

KEY POINTS

- Larger wheat carry-in stocks, combined with a rise in production, outweighs the increase in usage, leading to a substantial exportable surplus for 2022/23.
- While a rise in barley production and a fall in animal feed demand has led to a heavier balance sheet in 2022/23, the barley balance remains tight in a historical context and is the third tightest in 10 years.
- Maize usage is expected to be capped by higher domestic availability of grain.
- Another bumper oat crop has led to another year of high exports forecast.

INTRODUCTION

1. This release covers the first official estimates made of UK cereal supply and demand for 2022/23 (Appendix 1).

2. Defra were unable to publish provisional UK cereal and oilseed production estimates for 2022, due to reduced data availability from UK regions. Defra published provisional estimates for England only. AHDB have consulted with industry and Defra to build 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', 2021 production has been used in these balance sheets. Production of all crops for previous seasons is based on the results from the Defra [Cereal and Oilseed Rape Production Survey](#).

3. **In 2022/23, total cereals demand for animal feed is forecast at 12.850Mt, down 273Kt on the year and the lowest level since 2016/17.** Animal feed production this season is projected to decline, largely driven by the monogastric sectors. A decline in poultry feed demand is expected, driven by squeezed producer margins (for egg producers in particular), avian flu and the current 'cost of living crisis' impacting consumer demand, like with all livestock sectors. For pigs, with the backlog on farms largely cleared and a contraction in the breeding herd expected, pig feed production is expected to fall back from last year's highs. Cattle feed demand declined last season and is expected to remain relatively stable. Despite higher milk prices, producer margins are again being squeezed driven by higher input costs, with producers expected to utilise forage and grazing where possible. With margins for livestock and poultry producers continuing to be squeezed, as well as the avian flu outbreak, animal feed usage will be monitored closely this season. **Human and industrial (H&I) total cereal usage is expected to increase by 216Kt year-on-year to 10.571Mt.** This increase is largely driven by a rise in demand by the bioethanol and starch industries.

WHEAT

4. **At 18.735Mt, total availability of wheat in 2022/23 is forecast to be 1.337Mt higher than in**

2021/22. Higher opening stocks of 1.846Mt (up 429Kt from 2021/22), combined with a rise in output for harvest 2022, has outweighed a projected fall in imports, leading to the increased availability this season. UK wheat production is provisionally estimated at 15.664Mt, up 1.676Mt on the year, driven by higher-than-average yields. Wheat imports are forecast at 1.225Mt, down 769Mt from 2021/22 levels. The majority of imports are expected to be high protein wheat, with a small proportion feed wheat for Northern Ireland.

5. **H&I wheat consumption is expected to increase by 273Kt year on year to 7.385Mt in 2022/23.** A projected rise in demand by the bioethanol and starch industries is expected to outweigh a slight decline in flour miller demand. While both UK bioethanol plants are anticipated to be in operation, they are not expected to be running at full capacity for the entire season, partly due to longer maintenance periods. With higher input costs and less favourable bioethanol prices, bioethanol usage remains a key watch point. Wheat usage in starch production is also forecast to rise this season, on the back of increased capacity. Demand by flour millers is forecast to decline slightly on the year driven by higher extraction rates, on the back of higher specific weights, as well as the 'cost of living crisis' impacting the production of some premium and alternative products. While the protein content of this year's crop has averaged lower, flour millers are expected to use a slightly higher amount of home-grown wheat this season as imports are not pricing as competitively. However, a proportion of imported high protein milling wheat will be required to ensure continuity in the grist.

6. **In 2022/23 usage of wheat in animal feed is forecast to remain relatively unchanged (-9Kt) on the year at 7.239Mt.** The proportion of wheat used in rations this season is expected to increase, due to its availability and relative price compared with other feed grains such as maize. However, an overall decline in animal feed production this season, especially poultry feed, caps an increase in wheat usage. The amount of wheat fed on farm is forecast to be slightly lower due to the relative price, with growers yielding more by selling grain, instead of feeding it to livestock.

7. **At 3.752Mt, the balance of total availability and domestic consumption is 1.065Mt or 40% higher than 2021/22 levels.** Despite wheat consumption rising this season, larger carry-in stocks and output has led to the heavier balance. Taking into account an estimated operating stock requirement of 1.500Mt (unchanged year on year), that leaves a surplus available for either export or free stock of 2.252Mt, over 1.5 times 2021/22 levels of 857Mt and the largest surplus since 2015/16.

BARLEY

8. **In 2022/23, the total availability of barley is estimated to be 117Kt higher year on year at 8.226Mt.** Despite the lowest level of opening stocks in 10 years (961Kt), a rise in production has led to the overall increase in supply. Barley production is provisionally estimated at 7.190Mt, up 229Kt on the year, with higher-than-average yields outweighing a fall in planted area. Full season imports are forecast at 75Kt, 14Kt down on the year.

9. **H&I usage of barley is estimated to be 41Kt higher than 2021/22 levels at 1.923Mt.** If realised, this would be the highest level since 2014/15. Usage by the brewing, malting and distilling (BMD) is forecast to be higher on the year, with demand remaining robust, despite the rise in cost of living. Furthermore, an increase in distilling capacity in Scotland is expected this season.

10. **At 4.014Mt, usage of barley in animal feed rations is forecast to fall by 213Kt from 2021/22 levels.** At the start of last season barley was being included relatively heavily in rations, which was a knock-on from 2020/21, when supply of barley was high. However, with a larger supply of wheat from harvest 2021, barley inclusions fell at the expense of wheat for the rest of the 2021/22 season. With a higher domestic supply of wheat in 2022/23, this trend is expected to continue.

11. **The balance of barley supply and demand in 2022/23 is 289Kt higher year on year at 2.088Mt, driven by a fall in overall usage outweighing the rise in availability.** However, the barley balance remains lower than the previous five-year average and is the third lowest since 2012/13. Operating stocks remain unchanged at 800Kt, which leaves an exportable surplus of 1.288Mt, 360Kt higher year on year.

MAIZE

12. **In 2022/23, the total availability of maize is estimated at 2.258Mt, 159Kt lower than 2021/22 levels as a fall in imports outweighs the rise in opening stocks.** Full season imports of maize are forecast to fall by 197Kt on the year to 2.010Mt. So far this season (Jul-Sep) the UK has imported 627Kt of maize, nearly double the volume imported during the same period in 2021/22. It is expected that maize imports will steady as the season progresses due to its relative price compared with domestic grains.

13. **At 743Kt, maize usage by H&I sectors is estimated to fall by 114Kt year on year.** While bioethanol usage is expected to fall on the year, with wheat pricing more competitively, it's not projected to drop out of inclusions completely. **The usage of maize in animal feed is forecast to be slightly (-23Kt) down on the year at 1.150Mt, which would be the lowest level since 2016/17.** The relative price of maize and higher domestic supply of wheat is expected to cap maize inclusions in rations this season.

14. **The balance of maize supply and demand is 22Kt lower than 2021/22 levels at 360Kt.** Exports are estimated at 135Kt, relatively unchanged (+1Kt) on the year, while closing stocks are forecast at 225Kt, down 23Kt.

OATS

15. **The total availability of oats in 2022/23 is forecast at 1.253Mt, down 35Kt on the year, driven by a drop in production outweighing a slight rise in opening stocks.** Oat production is provisionally estimated at 1.081Mt, 42Kt lower year on year. Imports are pegged at 15Kt, down 2Kt from 2021/22.

16. **H&I usage of oats in 2022/23 is estimated to increase slightly by 16Kt on the year to 519Kt.** While additional oat milling capacity is expected to come online next year, it is not anticipated to impact demand for the 2022/23 season. **Usage of oats in animal feed is expected to fall back slightly (-28Kt) from last year's record levels to 446Kt.** While demand by compounders is expected to fall on the year, most of the decline is driven by a reduction in fed on farm usage, driven by a smaller, higher quality crop.

17. **At 257Kt, the balance of oat availability and consumption is 22Kt lower than 2021/22 levels, but remains relatively high in a historical context.** Exports are forecast to be 8Kt lower on the year, but remain strong at 115Kt. End-season stocks are estimated to be 15Kt lower on the year at 142Kt.

18. 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.

UK CEREAL SUPPLY AND DEMAND ESTIMATES ^(a)
Estimates made in November 2022

July to June crop years

Thousand tonnes

	WHEAT						BARLEY					
	2017/18 2021/22 average	2019/20 estimate	2020/21 estimate	2021/22 estimate	2022/23 Nov-22	% change on 21/22	2017/18 2021/22 average	2019/20 estimate	2020/21 estimate	2021/22 estimate	2022/23 Nov-22	% change on 21/22
(1) <u>Opening stocks</u>	1,848	1,911	2,438	1,416	1,846	30%	1,137	1,091	1,357	1,058	961	-9%
(2) <u>Production[†]</u>	13,652	16,225	9,658	13,988	15,664	12%	7,361	8,048	8,117	6,961	7,190	3%
(3) <u>Imports</u>	1,826	1,056	2,431	1,994	1,225	-39%	85	70	89	89	75	-16%
(4) Total availability	17,327	19,192	14,527	17,398	18,735	8%	8,583	9,210	9,562	8,108	8,226	1%
(5) <u>Human and industrial consumption (b)</u>	7,080	6,932	6,594	7,112	7,385	4%	1,833	1,778	1,722	1,883	1,923	2%
(5a) (of which home grown)	5,994	6,169	5,108	6,011	6,511	8%	n/a	n/a	n/a	n/a	n/a	n/a
(6) <u>Usage as animal feed (c)</u>	7,168	7,560	6,115	7,248	7,239	0%	4,262	4,144	5,312	4,227	4,014	-5%
(6a) (of which home grown)	6,484	7,060	5,365	6,548	6,739	3%	n/a	n/a	n/a	n/a	n/a	n/a
(6b) (of which compounders)	4,084	4,320	3,654	4,049	4,078	1%	1,457	1,399	1,890	1,544	1,358	-12%
(6c) (of which integrated poultry units)	1,161	1,185	1,080	1,143	1,155	1%	77	44	147	83	56	-32%
(7) Seed (d)	265	215	278	280	280	-	188	223	185	164	164	-
(8) Other	68	81	48	70	78	11%	37	40	41	35	36	3%
(9) Total domestic consumption	14,581	14,788	13,035	14,710	14,982	2%	6,320	6,185	7,260	6,309	6,138	-3%
(10) Balance (4) - (9)	2,746	4,404	1,492	2,688	3,752	40%	2,263	3,025	2,302	1,799	2,088	16%
(11) <u>Exports (e)</u>	546	1,205	209	511	-	*	1,162	1,790	1,290	764	-	*
(12) Intervention stocks (e)	-	-	-	-	-	-	-	-	-	-	-	-
(13) Commercial end-season stocks (e)	1,866	2,438	1,416	1,846	-	*	1,109	1,357	1,058	964	-	*
(14) (of which estimated operating stock requirement) (f)	1,540	1,550	1,500	1,500	1,500	-	784	790	780	800	800	-
(15) (of which free stock) (g)	326	888	-	346	-	*	325	567	278	164	-	*
(16) Surplus available for either export or free stock (10)-(12)-(14)-(18)	872	2,093		857	2,252	163%	1,474	2,356	1,568	928	1,288	39%
(17) 2020/21 operating stock deficit (13)-(14)**			-84									
(18) Residual (10)-(11)-(13)		761	-134	331				-121	-46	71		

	MAIZE						OATS					
	2017/18 2021/22 average	2019/20 estimate	2020/21 estimate	2021/22 estimate	2022/23 Nov-22	% change on 21/22	2017/18 2021/22 average	2019/20 estimate	2020/21 estimate	2021/22 estimate	2022/23 Nov-22	% change on 21/22
(1) <u>Opening stocks</u>	253	313	222	211	248	18%	124	116	106	147	157	6%
(2) <u>Production[†]</u>	-	-	-	-	-	-	991	1,076	1,031	1,123	1,081	-4%
(3) <u>Imports</u>	2,458	2,376	2,856	2,207	2,010	-9%	21	18	20	17	15	-13%
(4) Total availability	2,710	2,689	3,078	2,417	2,258	-7%	1,136	1,210	1,157	1,287	1,253	-3%
(5) <u>Human and industrial consumption</u>	822	800	1,011	858	743	-13%	532	553	531	503	519	3%
(5a) (of which home grown)	-	-	-	-	-	-	511	537	513	485	505	4%
(6) <u>Usage as animal feed</u>	1,375	1,362	1,536	1,174	1,150	-2%	358	346	394	474	446	-6%
(6a) (of which home grown)	-	-	-	-	-	-	358	346	394	474	446	-6%
(7) Seed	-	-	-	-	-	-	26	29	28	25	25	-
(8) Other (h)	4	4	4	4	4	-	5	5	5	6	5	-17%
(9) Total domestic consumption	2,201	2,166	2,551	2,035	1,898	-7%	921	933	958	1,007	995	-1%
(10) Balance (4) - (9)	509	523	527	382	360	-6%	215	276	199	280	257	-8%
(11) <u>Exportable surplus</u>	153	135	138	134	135	1%	70	120	41	123	115	-7%
(12) Commercial end-season stocks	248	222	211	248	225	-9%	133	106	147	157	142	-9%
(13) Residual (10)-(11)-(12)		166	178					50	11			

Links connect to relevant Defra/AHDB data pages

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

* Change not meaningful

** 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.

† Defra were unable to publish provisional UK cereal and oilseed production estimates for 2022, 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', 2021 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.

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

(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.

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		OTHER CEREALS (i)					
		2017/18 2021/22 average	2019/20 estimate	2020/21 estimate	2021/22 estimate	2022/23 Nov-22	% change on 21/22
(1)	Opening stocks	5	5	5	5	10	90%
(2)	Production [†]	145	169	168	297	297	0%
(3)	Imports	3	3	1	11	10	-9%
(4)	Total availability	153	177	174	313	317	1%
(5+6)	H&I and animal feed	144	169	166	294	298	1%
(5a+6a)	(of which home grown)	142	166	165	284	284	0%
(7)	Seed	3	3	3	5	5	-
(8)	Other	-	-	-	-	-	-
(9)	Total domestic consumption	147	172	169	299	303	1%
(10)	Balance (4) - (9)	5	5	5	14	14	-2%
(11)	Exportable surplus	-	-	-	4	4	-
(12)	Intervention stocks	-	-	-	-	-	-
(13)	Commercial end-season stocks	5	5	5	10	10	-3%

		TOTAL CEREALS					
		2017/18 2021/22 average	2019/20 estimate	2020/21 estimate	2021/22 estimate	2022/23 Nov-22	% change on 21/22
(1)	Opening stocks	3,367	3,437	4,128	2,837	3,221	14%
(2)	Production [†]	22,149	25,518	18,974	22,369	24,232	8%
(3)	Imports	4,393	3,523	5,397	4,318	3,335	-23%
(4)	Total availability	29,908	32,478	28,499	29,524	30,788	4%
(5)	H&I (wheat, barley, maize, oats) (h)	10,267	10,063	9,858	10,355	10,571	2%
(6)	Animal feed (wheat, barley, maize oats) (h)	13,163	13,412	13,357	13,123	12,850	-2%
(5a +6a)	Other cereals (H&I and animal feed)	144	169	166	294	298	1%
(7)	Seed	483	470	494	474	474	0%
(8)	Other	114	130	98	115	123	7%
(9)	Total domestic consumption	24,171	24,244	23,973	24,361	24,316	0%
(10)	Balance (4) - (9)	5,738	8,234	4,526	5,163	6,472	25%
(11)	Exports	1,931	3,249	1,679	1,537	-	-
(12)	Intervention stocks	-	-	-	-	-	-
(13)	Commercial end-season stocks	3,361	4,128	2,837	3,224	377	-88%
(14)	Estimated operating stock requirement (wheat & barley only)	2,324	2,340	2,280	2,300	2,300	-
(15)	Free stock for wheat and barley***	651	1,455	278	509	-	-
(16)	Surplus available for either export or free stock (10)-(12)-(14)-(15)	3,414	5,038	2,237	2,461	4,172	70%
(17)	Residual (10)-(11)-(13)		856	10	403		

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.

* Change not meaningful

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

† Defra were unable to publish provisional UK cereal and oilseed production estimates for 2022, 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', 2021 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.

Appendix II

CUMULATIVE MONTHLY STATISTICS

Usage of cereals by processors, external trade and stocks

Situation as at end of September 2022

Thousand tonnes

		2017/18 to 2021/22 average	2017/18 13 weeks	2018/19 13 weeks	2019/20 13 weeks	2020/21 13 weeks	2021/22 13 weeks	2022/23 13 weeks	% Change 2022/23 on 2021/22	Actual Change 2022/23 on 2021/22
WHEAT										
Usage	Flour millers ⁽¹⁾	1,616	1,817	1,726	1,444	1,477	1,477	1,504	2%	27
	of which home-grown	1,317	1,575	1,290	1,238	1,165	1,120	1,280	14%	160
	of which imported	299	242	436	206	312	357	224	-37%	-133
	Brewers, maltsters and distillers	187	208	168	192	180	209	247	18%	38
	Animal Feed Processors ⁽²⁾	1,185	1,188	1,226	1,194	1,130	1,111	1,102	-1%	-10
	of which feed compounders	892	884	927	917	840	836	815	-3%	-22
Imports	of which intergrated poultry units	292	304	299	276	290	275	287	4%	12
	From July ⁽³⁾	562	430	772	303	744	632	343	-46%	-289
Exports	From July ⁽³⁾	179	147	79	417	73	94	243	160%	150
BARLEY										
Usage	Brewers, maltsters and distillers	450	469	461	470	400	443	461	4%	18
	Animal Feed Processors ⁽²⁾	312	299	285	292	371	429	293	-32%	-136
	of which feed compounders	294	282	270	281	344	391	275	-30%	-116
	of which intergrated poultry units	18	17	16	11	27	38	18	-52%	-20
Imports	From July ⁽³⁾	24	35	22	16	25	40	21	-47%	-19
Exports	From July ⁽³⁾	355	343	129	671	279	268	288	7%	20
MAIZE										
Usage	Human and Industrial ⁽⁴⁾	**	**	**	**	**	**	**	*	*
	Animal Feed Processors ⁽²⁾	107	83	101	125	119	**	**	*	*
	of which feed compounders	94	71	92	106	105	91	107	17%	16
	of which intergrated poultry units	13	11	9	19	14	**	**	*	*
Imports	From July ⁽³⁾	536	398	544	561	640	324	627	93%	302
Exports	From July ⁽³⁾	35	35	38	31	35	20	28	41%	8
OATS										
Usage	Human and Industrial ⁽⁵⁾	134	130	142	128	139	128	130	2%	2
	Animal Feed Processors ⁽²⁾	13	10	15	12	14	25	19	-25%	-6
Imports	From July ⁽³⁾	6	11	6	2	6	4	3	-30%	-1
Exports	From July ⁽³⁾	18	17	14	26	16	6	49	768%	44

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.⁽⁵⁾ Oat milled data published quarterly.

* 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 22 November 2022. The data above may differ from the most recent published data.

Disclaimer

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