



# AHDB Harvest Report

Report 6-Week 13

Week Ending- 6<sup>th</sup> October

Prepared by ADAS

## Overview of Harvest 2020

Harvest was complete in Southern England and the East of England by 22 September, with the rest of GB complete by 29 September. Overall, just over 200Kha was harvested since WE22 September completing outstanding areas of wheat, spring barley and oats in the North East, North West, Yorkshire and Scotland.

Warm and dry conditions in the first week of harvest (WE14 July) allowed combines to begin at pace on ripe winter barley and oilseed rape crops in the South and East of England. Those in the Midlands started on crops the following week. Harvest was getting into full swing in WE11 August, with just under 600Kha cleared. However, the rate of progress dropped at the end of WE18 August as unsettled weather started to affect many regions and the following week, Storm Francis brought strong winds and heavy rain to most of GB.

The last fortnight of August remained wet and unsettled, with limited harvest opportunities. Rates of clearance fell to about 230Kha per week in each of these weeks. During this period, the main band of rain travelled West to East across Wales and Central England, with average rainfall in these areas ranging from 40-70mm for the week. High winds and heavy rain caused lodging in about 1% of wheat crops and 10-15% of spring barley and oat crops. There were also occasional parts of fields that were abandoned due to standing water.

An improvement in the weather and a return to settled conditions from the 01 September saw the rate of progress pick up again in WE08 September. This week saw an estimated 600Kha of crops harvested, including large areas of spring barley, wheat and oats. Conditions remained mostly settled across the country throughout September, allowing the end of harvest to finish unimpeded by rain. By WE22 September harvests in the South East, South West and East of England were complete, only small areas were left to harvest in the remaining regions of GB. These were completed by 29 September. Wet weather returned from 02 October, though harvest was complete by this point.

It has been a challenging season for forecasting average yields, due to the high variability across all crops and the challenges that wet weather brought in August. Overall, yields are below the five-year average across all crops, with the exception of spring barley performing slightly above the five-year average. Winter crops were particularly affected by poor sowing conditions in autumn and winter. Better yields were from crops sown in good conditions earlier in the autumn, before the heavy rain set in. These earlier crops were able to attain good root development, which meant they were more resilient to the wet winter and the dry spring. Later drilled crops that went into cloddy, wet seed beds varied in levels of establishment, with some areas of crops patchy and thin. This has brought overall yields within a field down and led to variability in farm yields. There was a marked difference in quality of crops harvested before and after the rainfall in late August. Before the rainfall, moisture contents were lower with high Hagberg numbers. Nitrogen levels were notably high in barley samples cut before the rainfall.

Harvest in WE29 September (and WE06 October) can be summarised as:

**Wheat** – Harvest was complete by 29 September, with dry weather allowing for final areas (mainly in Scotland, North East, West Midlands and Wales) to be cleared. Seasonal yields remain below the five-year average and are between 7.1-7.3t/ha. Quality has reduced slightly on crops harvested after rain in late August. Hagberg falling numbers (HFNs) then fell below specification for milling wheats. Specific weights averaged 74kg/hl, with some as high as 78kg/hl in Scotland where areas were least affected by heavy rain. The majority of crops cut in the past fortnight required some conditioning to dry or clean grains to achieve optimum levels for storage.

**Winter barley** – Harvest was complete in WE11 August. The yield estimate for the season is between 6.5-6.7t/ha, below the 5-year average of 7.1t/ha. Grain nitrogen contents averaged at 1.8%, with sustained reports of grain nitrogen contents over 2% in the East of England throughout the harvest period.

**Spring barley** – Harvest was complete by WE29 September, with only the last few acreages needing to be cut in the week for some regions (North East, Wales and Scotland). Average yield estimates for the season are between 5.8-6.0t/ha. This varied depending on how well crops fared in the dry spring or how well crops recovered from storm damage in August. Quality reduced slightly on later harvested crops, as these tended to be those that became lodged during Storm Francis. Specific weights were averaging 61kg/hl in the final week of harvest and grain nitrogen was in the range of 1.4-1.9%. As with most crops harvested in the last fortnight, the majority of spring barley cut had to be dried to get grain moistures below 15%.

**Oats** – Harvest came to a close by WE29 September with Wales, North East and Scotland clearing final areas. Seasonal yields are within the range of 5.1-5.3t/ha, slightly below the five-year average of 5.6t/ha. Specific weights for crops harvested in WE29 September were between 49-52kg/hl and many crops required some level of drying once they were cut.

**Winter oilseed rape** – Harvest was complete in WE08 September. Seasonal yield estimates were between 2.7-3.0t/ha. Oil contents for winter oilseed rape across the harvest period averaged 44%.

## Straw

Many growers baled this season where conditions and weather allowed. The beginning of harvest saw a high proportion of winter barley straw baled, with dry conditions in July facilitating this. Baling of wheat straw continued at pace, in keeping with the combine, with some headlands left due to greener straw. Clement weather during early August allowed for rapid removal and stacking of bales, with little needing to remain in fields to dry. Those baling spring barley straw struggled where stalks were still green, due to some areas in fields harvested before full maturity. Baling came to a halt for most once heavy rain set in August and wet conditions pushed straw moisture levels too high. Much of the swath laying during late August required turning before it could be baled and some damp and green straw needed to be left in the field to dry before being turned. In some cases, straw remained unbaled in fields for a couple of weeks as it was too damp to bale. During September, once weather improved, baling of the remaining spring barley and wheat areas progressed with ease, with many pushing on to bale in the same field as the combine.

Baling of wheat straw was a higher priority in areas with mixed farms (particularly in the West of England and Wales where 90-100% of the area was baled). Further South and East, where there are fewer livestock farms, the proportion baled was slightly less. Straw yields were variable, with typical wheat yields between 2.0-4.2t/ha depending on the harvest conditions. Yields dropped for later harvested crops in the North. Here there were reports as low as 1.0-1.5t/ha for wheat straw, especially where crops were poorly established. Spring barley straw yields are in the range of 2.5- 3.0t/ha and were lowest where crops experienced severe lodging issues during heavy rain in August. For oat straw, yields are between 2.0-3.5/ha and are tending to be lower where crops were impacted by lodging issues, where in the worst cases crops were laid flat. Oilseed rape straw yields ranged from 0.7-3.0t/ha, depending on the thickness of the crop and the proportion of the field that was patchy.

The combination of reduced crop areas compared to recent years, lower yields, and challenges with baling put a downwards pressure on straw productivity this year.

## Wheat

### Harvest update

The GB wheat harvest was complete by 29 September. Settled weather allowing for an easy finish to harvest in any regions with outstanding crop areas (Scotland, the North East, West Midlands, Yorkshire and Wales). The 2020 wheat harvest progressed well this year, with little to slow combines in the first few weeks of August. Regions in the South began harvest of ripe crops as early as WE28 July, but really picked up pace from WE04 August onwards across all regions. There was 200K to 350Kha cleared a week during WE04, WE11 and WE18 August. The arrival of unsettled weather in the second half of August (including Storm Francis) drastically reduced rate of clearance, with just 70K-75K cleared in each of WE25 August and WE01 September. These storms caused lodging issues (with an estimated 1% of the then unharvested national wheat area lodged). In some instances where regions received localised heavy showers, crops laid completely flat creating challenging harvest conditions and a reduction in yields. Conditions improved from 01 September and by WE08 September, another 200Kha had been cleared. Continued settled weather through September allowed for easy completion in the remaining areas. The early rate of clearance was ahead of most recent years, and despite the pausing in progress during late August, the end of harvest was in line with most recent years. Wheat harvest in the Southern counties was completed by WE08 September, with the remaining regions completed by WE29 September.

### Yields

The GB national average yield for the season is estimated to be between 7.1-7.3/ha, below the five-year average of 8.4t/ha. Crops harvested in the latter part of September included an increased proportion of winter wheat varieties sown in spring (March). In the later sown crops, yields of 5.0-6.0 t/ha were reported, but occasionally dropped as low as 3.4 t/ha.

Farm yields in the final weeks of harvest ranged between 3.4-12.5t/ha and varied depending on soil conditions at the time of sowing. Milling wheat is typically yielded between 5.0-10.0t/ha, with feed wheat between 5.5-12.5t/ha. Occasionally, some were as high as 13.0-14.0t/ha where crops established well and were worth spending money on inputs. Crops in the East of England tended to yield better than those in the North. Here, a larger proportion of crops had been drilled before wet weather set in during autumn.

The best yields were reported on crops sown early into good seed beds and established before the bad weather hit in autumn 2019. However, the majority of crops were drilled later than ideal, often into poor quality seed beds. This resulted in reduced plant counts and poor tillering, both of which contributed to reductions in yield. Where areas of fields were flooded during autumn, bare patches formed with occasional reports of abandoned parts of fields (mostly on headlands). An estimated 22% of winter wheat crops were sown in January and February (with some areas also sown in March). These late sown crops often went into poor seed beds, which then dried rapidly as conditions turned from waterlogged to water stressed in a few weeks. The late sown crops were lacking the root systems to cope with water stress and as a result, yields were negatively impacted.

### Quality

Crops harvested before the rain hit in mid-August had good Hagberg falling numbers. Protein levels were reasonable and specific weights fair. However, rain delays in August resulted in a decline in quality for later harvested crops. Wet conditions during grain fill were suited to the development of fusarium on grains where inoculum was present, and this caused issues in the more recently harvested crops (although dry conditions at flowering did manage to minimise infection). There were also reports



of occasional pink grains in samples from the East Midlands, but no widespread reports of grain samples failing due to mycotoxin contamination.

In later harvested milling wheats Hagberg falling numbers (HFNs) caused issues. A number of crops harvested in WE29 September failed to meet specifications, with HFNs falling below 150 seconds. There were occasional reports of high protein contents from lower yielding crops in Yorkshire, but typically proteins were between 12-14%. Specific weights dropped slightly after the August rain, but remained stable from crops sampled in the last fortnight. Many of these samples were still averaging 74kg/hl. Specific weights held up well in Scotland (with some crops as high as 78kg/hl) where less rain was received in August. For crops harvested in late September there were increased reports of sprouted grains, especially if harvest was delayed towards the end of the season.

**Specific weight** – Averaging between 74kg/hl, but typically between 72-76kg/hl from crops in the final weeks of harvest, rising to 78kg/hl on good crops in Scotland. Seasonal specific weights ranged between 72-79kg/hl, with many dropping on crops harvested after the August rains.

**Hagberg Falling Number (HFN)** – Hagberg falling numbers dropped slightly in the final weeks of harvest, with many now below 150 seconds. The typical range in WE29 September was between 120-200 seconds and the seasonal range between 120-300.

**Protein** – Averaging 12-14% from the final crops harvested. There were occasional reports of high proteins in Yorkshire, mostly from lower yielding crops. Proteins range between 11-14% across the harvest season.

**Moisture** – Ranging between 14-19%, with an average at 15% in the final week of harvest. The majority of wheat cut in the last fortnight has required drying and a large proportion has needed to be conditioned to clean up samples. Moistures stayed fairly stable throughout the season with a seasonal range between 14-19%.

## Winter Barley

### Harvest update

Harvest of winter barley began in the South East and East of England during WE14 July and was complete across all regions by WE18 August. Peak activity took place in WE28 July, with just over 100Kha cleared. Harvest progress in 2020 was ahead of 2019 and in line with the early harvest of 2018.

### Yields

The national average yield estimate for winter barley is 6.5-6.7t/ha, below the five-year average of 7.1t/ha. Weather conditions were challenging due to the initial dry conditions followed by the sudden wet weather from mid-autumn through to the end of winter, followed by another very dry period in spring. These conditions caused low tiller numbers for winter barley and yields continued to be poor throughout harvest, in strong contrast with the high average yields recorded last year (7.8t/ha).

Farm yields were variable across the season, in the range of 3.7-10.0t/ha. In-field variability was common, with lower yields due to bare patches where establishment was poor, or crops suffered in the dry conditions in spring. These bare patches brought down field averages.

Generally, hybrids yielded 8.5t/ha, with a few reports of crops at 10.0t/ha. These yields were balanced with crops of below 5.0t/ha for many two row malting varieties, although some two row feeds achieved higher yields (8.0t/ha). Feed varieties generally yielded 5.5-10.0t/ha. Malting varieties have yielded 4.5-7.4t/ha. Crops on heavier, moisture retentive land yielded 5.5-10.0t/ha, while crops on light lands yielded between 4.5-6.5t/ha.

The best regional yields were reported in Scotland, with regular reports of yields over 7.0t/ha and occasionally up to 9.5t/ha. Rainfall in Scotland was moderate over winter, and water stress was less of an issue compared to other regions in the spring months. In contrast, the lowest regional yields were reported in Northern and Western England (North West, North East West Midlands and Yorkshire), with regular reports of yields around 5.0-5.5t/ha.

## Quality

Winter barley was harvested in good weather early into the harvest period. However, grain nitrogen levels were high throughout the season, with the highest samples likely bound for the feed market. Specific weights were maintained throughout harvest, with only occasional reports of lower specific weights where crop establishment was poor due to the challenging weather conditions at sowing.

**Specific weight** – Specific weights averaged 64kg/hl, but were typically in the region of 60-69kg/hl throughout the harvest period. Lower specific weights occurred in light soils which suffered from the moisture deficit in spring.

**Screenings** – Typically around 2-7%.

**Grain nitrogen (malting varieties)** – Average 1.8% and ranged between 1.6-2.0% throughout the season. Slightly lower grain nitrogen contents were reported on Scottish crops and those from Northern England towards the end of harvest, but these were still close to 1.7%. In the East of England, grain nitrogen levels occasionally reached 2%. These high nitrogen samples were sent into store as feed.

**Moisture** – Moisture contents averaged 15% with a range between 13-17%. Samples with more than 14.5% moisture have been dried.

**Germination** – Reports indicate that germination levels were satisfactory across most of GB, although there are reports in the North West of malting barley being downgraded due to germinations from 90-95%. Germination levels remained typically between 90-98% throughout the season

## Spring Barley

### Harvest update

Harvest of spring barley crops was complete by 29 September with the remaining areas cut in the North East, Yorkshire, Wales and Scotland by this date. Combining of spring barley crops began in the South during WE04 August. Steady progress (90-120Kha per week) was made throughout each of the following four weeks. Activity was maintained in spring barley even during the period of heavy rain in late August, as these crops were quicker to dry out than others. Despite progress being maintained, the wet and windy weather caused an increase in lodged crops meaning many crops were left in fields waiting for the weather to improve.

Peak spring barley harvest took place in WE08 September, with just under 375Kha cleared. Through the rest of September harvest gradually completed across the regions, with decreasing rates of harvest observed towards the end of the month as unharvested crop area declined. The heavy rain during August and subsequent delays to harvest caused issues with seed shed, increasing germination in samples. Towards the middle of September, the South East, South West and East of England had completed spring barley areas, with the Midlands, North West and Yorkshire complete by WE22 September. Final areas remaining in the North East, Wales and Scotland were cleared by WE29 September.

## Yield

The estimated national average yield is between 5.8-6.0/ha, compared to a five-year average yield of 5.8 t/ha. Malting crops yielded in the range between 4.5-8.6t/ha and feed between 4.5-9.5t/ha.

Farm yields in the final weeks of harvest ranged from 3.7-9.5t/ha. Higher yields tended to be off better structured soils, with some of the best yields reported in Scotland (8.0-9.0t/ha). These yields were maintained where crops avoided wind damage at the end of August. However, where crops suffered loss of seed heads or lodging, reductions in yield were observed. There were occasional reports in the North West of areas being abandoned where crops were laid flat and could not be combined. Some of the later sown crops, and those planting into lighter soils that had insufficient moisture retention through the dry spring, produced yields below 4.0t/ha.

## Quality

Quality of spring barley harvested in the first part of August was reasonable, with specific weights averaging about 65kg/hl. However, as harvest progressed of the later sown crops, plus those affected by rain in August, specific weights declined to a September average closer to 61 kg/hl. Overall quality has deteriorated slightly, especially after the August rains. The later harvested crops have shown issues with sprouted grains, causing instances of rejections from merchants in Yorkshire and the North East.

**Specific weight** – Typically between 53-66kg/hl, but averaging 61kg/hl for September harvested crops and the seasonal range between 53-67kg/hl. Specific weights dropped slightly as the later harvested crops were affected by wet weather towards the end of August.

**Grain nitrogen (malting varieties)** – Typically between 1.4-1.9% in the later harvested crops, but averaging 1.7%. Seasonal grain nitrogen ranged between 1.3-2.2%.

**Screenings** – Between 2-6% in crops harvested in September, with occasional reports of screenings as high as 12%. Screenings ranged between 2-9% throughout the season, with higher screenings reported off late sown crops that struggled due to water stress.

**Germination** – Typically 96-98% in the final weeks of harvest. However, occasional reports included crops with germination levels as low as 80-90%, especially on the later harvested crops. Throughout the season germination levels ranged between 90-99%.

**Moisture** – Ranging between 12-19%, with most crops coming in at 15% or below in the last weeks of harvest and was typical for the season. During September, there has been an increase in grain requiring conditioning to either reduce moisture before storing or clean samples of any green grains.

## Oats

### Harvest update

Harvest of oats began in WE04 August in the East of England, South East and South West regions. Steady progress was made throughout August and September, with 20-30Kha typically cleared each week. Peak harvest occurred in WE08 September (just over 55Kha cleared), when dry weather allowed good clearance rates of ripe crops. Oat harvest was completed by WE29 September for both winter and spring varieties. Harvest progress was broadly in line with 2019 and 2017 and behind progress in 2015, 2016 and 2018. It should also be noted that the oat area was estimated to be almost 20% higher than that grown in 2019.

An estimated 10-15% of the total oat area was affected by lodging caused by the wind and rain in August. Most of this area was harvested in early September, although where crops were lodged flat this slowed combine speeds and resulted in seed shed.

## Yields

Yields were variable, with the estimated average between 5.1-5.3t/ha, slightly below the five-year average of 5.6 t/ha.

Yields on winter varieties were dependent on autumn crop establishment. Those sown on heavier land in October yielded better than crops sown on lighter soils or later on heavy land. Winter oat crops typically yielded 5.0-9.0t/ha, whilst yields of spring oats ranged from 3.0-8.5t/ha. Spring oat yields tended to be poorer where crops were significantly affected by the strong winds and rain, which resulted in seed shed. Naked oat varieties yielded 3.5-6.0t/ha, with milling varieties and feed varieties both yielding between 5.0-8.5t/ha.

The best oat yields were reported in the North, with regular reports of yields over 6.0t/ha in Scotland, the North West, North East and Yorkshire. In the South East and East of England, yields averaged closer to 5.0t/ha. Spring oat yields in Yorkshire were better than expected despite seed shedding, with an average yield of 7.0t/ha.

## Quality

Where harvest was delayed by the heavy rainfall in August and crops stood wet, there were occasional reports of sprouting, resulting in reduced quality of affected samples.

**Specific weight** – Average 50kg/hl, typical range between 49-52kg/hl from crops harvested in September. Specific weights are generally acceptable, but tended to be better in winter oats compared to spring oats. There were some particularly good specific weights reported in Scotland on later harvested crops (with reports of crops reaching up to 58kg/hl), whilst in the South West and Wales specific weights were closer to 46kg/hl. Throughout the season specific weights ranged between 46-58kg/hl.

**Moisture** - The majority of winter oats were ripe at harvest and harvested at moistures close to 14.5% throughout the season, with a range between 13-19%. Those crops harvested towards the end of the harvest period tended to be cut at slightly higher moistures in the range of 13-19%, with moistures averaging 16%.

## Winter oilseed rape

### Harvest update

Winter oilseed rape harvest began in the East of England in WE14 July. Peak harvest occurred in WE28 July, with just under 130Kha cleared, in each of the following two weeks about 80Kha was cleared, Progress continued apace, with most regions of GB completing harvest by WE18 August. Rain in late August delayed the completion of the final areas in the North East (harvest complete in WE25 August), Yorkshire and Scotland (complete in WE08 September). Harvest progress was one week ahead of 2019 and broadly in line with the early harvest of 2018. This pace was helped by good weather and rapid ripening of crops, with later harvested areas slowed by late maturing varieties and rains before desiccation periods were surpassed.



## Yields

The national average yield is estimated to be 2.7-3.0t/ha, down on the 5-year average of 3.5t/ha. Yields were highly variable, with patchy thin crops and uneven establishment making the judgement of average yields particularly challenging. Yield reports range from 0.5t/ha on the worst affected fields through to 4.7t/ha on those crops that were established well and not impacted by cabbage stem flea beetle (CSFB) damage. Poor yields have been linked to the combined effects of pest activity, poor weather conditions in winter and spring and pigeon grazing.

The best yields came from crops planted in August that established well, particularly those crops on more moisture retentive heavier soils. Crops on light land were affected by water stress soon after planting due to the dry period in September 2019 and again in spring 2020, which reduced yields.

## Quality

**Oil content** –Between 43-45% and, averaging 44%.

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