# **SUPPLY AND DEMAND**

**28 November 2023** 



## **KEY POINTS**

- A smaller wheat crop outweighs heavier carry-in stocks and increased imports. This, combined with an
  uptick in domestic consumption, leaves a tighter wheat balance for the 2023/24 season.
- For barley, despite expectations of a slight fall in overall domestic consumption, lower availability leads to a tighter than average balance this season.
- Maize imports in the 2023/24 season are expected to rise for increased usage in animal feed production.
- A smaller oat crop leads to a tight looking balance this season.

## **INTRODUCTION**

- 1. This release covers the first official estimates made of UK cereal supply and demand for 2023/24 (Appendix 1).
- 2. Defra were unable to publish provisional UK cereal and oilseed production estimates for 2023, due to reduced data availability from UK regions. Official provisional estimates are for England and Scotland only. Following Defra's methodology from when a UK provisional figure was last released in 2021, the AHDB have assumed no change for Wales and Northern Ireland area and production figures from 2022. These have been combined with the provisional England and Scotland production figures to produce UK wheat and barley production estimates for the AHDB Early Balance Sheets. Production for previous seasons is based on the results from the Defra Cereals and Oilseed Rape Production survey.
- Total cereals demand for animal feed in 2023/24 is forecast at 12.443 Mt, relatively unchanged on the year and the second lowest level since 2016/17. Last year, lacklustre demand, largely driven by the monogastric sector, saw a steep decline in cereals usage for animal feed production. This season it is not expected that total feed production will rebound, and we could see further falls in cattle and pig feed demand. However, higher cereal inclusion and some recovery in the poultry sector means that usage will likely remain steady in 2023/24. Of course, should Avian Flu cases worsen in line with last season, we could see poultry feed demand revert to year earlier levels or lower. For pigs and cattle, cost of production is expected to remain high, with margins continuing to be squeezed. As a result, despite contraction last year, it's unlikely that the pig herd will expand much this season. Herd reductions are also expected within the dairy herd in the new calendar year as a way of cutting costs.
- 4. Human and Industrial total cereals usage is estimated to be 340 Kt higher than 2022/23 levels at 10.938 Mt. This increase is largely driven by a rise in demand by the bioethanol and starch industries, with demand estimated to remain firm for the rest of the season after a strong start. Demand for cereals from the brewing malting and distilling (BMD) and flour milling sectors, is expected to remain relatively in line with last season.

## **WHEAT**

- 5. In 2023/24, the total availability of wheat is estimated at 17.433 Mt, 1.241 Mt lower than 2022/23 levels, with a smaller crop outweighing a rise in carry-in stocks and imports. Opening stocks this season are forecast at 1.953 Mt, the highest since 2020/21 and up 165 Kt on the year. UK wheat production is provisionally estimated at 14.055 Mt, down 1.485 Mt from year earlier levels, on the back of a smaller planted area and large variation in yields. Full season imports are forecast at 1.425 Mt, up slightly (79 Kt) on the season. Wheat imports this season to date (Jul-Sep) are up 13.4% on the year. The majority of imports this season are expected to be high protein wheat, with quality lacking after the relatively wet start to harvest.
- H&I wheat consumption is expected to increase by 328 Kt year on year to 7.664 Mt in 2023/24. This yearly rise is largely due to strong demand from the bioethanol and starch industries, with firm wheat usage at the beginning of the season expected to continue. Strong demand for wheat from the sector is reflected in the current premiums for feed wheat delivered into Yorkshire. It is assumed in our estimates that both UK bioethanol plants will be operational this season. A positive resolution to the renewable energy directive (RED II) requirements following the UK's exit from the EU is also assumed. It is worth nothing that if we see any changes to the RED II status of domestically produced grain, UK wheat S&D would evolve significantly through the rest of the season. Despite lower extraction rates compared to last season, demand by flour millers is forecast to decline slightly on the year, as the 'cost-ofliving crisis' continues to impact flour demand. Flour millers are expected to use a higher proportion of imported wheat in 2023/24 than last season, due to a lack of high-quality domestic supply, with German milling wheat now pricing into the north of England. Wheat usage in BMD is forecast up on the year, with firm demand from the distilling sector.
- 7. Usage of wheat in animal feed is forecast up slightly (76 Kt) on the year, at 6.985 Mt. The reason for this rise is that wheat continues to feature relatively heavily in rations so far this season (Jul-Sep) specifically in integrated poultry units (IPU). However,

looking ahead, for the rest of the season, barley is expected to remain at strong levels, and maize expected to price more competitively into feed production, capping any further climbs in wheat demand. In the 2023/24 season, the amount of wheat fed on farm is forecast to be slightly lower on the year due to tighter availability and the relative price, with cheaper feed prices expected this season but still historically high grain prices for farmer selling.

8. At 2.447 Mt, the balance of total availability and domestic consumption is 1.637 Mt or 40% lower than 2022/23 levels, and below the five-year average of 3.003 Mt. Reduced availability due to a smaller crop, combined with increased domestic consumption has led to the tighter balance. An estimated operating stock requirement of 1.500 Mt (unchanged on the year) is taken into account, leaving a 947 Kt surplus of wheat available for either export or free stock, down 1.091 Mt on 2022/23 levels, and slightly lower than the five-year average.

## **BARLEY**

- 9. In 2023/24, total availability of barley is estimated at 8.336 Mt, 101 Kt lower than 2022/23 levels largely due to a fall in production. Despite the highest level of opening stocks since 2020/21, a 5% decline in production and a fall in imports has led to reduced availability this season. UK barley production is provisionally estimated at 6.981 Mt, down 404 Kt or 5% on the year, with poor spring barley yields outweighing a rise in total planted area. Full season imports are forecast at 87 Kt, relatively in line (down 1 Kt) with 2022/23. High quality barley imports are expected firm this season, with strong demand forecast from BMD.
- 10. H&I barley consumption is estimated to be in line with year earlier levels, up 5 Kt at 1.985 Mt and the highest this century. Usage by the brewing, malting and distilling (BMD) is forecast to be higher on the year. While demand for brewing is said to be lacklustre as a result of the rise in cost of living, distilling sees barley usage on the up with increased capacity and firm demand.
- 11. Usage of barley in animal feed rations in 2023/24 is forecast to fall by 14 Kt on the year, to 3.929 Mt. Much of this estimated fall is down to usage so far this season, with wheat featuring more heavily this season to date. However, barley features in rations at more supported levels than perhaps earlier expected this season, and looking ahead, barley looks to remain price competitive, leading to a relatively unchanged usage figure this season from last.
- 12. The barley supply and demand balance in 2023/24 is 90 Kt or 4% lower year on year at 2.207 Mt, driven by a decrease in availability. The barley balance remains lower than the previous five-year average. Operating stocks remain unchanged at 800 Kt, leaving an exportable surplus of 1.407 Mt, down 196 Kt on the year and below the five-year average.

## **MAIZE**

- 13. In 2023/24, the total availability of maize is estimated to be 28 Kt greater year on year at 2.274 Mt. Full season imports of maize are forecast to rise 151 Kt on year earlier levels to 2.274 Mt. This season to date (Jul-Sep), the UK has imported 530 Kt of maize, down 16% on the volume imported during the same period in 2022/23. It is estimated that maize imports will pick up pace as the season progresses due to its relative price compared with domestic grains.
- 14. Maize usage by H&I sectors is estimated at 778 Kt, down 13 Kt on year earlier levels. Maize usage by the bioethanol sector is expected to pick up for the rest of the season, with the yearly decline due to a slow start to this season for maize usage in the sector. The usage of maize in animal feed is forecast up slightly (16 Kt) on the year at 1.253 Mt, which would be the highest level since 2020/21 but still below the previous five-year average. The relative price of maize compared to domestic wheat and barley is expected to shift towards the end of the season leading to a rise in maize usage in animal feed production forecast later in the season.
- 15. In 2023/24 the balance of maize supply and demand is 25 Kt higher than year earlier levels at 365 Kt. Exports are estimated at 150 Kt, up 19 Kt on the year, while closing stocks are forecast at 215 Kt, up 89 Kt from 2022/23 levels.

## **OATS**

- 16. The total availability of oats in 2023/24 is forecast at 1.011 Mt, down 171 Kt on the year, due to a fall in both opening stocks and production outweighing a rise in imports. UK oat production this season is provisionally estimated at 841 Kt, down 166 Kt year on year. Full season imports are pegged at 30 Kt, up 12 Kt or 71% from 2022/23.
- 17. H&I oat consumption in 2023/24 is estimated to rise by 20 Kt on the year to 512 Kt. While demand for oat products is thought to be lacklustre globally, increased hulling losses from this season's domestic crop, as well as expectations of increased capacity, mean total oat demand is forecast up on the year. As the season progresses, the impact of increased capacity will be assessed. Usage of oats in animal feed is forecast down 73 Kt or 21% on the year, at 277 Kt. Both demand by compounders and fed on farm usage is forecast down this season, driven largely by a smaller crop.
- 18. At 195 Kt, the balance of oat availability and consumption is 117 Kt lower than 2022/23 levels, and lower than the five-year average of 244 Kt. Full season exports are forecast to decline by 112 Kt on the year, at 60 Kt. End-season stocks are estimated to be 5 Kt lower on the year at 135 Kt.
- 19. Appendix II shows cumulative usage and trade data to end-September. This release and related information can be found at ahdb.org.uk/cereals-oilseeds-markets.

**CEREALS & OILSEEDS** 



### Appendix I

## UK CEREAL SUPPLY AND DEMAND ESTIMATES (a) Estimates made in November 2023

July to June crop years

Thousand tonnes

		WHEAT					BARLEY						
		2018/19 2022/23	2020/21	2021/22	2022/23	2023/24	% change	2018/19 2022/23	2020/21	2021/22	2022/23	2023/24	% change
		average	estimate	estimate	estimate	Nov-23	on 22/23	average	estimate	estimate	estimate	Nov-23	on 22/23
(1)	Opening stocks	1,854	2,438	1,413	1,788	1,953	9%	1,109	1,357	1,058	964	1,268	32%
(2)	<u>Production<sup>†</sup></u>	13,793	9,658	13,988	15,540	14,055	-10%	7,404	8,117	6,961	7,385	6,981	-5%
(3)	<u>Imports</u>	1,737	2,431	1,994	1,346	1,425	6%	81	89	89	88	87	-1%
(4)	Total availability	17,384	14,527	17,394	18,674	17,433	-7%	8,595	9,562	8,108	8,437	8,336	-1%
(5)	Human and industrial consumption (b)	7,002	6,617	7,156	7,336	7,664	4%	1,853	1,722	1,885	1,980	1,985	0%
(5a)	(of which home grown)	5,939	5,131	6,056	6,419	6,617	3%	n/a	n/a	n/a	n/a	n/a	n/a
(6)	Usage as animal feed (c)	7,046	6,115	7,242	6,909	6,985	1%	4,242	5,312	4,228	3,943	3,929	0%
(6a)	(of which home grown)	6,422	5,365	6,542	6,489	6,485	0%	n/a	n/a	n/a	n/a	n/a	n/a
(6b)	(of which compounders)	3,991	3,654	4,043	3,774	3,883	3%	1,470	1,890	1,544	1,344	1,374	2%
(6c)	(of which integrated poultry units)	1,134	1,080	1,143	1,104	1,176	6%	80	147	83	74	79	8%
(7)	Seed (d)	264	278	280	267	267	-	191	185	178	181	181	-
(8)	Other	69	48	70	78	70	-10%	37	41	35	37	35	-5%
(9)	Total domestic consumption	14,381	13,058	14,748	14,590	14,985	3%	6,323	7,260	6,326	6,140	6,129	0%
(10)	Balance (4) - (9)	3,003	1,469	2,646	4,084	2,447	-40%	2,272	2,302	1,782	2,297	2,207	-4%
(11)	Exports (e)	774	209	511	1,586	-	*	1,166	1,290	764	1,123	-	*
(12)	Intervention stocks (e)	-	-	-	-	-	-	-	-	-	-	-	-
(13)	Commercial end-season stocks (e)	1,901	1,413	1,788	1,953	-	*	1,148	1,058	964	1,268	-	*
(14)	(of which estimated operating stock requirement) (f)	1,520	1,500	1,500	1,500	1,500	-	790	780	800	800	800	-
(15)	(of which free stock) (g)	381	-87	288	453	-	*	358	278	164	468	-	*
(16)	Surplus available for either export or free stock (10)-(12)-(14)-(18)	1,154		799	2,038	947	-54%	1,524	1,568	928	1,592	1,407	-12%
(17)	2020/21 operating stock deficit (13)-(14)**		-87										
(18)	Residual (10)-(11)-(13)		-153	347	546				-46	54	-95		

		MAIZE					OATS						
		2018/19					%	2018/19					%
		2022/23	2020/21	2021/22	2022/23	2023/24	change	2022/23	2020/21	2021/22	2022/23	2023/24	change
		average	estimate	estimate	estimate	Nov-23	on 22/23	average	estimate	estimate	estimate	Nov-23	on 22/23
(1)	Opening stocks	248	222	211	248	126	-49%	133	106	147	157	140	-11%
(2)	Production <sup>†</sup>	-	-	-	-	-	-	1,017	1,031	1,123	1,007	841	-16%
(3)	<u>Imports</u>	2,477	2,856	2,207	2,123	2,274	7%	21	20	17	18	30	71%
(4)	Total availability	2,726	3,078	2,417	2,371	2,399	1%	1,171	1,157	1,287	1,182	1,011	-14%
(5)	Human and industrial consumption	852	1,011	859	791	778	-2%	523	531	501	492	512	4%
(5a)	(of which home grown)	-	-	-	-	-	-	501	513	483	474	487	3%
(6)	Usage as animal feed	1,376	1,536	1,172	1,236	1,253	1%	374	394	476	350	277	-21%
(6a)	(of which home grown)	-	-	-	-	-	-	374	394	476	350	277	-21%
(7)	Seed	-	-	-	-	-	-	26	28	24	23	23	-
(8)	Other (h)	4	4	4	4	4	-	5	5	6	5	4	-20%
(9)	Total domestic consumption	2,232	2,551	2,035	2,031	2,034	0%	927	958	1,007	869	816	-6%
(10)	Balance (4) - (9)	494	527	383	340	365	7%	244	199	280	312	195	-38%
(11)	Exportable surplus	145	138	134	131	150	14%	99	41	123	172	60	-65%
(12)	Commercial end-season stocks	224	211	248	126	215	71%	133	147	157	140	135	-4%
(13)	Residual (10)-(11)-(12)		178	0	84				11	0	0		

#### Links connect to relevant Defra/AHDB data pages

Due to rounding, totals may not agree with the sum of individual items

†Defra were unable to publish provisional UK cereal and oilseed production estimates for 2023, due to reduced data availability from UK regions. Defra published provisional estimates for England only. AHDB have consulted with industry and Defra to produce production estimates for Wales, Scotland, and Northern Ireland. These have been combined with the provisional Defra England production figures to produce UK wheat, barley and oat production estimates for this release. For 'other cereals', 2022 production has been used in these balance sheets. Production of all crops for previous seasons is based on the results from the Defra Cereals and Oilseed Rape Production survey.

- (b) Defra updated the registry for the UK flour millers survey in spring 2016, the wheat H&I usage has been adjusted to take account of this change,
- (c) Animal feed usage has been split by sector. Note, other users are only included in the total.
- (d) Seed numbers have been updated based on a number of assumptions, calculated for the purposes of the balance sheets only.
- (e) Split of exports, intervention and total commercial end-season stocks only published for historical seasons.
- (f) Estimated operating stocks requirement is a calculated estimate of the minimum tonnage that users of grain require to get through to a point at which new crop can be utilised.
- (g) Free stock is the stock available after both exports and estimated operating stock requirements have been fulfilled.
- (h) 2014/15 new format: Maize demand in "Other food use" has been added to the H&I total for maize. This was previously included in the "Other" category.

<sup>\*</sup> Change not meaningful

<sup>\*\*</sup> Due to the highly unusual nature of this seasons hugely reduced wheat production figure, an extra line is included in the balance sheet to show the operating stock deficit.

<sup>(</sup>a) These are revised during the year. Figures rounded to the nearest 1000 tonnes.

		OTHER CEREALS (i)								
		2018/19 2022/23 average	2020/21 estimate	2021/22 estimate	2022/23 estimate	2023/24 Nov-23	% change on 22/23			
(1)	Opening stocks	6	5	5	10	6	-41%			
(2)	Production <sup>†</sup>	227	168	297	330	330	0%			
(3)	Imports	4	1	11	4	3	-43%			
(4)	Total availability	237	174	313	345	339	-2%			
(5+6)	H&I and animal feed	219	166	289	300	295	-2%			
(5a+6a)	(of which home grown)	213	165	279	290	287	-1%			
(7)	Seed	6	3	10	10	10	0%			
(8)	Other	-	-	-	-	-	-			
(9)	Total domestic consumption	224	169	299	310	305	-2%			
(10)	Balance (4) - (9)	13	5	14	35	34	-3%			
(11)	Exportable surplus	7	-	4	29	25	-15%			
(12)	Intervention stocks	-	-	-	-	-	-			
(13)	Commercial end-season stocks	6	5	10	6	9	55%			

		TOTAL CEREALS						
		2018/19 2022/23 average	2020/21 estimate	2021/22 estimate	2022/23 estimate	2023/24 Nov-23	% change on 22/23	
(1)	Opening stocks	3,350	4,128	2,834	3,167	3,493	10%	
(2)	Production <sup>†</sup>	22,442	18,974	22,369	24,262	22,207	-8%	
(3)	Imports	4,321	5,397	4,318	3,579	3,818	7%	
(4)	Total availability	30,113	28,499	29,521	31,009	29,518	-5%	
(5)	H&I (wheat, barley, maize, oats) (h)	10,230	9,881	10,402	10,598	10,938	3%	
(6)	Animal feed (wheat, barley, maize oats) (h)	13,036	13,357	13,117	12,437	12,443	0%	
(5a + 6a)	Other cereals (H&I and animal feed)	219	166	289	300	295	-2%	
(7)	Seed	487	494	492	481	481	0%	
(8)	Other	115	98	115	124	113	-9%	
(9)	Total domestic consumption	24,087	23,996	24,415	23,940	24,270	1%	
(10)	Balance (4) - (9)	6,026	4,503	5,105	7,069	5,248	-26%	
(11)	Exports	2,191	1,679	1,537	3,041	-	-	
(12)	Intervention stocks	-	-	-	-	-	-	
(13)	Commercial end-season stocks	3,412	2,834	3,167	3,493	-	-	
(14)	Estimated operating stock requirement (wheat & barley only)	2,310	2,280	2,300	2,300	2,300	-	
(15)	Free stock for wheat and barley***	738	191	452	921	-		
(16)	Surplus available for either export or free stock (10)-(12)-(14)-(18)	3,716	2,233	2,404	4,234	2,948	-30%	
(17)	Residual (10)-(11)-(13)		-10	401	535			

Source: AHDB, Defra

### Links connect to relevant Defra/AHDB data pages

Due to rounding, totals may not agree with the sum of individual items

(i) Includes mainly rye, triticale and mixed grain.

†Defra were unable to publish provisional UK cereal and oilseed production estimates for 2023, due to reduced data availability from UK regions. Defra published provisional estimates for England only. AHDB have consulted with industry and Defra to produce production estimates for Wales, Scotland, and Northern Ireland. These have been combined with the provisional Defra England production figures to produce UK wheat, barley and oat production estimates for this release. For 'other cereals', 2022 production has been used in these balance sheets. Production of all crops for previous seasons is based on the results from the Defra Cereals and Oilseed Rape Production survey.

<sup>\*</sup> Change not meaningful

<sup>\*\*\*</sup> Free stock figure in total cereals for 2020/21 balance sheet relates to barley only, due to the wheat deficit

### Appendix II

## CUMULATIVE MONTHLY STATISTICS Usage of cereals by processors, external trade and stocks

Situation as at end of September 2023 Thousand tonnes

Situation as a	t end of September 2023									Thousand tonnes
		2018/19 to	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	% Change	Actual Change
		2022/23	40	40	40	40	40	40	2023/24 on 2022/23	2023/24 on 2022/23
WHEAT		average	13 weeks	2022/23	2022/23					
	Flour millers (1)	1,534	1,726	1,444	1,477	1,488	1,506	1,621	8%	115
	of which home-grown	1,206	1,290	1,238	1,165	1,131	1,283	1,350	5%	67
	of which imported	328	436	206	312	357	223	271	21%	48
Usage	Brewers, maltsters and distillers	187	168	192	180	209	246	264	7%	18
	Animal Feed Processors (2)	1,165	1,226	1,194	1,130	1,111	1,101	1,107	1%	7
	of which feed compounders	880	927	917	840	836	814	806	-1%	-7
	of which intergrated poultry units	285	299	276	290	275	287	301	5%	14
Imports	From July (3)	613	772	303	744	632	356	404	13%	48
Exports	From July (3)	166	79	417	73	94	247	79	-68%	-168
BARLEY										
	Brewers, maltsters and distillers	444	461	470	400	443	461	478	4%	17
Usage	Animal Feed Processors (2)	344	285	292	371	429	297	315	6%	17
Osago	of which feed compounders	321	270	281	344	391	279	285	2%	6
	of which intergrated poultry units	23	16	11	27	38	18	30	63%	11
Imports	From July (3)	26	22	16	25	40	21	19	-10%	-2
Exports	From July (3)	337	129	671	279	268	288	218	-24%	-70
MAIZE										
Usage	Human and Industrial (4)	**	**	**	**	**	**	**	*	*
Osago	Animal Feed Processors (2)	112	101	125	119	103	**	**	*	*
	of which feed compounders	99	92	106	105	91	109	82	-25%	-27
	of which intergrated poultry units	14	9	19	14	12	**	**	*	*
Imports	From July (3)	517	544	561	640	324	631	530	-16%	-101
Exports	From July <sup>(3)</sup>	31	38	31	35	20	31	44	42%	13
OATS										
Usage	Human and Industrial <sup>(5)</sup>	134	142	128	139	128	129	124	-4%	-5
	Animal Feed Processors (2)	17	15	12	14	25	19	12	-35%	-7
Imports	From July (3)	5	6	2	6	4	3		18%	1
Exports	From July <sup>(3)</sup>	15	14	26	16	6	49	24	-51%	-25

Source: AHDB, Defra, HMRC

(1) Includes bioethanol and starch usage

(2) Great Britain only

(3) HMRC

(4) Data no longer available. For quarterly data to end of 2017/18, please access using historic balance sheets.

<sup>(5)</sup> Oat milled data published quarterly. Data displayed as at end-September (13 weeks).

\* Changes not meaningful

\*\*Insufficient sample to produce robust figure

### Notes

Due to rounding, totals may not agree with the sum of the individual items.

There are 53 weeks in the statistical year 2020. In order to incorporate the change January 2020 was increased to a 5 week period compared to 4 weeks in 2019.

There are 53 weeks in the statistical year 2016. In order to incorporate the change April 16 was increased to a 5 week period compared to 4 weeks in 2015.

Figures in Appendix II were updated on 28 November 2023. The data above may differ from the most recent published data.

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