2019

## EXECUTIVE SUMMARY

---

This crop development report covers the period from harvest through to the end of November. It provides information on the drilling and establishment of winter cereals and oilseeds, as well as commentary on any weed, pest and disease issues that have affected crops during autumn 2019. Autumn 2019 has proven to be a real challenge in terms of crop establishment.

**Winter oilseed rape** about half the area was drilled in August, with adequate moisture to allow crops to emerge. However, conditions turned persistently dry for the majority of September across most of GB. The lack of rainfall meant that soil moisture deficits were high for the time of year and emergence of later sown oilseed rape crops was often affected by a lack of moisture. This slowed growth rates, leaving them vulnerable to damage from cabbage stem flea beetle (CSFB). Early drilled (August) crops had good establishment and seem to be weathering CSFB attacks reasonably well. It is estimated that about 74% of the winter oilseed rape area is in fair to excellent condition, with about 8% considered to be in very poor condition and at risk of failure.

**Winter cereal** drilling was negatively impacted by the weather this season. Farmers made a conscious decision not to drill in September partly because seed beds were overly dry in many regions, and partly as part of a black-grass management strategy. The sudden switch to wet weather in the last few days of September meant that soils rapidly turned too wet to cultivate and drilling plans were disrupted. By the end of November it is estimated that just under 60% of the intended wheat area and just under 65% of the intended winter barley area had been drilled.

It is estimated that 36% of the intended wheat area is in fair to excellent condition and 15% in poor to very poor condition, with the remainder either not emerged or not even drilled. Similar proportions of good to poor crops are seen in winter barley and winter oats. However there are slightly higher proportions of these crops in the fair category, reflecting a slightly larger proportion of the intended area actually in the ground. Between 3-8% of the winter cereal area is in very poor condition with poor emergence and damage caused by excessively wet soils. These crops are of questionable viability and may be written off later in the season.

Applications of pre-emergence herbicides were disrupted, with weather windows for drilling often too narrow to allow the sprayer in as well. In addition where seed beds were poor and there were concerns over establishment some farmers held off investing in herbicides until they knew there was a viable crop present. Where conditions allowed post-emergence herbicides were applied during November. Slug pressure was high during the autumn and ferric phosphate applications were made where possible to minimise damage. Aphid levels were low, with reduced need to apply foliar insecticides.

## CROP REPORT

---

### Weather

Rainfall in August and September was close to, or slightly below, average for most of the key arable areas in GB, especially the East of England and the South East. Here soil moisture deficits built and ground conditions were very dry. The weather took an abrupt change in the last few days of September with a series of large storms affecting the whole country. The [Met Office weather maps](#) show that rainfall in October and November was above average for Yorkshire, the East Midlands, West Midlands and North East, as well as the more easterly parts of Scotland. The East of England, and Southern counties had above average rainfall in October, but close to average in November. However, it was not just the volume of rain that was the problem, but the frequency with which it fell. Over 20 rainy days (over 0.2mm) were recorded in most parts of GB in October and a similar level recorded in November. This meant that soils rarely had much opportunity to dry out sufficiently for field work to commence.

The generally dry conditions in September and low cloud cover meant that temperatures were close to average in the Midlands, Northern England and Scotland, and slightly warmer than average for the south of Wales, Southern England and the East of England. The turn to wetter weather in October meant that temperatures from the Midlands north were slightly below average (by 0.5-1.5 degrees), with most of the country cooler than average for November. The combination of cooler temperatures and wet conditions meant that soils were cold and wet for drilling and any planted crops were slow to establish.

### Crop Condition

Crop condition was assessed using the USDA approach. This classifies crops into one of five categories, from very poor through to excellent (see details below). The values are given as the percentage of the GB crop area for that crop, that fall in each of the categories – regional condition scores are available on the AHDB website.

#### Crop Condition definitions:

- Very Poor** Extreme degree of loss to yield potential, complete or near crop failure.
- Poor** Heavy degree of loss to yield potential which can be caused by excess soil moisture, drought, disease, etc.
- Fair** Less than normal crop condition. Yield loss is a possibility but the extent is unknown.
- Good** Yield prospects are normal. Moisture levels are adequate and disease, insect damage, and weed pressures are minor.
- Excellent** Yield prospects are above normal. Crops are experiencing little or no stress. Disease, insect damage, and weed pressures are insignificant.

Autumn 2019 was challenging for the establishment of winter cereal crops in particular and therefore, unlike most years, only 60-70% of the intended winter cereal area had been drilled by the end of November. The condition scores presented below therefore reflect the proportion of the intended crop area that is in each condition as of the end of November. At the end of November an estimated 21% of the intended area of wheat was in fair condition, with a further 13% in good condition, and just 2% considered to be in excellent condition. An estimated 5% of wheat crops were deemed to be in very poor condition at the end of November and concerns were raised over the viability of these

crops going forwards. Almost 50% of the intended wheat area either had not emerged, or had not been drilled by the end of November. A similar pattern of condition was seen in the winter barley and oat crops too, with most crops falling in fair to good, whilst 3-5% considered to be very poor (**Table 1**).

The poorest crops are those that were drilled into overly wet, cloddy seed beds. These have subsequently suffered from persistent waterlogging resulting in seed rotting in the soil prior to germination. Overall growth was slow during the autumn as a result of both cool temperatures and excessive rainfall.

**Table 1 – Average crop condition of the drilled area and the area not planted or emerged as a proportion of the intended total area – GB crops\***

	Very Poor	Poor	Fair	Good	Excellent	Crops not yet planted /emerged
<b>Winter Wheat</b>	5%	10%	21%	13%	2%	49%
<b>Winter Barley</b>	5%	11%	28%	14%	2%	39%
<b>Oats</b>	3%	12%	22%	15%	2%	47%
<b>WOSR</b>	8%	17%	44%	26%	4%	2%

*\*Figures may not add to 100% due to rounding.*

An estimated 74% of the winter oilseed rape crop is deemed to be in fair to excellent condition. However, there was around 25% of the area that was considered to be in poor or very poor condition at the end of November, and many of these crops are expected to fail over winter. The very poor crops are associated with late drilled, slow establishing crops that went into dry seed beds. These were then vulnerable to cabbage stem flea beetle damage. Earlier drilled crops had more moisture available during establishment, and most of these are in fair to good condition.

## Wheat

### Drilling progress

It is estimated that just under 60% of the intended GB wheat area had been drilled by the end of November. Approximately 12% was drilled in September, 30% in October and 15% in November. Typically by the end of November the majority of the intended area would have been drilled, with the exception of small area after roots and maize.

The expectation is that farmers will continue to drill through December and January (especially where growers have lighter land that is currently uncropped), but in some cases farmers will change their cropping plans and switch to spring cropping.

Many farmers, especially on heavy soils affected by grass weeds had already planned to delay the drilling of winter wheat until late September, taking advantage of stale seed beds for black-grass control. Dry soils, and a lack of grass weed germination during September caused farmers to move drilling plans later in the season. They were aiming to drill into moisture, ideally after some emergence of grass weed had been controlled with glyphosate or cultivations prior to drilling. However, the Great British weather caused serious disruption to those plans with heavy rainfall occurring in the last few days of September and continuing well into October. Soils rapidly moved from too dry to too wet and access to fields for cultivation and drilling became a real challenge.

There were a small number of brief weather gaps (2-3 dry days in a row) during October and early November where farmers were able to access fields, all be it in less than ideal conditions. Those that had the appropriate machinery and the capacity were able to get in and drill at least part of their

intended area. The wet and increasingly cold soils meant that emergence was slow, with some reports of seed rotting in the field before it was able to establish. Although occasional farmers were contemplating drilling into the frost during the period of drier, cold, bright weather in late November and early December, most have accepted that they are unlikely to get more drilled before the end of the year.

Farms with lighter land fared best in terms of drilling progress, with these soils having been easier to access and cultivate than many of the heavier soil types. Where weather windows allowed, it was the small farms with modest acreages and those farms with an excess of horse power that were able to capitalise on the opportunities and complete cultivations and drilling operations in the brief windows that were available. Some farmers resorted to only planting parts of fields and altered drilling plans so that fields were chosen to be sown because they were accessible, rather than because that was what was planned in the rotation. Those farmers drilling during November increased seed rates to compensate for cold, wet soils and lower germination percentages. Where root (potatoes and sugar beet) or maize crops were grown in 2019 the damage caused to the soil by harvest (where that has occurred) means that the fields are currently unsuitable for drilling, and these fields are now expected to be planted with spring crops.

Cultivation techniques have varied across the country, influenced to a certain extent by the level of waterlogging as well as soil type. In the 'drier' regions and for those farmers with light land it has been possible to maintain planned cultivations (such as using the plough). Where soils were particularly wet there was increased use of direct drills, although wet stubbles caused issues with these. Where roots (potatoes and sugar beet) or maize were the previous crop there is often significant structural damage to soils and these fields have mostly been left for the spring.

### *Crop development*

At the end of November an estimated 51% of the intended winter wheat had emerged with just under 15% at GS20-29 (tillering). Crops that were drilled in October tended to have low plant populations due to seed loss from waterlogging and poor seedbed conditions.

The best crops were those that were drilled early by direct drilling.

### *Weeds*

The wet soil conditions and challenges to drilling meant that many fields once drilled were rarely in a condition where it was appropriate to apply pre-emergence herbicides. Weather windows were rarely long enough to allow for both drilling and spraying to occur together. It is estimated that in wetter regions such as Yorkshire, just 10% of the drilled area has received planned pre-emergence herbicide applications, whilst in the South East where conditions are slightly drier this figure is closer to 50%. This raises concerns over the level of grass weeds emerging in the crops.

**Black-grass** – The late drilling of crops meant there was a decrease in black-grass populations, especially in areas where black grass control is typically poor e.g. East of England and East Midlands. However, the lack of pre-emergence herbicide applications leaves these crops vulnerable to late emerging black-grass populations.

**Broad leaved weeds**- Where no herbicides were applied there are reports of weeds such as poppy, shepherd's purse and mayweed that are beginning to get large.

## *Pests*

**Slugs** – The wet weather and poor seed beds (cloddy with lots of crop residue) favoured slug activity, especially in crops following oilseed rape. Ferric phosphate applications were made to manage numbers. Typically crops that were later drilled have suffered damage from slugs as plants were growing slowly and most had yet to reach the two leaf stage (GS12). Slug pressure is higher in the North of England and the Midlands, with Southern regions only seeing occasional issues.

**Aphids**- With most of the winter wheat drilled later than usual, and cool temperatures aphid numbers were low, reducing the need for foliar applications. Earlier drilled crops received insecticide treatments to manage BYDV risk. Few later drilled crops were treated, partly due to lower risk and also due to inaccessibility.

**Crows**- There has been significant crow damage on later emerging crops.

## *Disease*

Overall disease levels are low at the end of the November, with cooler weather reducing the risk of infection.

## **Winter Barley**

### *Drilling progress and Crop development*

Approximately 65% of the intended winter barley area was drilled by the end of November. It is estimated that about 30% was drilled in September, 30% in October and 5% in November, with the majority of this sown on lighter soils. Crops were drilled much later than normally considered good for establishment. Unlike wheat the window for drilling winter barley is fairly narrow, and the yield impacts of delayed drilling are much greater. Therefore, those crops that were not drilled before the end of November are unlikely to be drilled, with spring varieties planted in their place.

Establishment is variable depending on drilling dates, with a reduction in day length and cooler soils causing delays to emergence. Those drilled later are looking fragile and have emerged poorly in wet seedbeds, whereas those that were established earlier are now approaching tillering (GS20-29). By the end of November just under 60% of the intended area had emerged and 25% had started tillering GS 20-29.

## *Weeds*

As with wheat the delays to drilling and the poor condition of soils meant that few crops received their planned pre-emergence herbicide applications. Those that did spray experienced instances of crop damage (yellowing and stunting) where heavy rainfall occurred soon after applications. As in wheat the delayed drilling reduced the amount of **black-grass** present, especially in the East of England. At present the main weed issue is **volunteers**, especially where no herbicides were applied. Where residual herbicides were applied, these gave good control of **broad leaved weeds**.

## *Pests*

The main issue affecting barley crops this autumn is **slug** damage, especially on cloddy seed beds. Ferric phosphate applications have been made. Delayed drilling and cool temperatures reduced the

**aphid** risk minimising the need for insecticide applications this autumn. **Rabbits** caused excessive damage, especially in crops where plants were very small.

### *Disease*

Disease levels remain low, with no significant reports of mildew on crops.

## Oats

### *Drilling progress and crop development*

It is estimated that just over 65% of the originally intended winter oat area was drilled by the end of November. Most progress was made in the South, but the majority of the area was drilled later than usual. Due to the lateness of drilling, and the cold damp conditions, it is estimated that 12% of drilled crops have yet to emerge. There are an estimated 53% that have emerged, with a small proportion of that area starting to reach tillering (18 %). Those that are at the early stage of emergence are still frail and vulnerable to unsettled weather. Where planned winter oats remain unsown it is expected that farmers will now change drilling plans and plant spring oats instead.

### *Weeds*

Delays to drilling, and poor soil conditions immediately after drilling, meant that few crops received planned pre-emergence herbicides. Post emergence herbicide applications were also disrupted, partly by the soil conditions, partly out of choice as farmers were reluctant to invest too much in crops that may not emerge properly. There were also limited spray opportunities and prioritisation on farm favoured wheat or barley crops. Weeds such as **chickweed**, **volunteer OSR**, **charlock**, **cleavers** and **speedwells** are typically present in unsprayed oat crops.

### *Pests*

**Slug** activity and **aphid** numbers are low, with little to no insecticides being applied due to unsettled weather.

### *Disease*

Disease levels in winter oats at the end of November were low.

## Winter Oilseed Rape

### *Drilling progress and crop development*

Drilling of winter oilseed rape is complete, with just under half the area sown in August, and slightly over half sown in September. Early sown crops (those sown at the beginning of August) were drilled into good seed beds, with adequate moisture and as a result established well. Later drilled crops, those drilled in late August and early September, went into drier seed beds and were slow to emerge with poor crop establishment. The majority (78%) of crops were at 6 true leaves by the end of November, crops drilled later (September) were typically at 2-4 true leaves.

Establishment of oilseed rape crops is poor with 25% of the sown area in poor or very poor condition. There are a variety of influences on establishment. First the period of dry weather, especially in the East of England, that affected crops during emergence. Then the presence of cabbage stem flea beetle causing grazing damage to slow growing plants. This poor early start was exacerbated by the move to

wet weather causing soils to become cold and wet. This resulted in slow growth for the later part of the autumn, leaving the crops vulnerable to pest attack. In some of the more northern regions, where cereal harvest was slowed by a period of wetter weather in late August, there were a higher proportion of oilseed rape crops that were drilled into the later planting window. This left crops more vulnerable to the poor conditions experienced this autumn.

Those crops sown using a subsoiler established better than those sown using plough based cultivations. This is partly due to the retention of soil moisture where oilseed rape was drilled into relatively dry seed beds.

### Weeds

The challenges of establishing oilseed rape crops this autumn meant that farmers were at times unwilling to invest in herbicide programmes until they were sure that they had a sufficiently viable crop to warrant treatment. As a result a lower than normal proportion of crops received a pre-emergence herbicide application. Cereal **volunteers** were well controlled across the regions. **Black-grass** and **ryegrass** are present in crops, especially in the East of England and South West where herbicide applications were either not possible or not effective. **Groundsel**, **charlock** and **speedwells** are prevalent in oilseed rape crops, with **burr chervil** becoming an increasing problem, especially in the Midlands.

### Pests

**Cabbage stem flea beetle** activity remains a concern. The East of England and Southern England are particularly badly affected, but there are increasing levels of damage being reported in areas that have a historically low incidence of the pest. September sown crops were the worst affected due to slow growth rates, with those sown in August faring better through good establishment. **Slug**, **pigeon** and **aphid** pressure was relatively low, although there are reports of small areas of crops lost to slugs where it was too wet to apply slug pellets, predominantly in the North of England and Scotland.

### Disease

There are occasional incidences of **light leaf spot** reported, especially in the East of England, but as yet they are not causing significant concern. **Phoma** leaf spot lesions first appeared in October, and where thresholds were met (and conditions allowed) fungicide applications were made.

Sarah Wynn	Luchia Garcia-Perez	Vikki Campbell
<b>ADAS Boxworth</b> <b>Direct dial: 01954 268249</b> <a href="mailto:sarah.wynn@adas.co.uk">sarah.wynn@adas.co.uk</a>	<b>ADAS Boxworth</b> <b>Direct dial: 01954 268205</b> <a href="mailto:luchia.garcia-perez@adas.co.uk">luchia.garcia-perez@adas.co.uk</a>	<b>AHDB</b> <a href="mailto:Vikki.campbell@ahdb.org.uk">Vikki.campbell@ahdb.org.uk</a>