

Strutt & Parker Yield Results | Harvest 2018

At a glance

The average yield of winter wheat¹ for Spring crops were particularly harvest 2018 was 8.5t/ha, 7% lower than in 2017 and 9% lower than the five year average.

affected by the drought in May, June and July leading to 2018 yields well below the five year average.

The winter barley crop was the least affected by the drought, as the crop was already senescing by the time the drought took hold. Yields were up 5% on 2017 and up 2% of the five year average.

Average yields for 2018

Yields were lower than in 2017 for all of the main crops apart from 2nd wheat and winter barley.

Table 1: Average yields for 2018 compared with the last five years (t/ha)

	Winter Wheat	1st Wheat	2nd Wheat	Winter Barley	Spring Barley	Winter OSR	Winter Beans	Spring Beans
2018	8.5	8.7	8.0	7.7	5.6	3.4	2.9	2.8
% change from 2017	-7%	-8%	3%	5%	-5%	-8%	-31%	-27%
2017	9.1	9.5	7.8	7.4	6.0	3.7	4.2	3.8
2016	8.9	9.2	8.8	6.7	6.4	2.9	3.9	3.9
3 year average	8.8	9.2	8.1	7.3	6.0	3.3	3.6	3.7
2015	10.2	10.9	9.3	8.3	7.0	3.7	3.5	4.2
2014	10.1	10.2	9.8	8.1	7.0	3.8	3.5	4.2
5 year average	9.3	9.6	8.6	7.6	6.3	3.5	3.6	3.8
% change from 5 year average	-9%	-10%	-7%	2%	-10%	-3%	-18%	-28%



Chart 1: Average yield for winter wheat for 1999 - 2018 compared with the five and 20 year averages (t/ha)

All wheat yields stated are an average of all varieties of winter wheat grown, as either first or second wheat, unless explicitly stated as being yields for first or second wheats.

Bottom, average and top yields

We have divided our sample so it is possible to see what the bottom 25% yield is, the average and the top 25% (as well as the minimum and maximum yields).

Chart 2: Minimum, bottom 25%, average, top 25% and maximum yields (t/ha) for 2018 compared with 2017 and 2014 – 2018 five-year average (t/ha)



Yield by soil type

Yields of winter wheat² on heavy clay soils averaged 8.6t/ha, which is 8% lower than 2017, and 9% lower than the five-year average.

Yields on medium clay loams averaged 8.4t/ha, 5% lower than in 2017 and 7% lower than the five-year average.

Yields on the lighter chalk loams averaged 9.5t/ha, 5% lower than in 2017 and 7% lower than the five-year average.

For first wheats, yields were 4 - 9% lower than in 2017 and 7 – 11% lower than the five-year average.

Yield by farm type

As in previous years, the data does not show a statistically significant difference in winter wheat yield between in hand farms and Contract Farming Agreements (CFAs).

Many new CFAs are on lower performing farms with the aim of improving yields. The majority of CFAs in our dataset are on their second three-year term, and consequently they are stable, long-term relationships which have enabled the contractor to raise and achieve consistency in yields.

Methodology

The data comes from 140 farms managed by Strutt & Parker's farming department. The farms cover 48,400 hectares, have an average size of 354 hectares and are mainly located in the East of England, Midlands and South East England.

The data is based on actual yields from weighbridges and moved grain and, where not available, from estimated yields of measured grain heaps. Due to this, we present the yield data to only one decimal place.

Data is only presented for individual crops where we have data from 20 or more farms for each year, apart from for winter barley where the 2013 and 2012 data are from 16 and 17 farms respectively, and spring beans where the 2015, 2014 and 2012 data are from 16, 13 and 9 farms respectively.

The sample of farms in the survey changes every year, which could affect the yields reported. In order to assess this, we have analysed the data for farms from which we have 2018, 2017, 2016, 2015 and 2014 data (our 'frozen sample'). The frozen sample yields are not significantly different from the full samples, which gives us confidence that the changes in yields we are reporting are real.

² All wheat yields stated are an average of all varieties of winter wheat grown, as either first or second wheat, unless explicitly stated as being yields for first or second wheats.

Interpretation for each crop by our agronomy team

The harvest season of 2018 was characterised by good establishment of autumn crops, but a prolonged winter and wet spring which delayed the drilling of spring crops. This was followed by drought conditions that lasted from the end of May until mid-August. East Anglia only received 57% of the 1981-2010 average summer rainfall, whilst the UK received 73%. Spring temperatures in England were 0.5°C warmer than the average (1981-2010). (Source: Met Office).

Wheat

- The average winter wheat yield was 8.5 t/ha, below the five-year average of 9.3t/ha. Both first and second wheats were below the five-year average, and suffered with a lack of moisture at grain fill, limiting yield.
- Interestingly the average second wheat yield was still 3% above the second wheat average in 2017. The dry
 start to the spring in 2017 limited the uptake of nitrogen, and the crop never fully recovered in comparison to
 the first wheats which had more residual nitrogen in the soil which buffered the effects of the lack of nitrogen
 uptake.
- The uptake of nutrients in 2018 was good in the early spring if applications of fertiliser were able to be made, however ground conditions meant that this was not possible on many farms. In many cases the T0 fungicide application was delayed and combined with the T1 fungicide in April. This also meant that growth regulators were not applied until the later growth stages at GS31, weakening the lower internodes. However, lodging was not much of an issue because of the drought that took hold from May through to August. The drought came at a critical time for the crop with ear emergence, flowering and grain fill all being affected.
- In the East of England many wheat crops were harvested before the end of July. The demand on hauliers at this time was unprecedented as merchants were still moving winter barley and oilseed rape crops.
- Screenings were also high as there was a large variation in grain size arising from limited moisture at maturation.

Oilseed rape

- Winter oilseed rape averaged 3.4 t/ha, 8% lower than in 2017 and 3% lower than the five-year average. The crop struggled to maintain the number of seeds set per pod, and this therefore limited yield potential.
- Conditions for establishment were good in the autumn, and the pressure from Cabbage Stem Flea Beetle (CSFB) was not as severe as in previous years. As always good establishment was dependant on rainfall reaching the crop in its early growth stages, both to push growth but also in that rainfall events usually correspond with lower daytime temperatures which reduces the activity of CSFB.

Winter Barley

- Winter Barley did not suffer as greatly from the drought, yielding an average of 7.7t/ha, 5% up from 2017 and 2% higher than the five-year average.
- With good autumn establishment, and a long period to complete tillering, the barley crop went into the spring with good potential. The best crops received an early application of nitrogen in order to maintain the number of tillers and build biomass.
- The crop had already filled its grains and senesced before the worst of the drought took hold, therefore limiting the loss of yield seen in other crops.

Spring Barley

- In general, spring barley did not perform well in 2018, with yields averaging 5.6 t/ha; 5% lower than in 2017 and 10% below the five-year average.
- Drilling conditions were delayed due to a prolonged cold, wet winter that saw very few crops being drilled until late April.
- Conditions turned extremely dry after drilling, and anecdotal reports suggest some crops only saw one rainfall between being drilled and being harvested. However, there was moisture at drilling so seedbed nitrogen was taken up and establishment was generally good.
- Grain nitrogen and screenings were frequently high. Germination percentages were also reduced, particularly in crops that were not harvested until after rainfall at the end of August.

Spring Beans

- Spring beans yields dropped below winter beans for the second year in a row and only the second time in the last 10 years. The average was 2.8t/ha for 2018, which is 27% down on 2017 and 28% lower than the five-year average.
- Fewer farms grew spring beans in 2018, either a result of planting another spring crop or successfully establishing a winter crop. In addition to this, changes to the Basic Payment Scheme Greening rules prohibiting the use of plant protection products on pulses meant that spring beans became less of an attractive crop to grow.
- As with the winter beans, bruchid activity was high with very few samples making human consumption specification. In addition, quality as was poor, as crops did not fully fill the seeds set in the pod which was the primary factor behind lower yields.

Winter Beans

- Yields were higher than spring beans for the second time in the history of our survey (the first was in 2017), achieving an average of 2.9t/ha, in comparison to 2.8t/ha.
- This being said the average was considerably lower than the 2017 and five year averages. Winter bean yields were down 31% on 2017 and 18% on the five-year average.
- Yield loss arose as a result of a lack of moisture at pollination when the number of seeds per pod is set, and then exacerbated by the continuing drought which hindered seed fill.
- Quality was also poor. The high temperatures during pod set favoured bruchid beetle, with very few samples at harvest being under the threshold for human consumption.
- Germination and seed weight was also adversely affected by the drought. As a result, the PGRO have issued a derogation to lower the required germination of 2018 winter bean seed crops from 80% to 70%.

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