

Austrian Soft Wheat from the Crop 2023

Preface

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*Ladies and Gentlemen,
Dear Customers and Friends of Austrian Wheat!*

The still strained geopolitical situation, weather extremes, logistic bottlenecks, inflation, and a weakening economy have influenced the world market in the past months and led to high volatility on the futures markets.

The market has no clear direction at present, which causes violent short-term price swings.

The harvest was able to be completed in the main part of Austria by the beginning of August, so that only small remnants needed to be brought in after the long and nerve-racking rain delay in the first half of August.

The Austrian wheat harvest 2023 is therefore not only in terms of quantity but also in terms of quality very good and displays high hectolitre weights and falling numbers, good gluten quality and ideal baking values.

The proportion of quality and premium wheat is this year significantly lower than usual due to the weather and high yields. The large proportion of milling wheat with very good gluten values should however fulfil in every respect the rigorous requirements of the milling industry both in Austria and in our neighbouring countries.

This year again the analyses, which were made in all regions in the course of our traditional harvest monitoring programme, show that Austrian wheat of the crop 2023 is not significantly affected by fusarium, heavy metal, or crop protection chemical residue issues.

Due to the relatively low production of high quality wheat in large parts of Europe we are confident that we can approach the marketing season with optimism, despite the logistical problems which have existed for months, and which is again challenging the whole industry.

The wheat crop of 2023 in Austria at 1,645,000 tonnes lies 5% above last year's good result. Thus, this year's crop is to be classified as above average (12% above the average). The main reason for the increase in production is the marked expansion of 2,923 hectares in the soft wheat area (after an increase last year), as the dry and mild autumn allowed planting to be completed as planned. The harvested yields per hectare are, at 64 quintals per hectare, above average (13% above the average level) and above last year (+7%).

The crop year began with a dry autumn, during which planting (of mainly autumn sown seed) was able to be completed without hindrance. On the other side the dry autumn and winter led to a lack of the winter moisture necessary for the beginning of growth. During a warm and relatively dry March and, an April during which rainfall was ample, particularly good tillering (formation of side shoots) was possible, for which reason more ears per square metre were available as a basis for the development of yield. During a rainy May, a good many kernels per ear were formed. The warmth and dry weather at the end of June and the beginning of July allowed a swift harvest in the main growing areas without long interruptions.

The traditional Austrian quality wheat region covers the central and eastern parts of the province of Lower Austria and the northern and central parts of the province of Burgenland. In climate terms this region is called the continental Pannonian climate zone (Figure 1). As a result of long-term observations, we know that this climate zone is the best region for the production of high-quality wheat, a fact which has come to be known all over Europe. Although the yields are not as high as in the western parts of Lower Austria and in Upper Austria due to the lack of rainfall, the climate is highly favourable to the development of very good baking qualities.

Moreover, this region profits from the deep and rich humus soil that also has an influence on the wheat quality.

In the milling wheat region (western Lower Austria and Upper Austria) the quality parameters are inferior, but they usually produce a good milling quality (Figure 1).

The essential parameters for the baking quality of wheat are protein quantity, protein quality and the gelatinization of the starch. The protein quantity is determined by the variety as well as by weather conditions, soil, fertilization, and climate. The protein quality on the other hand is mainly a genetic characteristic and thus a variety feature. Gelatinization of the starch depends essentially on the weather conditions before harvest.

Wheat Varieties

The Austrian wheat varieties are graded into 9 quality categories, category 1 representing the lowest and category 9 the highest baking quality. In the Pannonian climate zone in eastern Austria the quality wheat varieties are dominant, which are classed into the baking quality categories 7 to 9. The leading quality wheat varieties are “Capo,” “Christoph,” “Aurelius,” “Axaro” and “Bernstein.” Among the milling wheat varieties, which are classed into the baking quality categories 3 to 6, the varieties “RGT Reform,” “Tiberius” and “Spontan” are significant.

Yields

Table 1 lists crop areas, average yields, and total production as well as available quantities. For the crop 2023 the figures for market availability are estimates.

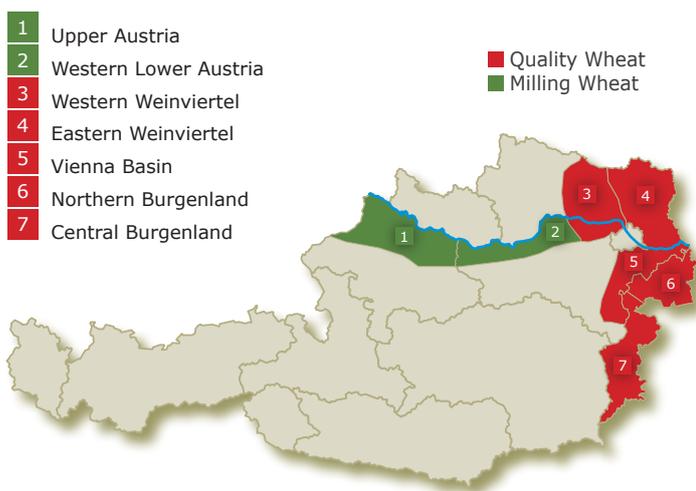
Production and available quantities of quality and milling wheat per crop year

The wheat area was expanded once again as it was last year (+2,923 hectares) and reached 247,424 hectares.

The areas shown in Figure 1 in the eastern part of Austria came to 142,971 ha, which is 300 ha more than last year. The crop area in western Lower Austria and in Upper Austria reached 73,510 ha.

The average yield of soft wheat in the entire area is expected to be 64.7 dt/ha. This means that the region has a total production of quality and milling wheat of around 1,400,000 tons (estimates). Available from this region from the crop of 2022 is around 1,330,000 t, of which around 60% of the quantities are to be found in the Pannonian climate zone, of which about one third is above 14% protein.

Figure 1
Quality wheat and milling wheat regions



Quality Criteria

The quality data listed in the table below are based on a crop survey made by “Agrarmarkt Austria” and the “Versuchsanstalt für Getreideverarbeitung” (Institute for Cereal Processing) in Vienna who drew samples at the various wholesale buyers and analysed them. The recorded date of the quality data for 2023 as well as of the comparative data from 2022 is August 1st, thus the results are provisional ones.

The average hectolitre weight of quality wheat is 82.1 kg and is outstanding. In Upper Austria and in western Lower Austria the hectolitre weight is, at 82.1 kg/hl, also outstanding. The milling quality of the new crop is excellent. More details about the hectolitre weights in the different regions are to be found in tables 2a and 2b.

Quality Parameters of Quality and Milling Wheat Crop 2023 in comparison to last year

Figure 2 displays averages of this year’s quality and milling wheat crop. The protein content, at 14.3% in the quality wheat area, is excellent. The gluten content corresponds at 33.2%, which is in a normal correspondence with protein. In the milling wheat area, a protein content of 12.9% was measured, which is above the minimum value for milling wheat at the Exchange for Agricultural Products (12.5%). The wet gluten content is also in the usual relation with protein content, so that a good average of 29.2% was measured.

Quality Survey 2023 – Protein Contents and Falling Numbers of Quality Wheat

Tables 3a and 3b list the protein contents and the falling numbers of the Pannonian climate regions and the milling wheat regions. The protein levels in the quality wheat area and falling numbers in all areas are very good.

Quality Survey 2023 – Farinogram and Alveogram in the Quality Wheat Area

Table 4 lists the behaviour of wheat in processing. The Farinogram characterizes the consistency of the dough. The average dough development of 5.6 minutes is excellent. Dough stability at 21.7 minutes is a wonderful result.

For the Alveogram the W-value in the quality wheat area with an average result of 305 units is very good.

The ratio of P/L of 0.5 is ideal.

Farinogram and Alveogram of the crop 2023 in the survey areas of quality wheat and milling wheat

The behaviour of wheat of the various Pannonian areas is listed in table 5a and of the milling wheat areas in table 5b.

The Farinogram stability and the W-values as per Alveogram are very good in the quality wheat area. Farinogram and Alveogram values of milling wheat are good.

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Mycotoxin Contamination

The problem of the mycotoxin DON (Deoxynivalenol) caused by Fusarium has been studied in Austria for many years (examination of the influencing factors in field tests, evaluation of head blight in variety classification tests, etc.). In particular the large-scale field monitoring conducted by the Chambers of Agriculture and the samples analysed give on the one hand an excellent survey of the contamination in the various regions, and on the other hand they make it possible to develop adequate agricultural strategies for the reduction of infection risk. From this viewpoint the Austrian wheat producers have been well prepared to respond to the introduction of the maximum mycotoxin level of wheat applicable at present (DON 1250 µg/kg).

Contamination with heavy metals and pesticide residues

Besides the contamination with mycotoxins, we would also like to point to the lack of contamination of Austrian cereals production and milling products with heavy metals. The "Versuchsanstalt für Getreideverarbeitung" (Institute for Cereal Processing) found no contamination with lead, cadmium, or mercury in qualitative analysis of any cereal or cereal product from the Austrian Federal Area between 2015 and 2023.

In Austria, no residue of Glyphosate was found in wheat, rye, and milling products, whereas in the whole European monitoring area 8% of samples analysed were found to be contaminated with Glyphosate.

Summary

This year's wheat crop is larger than last year and contains a smaller percentage of quality and premium wheat. The specific gluten qualities are very good.

Regarding the baking quality the **quality wheat harvest** in 2023 in the Pannonian area is classified as very good. The hectolitre weights are of the highest, therefore excellent milling qualities are expected. Protein and wet gluten values are slightly lower than last year but can still be classified as very good. The falling

number values are very high, comparable to the values of last year. The Farinogram and Alveogram results lead to expectations of balanced processing characteristics.

The values in the **milling wheat areas** are, as expected, lower than in the quality wheat area, but are good.

The **mycotoxin levels** (DON) are classified as low in the whole wheat area.

Figure 2

Quality of Quality and Milling Wheat Crop 2023 in comparison to the previous year

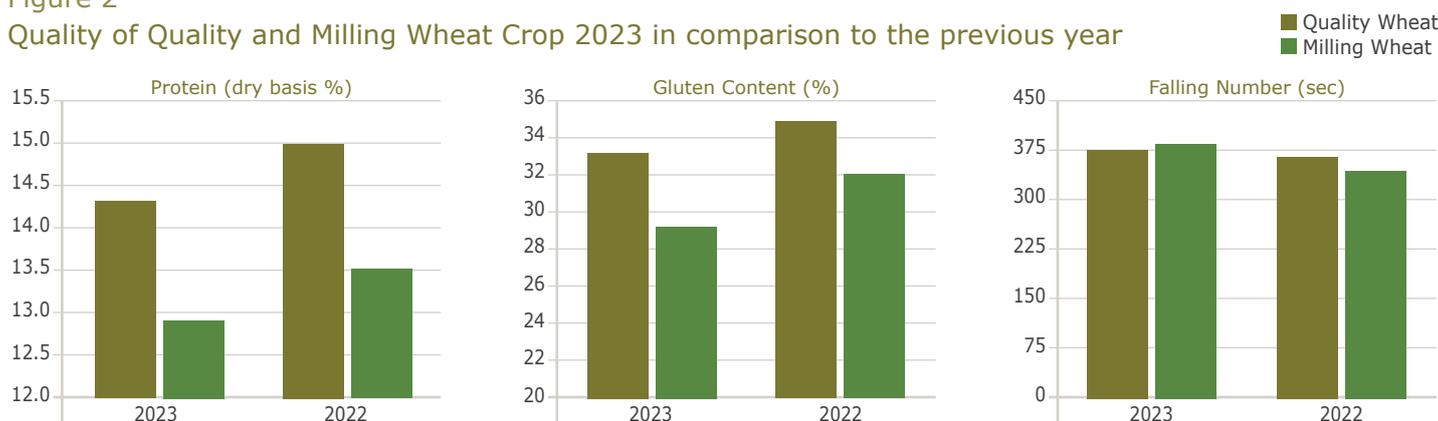


Table 1

Production und available quantities of quality and milling wheat per marketing year

Survey Area	2023/24 Estimate				2022/23 Final				2021/22 Final			
	Area in ha	Yield in dt	Production in t	Availability in t	Area in ha	Yield in dt	Produktion in t	Availability in t	Area in ha	Yield in dt	Production in t	Availability in t
Northern Burgenland	15,293	55.8	85,299	81,034	15,595	43.8	68,378	64,959	15,552	45.0	69,984	66,484
Middle Burgenland	9,998	60.0	59,988	56,989	9,733	44.6	43,446	41,274	10,822	47.0	50,865	48,322
Vienna Basin	18,708	60.5	113,265	107,602	17,596	49.0	86,251	81,938	18,339	45.1	82,686	78,551
Eastern Weinviertel	43,810	60.8	266,210	252,899	44,231	48.9	216,215	205,404	44,396	48.4	215,056	204,303
Western Weinviertel	55,162	63.5	350,107	332,601	55,516	59.1	327,892	311,497	53,462	53.2	284,314	270,098
	142,971	61.2	874,869	831,125	142,672	52.0	742,182	705,072	142,572	49.3	702,904	667,759
Western Lower Austria	22,289	72.3	161,127	153,071	21,587	63.0	136,046	129,244	20,434	70.6	144,211	137,001
Upper Austria	51,221	71.0	363,669	345,486	49,279	78.0	384,376	365,157	46,064	72.0	331,661	315,078
	73,510	71.4	524,796	498,556	70,866	73.4	520,422	494,401	66,498	71.6	475,872	452,078
Total	216,481	64.7	1,399,665	1,329,682	213,538	59.1	1,262,604	1,199,474	209,070*	56.4	1,178,776	1,119,837

* Remarks on the area: The following areas for organic farming are included: **2023/2024:** 43,592 ha • **2022/2023:** 41,658 ha • **2021/2022:** 40,658 ha • **2020/2021:** 40,280 ha

Quality Survey 2023

Table 2a

Hectolitre Weight of Quality Wheat

Average Hectolitre Weight

Survey Area	2023	2022	2021
Northern Burgenland	82.2	83.0	80.2
Central Burgenland	79.8	82.0	80.0
Vienna Basin	82.9	83.4	82.1
Eastern Weinviertel	82.8	83.3	80.2
Western Weinviertel	83.0	82.0	81.3
Average	82.1	82.7	80.8

Table 2b

Hectolitre Weight of Milling Wheat

Average Hectolitre Weight

Survey Area	2023	2022	2021
Western Lower Austria	83.3	83.0	79.7
Upper Austria	80.8	81.4	80.3
Average	82.1	82.2	80.0

Table 3a

Protein Contents and Falling Numbers of Quality Wheat

Average Protein in dry matter %

Survey Area	2023	2022	2021
Northern Burgenland	14.0	15.7	15.3
Central Burgenland	14.8	15.1	15.7
Vienna Basin	14.3	14.8	15.8
Eastern Weinviertel	14.1	14.8	15.3
Western Weinviertel	14.4	14.7	15.5
Average	14.3	15.0	15.5

Average Falling Number in sec.

Survey Area	2023	2022	2021
Northern Burgenland	376	364	366
Central Burgenland	378	374	361
Vienna Basin	389	370	365
Eastern Weinviertel	376	378	365
Western Weinviertel	364	355	339
Average	376	368	359

Table 3b

Quality Survey 2023 – Protein Contents and Falling Numbers for Milling Wheat

Average Protein in dry matter %

Survey Area	2023	2022	2021
Western Lower Austria	14.8	14.5	14.6
Upper Austria	11.0	12.6	12.6
Average	12.9	13.5	13.6

Average Falling Number in sec.

Survey Area	2023	2022	2021
Western Lower Austria	379	349	365
Upper Austria	375	349	326
Average	377	349	345

Table 4

Average Farinogram Results

Quality wheat area

	2023	2022	2021
Stability	21.7	24.7	25.1

Average Alveogram Results

Quality wheat area

	2023	2022	2021
W (Total Energy)	305	357	351
P/L = Resistance/Extensibility	0.5	0.5	0.5

Table 5a

Farinogram und Alveogram of the crop 2023 in the survey areas of quality wheat

Survey Area	Stability	W (Total Energy)	P/L, Resistance/Extensibility
Northern Burgenland	18.3	265	0.6
Central Burgenland	22.4	341	0.5
Vienna Basin	21.9	297	0.5
Eastern Weinviertel	22.5	283	0.6
Western Weinviertel	23.5	339	0.5
Average	21.7	305	0.5

Table 5b

Farinogram and Alveogram of the crop 2023 in the survey areas of milling wheat

Survey Area	Stability	W (Total Energy)	P/L, Resistance/Extensibility
Western Lower Austria	27.1	294	0.6
Upper Austria	3.8	138	1.3
Average	15,5	216	0,9

Tabelle 6

Mycotoxin Contamination

Survey Area	DON 2023 [$\mu\text{g}/\text{kg}$]
Northern Burgenland	196
Central Burgenland	668
Vienna Basin	109
Eastern Weinviertel	347
Western Weinviertel	244
Western Lower Austria	247
Upper Austria	<40

The contamination level of the current crop is regarded as low in the quality and milling wheat areas, being well below the maximum tolerance of 1250 μg DON/kg.