

Strutt & Parker Yield Results | Harvest 2016

At a glance

The average yield of winter wheat for harvest 2016 fell to 8.9t/ha, 13% lower than in 2015 and 2% lower than the 2012-16 five year average.

Rainfall in the latter stages of crop development hampered yields, with the lack of sunshine particularly affecting wheat on heavy soils, oilseed rape and winter barley.

Oilseed rape yields felt the impact of Cabbage Stem Flea Beetle as the average winter OSR yield fell to 2.9t/ha, 23% lower than in 2015 and 18% lower than the five year average.

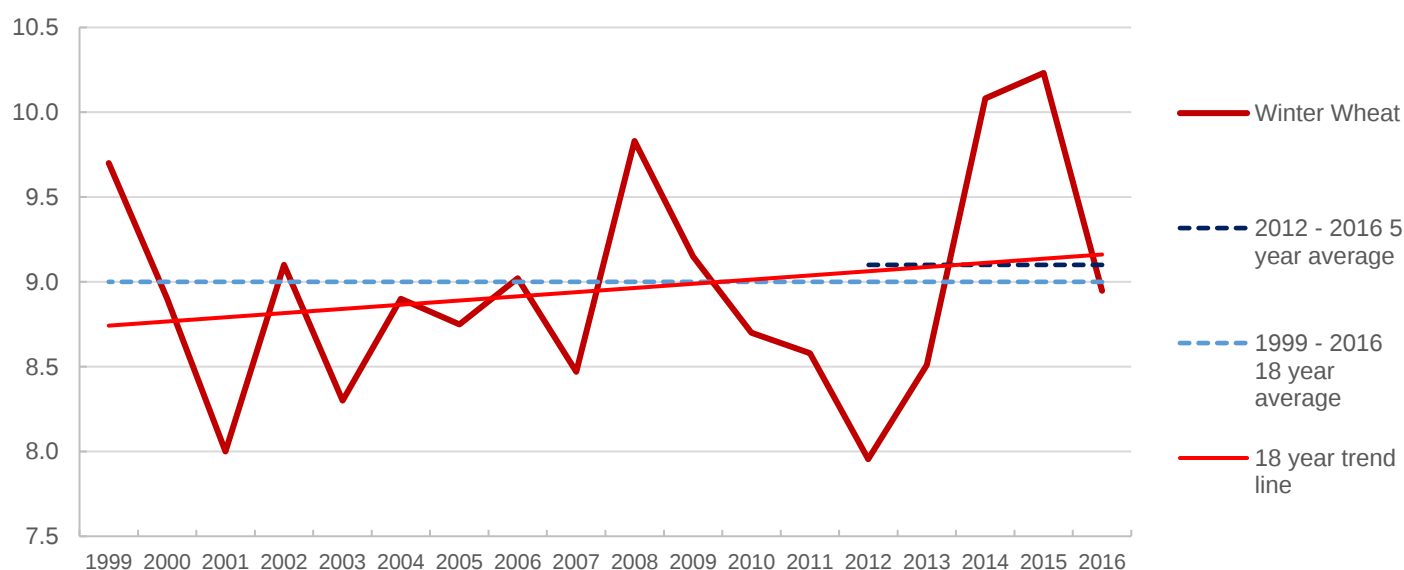
Average yields for 2016

Yields were lower for all main crop types although wheat yields were around the five year average.

Table 1: Average yields for 2016 compared with the last five years (t/ha)

	Winter Wheat	1st Wheat	2nd Wheat	Winter Barley	Spring Barley	Winter OSR	Spring Beans
2016	8.9	9.2	8.8	6.7	6.4	2.9	3.9
% change from 2015	-13%	-15%	-5%	-19%	-9%	-23%	-7%
2015	10.2	10.9	9.3	8.3	7.0	3.7	4.2
2014	10.1	10.1	9.8	8.1	7.0	3.8	4.2
2013	8.5	8.9	7.7	7.3	6.0	3.4	3.5
2012	8.0	7.9	7.8	7.4	6.6	3.9	4.9
2012 – 16 5 year average	9.1	9.3	8.7	7.5	6.5	3.5	4.0
% change from 5 year average	-2%	-1%	0%	-11%	-3%	-18%	-2%

Chart 1: Average yield for winter wheat for 1999 - 2016 compared with the five and eighteen year means (t/ha)

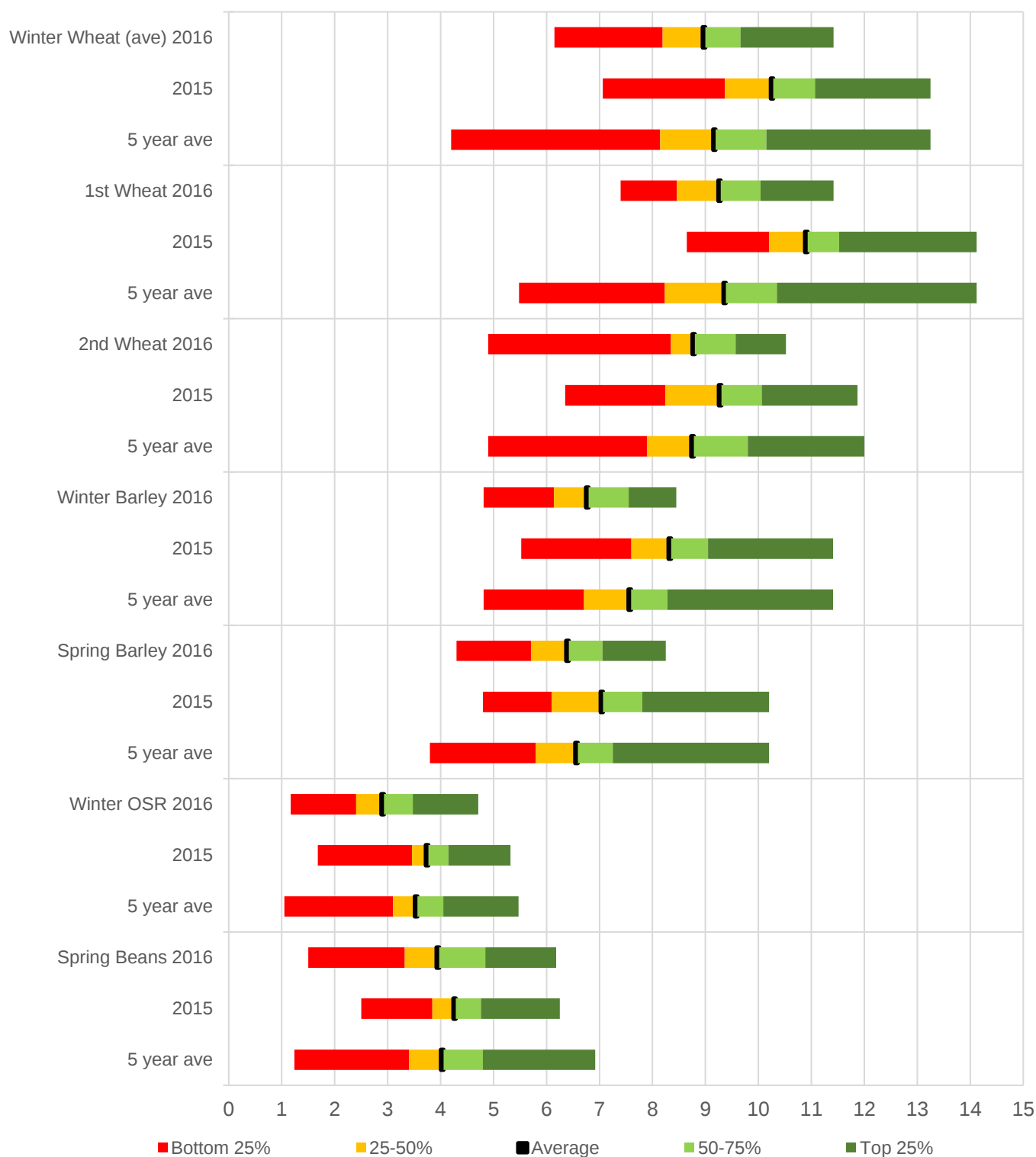


¹ All wheat yields stated are an average of all varieties of winter wheat grown, as either first or second wheat, unless explicitly stated as being yields for first or second wheats.

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 yields)²

Chart 2: Minimum, bottom 25%, average, top 25% and maximum yields (t/ha) for 2016 compared with 2015 and 2012 – 2016 five year average (t/ha)



² Bottom 25% means if 100 yields were measured, the amount of the 25th yield from the bottom. The top 25% is the 25% from the top (and 75th from the bottom). NB the minimum and maximum yields stated for the five year average are the lowest and highest during the five year period, and not the average of the lowest and highest.

Yield by soil type and farm type

Yields fell on all soil types by about the same proportions.

Yields of winter wheat³ on heavy clay soils averaged 8.9t/ha, which is 14% lower than 2015, and 5% lower than the 2012-16 five year average.

Yields on medium clay loams averaged 8.8t/ha, 11% lower than in 2015 and 4% lower than the five year average.

Yields on the lighter chalk loams averaged 9.7t/ha, 15% lower than in 2015 and 4% lower than the 2012-16 five year average.

For first wheats there were similar levels of falls on heavy and light soils.

Chart 3: Average yield for winter wheat by soil type and farm type for 2012 – 2016 (t/ha)



The data does not show a statistically significant difference in winter wheat yield between in hand farms and Contract Farming Agreements (CFAs). This is despite most new CFAs typically being on lower performing farms with the aim to bring yields up. The majority of CFAs in the data set are on their second three year term and consequently they are stable, long-term relationships which enable the contractor to achieve consistency in yield.

Interpretation for each crop by our agronomy team

Wheat

- Competing with the record high of 2015 was unlikely when the season started off very slowly. For many areas too much rain in the latter stages of development hampered yields.
- 1st wheat yields fell by 15% to 9.2t/ha, 15% lower than in 2015 and 1% lower than the five year average.
- 2nd wheat yields were 8.8t/ha, 5% lower than in 2015 and the same as the five year average.
- We were surprised our data showed light and heavy soil types falling in yield by similar percentages this year compared with 2015 and the five year average. We feel that the excess rainfall in June (99mm compared with 19mm in June 2015 for Met Office Cambridge) provided sufficient moisture to the lighter, chalk loams at grain fill and consequently should have performed comparatively better.

³ This is an average of all varieties of winter wheat grown as either first or second wheat.

- We feel the lower yields on heavy land in particular were a result of not receiving sufficient solar radiation needed to capitalise on the available moisture at grain fill.
- Lack of grass weed control has had a fundamental impact on yields in some areas, reducing yield through either direct competition or late season crop destruction.
- Our team's experience is that this was the worst year for black-grass control in recent years. The reason for this was the mild winter, which meant that the black-grass grew through pre-emergence sprays. It was large and tillered before post-emergence sprays were applied. Resistance to Atlantis has become widespread and consequent efficacy on large, tillered plants has greatly reduced.
- Foliar disease has also been an issue, with early rust and septoria levels requiring robust T1 and T2 fungicides on all but the cleanest varieties. Rainfall at flowering also led to fusarium ear diseases and consequent loss of bushel weight.
- It is also clear that variety choice has had an effect. Based on data from the AHDB Recommended List trials for the East, Skyfall performed 3% below its five year mean and Trinity was 2% down. Crusoe, Cordiale and Evolution were all 3% above their five year means.
- Our data shows that Skyfall yields were 2% lower than Crusoe, with both achieving full milling specification.

Oilseed rape

- Oilseed rape had its lowest yielding year since 2004, with the crop averaging 2.9 t/ha, 18% down on the five year average and 23% down on 2015 levels. The yield shock was an unwelcome surprise as, at desiccation time, many crops did not look as poor as they performed.
- In the East, crops struggled to establish under the pressure of pyrethroid resistant adult Cabbage Stem Flea Beetle (CSFB), even in counties where emergency approval was granted for neonicotinoid seed dressing.
- Additionally, the damage caused by larvae of the CSFB led to stunted growth and premature senescence.
- A long flowering period and reduced solar radiation (309 sunshine hours for May/June compared with 426 in 2015, Met Office Oxford) led to fewer seeds per pod and smaller seeds.
- Areas of crops were either lost or sprayed out due to CSFB adult and larvae damage, black-grass, slugs and pigeons, which all contributed to the lower yields.
- Anecdotally, hybrids performed better than conventional varieties in CSFB larvae pressure areas because the growing point was faster to lift away from larvae damage in the early spring.

Winter Barley

- Winter Barley also was a casualty of the 2016 growing conditions – yielding on average 6.7t/ha, 19% down from 2015 and 11% lower than the five year average.
- Within the ear, low seed numbers and seed weight were a result of the slow spring and subsequent growing conditions and led to many final bushel weights below 60kg/hl and subject to quality claims.
- Barley Yellow Dwarf Virus had a considerable impact on yield as a result of insufficient aphid protection and the mild autumn conditions.
- The yields of both six-row hybrid and two-row conventional varieties were equally affected, with local site conditions having a greater bearing on final bushel weight. However while both types had a bad year, six-row hybrids out-yielded the two-rows, as shown in the AHDB Recommended List trials for the East data.

Spring Barley

- Yields were reasonable at 6.4 t/ha and quality was good considering the wet conditions at planting and delayed drilling on heavier ground.
- This narrowed the gap significantly between spring and winter barley to just 0.3 t/ha for 2016, although a 1t/ha difference remains between the five year averages.
- Crops benefitted from the available moisture, supporting better bushel weights and, in general, a marketable quality.

Spring Beans

- Spring beans continue to average marginally higher than winter beans, at 3.9t/ha for 2016 which is 7% down on 2015 and 2% down on the five year average.
- The fall in yield appears to be as a result of the late spring and slow mid-season growing conditions.
- Control of bruchid beetle at late flowering has again been difficult and resulted in many crops only making feed quality.
- Anecdotally, winter beans is the only crop which had higher yields in 2016 than in 2015. Good establishment and the mild winter led to good plant development and survival. Quality has been generally poor with high bruchid beetle damage in samples (>10%) negating human consumption premium.

Methodology

The data comes from 129 farms managed by Strutt & Parker's farming department. The farms cover 54,000 hectares, have an average size of 416 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 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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