Austrian Wheat, Crop 2016

Preface

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

Although this year's weather conditions were markedly unfavourable in large parts of Europe, with frequent and heavy rainfalls, particularly in Western Europe, which had negative impacts on the quality, the Austrian wheat crop was harvested under relatively favourable conditions.

The crop started as early as at the beginning of July and, interrupted by a longer period of rainfalls in the second week of July, in the Pannonian climate zone it was nearly finished by the end of July.
As a result of the favourable sowing conditions and the abundant rainfall in spring, top yields were also achieved this year. The total volume reached about 1.9 million tons, which is an increase of 19% compared to last year.

With regard to the frequent rainfall that affected the optical aspect of the harvested wheat in comparison to last year´s crop, which had been brought in under perfect weather conditions, the processing industry was surprised by the generally good gluten quality of the first samples and trial shipments they received.
Whereas, because of the high yields, the protein contents are lower than last year, the results within all wheat quality groups indicate smoother and more elastic gluten.

It is estimated that only 30% of the total volume harvested in the Pannonian climate zone and in the Alpine foothills reached a protein level of 14%, which is necessary for its marketing as quality wheat. This percentage contains a share of around 10% of premium wheat with a minimum protein level of 15%. The remaining 70% are milling wheat (protein 12.5 to 13.9 %) and feed wheat.

The perspective for the commercialisation of Austrian wheat remains positive, with nearly all wheat quality classes being available for trade in the coming months, while many neighbouring countries, with the quality problems they are confronted with, will play a significantly lesser role in the milling wheat market this year.
The extremely large stocks as well as a further worldwide record level of harvested volumes will however set a limit to price increases. From today's viewpoint the expected large maize crop might have a serious impact on warehousing and price development in the next few months, whereas towards the end of the year the perspectives for wheat marketing should improve.

Thus, the market trends of the forthcoming months remain difficult to estimate and will again confront all market participants with challenges.

Introduction

This year's Austrian wheat crop volume met the high expectations. Sowing in autumn 2015 profited from optimum conditions, sufficient rainfalls in October made wheat emergence rapid and unproblematic. Temperatures around 10° and more rainfall in November supported the vegetation before winter, and the mild temperatures, low snowfall and mild frosts allowed it to survive the winter season without problems in all regions. In January and February many regions had more than 100 mm of rain, along with above average temperatures.
In spring the wheat areas started in very good condition. Subsequently, particularly in the dry region in Eastern Austria, the vegetation received satisfactory volumes of rainfall. Some regions had more than 100 l of precipitation over the long-term average, which created perfect conditions for diseases such as yellow rust and leaf spot disease. For this reason proper soil management and crop rotation was eminently important this year.

In June, usually a month with dry weather, additional rain accelerated the maturation processes to such a degree that in the regions where harvest usually starts early it was even earlier. The yields reached top levels, while the hectolitre weights and the falling numbers were satisfactory. Unfortunately the protein contents could not reach the high levels of the previous years. In mid-July harvest was interrupted by a long period of rainfall, which affected the hectolitre weight and the typical brownish colour of the Pannonian wheat. In the first week of August the harvest was finally completed in all regions.
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 wheat qualities, a fact which has come to be known all over Europe. Though 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 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 no. 1 representing the lowest and category no. 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", Bernstein, Midas, Lukullus", "Energo", "Emilio" and "Element". Among the milling wheat varieties, which are classed into the baking quality categories 3 to 6, the varieties "Sax", "Spontan", "Pedro", "Mulan", "Sailor" and "Meister" are noteworthy.

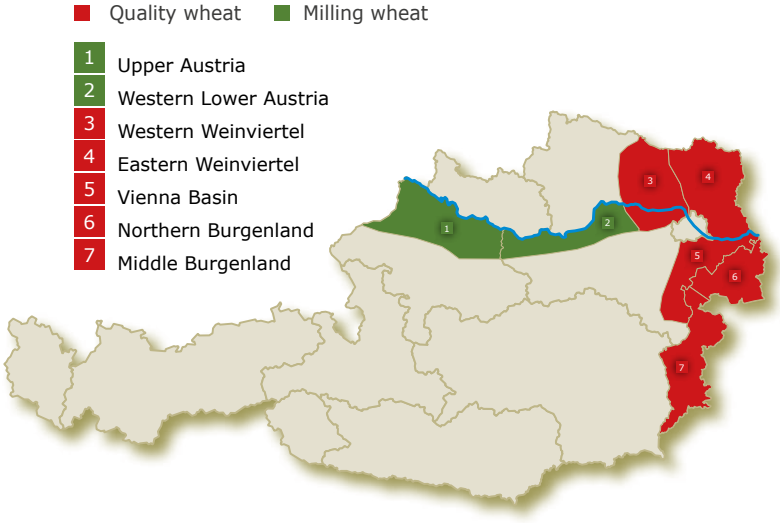
Yields

Table no. 1 lists crop areas, average yields and total production as well as available quantities. Quantities available from the crop 2016 are estimates.

Production and available quantities of Quality and Milling wheat per Crop Year

In comparison to last year the total crop area (274,722 ha) of Austrian wheat increased slightly (+1,8 %). The areas shown in the chart (see Figure 1), in the eastern part of Austria were enlarged slightly by 2,000 ha in comparison to last year, and reached a level of 166,000 ha this year. In western Lower Austria and in Upper Austria it also increased slightly and amounts to about 76,000 ha. The average yield of wheat in the survey area is 67 dt/ha. This results in a total production of about 1.600.000 t of quality and milling wheat in 2016. Quantities available are estimates. In total there is an estimated quantity of about 1.500.000 t wheat available, 67% of which was harvested in the Pannonian climate zone, approximately 30% of which is quality wheat with a protein content of more than 14%. Despite the good quantities the amount of wheat from the Pannonian climate zone with more than 14% protein content is considerably lower than last year`s results.

Figure 1:
Quality wheat and milling wheat region



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 2016 as well as of the comparative data from 2015 is August 12th, thus the results are provisional ones.

The average hectolitre weight of quality wheat is 81,7 kg and is very good. In Upper Austria and in western Lower Austria the hectolitre weight is also very high. 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 2016, in Comparison to 2015

Figure 2 lists averages of this year's quality and milling wheat crop. The protein content of quality wheat (on average14,1 %) is slightly lower than last year, however still at a very good level. In a similar manner the gluten content of quality wheat amounts to 32,2 % and is very good The protein content of milling wheat averages 13,5 % and is higher than in 2015 This can also be seen in the gluten content of 29,4 %

Quality Survey 2016 – 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 of the quality wheat region are very good in all areas.

Quality Survey 2016 – Farinogram and Alveogram of Quality Wheat

Table 4 lists the behaviour of wheat in processing. The Farinogram characterizes the consistency of the dough. The average dough development of 4,9 minutes is very good, while dough stability at 20,0 minutes is a very good result.
For the Alveogram the W-value of quality wheat with an average result of 309 units is very good.
The ratio P/L of 0,70 is good.

Farinogram and Alveogram of the crop 2016 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 all quality wheat areas. Farinogram and Alveogram values of milling wheat are normal to 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 bonification tests, etc.). In particular the large-scale 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).

Summary

The higher total yields in comparison to last year led to a decrease in the proportion of quality wheat and premium wheat to total wheat produced.
The specific gluten content is however very good.
The quality parameters are presented in the folder.
Nearly 30% of the total amount is quality wheat and premium wheat.
The baking quality of wheat from the 2016 bread grain crop in the Pannonian quality wheat region is very good.
Protein, gluten and falling number values are very good.
The Farinogram and Alveogram values suggest very good processing characteristics.
The values achieved in the milling wheat regions are, as expected, lower than those achieved in the quality wheat region.
The DON contamination in all wheat regions is very low.

Figure 2
Quality Parameter of Quality and Milling Wheat Crop 2016, in Comparison to 2015

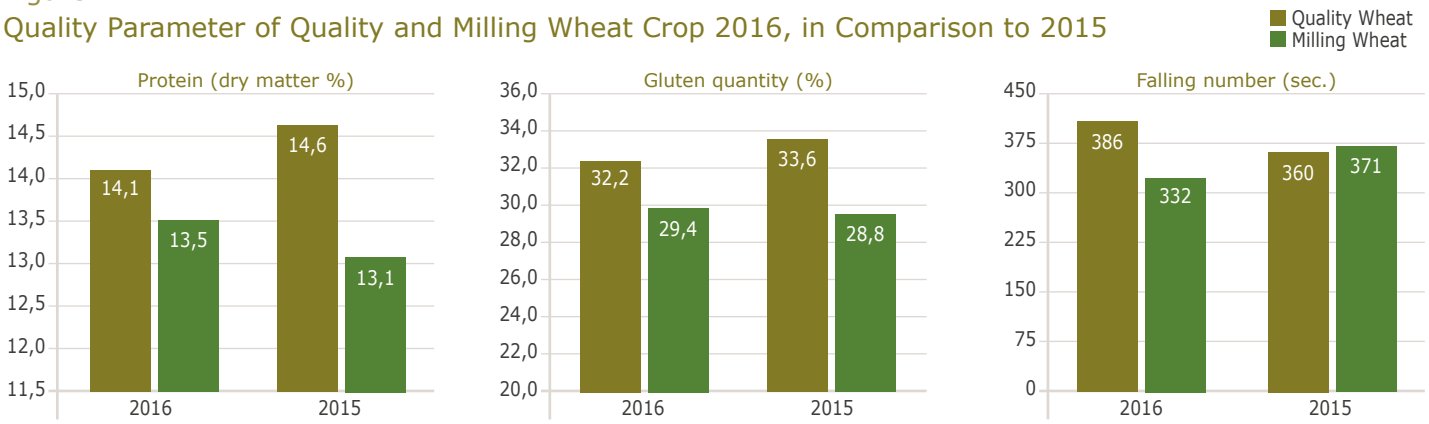

Table 1
Production and Available Quantities in the Quality and Milling wheat regions

Suryey area	2016/17 preview				2015/16 final				2014/15 final			
	Area in ha	Yield in dt	Production in t	Availability in t	Area in ha	Yield in dt	Production in t	Availability in t	Fläche in Hektar	Yield in dt	Production in t	Availability in t
Northern Burgenland	17.078	55	94.000	**89.000**	16.607	43,5	73.000	**69.000**	20.117	45,6	in t	**87.000**
Middle Burgenland	11.601	60	70.000	**66.000**	11.155	43,5	49.000	**46.600**	11.581	44,5	51.000	**48.000**
Vienna Basin	23.151	63	146.000	**139.000**	23.322	55,2	128.700	**125.500**	24.263	54,5	132.000	**125.000**
Eastern Weinviertel	53.965	63	340.000	**323.000**	54.095	53,5	289.400	**282.200**	59.813	52,1	311.000	**295.000**
Western Weinviertel	60.228	70	422.000	**401.000**	58.910	58,6	345.200	**336.600**	60.640	52,5	319.000	**303.000**
	166.022	64,5	1.072.000	**1.018.000**	164.089	52,7	884.100	**862.000**	176.414	49,8	878.000	**834.000**
Lower Austria - West	25.563	70	179.000	**170.000**	24.813	69	171.200	**166.900**	24.531	79,4	195.000	**185.000**
Upper Austria	50.331	73	367.000	**349.000**	49.835	71	353.800	**345.000**	50.065	81,4	408.000	**387.000**
	75.894	69,3	546.000	**519.000**	74.648	70	525.000	**511.900**	74.596	80,4	600.000	**569.000**
Total	**241.916***	**67**	**1.618.000**	**1.537.000**	**238.737***	**59**	**1.409.100**	**1.373.900**	**251.010***	**59,9**	**1.503.000**	**1.428.000**

* Remarks on the total area: the following acreages for organic farming are included:
2016/17: 25.732 ha | **2015/16:** 25.657 ha | **2014/15:** 24.027 ha

Quality Survey 2016

Table 2a

Hectolitre Weight of Quality Wheat in the Quality wheat region

Average Hectolitre Weight

SURVEY AREA	2016	2015	2014
Northern Burgenland	82,7	83,3	82,1
Central Burgenland	80,8	83,7	83,8
Vienna Basin	84,0	83,2	83,6
Eastern Weinviertel	79,8	83,6	81,8
Western Weinviertel	81,3	84,2	83,2
Average	**81,7**	**83,6**	**82,9**

Table 2b

Hectolitre Weight of Milling Wheat in the Milling wheat region

Average Hectolitre Weight

SURVEY AREA	2016	2015	2014
Western Lower Austria	79,1	84,2	81,7
Upper Austria	79,1	82,8	81,7
Average	**79,1**	**83,5**	**81,7**

Table 3a

Protein Contents and Falling Numbers of Quality Wheat in the Quality wheat region

Average Protein in dry matter %

SURVEY AREA	2016	2015	2014
Northern Burgenland	14,1	14,6	15,0
Central Burgenland	14,2	14,6	14,5
Vienna Basin	14,1	14,8	14,3
Eastern Weinviertel	14,1	14,5	14,9
Western Weinviertel	14,1	14,7	14,8
Average	**14,1**	**14,6**	**14,7**

Average Falling Number

SURVEY AREA	2016	2015	2014
Northern Burgenland	383	355	369
Central Burgenland	407	347	360
Wiener Becken	388	359	365
Eastern Weinviertel	387	380	370
Western Weinviertel	366	360	353
Average	**386**	**360**	**364**

Table 3b

Protein Contents and Falling Numbers of Milling Wheat in the Milling wheat region

Average Protein in dry matter %

SURVEY AREA	2016	2015	2014
Western Lower Austria	14,3	14,2	13,5
Upper Austria	12,7	12,1	11,7
Average	**13,5**	**13,1**	**12,6**

Average Falling Numbern

SURVEY AREA	2016	2015	2014
Western Lower Austria	318	362	299
Upper Austria	346	379	318
Average	**332**	**371**	**309**

Table 4

Average Farinogram Results

Quality wheat region

	2016	2015	2014
Stability	20,0	22,5	22,6

Average Alveogram Results

Quality wheat region

	2016	2015	2014
W (Total Energy)	309	322	314
P/L = Resistance/Extensibility	0,7	0,50	0,90

Table 5a

Farinogram and Alveogram of the crop 2016 in the survey areas of quality wheat

SURVEY AREA	Stability	W (Total Energy)	P/L (Resistance/Extensibility)
Northern Burgenland	22,3	293	0,6
Central Burgenland	17,7	310	0,5
Vienna Basin	22,0	347	0,6
Eastern Weinviertel	20,0	300	0,7
Western Weinviertel	19,0	309	0,7
Average	**20,0**	**309**	**0,7**

Table 5b

Farinogram and Alveogram of the crop 2016 in the survey areas of milling wheat

SURVEY AREA	Stability	W (Total Energy)	P/L (Resistance/Extensibility)
Western Lower Austria	10,0	332	0,9
Upper Austria	7,0	248	1,2
Average	**9,0**	**290**	**1,0**

Table 6

Mycotoxin contamination for each survey area

SURVEY AREA	DON 2016 [µg/kg]
Northern Burgenland	< 80
Central Burgenland	300
Vienna Basin	< 80
Eastern Weinviertel	270
Western Weinviertel	480
Western Lower Austria	440
Upper Austria	240

In the quality wheat and milling wheat regions the contamination is very low and considerably below the maximum permissible value.