

Austrian Soft Wheat from the Crop 2020

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Preface

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

This year we have had to get used to the fact that our lives, as well as our everyday business practices, have been permanently changed due to the continuing Covid-19 pandemic.

Not only the private holiday abroad, but also almost all business journeys and many of the most respected exchange functions, which in other years contribute greatly to the maintenance of personal contacts, have fallen victim to the pandemic.

It seemed to us therefore more important than ever in this challenging year 2020 to make available as usual to all customers and business partners our traditional harvest report, which evaluates the Austrian wheat crop.

The crop this year reached almost the same level as that of the year before, despite the slight reduction in the area of wheat planted last autumn.

After a prolonged dry spring in March and April, nationwide and intensive rainfall arrived in Austria at the end of May, which laid the basis just in time for a satisfactory harvest quantity.

The wheat ripened in almost ideal conditions during the month of June, and the cool and damp weather allowed optimal development of grain development and gluten quality.

The analyses carried out so far in the course of our well-established monitoring programme have shown that Austrian wheat of the crop of 2020 is thankfully free from significant fusarium contamination, as in previous years.

The Austrian cereals trade has proved in the past months that it is capable, even under the most difficult conditions, of fulfilling obligations to customers both inland and abroad continually and punctually and, along with agriculture and processors, has made a large contribution to the security of supply of the population.

Our customers can rely on us to preserve this engagement in the coming season, which will probably pose considerable challenges again, and we are confident that we will be able to market our "Austrian Wheat", not only due to its high quality, but also because of the reliability and the trustworthiness of the Austrian cereals trade.

This year again a good average wheat harvest was brought in. The somewhat reduced area leads to a reduction in the total quantity of wheat (-2 %), which is expected to reach 1.5 million tonnes.

A warm winter well supplied with rainfall allowed the wheat stands to reach the spring well developed. Then a pronounced spring drought followed from the begin of vegetation at the beginning of March until mid-May. The result of this was reduced tillering (number of heading plants per square metre) and following on from this a modest ear development (number of kernels per ear). For this reason, the expectations for the wheat crop were very negative, until finally hesitant rainfall (from mid-May) and then nationwide abundant rain in June, combined with moderate temperatures, led to an ideal grain filling phase. A significant reduction in the number of days over 25° C of two-thirds of last year was decisive, as grain filling functions well up to a temperature of 25°C. The wheat plants compensated through high hectolitre weights and well-developed grains a large part of the harvest quantity which was lost in the preceding dry period. The summary of this year's crop is average yields, exceptionally good hectolitre weights and a reduced proportion of Premium and Quality wheat compared with last year.

The total soft wheat crop in Austria is slightly below last year, as the area was reduced by 2,119 hectares. Regarding the yields a west/east gap is recognisable. In rainy Upper Austria good yields of around 7 – 8 tonnes per hectare are expected, while Lower Austria will achieve 5.5 – 6 t/ha. On average the yield for soft wheat without spelt lies, at 6 t/ha, slightly above last year's level.

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 "Bernstein", "Capo", shortly in front of "Aurelius", "Energio", "Arnold" and "Christoph". Among the milling wheat varieties, which are classed into the baking quality categories 3 to 6, the variety "RGT Reform" leads clearly, in second place is "Spontan", and in third "Siegfried".

Yields

Table 1 lists crop areas, average yields and total production as well as available quantities.

Quantities available from the crop 2020 are estimates.

Production and available quantities of Quality and Milling Wheat per crop year

The wheat area was reduced again from the record low of the previous year (-2,119 hectares) and reached the historically low figure of only 246,106 hectares. The areas shown in Figure 1 in the eastern part of Austria also sank as well to 148,422 ha, which is 1,000 ha less than last year. The crop area in western Lower Austria and in Upper Austria increased slightly (+1,500 ha) to 70,139 ha. The average yield of soft wheat in the entire area is expected to be 60.5 dt/ha. This means that the region has a total production of quality and milling wheat in 2019 of around 1,323,000 tons (estimates). Available from this region from the crop of 2020 is around 1,257,000 t, of which around 60 % of the quantities are to be found in the Pannonian climate zone, of which 50 % is above 14 % protein. Due to the better grain filling the quantity of wheat with over 14 % protein is lower than last year.

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 2020 as well as of the comparative data from 2019 is August 5th, thus the results are provisional ones.

The average hectolitre weight of quality wheat is 82,6 kg and is exceptional. In Upper Austria and in western Lower Austria the hectolitre weight is, at 79,9 kg/hl, good. The milling quality of the new crop is very good. 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 2020 in comparison to 2019

Figure 2 displays averages of this year's quality and milling wheat crop. The protein content, at 15.5 % in the quality wheat area, is excellent. The gluten content is correspondingly extremely high at 36.8 %. In the milling wheat area, a protein of 13.7 % was measured, which is far above the minimum value for milling wheat at the Exchange for Agricultural Products (12.5 %). The wet gluten content is correspondingly good at 30.1 %.

Quality Survey 2020 – 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 and falling numbers are excellent in all areas.

Quality Survey 2020 – 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 8.8 minutes is excellent, while dough stability at 22.4 minutes is an extraordinarily good result.

For the Alveogram the W-value of quality wheat with an average result of 374 units is excellent.

The ratio of P/L of 0.5 is ideal.

Farinogram and Alveogram of the crop 2020 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 excellent in all quality wheat areas. Farinogram and Alveogram values of milling wheat are good.

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Mycotoxin Contamination

The problem of the mycotoxins 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 between 2015 and 2020.

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

Due to average yields the proportion of quality and premium wheat will be lower than last year. The specific gluten qualities are good. The quality results are presented in the folder.

The quality wheat harvest in 2020 regarding the baking quality in the Pannonian area is classified as excellent. The protein and wet gluten values are of the very best.

The falling number values are slightly lower than last year but still classified as good.

The Farinogram and Alveogram results lead to expectations of excellent processing characteristics.

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

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

Figure 2

Quality of quality and milling wheat crop 2020, in comparison to crop 2019

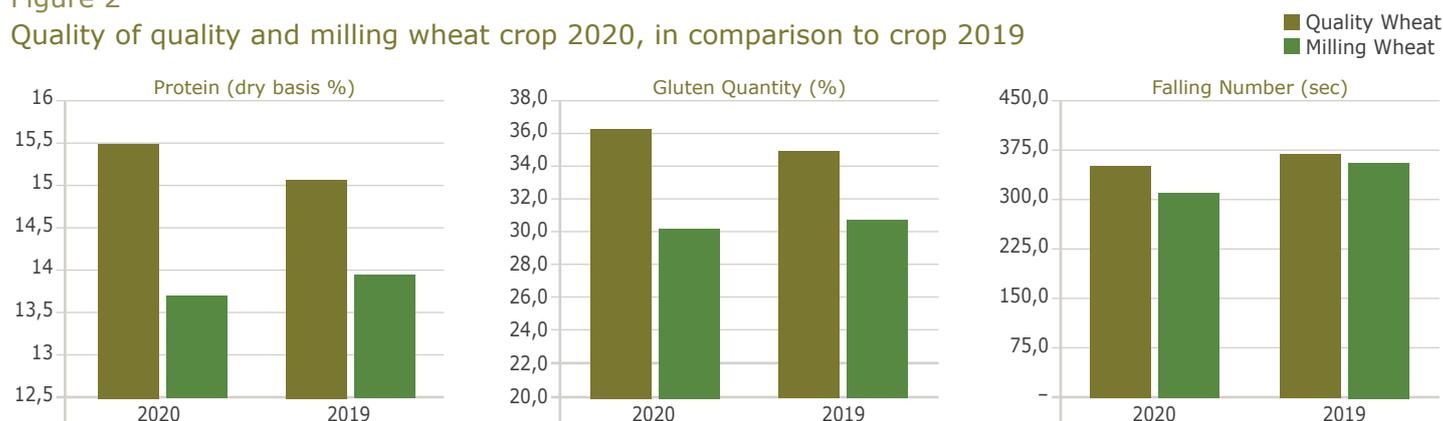


Table 1

Production und available quantities of quality and milling wheat

Survey area	2020/21 Estimate				2019/20 Final				2018/19 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	16,110	44	74,107	70,401	16,032	46	73,748	70,061	16,324	38	62,000	59,000
Middle Burgenland	10,340	51	52,732	50,095	11,647	48	55,907	53,112	12,009	39	47,000	45,000
Vienna Basin	19,335	50	96,677	91,843	18,569	54	100,272	95,259	20,890	46	96,000	91,000
Eastern Weinviertel	46,043	56	257,840	244,948	46,939	53	248,777	236,338	49,204	41	202,000	192,000
Western Weinviertel	56,594	57	322,587	306,458	56,644	54	305,880	290,586	57,938	43	249,000	237,000
	148,422	54.2	803,943	763,746	149,832	52.4	784,585	745,355	156,365	42	656,000	623,000
Western Lower Austria	22,902	70	160,316	152,300	22,483	68	152,885	145,241	23,777	58	138,000	131,000
Upper Austria	47,236	76	358,997	341,047	46,086	75	345,643	328,361	48,410	63	303,000	287,000
	70,139	74	519,313	493,347	68,569	71.5	498,528	473,602	72,187	62	453,000	430,000
TOTAL	218,561*	60.5	1,323,256	1,257,093	218,401*	58.8	1,283,113	1,218,957	228,552*	49	1,109,000	1,053,000

* Remarks on the total area:

The following areas for organic farming are included: **2020/21:** 40,280 ha • **2019/20:** 40,298 ha • **2018/19:** 34,968 ha

Quality Survey 2020

Table 2a
Hectolitre Weight of Quality Wheat

Average Hectolitre Weight

SURVEY AREA	2020	2019	2018
Northern Burgenland	83.2	80.9	80.2
Central Burgenland	82.7	81.4	80.0
Vienna Basin	82.2	80.4	81.4
Eastern Weinviertel	83.1	79.2	81.6
Western Weinviertel	81.6	80.8	81.4
Average	82.6	80.5	80.9

Table 2b
Hectolitre Weight of Milling Wheat

Average Hectolitre Weight

SURVEY AREA	2020	2019	2018
Western Lower Austria	80.6	81.0	80.5
Upper Austria	79.3	79.5	80.9
Average	79.9	80.2	80.7

Table 3a
Protein Contents and Falling Numbers of Quality Wheat

Average Protein in dry matter %

SURVEY AREA	2020	2019	2018
Northern Burgenland	16.0	15.1	15.3
Central Burgenland	15.7	15.2	15.5
Vienna Basin	15.5	15.0	15.3
Eastern Weinviertel	15.0	15.2	15.8
Western Weinviertel	15.2	15.0	15.5
Average	15.5	15.1	15.5

Average Falling Number in sec.

SURVEY AREA	2020	2019	2018
Northern Burgenland	331	371	319
Central Burgenland	353	358	323
Vienna Basin	350	367	372
Eastern Weinviertel	371	377	392
Western Weinviertel	359	371	371
Average	353	369	355

Table 3b
Protein Contents and Falling Numbers for Milling Wheat

Average Protein in dry matter %

SURVEY AREA	2020	2019	2018
Western Lower Austria	14.8	14.6	14.8
Upper Austria	12.7	13.1	13.0
Average	13.7	13.8	13.9

Average Falling Number in sec.

SURVEY AREA	2020	2019	2018
Western Lower Austria	310	363	295
Upper Austria	296	357	330
Average	303	360	313

Table 4
Average Farinogram Results

Quality wheat region

	2020	2019	2018
stability	22.4	24.8	22.5

Average Alveogram Results

Quality wheat region

	2020	2019	2018
W (Total Energy)	374	307	337
P/L = Resistance/Extensibility	0.5	0.5	0.4

Table 5a
Farinogram and Alveogram of the crop 2020 in the survey areas of quality wheat and milling wheat

SURVEY AREA	Stability	W (Total Energy)	P/L, Resistance/Extensibility
Northern Burgenland	20.8	334	0.5
Central Burgenland	25.2	430	0.4
Vienna Basin	19.6	363	0.5
Eastern Weinviertel	23.7	344	0.6
Western Weinviertel	22.8	400	0.6
Average	22.4	374	0.5

Table 5b
Farinogram and Alveogram of the crop 2020 in the survey areas of milling wheat

SURVEY AREA	Stability	W (Total Energy)	P/L, Resistance/Extensibility
Western Lower Austria	17.6	353	0.6
Upper Austria	5.5	222	0.8
Average	11.5	288	0.7

Table 6
Mycotoxin Contamination

SURVEY AREA	DON 2020 [µg/kg]
Northern Burgenland	50
Central Burgenland	<40
Vienna Basin	50
Eastern Weinviertel	50
Western Weinviertel	220
Western Lower Austria	410
Upper Austria	240

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