

Strutt & Parker Yield Results | Harvest 2017

At a glance

The average yield of winter wheat¹ for harvest 2017 was 9.1t/ha, 2% higher than in 2016 but 3% lower than the five year average.

Spring crops and 2nd wheat were particularly affected by the spring drought in April/May leading to 2017 yields below the five year average.

Oilseed rape benefited from higher June sunshine hours than those experienced in 2016, helping to push yields to 3.7t/ha, 6% above the five-year average.

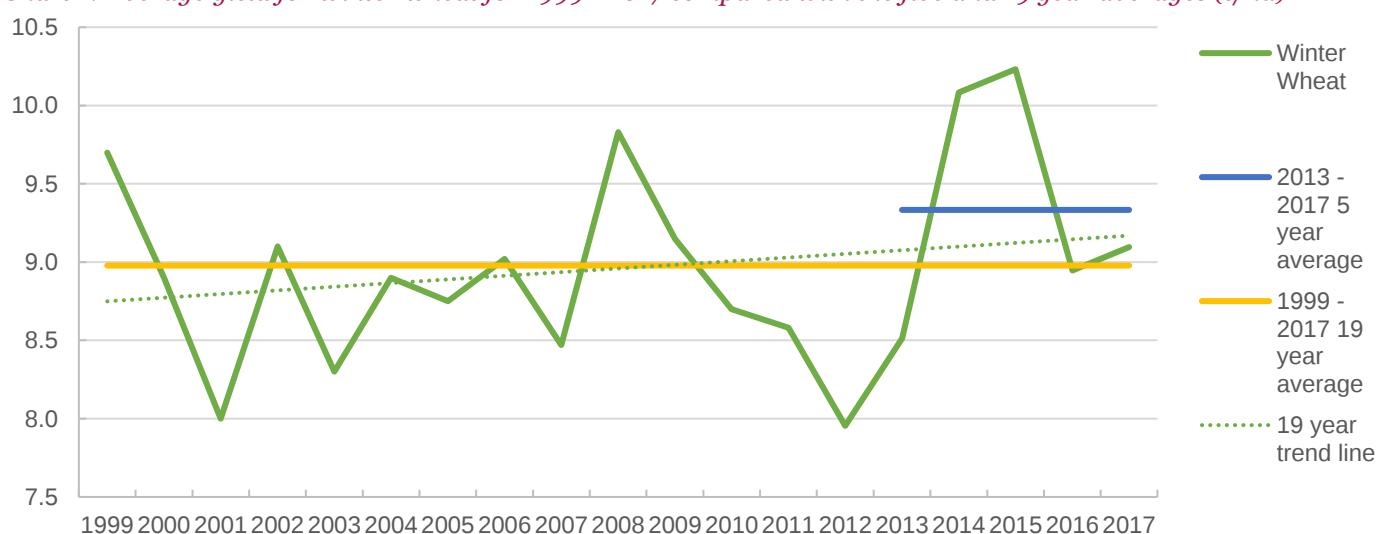
Average yields for 2017

Yields were higher than last year for most of the main crop types, apart from 2nd wheats, spring barley and spring beans.

Table 1: Average yields for 2017 compared with the last five years (t/ha)

	Winter Wheat	1st Wheat	2nd Wheat	Winter Barley	Spring Barley	Winter OSR	Winter Beans	Spring Beans
2017	9.1	9.5	7.8	7.3	6.0	3.7	4.2	3.8
% change from 2016	2%	2%	-11%	9%	-7%	27%	7%	-2%
2016	8.9	9.2	8.8	6.7	6.4	2.9	3.9	3.9
2015	10.2	10.9	9.3	8.3	7.0	3.7	3.5	4.2
2014	10.1	10.1	9.8	8.1	7.0	3.8	3.5	4.2
2013	8.5	8.9	7.7	7.3	6.0	3.4	2.3	3.5
5 year average	9.3	9.7	8.6	7.5	6.4	3.5	3.9	3.9
% change from 5 year average	-3%	-2%	-10%	-2%	-7%	6%	8%	-1%

Chart 1: Average yield for winter wheat for 1999 - 2017 compared with the five and 19 year averages (t/ha)

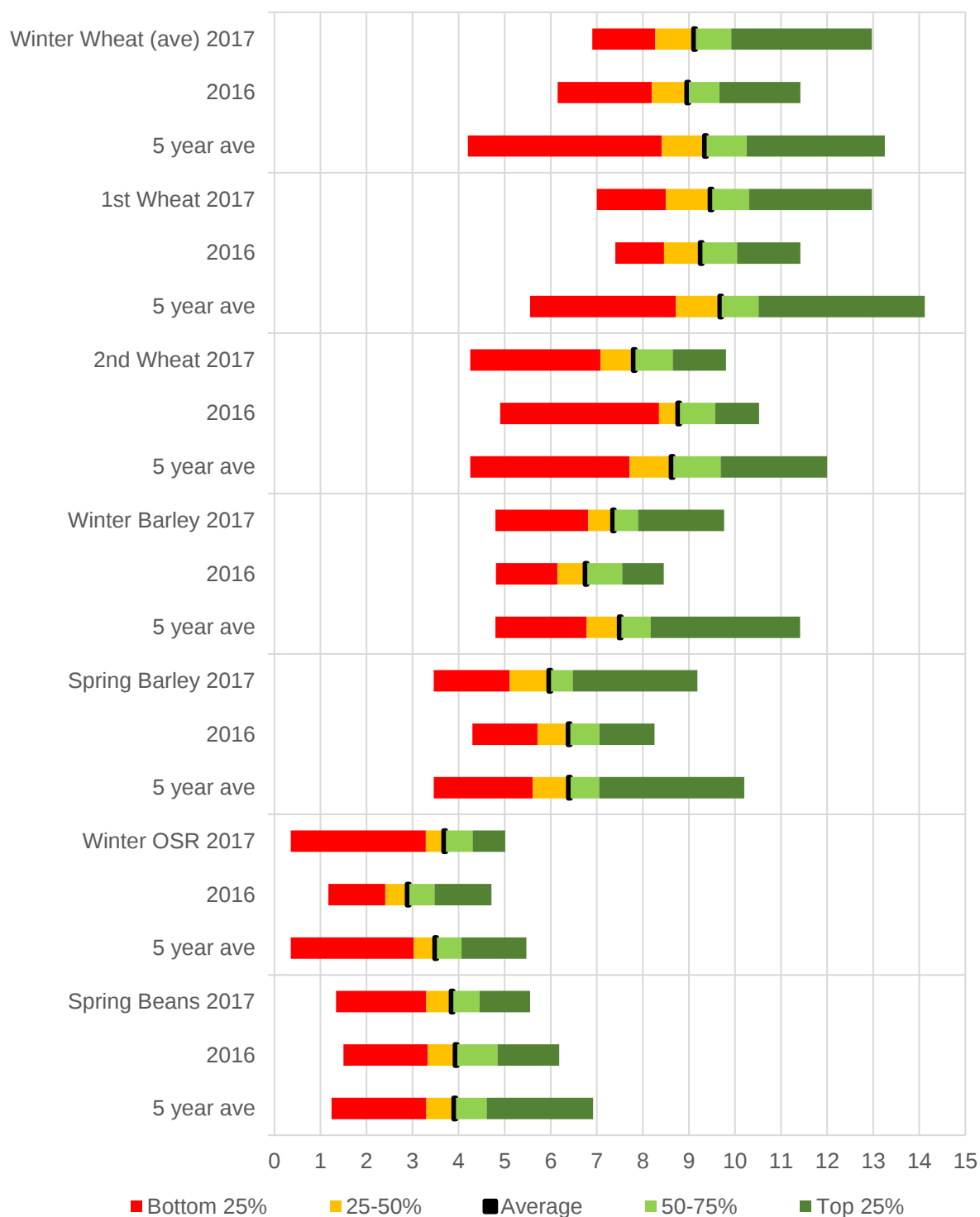


¹ All wheat yields stated are an average of all varieties of winter wheat grown, as either first or second wheat, unless explicitly stated as being yields for first or second wheats.

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 yields²).

Chart 2: Minimum, bottom 25%, average, top 25% and maximum yields (t/ha) for 2017 compared with 2016 and 2013 – 2017 five year average (t/ha)



Yield by soil type and farm type

Yields of winter wheat² on heavy clay soils averaged 9.3t/ha, which is 4% higher than 2016, and 2% lower than the 2013-17 five year average.

Yields on the lighter loam soils averaged 10.0t/ha, 3% higher than in 2016 and 2% lower than the five year average.

The data averaging of wheat yields on lighter land does not reflect the experience of many farms on lighter soils in 2017 who were particularly affected by the spring drought conditions and consequently had yields well below the farm five year average.

The data does not show a statistically significant difference in winter wheat yield between in hand farms and Contract Farming Agreements (CFAs).

New CFAs tend to be lower performing farms where yield increases over a number of years. 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.

Chart 3: Average yield for winter wheat by soil type and farm type for 2014 – 2017 (t/ha)

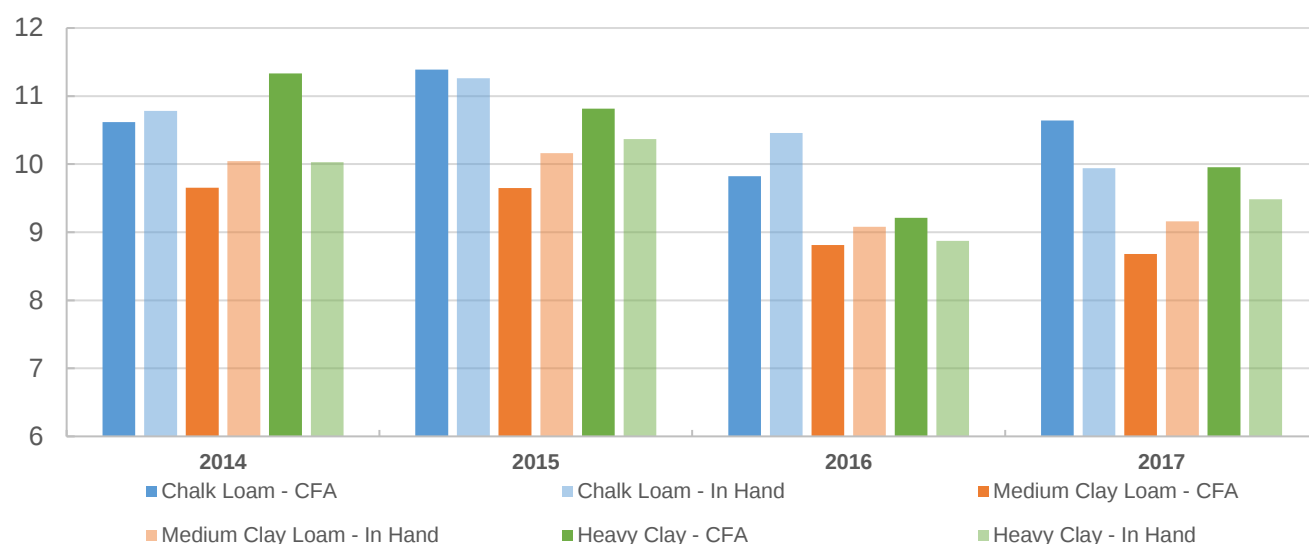
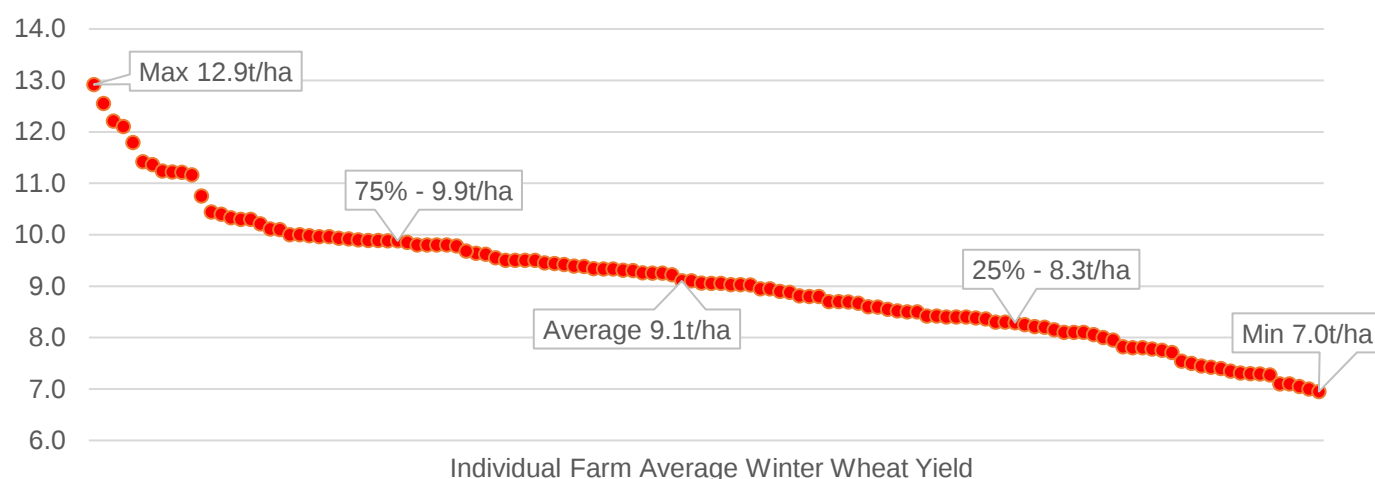


Chart 4: Distribution of all winter wheat yields for 2017 (t/ha)



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

Wheat

- 1st wheat yields averaged 9.5t/ha, 2% higher than in 2016 but 2% lower than the five year average.
- 2nd wheat yields averaged 7.8t/ha, 11% lower than in 2016 and 10% lower than the five year average.
- Lack of autumn moisture delayed emergence, with many crops less developed than normal going into winter.
- Prolonged dry conditions during spring starved the crop of nutrition and forced crops through their growth stages.
- Small root structures as a result of the slow autumn growth, poor stem carbohydrate reserves, low ear number and quick grain fill had a toll on 2nd wheat yield, with early varieties the worst affected.
- T1 and T2 timings were early, with flag leaves emerging on knee-high crops.
- 1st wheats on well-structured soils or those with added organic manures maintained potential, with the highest yielding blocks averaging over 11t/ha.
- Quality on early cut fields was reasonable – the late take up of nitrogen and low yields gave constantly high, and in cases too high, grain proteins, which was reflected from milling to feed wheats.
- Specific grain weights were variable, influenced by site more than variety, with few varieties making the highs of 80kg/hl seen in 2016.
- Retention of hagberg quality was one of the take home experiences from harvest 2017, the season proving a test of genetics and breeding.
- The hagberg falling number was locally influenced but in general Crusoe, Gallant, Cordiale and Lili seemed to retain quality as early combining progressed. Skyfall and Siskin appeared to lose hagberg quality with surprising speed, late slow/finishing Skyfall the possible exception. Of the Group 3 varieties, Barrel and Basset appeared to hang on better than Zulu.
- DON and ZON infections remained low, with rain arriving after flowering, fusarium levels were also low.

Oilseed rape

- Oilseed rape had a much better year, with the crop averaging 3.7t/ha, 6% up on the five year average and 27% up on 2016 levels.
- This yield improvement was partly down to the selection of crops with good potential being taken through to harvest, with growers being far harder and replanting potentially poor crops or crops infested with grass weeds early on.
- In the eastern region, a large area was lost shortly after establishment due to the August/September drought conditions, with cabbage stem flea beetle adult (CSFB) damage being a secondary problem.
- We estimate that circa 80% of the crop was lost in Essex at that point.
- CSFB larvae pressure seemed lower than in 2016 and plants benefited from 229.9 sunshine hours throughout June in East Anglia, a significant increase compared to the 131.7 sunshine hours reported by the Met Office for June 2016.

Winter Barley

- Winter barley recovered from 2016 levels - yielding an average of 7.3t/ha, 9% up from 2016 and just 2% lower than the 5 year mean.
- Winter barley generally benefited from an earlier drilling date and spring nitrogen than other second cereals which will have prevented some of the issues experienced in the second wheat.
- The issue of specific weights faced in 2016 was not prevalent in 2017, with most crops making marketable specifications without deductions.
- The highest yielding varieties this year were the 6 row hybrids, with 2 row conventional varieties not too far behind.
- As with all crops, seedbed conditions in autumn 2016 had a big influence on how the plants accessed nutrition, crops that could not access sufficient nutrients were quick to drop tillers and yield suffered.
- Late nitrogen uptake, post ear emergence, gave crops some unwanted straw length which caused lodging issues, as well as high grain nitrogen values.

Winter Beans

- Yields were significantly higher than spring beans for the first time in the history of our survey, achieving an average of 4.2t/ha, a 7% increase on 2016 yields and an 8% increase on the 5 year average.
- Yield came from crops being established well in the dry October 2016 conditions, good seedbeds gave good anchorage and access to nutrition.
- Rain through flowering, pod set and grain fill caused crops to set high yield potentials, mitigating the impact of the high June temperatures.
- While yield was good, quality was poor. The high temperatures during pod set favoured bruchid beetle, with very few samples at harvest being under the threshold for human consumption.

Spring Barley

- Overall a poor performance for spring barley in 2017, with yields averaging 6.0 t/ha, 7% lower than in 2016 and 7% below the five year average.
- Drilling conditions were challenging on some farms, with a slower than anticipated start to establishment.
- Initially moisture was an issue on some sites if it had been lost in seedbed preparation, in the main growth was slow to GS 30.
- Nitrogen applications were timely, with enough initial moisture to get crops moving.
- Having applied one growth regulator to an already slow moving crop, many backed away from further straw shortening for fear of damaging the crop. In some cases, this turned out to be a mistake as with the later rains came the uptake of nitrogen and rapid expansion in crop height.
- While most crops got through the gales and heavy rain in June, ultimately it was the delay in getting the crop cut that had the biggest impact on yield.
- Grain size looked to be reasonable, with the odd blind grain site and partially formed ears being noted.
- Delays to the wheat harvest put the spring barley harvest back, followed by days of waiting for the crop to dry before cutting finally progressed. Harvesting brackled crops with many ears on the ground and many more bent over added to the combining challenge.
- Anecdotal reports of 1 – 1.5t/ha of crop left behind were frequent.
- Seed germination was variable, with “pre germ” figures often pulling down the specification further, only early harvested grain yielded on par with expectation and had a chance to make full malting specification, in what was a challenging and generally frustrating year for the crop.

Spring Beans

- For the first time in over 10 years of our survey, spring bean yields dropped below that of winter beans, with an average of 3.8t/ha for 2017, a 2% decrease on 2016 and 1% decline on the five year average.
- Crops generally established and grew well in the early season, canopy size was reasonable, as was early flower and pod set.
- A combination of high temperatures, lack of rainfall mid flowering and poor root structure development (when compared to winter beans) caused flowering to cease prematurely, with generally fewer pods per stem than required.
- Some pod splitting at harvest was noted but in general the crop did not set enough viable pods.
- As with the winter beans, bruchid activity was high with very few samples making human consumption specification.

Methodology

The data comes from 132 farms managed by Strutt & Parker's farming department. The farms cover 54,000 hectares, have an average size of 409 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 spring beans where the 2015 and 2014 data are from 16 and 13 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 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.

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Canterbury	01227 451 123
Chelmsford	01245 258 201
Chester	01244 354 888
Chichester	01273 832 602
Cirencester	01285 659 661
Edinburgh	0131 226 2500
Exeter	01392 215 631
Farnham	01252 821 102
Gerrards Cross	01753 891 188
Guildford	01483 306 565
Harpenden	01582 764 343
Harrogate	01423 561 274
Haslemere	01428 661 077
Horsham	01403 246 790
Inverness	01463 719 171
Ipswich	01473 214 841
Lewes	01273 475 411
Ludlow	01584 873 711
Market Harborough	01858 433 123
Moreton-in-Marsh	01608 650 502
Morpeth	01670 516 123
Newbury	01635 521 707
Northallerton	01609 780 306
Norwich	01603 617 431
Odiham	01256 702 892
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Pangbourne	0118 984 575
Perth	01738 567 892
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Sevenoaks	01732 459 900
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