

Strutt & Parker Yield Results | Harvest 2019

At a glance

The average yield of winter wheat¹ for harvest 2019 was 9.9t/ha, 17% higher than in 2018 and 7% higher than the five-year average. First wheat yields were 4% higher than the five-year average and second wheat yields were 15% better.

Winter barley performed better than in 2018. Yields averaged 8.8t/ha, which is 14% higher than in 2018 and 12% above the five-year average. Spring barley yields were also higher, up 23% on 2018 levels and 9% above the five-year average.

Winter oilseed rape performed very similarly to 2018, averaging 3.4t/ha in both years, which is the five-year average. We will keep an eye on yields, as the full impact of the increase in cabbage stem flea beetle damage becomes clear.

Average yields for 2019

Yields were higher than in 2018 for all of the main crops.

Figure 1: Average yields (t/ha)

	Winter Wheat	1st Wheat	2nd Wheat	Winter Barley	Spring Barley	Winter OSR	Winter Beans	Spring Beans
2019	9.9	10.0	9.8	8.8	6.9	3.4	3.8	3.8
% change from 2018	17%	15%	22%	14%	23%	1%	32%	36%
2018	8.5	8.7	8.0	7.7	5.6	3.4	2.9	2.8
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
2015	10.2	10.9	9.3	8.3	7.0	3.7	3.5	4.2
Five-year average	9.3	9.6	8.6	7.9	6.4	3.4	3.6	3.8
% change from five-year ave	7%	4%	15%	12%	9%	1%	6%	0%

Figure 2: Average yields for winter wheat (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.

Range of 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). For most cereal crops there is a 2t/ha range in the middle 50% of yields, which can greatly affect profitability.

Figure 3: Minimum, bottom 25%, average, top 25% and maximum yields (t/ha) for last three years

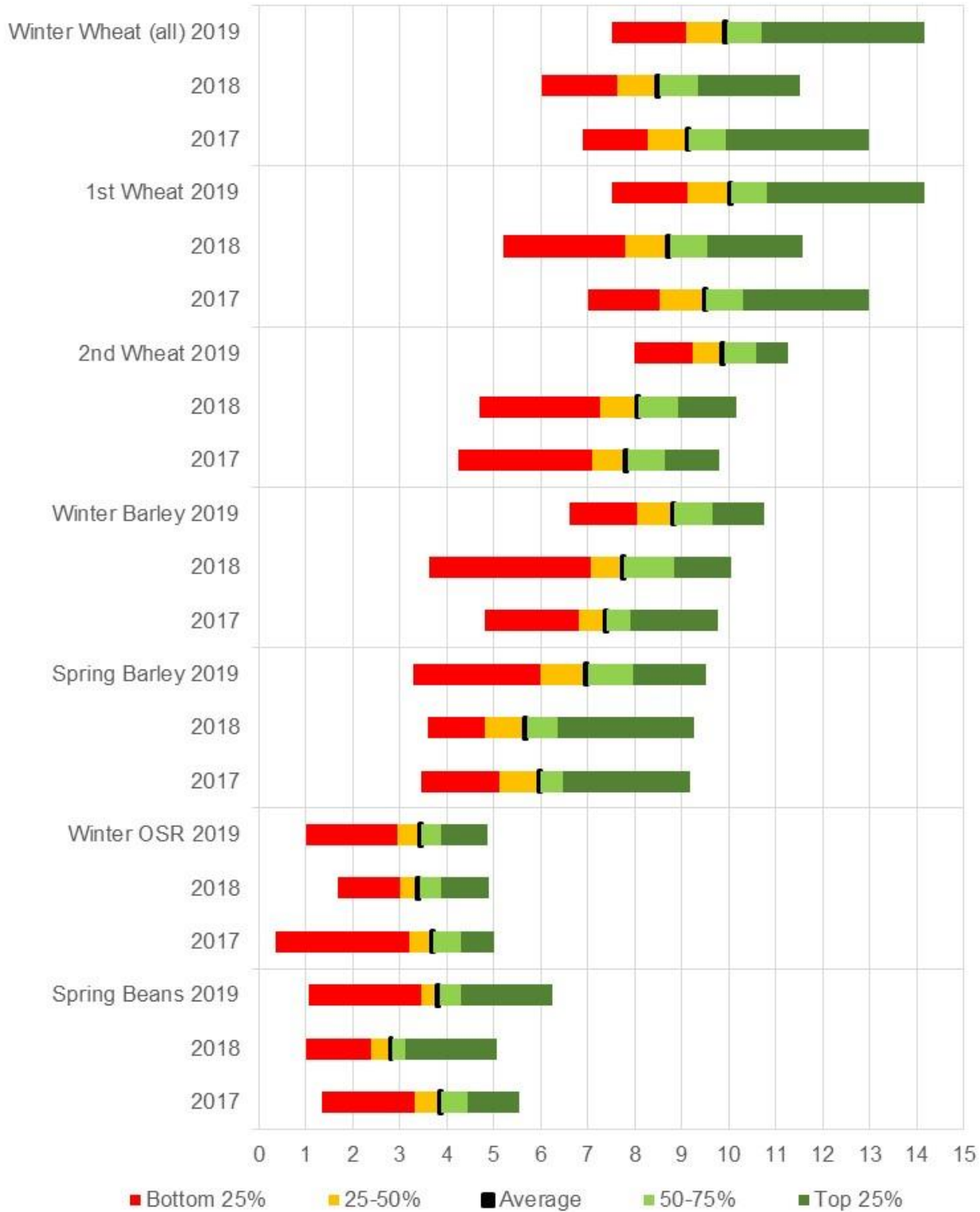
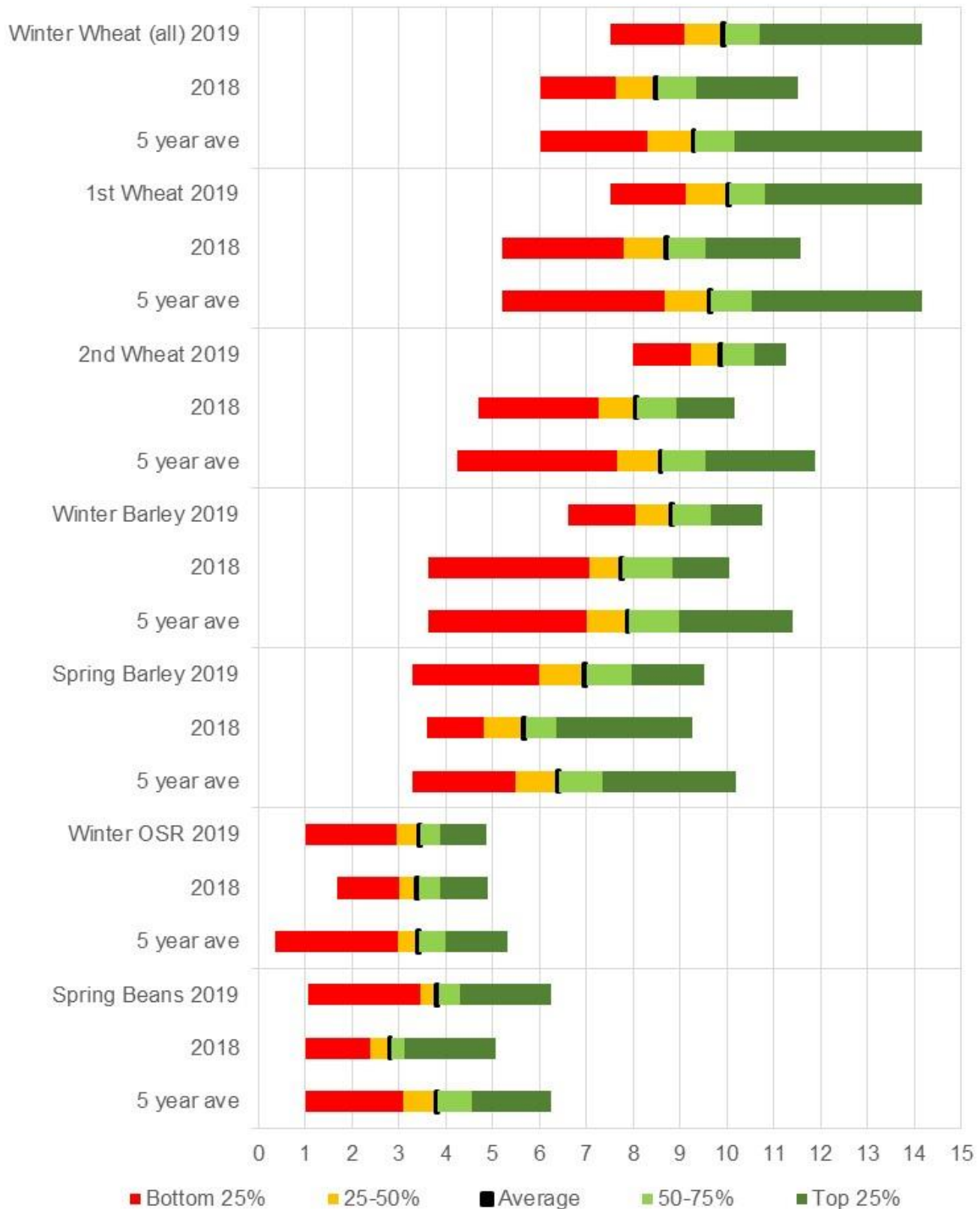


Figure 4: Minimum, bottom 25%, average, top 25% and maximum yields (t/ha) for 2019 compared with the five-year average (2015 – 19)





Yield by soil type

Wheat yields² were above average on all soils apart from lighter chalk loams, where they averaged 9.4t/ha, 1% lower than in 2018 and 6% lower than the five-year average. On heavy clay soils, wheat averaged 10.6t/ha, which is 23% higher than in 2018, and 12% above the five-year average, and on medium clay loams it averaged 9.9t/ha, 18% higher than in 2018 and 8% higher than the five-year average.

For first wheats, yields were 15% higher than in 2018 and 4% above the five-year average.

Yield by farm type

For the first time, the data shows a significant difference in winter wheat yields between in hand farms (10.2t/ha average in 2019) and Contract Farming Agreements (9.5t/ha). We will watch this trend over time to assess whether it is real, long-term and what could be causing it.

Interpretation for each crop by our agronomy team

The harvest season of 2019 was characterised by good establishment of autumn crops, but with very low winter rainfall. The mean temperature for the UK as a whole over the winter was 1.4°C above the 1981-2010 average and the average rainfall for the UK was only 77% of the 1981-2010 average³. This meant that spring crops could be drilled far earlier than in 2018, which undoubtedly helped the uplift in yield. The spring remained very dry, and many crops had altered fungicide and growth regulator programmes. 2018 was a year in which many growers were able to reduce their fungicide spend considerably, relying more on varietal resistance rather than chemistry. The wetter weather from the start of June helped to secure the yield of most crops this year, but the impact was somewhat reduced for the earlier senescing crops such as oilseed rape.

Wheat

- The average winter wheat yield was 9.9 t/ha, which is 7% higher than the five-year average of 9.3t/ha. First wheats were 4% above the five-year average, and second wheats were 15% above.
- The uptake of nutrients in 2019 was good in the early spring if applications of fertiliser were able to be made. However the later applications of granular products often had to wait for a considerable time to be washed in and become available to roots. 2019 was a season in which farms using liquid products later in the season would have benefitted.
- Many wheat crops still required a late nitrogen application to achieve milling quality, even for varieties which reach specification relatively easily such as *Crusoe*. Despite this challenge of achieving the specification, milling premiums are still only £15/t above feed price at the time of writing due to the quantity of wheat in the market.
- In many cases the T0 fungicide application could be kept basic and inexpensive, as the dry weather prevented early septoria and yellow rust development. This was variety dependant however, and varieties with low resistance scores still required treatment where disease was expected.
- Recommendations for T1 and T2 fungicide and growth regulator applications required careful adjustment to balance the need for protection from future disease with the absence of signs of disease at the time. Because of the dry weather, many growth regulators at T1 were at reduced rates compared to other years.
- Harvest progress was generally slow and frequent rain events and showers meant crops needed to be prioritisation. A dry August bank holiday helped and growers in the south and east of England generally finished harvest then.
- Grain moisture at harvest was higher than in recent years, due to the rainfall at harvest. This increased drying costs for many wheat crops, or the price was reduced due to deductions for moisture.
- Grain protein levels were more difficult to achieve than in 2018 due to the dilution effect of higher yields.

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.

³ Source: Met Office.

Costs of production and profitability. The average winter wheat cost of production was £126/t in 2018. Higher yields and lower spending on fungicides should have reduced it in 2019 to around or below £108/t in 2019⁴. Despite the higher yields, net margins are likely to be lower (at an average of £27/t or £267/ha), due to the lower wheat price.

	2019 Average (Provisional)	2018 Average
Total Variable Costs (£/ha)	£500	£500
Total Fixed Costs (£/ha)	£570	£570
Total Costs excluding BPS, Rent and Finance (£/ha)	£1,070	£1,070
Yield (t/ha)	9.9	8.5
Cost of Production excluding BPS, Rent and Finance (£/t)	£108	£126
Price (£/t)	£135	£165
Net margin excluding BPS, Rent and Finance (£/t)	£27	£39
Net margin excluding BPS, Rent and Finance (£/ha)	£267	£327

Oilseed rape

- Winter oilseed rape yields averaged 3.4 t/ha, 1% higher than in 2018 and 1% above the five-year average. Data on farms for which we have a long time series of yields suggests that yields are falling, possibly the result of cabbage stem flea beetle (CSFB) infestations.
- Conditions for establishment were good in the autumn, however a dry end of August and start of September meant that growth was delayed until there was rain in mid-September. Pressure from CSFB was high, and many crops struggled to get through the risk period. As always good establishment was dependant on rainfall reaching the crop in its early growth stages, both to push growth but as rainfall events usually correspond with lower daytime temperatures, which reduce the activity of CSFB.
- Because of the dry autumn, winter disease levels were low. This meant many growers could rely more on the varietal resistance of the plant. If a fungicide was required, this was generally inexpensive.
- A dry winter also allowed for spring fertiliser applications to occur early in the season, pushing crop growth.
- The dry spring did inevitably have an effect on yield, as the rains in June occurred after most of the yield potential had been set. It did help fill the seeds that were set and there is no doubt that yield would have been lower if the rains hadn't happened.
- **Costs of production and profitability.** The average winter oilseed cost of production was £275/t in 2018. Yields were very similar in 2019 and prices slightly higher. However, the increased costs of growing OSR including numerous sprays of insecticide will inevitably be maintaining or increasing variable cost spend, so cost of production in 2019 may rise from our provisional figure of £271/t. The higher price has boosted net margins to an average of £74/t or £252/ha. This makes it slightly less profitable than wheat and there is higher risk, due to the impact of CSFB on yields and the cost of its control.

	2019 Average (Provisional)	2018 Average
Total Variable Costs (£/ha)	£435	£435
Total Fixed Costs (£/ha)	£490	£490
Total Costs excluding BPS, Rent and Finance (£/ha)	£925	£925
Yield (t/ha)	3.4	3.4
Cost of Production excluding BPS, Rent and Finance (£/t)	£271	£275
Price (£/t)	£345	£335
Net margin excluding BPS, Rent and Finance (£/t)	£74	£60
Net margin excluding BPS, Rent and Finance (£/ha)	£252	£203

⁴ We do not have confirmed variable or fixed costs for harvest 2019 yet so have used the average costs for harvest 2018 from our benchmarking database to produce these provisional figures. Please contact us if you would like to discuss cost of production benchmarking.



Winter Barley

- Winter Barley performed much better than in 2018, yielding an average of 8.8t/ha, 14% up on 2018 and 12% above the five-year average.
- Establishment in the autumn was good. There was a wide window for drilling and for crops to complete tillering. Barley has a reduced ability to compensate for low plant populations and tiller numbers than wheat, so getting enough plants in the ground, and in good time, is key.
- Disease control was relatively straightforward due to the dry conditions. The main barley diseases (net blotch and rhynchosporium) are made worse by cool, wet conditions rather than dry ones.
- Most crops received an application of the multisite chlorothalonil at the T2 timing for ramularia, as the other fungicide groups have reduced efficacy on this disease. The future of ramularia control is not clear at the moment, with the revocation of chlorothalonil in 2020.

Spring Barley

- In general, spring barley performed better than in 2018, with yields averaging 6.9t/ha, 23% higher than the previous year and 9% above the five-year average.
- Drilling conditions were much better than in 2018, with a much drier and warmer winter allowing crops to get a good start.
- Crops harvested with higher moisture contents had to be dried carefully to maintain germination, which is crucial for malting contracts. Where germination reductions were expected, the crop needed to be moved soon after harvest, often resulting in a lower sale price.
- Grain nitrogen percentages were variable depending on the timing of nitrogen applications, previous cropping and moisture in the soil at the early growth stages.
- **Costs of production and profitability.** The average cost of production was £145/t in 2018. Higher yields should reduce it to around or below £118/t in 2019⁵. Despite the higher yields, net margins are likely to be lower (at an average of £12/t or £83/ha), due to the much lower barley price. This makes it all the more important to achieve a malting specification on spring barley in order to make the enterprise profitable.

	2019 Average (Provisional)	2018 Average
Total Variable Costs (£/ha)	£310	£310
Total Fixed Costs (£/ha)	£510	£510
Total Costs excluding BPS, Rent and Finance (£/ha)	£820	£820
Yield (t/ha)	6.9	5.6
Cost of Production excluding BPS, Rent and Finance (£/t)	£118	£145
Price (£/t)	£130	£175
Net margin excluding BPS, Rent and Finance (£/t)	£12	£30
Net margin excluding BPS, Rent and Finance (£/ha)	£83	£169

Field Beans

- Average spring beans yields were 3.8t/ha, 36% higher than the 2018 average and matching the five-year average. Winter bean yields were a huge improvement on the 2018 average, with an increase of 32%.
- The rainfall in June was the crucial difference between the 2019 and 2018 crop, with the drought in the previous year causing the drastic reduction in yield.
- Some growers were deterred from growing beans in 2019 due to their performance in the previous year, however these results reiterate how performance is so closely related to the weather at key times of year.
- Demand for beans remains strong as a source of non-GM protein for animal feed and as an exportable human consumption crop to north Africa. Bean prices have fallen slightly to around £180/t for feed, but prices of £200/t were achieved at harvest by some.

⁵ We do not have confirmed variable or fixed costs for harvest 2019 yet so have used the average costs for harvest 2018 from our benchmarking database to produce these provisional figures. Please contact us if you would like to discuss cost of production benchmarking.



Looking to harvest 2020

- The autumn of 2019 looks set to be one to forget – due to prolonged wet conditions hampering the drilling of autumn cereals. The situation for oilseed rape is also a tale of two halves, with earlier drilled crops looking good on the whole and many later drilled crops grazed to nothing. Perhaps though, instead of forgetting this season, it is a good one to learn from.
- Growers who were able to adapt quickly to changes in conditions, and windows for drilling have managed to get crops in the ground. This also goes hand-in-hand with having machinery and labour available to act accordingly. Farms that have large acreages to cover with small numbers of large machinery have struggled this season.
- Having smaller machinery, which is able to travel in more challenging conditions, can pay off in seasons such as this. Hopefully as the trend for automation increases, growers will be able to utilise the full window of opportunity available – resulting in more crops being drilled when conditions allow.
- What has been clear over the last few seasons is that understanding profitably and cost of production is paramount to making informed decisions relating to farm businesses.
- As a starting point, all growers should be utilising technology to record yields, crop sales and prices, variable costs and fixed costs. Most growers are already using systems on their farms that have this functionality, but are not using them to their full potential. Integrating this information with new systems will facilitate new insights into the production of crops, improving decision making and driving profitability.

Methodology

The data comes from 137 farms managed by Strutt & Parker's farming department. They farm 110,600 hectares and have an average cropped area of 831 hectares. They 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 yields 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 data for most years is from fewer than 20 farms.

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 2019, 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.

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