YIELD RESULTS

Harvest 2020

AT A GLANCE

Wheat

The average winter wheat[1] yield was 7.4t/ha, which is 25% lower than in 2019 and 15% lower than the five-year average of 8.8t/ha. First wheats were 16% below the five-year average, and second wheats were 11% below.

Barley

Winter Barley yields averaged 6.6t/ha, 24% lower than in 2019 and 12% below the five-year average.

The average yield for spring barley was 5.8t/ha, 16% lower than in 2019 and 5% lower than the five-year average. All the major crops performed below the five-year average however spring barley was the closest to achieving this.

Oilseed rape

Winter Oilseed rape yields averaged 2.4t/ha, 30% lower than in 2019 and 24% lower than the five-year average.

Beans

Winter beans were the worst performing of the major crops with an average yield of 1.8t/ha, 53% lower than in 2019 and 44% lower than the five-year average.

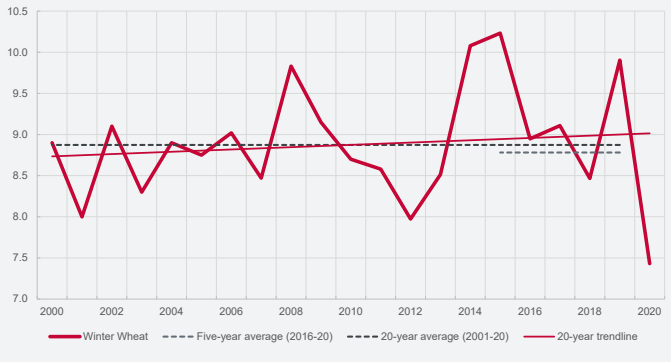
AVERAGE YIELDS FOR 2020

Yields were lower than in 2019 for 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
2020	7.4	7.6	7.4	6.6	5.8	2.4	1.8	3.3
% change from 2019	-25%	-24%	-25%	-24%	-16%	-30%	-53%	-14%
2019	9.9	10	9.8	8.8	6.9	3.4	3.8	3.8
2018	8.5	8.7	8	7.7	5.6	3.4	2.9	2.8
2017	9.1	9.5	7.8	7.4	6	3.7	4.2	3.8
2016	8.9	9.2	8.8	6.7	6.4	2.9	3.9	3.9
Five-year average	8.8	9	8.3	7.6	6.2	3.1	3.2	3.6
% change from five-year ave	-15%	-16%	-11%	-12%	-5%	-24%	-44%	-10%

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

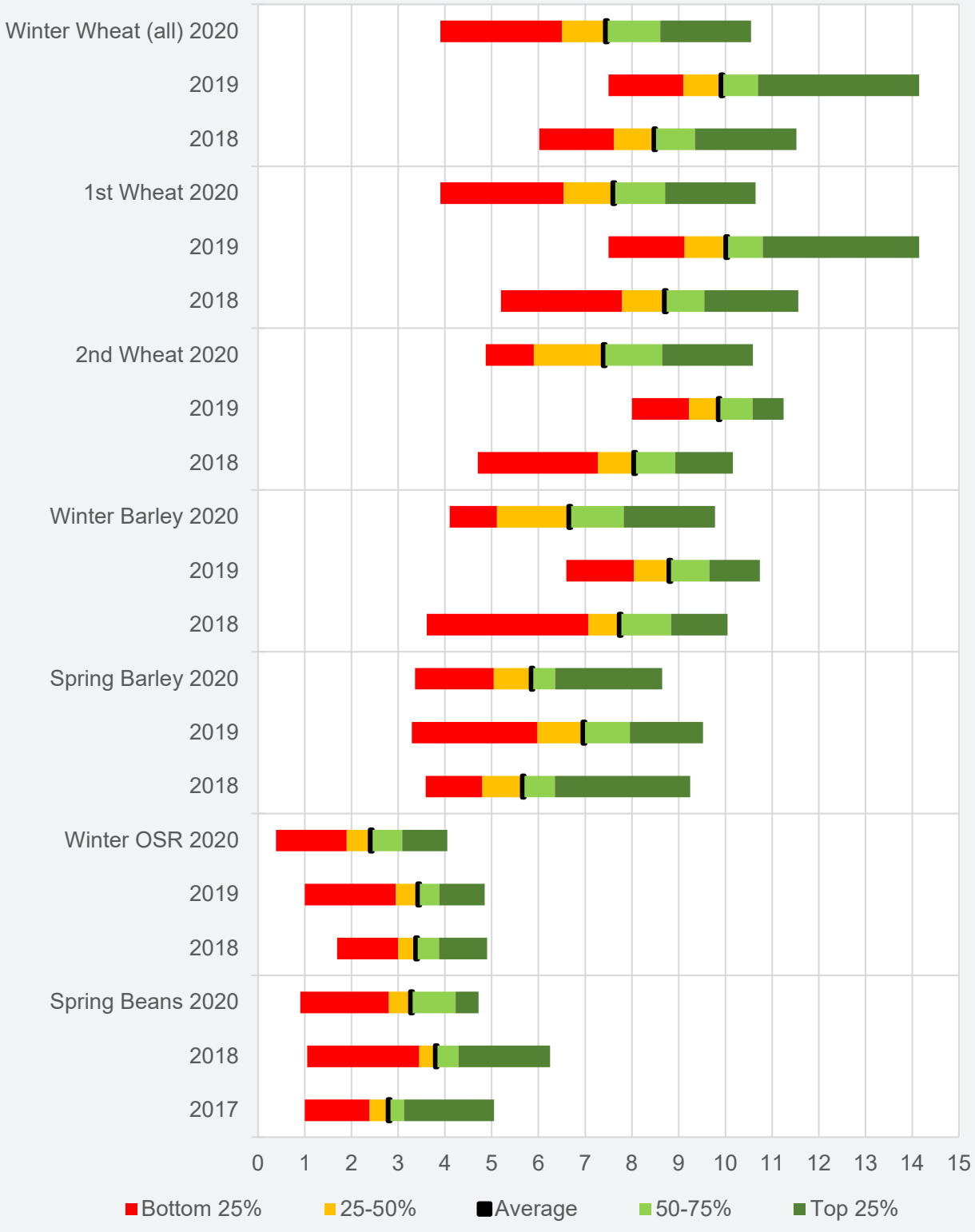
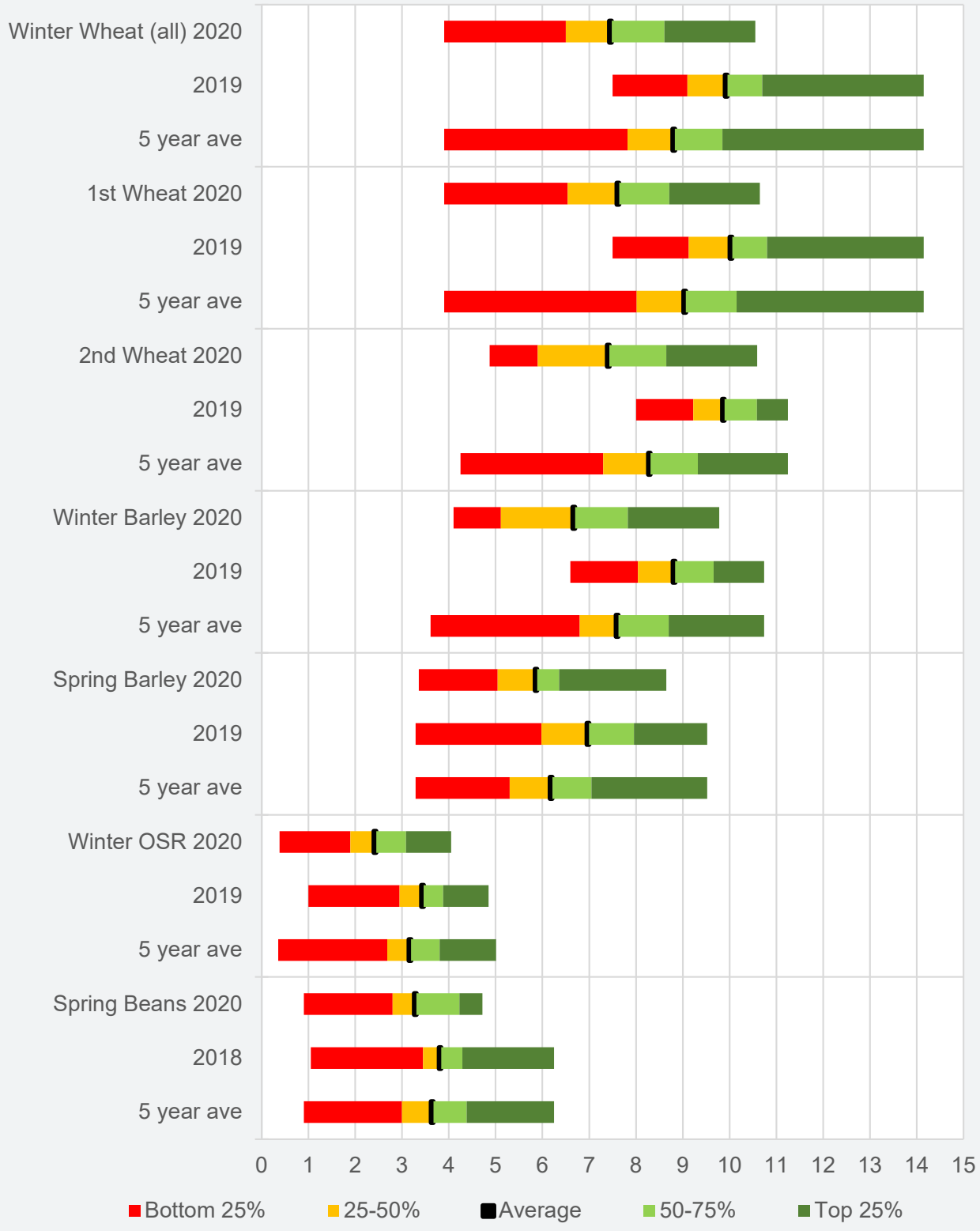


Figure 4 Minimum, bottom 25%, average, top 25% and maximum yields (t/ha) for 2020 compared with the five-year average (2016 – 20)



WHEAT

Key stats

7.4t/ha

The average winter wheat yield was 7.4t/ha

25%

2020 winter wheat area is estimated to be 25% down on the 2019 area

31%

Only 31% of Group 1 varieties achieving full grain protein levels

Winter Wheat:

The average winter wheat yield was 7.4t/ha, which is 25% lower than in 2019 and 15% lower than the five-year average of 8.8t/ha. First wheats were 16% below the five-year average, and second wheats were 11% below.

Due to the prolonged wet weather which hampered autumn drilling, the 2020 winter wheat area is estimated to be 25% lower than the average.
Coming out of a mild winter, yellow rust was generally easy to find in susceptible varieties and required treating in early spring with a triazole based fungicide.

As the spring progressed, drought conditions began to have an impact and disease levels were low, particularly septoria tritici. Where it was appropriate fungicide inputs could be reduced taking into account location and varietal resistance.

Wheat harvest began earlier than normal with a majority of winter crops in the east cut in late July through to early August. The second half of August saw widespread rainfall which slowed harvest progress and also had an adverse effect on grain quality.

Grain protein levels were difficult to achieve with only 31% of Group 1 varieties achieving full specification to date. The lack of rainfall during the spring did not allow enough nitrogen be taken up by the crop and by the time crops did receive rainfall in June it was too late as crops had begun to mature and were not able to convert the nitrogen into grain protein effectively.

Spring Wheat:

Spring wheat protein levels were generally more consistent than their winter counterparts, having received rainfall at an earlier stage in their maturity enabled them to utilise nitrogen more effectively.

Figure 7 Winter wheat cost of production and net margin

		2020 Average (Provisional)	2019 Average	2018 Average
(£/ha)	Total Variable Costs	£526	£526	£500
(£/ha)	Total Fixed Costs	£533	£533	£570
(£/ha)	Total Costs excluding BPS, Rent and Finance	£1,059	£1,059	£1,070
(t/ha)	Yield	7.4	9.9	8.5
(£/t)	Cost of Production excluding BPS, Rent and Finance	£143	£107	£126
(£/t)	Price	£175	£135	£165
(£/t)	Net margin excluding BPS, Rent and Finance	£32	£28	£39
(£/ha)	Net margin excluding BPS, Rent and Finance	£241	£278	£327

BARLEY

Key stats

6.6t/ha

Winter Barley yields averaged 6.6t/ha

5.8t/ha

Average yield for spring barley was 5.8t/ha

Winter Barley:

Winter Barley yields averaged 6.6t/ha, 24% lower than in 2019 and 12% below the five-year average.

Due to the wet conditions in the autumn, the majority of winter barley crops were drilled later than would have been preferred. Crops drilled from the middle of October onwards were significantly lower yielding, as winter barley has a reduced ability to compensate for low plant populations and tiller numbers compared to winter wheat.

Disease pressure was low due to the dry spring; the main barley diseases (net blotch and ryncosporium) prefer cool wet conditions rather than the hot dry ones that were experienced.

Control of ramularia, one of the other major diseases in winter barley will become more difficult following the revocation of chlorothalonil in May 2020.

Spring Barley:

The average yield for spring barley was 5.8t/ha, 16% lower than in 2019 and 5% lower than the five-year average.

Drilling conditions in the early spring were poor following the wet winter. By the time seedbeds dried out enough the spring drought took hold and crops struggled to emerge evenly unless soil moisture had been conserved effectively.

In hindsight crops should have received all of the nitrogen in the seedbed, as later applications were not able to be utilised effectively due to the lack of rainfall to wash the fertiliser into the soil.

As a result of the dry conditions, weed pressure was low and many crops did not receive a pre-emergence herbicide reducing input costs.

Very few crops have achieved the required specification to achieve malting quality due to having a high grain nitrogen content, therefore most crops have been targeted at the feed market. Sample results received also indicate low specific weight and germination for late harvested crops which received heavy rainfall once they had matured.

Figure 8 Spring barley cost of production and net margin

		2020 Average (Provisional)	2019 Average	2018 Average
(£/ha)	Total Variable Costs	£344	£344	£310
(£/ha)	Total Fixed Costs	£478	£478	£510
(£/ha)	Total Costs excluding BPS, Rent and Finance	£822	£822	£820
(t/ha)	Yield	5.8	6.9	5.6
(£/t)	Cost of Production excluding BPS, Rent and Finance	£141	£118	£145
(£/t)	Price	£135	£130	£175
(£/t)	Net margin excluding BPS, Rent and Finance	-£6	£12	£30
(£/ha)	Net margin excluding BPS, Rent and Finance	-£34	£81	£169

OILSEED RAPE

Winter Oilseed rape yields averaged 2.4t/ha, 30% lower than in 2019 and 24% lower than the five-year average.

Oilseed rape had a difficult year due to the perfect storm of unfavourable conditions, firstly cabbage stem flea beetle (CSFB) larvae pressure and dry conditions at planting, crops sitting in cold wet soils over winter followed by the dry hot spring which led to plants developing very thin and short canopies with small seeds.

There has been a move to earlier drilling to allow the plants to get established before the end of August when CSFB feeding levels appear to be at their highest. The key to getting a crop established is moisture at drilling or shortly afterwards, to allow plants to get to four true leaves as quickly as possible.

Key stats

2.4t/ha

Winter Oilseed rape yields averaged 2.4t/ha

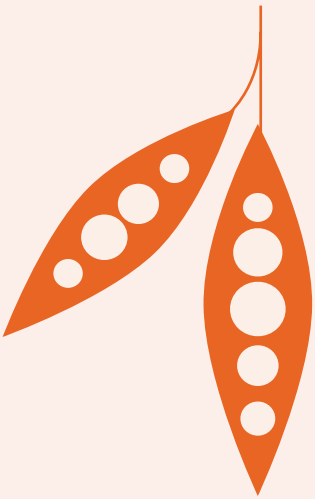
-£37/t

Net margin excluding BPS, Rent and Finance.

Figure 9 Winter oilseed rape cost of production and net margin

		2020 Average (Provisional)	2019 Average	2018 Average
(£/ha)	Total Variable Costs	£486	£486	£435
(£/ha)	Total Fixed Costs	£481	£481	£490
(£/ha)	Total Costs excluding BPS, Rent and Finance	£967	£967	£925
(t/ha)	Yield	2.4	3.4	3.4
(£/t)	Cost of Production excluding BPS, Rent and Finance	£403	£283	£275
(£/t)	Price	£366	£345	£335
(£/t)	Net margin excluding BPS, Rent and Finance	-£37	£62	£60
(£/ha)	Net margin excluding BPS, Rent and Finance	-£89	£210	£203

FIELD BEANS



Key stats

Winter Beans:

Winter beans were the worst performing of the major crops with an average yield of 1.8t/ha, 53% lower than in 2019 and 44% lower than the five-year average.

Spring beans performed better than winter beans with an average yield of 3.3t/ha, 14% lower than in 2019 and 10% lower than the five-year average.

Many winter bean crops were not planted as a result of the wet autumn, and those that were went into cold, wet seedbeds. As a result of this, crops lacked vigour coming out of winter and the hot and dry spring had an adverse effect through flowering and pods set.

Rust was the main disease present in crops, reliably controlled using a triazole-based fungicide program. Chocolate spot was not as easy to find – however, this disease could become more prevalent in the future, following the revocation of chlorothalonil.

Bruchid beetle activity was high due to the hot temperatures during pod fill and few samples have made human consumption. Control of this pest with pyrethroid insecticides is becoming less effective, with many growers choosing to omit these products from their late spring applications.

Seed quality has also been adversely affected by the drought and many samples are returning germination results of less than 80%.

The market for beans remains strong and prices of over £200/t have been achievable for feed quality.

Figure 10 Winter beans cost of production and net margin

		2020 Average (Provisional)	2019 Average	2018 Average
(£/ha)	Total Variable Costs	224	224	230
(£/ha)	Total Fixed Costs	388	388	430
(£/ha)	Total Costs excluding BPS, Rent and Finance	612	612	660
(t/ha)	Yield	1.8	4.47	2.98
(£/t)	Cost of Production excluding BPS, Rent and Finance	340	137	221
(£/t)	Price	210	185	210
(£/t)	Net margin excluding BPS, Rent and Finance	-130	48	-11
(£/ha)	Net margin excluding BPS, Rent and Finance	-234	215	-34

LOOKING TO HARVEST 2021

2020 looks like a year to forget – the wet autumn that hampered cereal drilling, the wettest February on record, followed by the driest and hottest spring in UK records

Oilseed rape crops have established well following the August rainfall, and earlier drilled crops have taken advantage of this. In these earlier drilled crops, CSFB damage has been low but what effect larvae will have post-winter is still unknown. Crops drilled in late August and early September have experienced more pressure and damage from CSFB

Another UK weather record was broken with 3rd October 2020 being the wettest day in the UK since records began. This has been the second wet autumn in a row and has impacted autumn cereal drilling. We can expect weather like in recent years be the normal, not the exception, due to climate change. Therefore, farmers must either have a flexible machinery fleet which can operate in these more challenging conditions or change their rotation and crop management.

2021 will be the first spring without the use of chlorothalonil, which has been revoked due to its possible effects on the environment and human health. It has been a useful multisite product, aiding fungicide programmes targeting Septoria Tritici and for managing disease resistance.

After the wet harvest in 2020, it will be important to correct any damage to soil structure so that it does not affect subsequent crops.

With dry springs becoming a more frequent occurrence, applying early nitrogen as soon as conditions allow in the spring is key for driving cereal yields

Blackgrass levels were low at harvest 2020, as a result of later drilled winter crops and an increase in spring cropping. Going into 2021, it is important not to forget the impact this weed will have on yields, if not managed appropriately. Herbicides alone cannot be relied on for control and cultural controls such as delayed drilling and crop competition will still be required.

Following a low yielding harvest 2020, and with the continued impact of COVID-19, farm profits will be lower and cash flows could become tight over the next twelve months. This season will highlight the importance of knowing the cost of production for each crop, and where improvements can be made to ensure that all areas of the business remain profitable.

STRUTT & PARKER FARMING OFFICES

1. Inverness
2. Banchory
3. Perth
4. Morpeth
5. Northallerton
6. Shrewsbury
7. Stamford
8. Cambridge
9. Norwich
10. Chelmsford
11. Oxford
12. Newbury
13. Salisbury

Methodology
The data comes from 137 farms managed by Strutt & Parker's farming department. They farm 48,600 hectares and have an average cropped area of 360 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 for which we have 2020, 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.