trigoargentino.com.ar

TRIGO ARGENTINO

Institutional quality report

2018/2019 CROP

Bread wheat
2018/2019 Crop

TRITICUM AESTIVUM L.

The 2018/19 wheat cropping season was marked by high yields in the main growing areas, as was the case in the past three seasons. Furthermore, protein content was slightly higher than in the 2017/18 season.

National production is estimated at 19,454 million tons, slightly up from the previous season that reached 18,445 million tons. Six thousand two hundred ninety-one (6,291) million hectares were planted, and 6,037 were harvested. The national yield was 3,222 kg/h, quite similar to the 3,124 kg/h of the previous growing season.

Once again, yellow rust was the prevalent foliar disease. The province of Buenos Aires, especially in southeastern latitudes, was the most infected. The disease occurred to a much lesser extent in the center and west of the province, considering the significant moisture stress suffered in the area. Yellow spot and bacteriosis were detected in regions where frost damaged the crop. Other endemic diseases such as leaf rust were of secondary importance due to the extent of yellow rust infection. Stem Fusarium was as relevant as yellow rust but only in particular areas. (Information supplied by Dr. Pablo Campos). The occurrence of Fusarium was low and distributed in the Pampeana Centro subregion (that is, south of Cordoba, south of Santa Fe, center and north of Buenos Aires). In 9 de Julio, Pehuajo, Bolivar, and Dolores (that is, in the center of the province of Buenos Aires), moderate to severe Fusarium infection was reported at mid and late heading dates. In the Northern part of the Pampeana Norte subregion (that is, Entre Rios, center and north of Santa Fe and Cordoba), the occurrence of Fusarium was low. Moderate and high degrees of Fusarium occurrence was reported only in the center east of Entre Rios; the infection affected wheat with early heading dates.

Planted acreage, harvested acreage, production and yield, by sub-regions

Based on data from the Ministerio de Agroindustria de la Nación. 2018-2019 Crop.

SUBREGION	AREA PLANTED (HA)	AREA HARVESTED (HA)	YIELD (KG/HA)	PRODUCTION (TN)
I	679.056	647.237	2.841	1.838.644
II North	1.030.956	991.692	3.191	3.164.318
II South	994.424	974.982	4.342	4.233.057
III	504.545	503.950	3.628	1.828.280
IV	581.006	553.931	4.173	2.311.806
V North	692.352	647.375	2.625	1.699.243
V South	1.138.840	1.090.250	2.968	3.236.193
NORTHEAST	313.716	312.326	2.038	636.660
NORTHWEST	356.449	315.824	1.602	505.958
NATIONAL	**6.291.344**	**6.037.566**	**3.222**	**19.454.159**

SUBREGION	LOCALITY COMPOSITE	SAMPLING (TONS)	PRODUCTION (TONS)	PRODUCTION SAMPLED
I	20	78.630	1.838.644	4,3 %
II North	60	402.200	3.164.318	12,7 %
II South	17	63.000	4.233.057	1,5 %
III	26	85.000	1.828.280	4,6 %
IV	36	132.298	2.311.806	5,7 %
V North	38	155.505	1.699.243	9,2 %
V South	59	208.998	3.236.193	6,5 %
NORTHEAST	2	8.000	636.660	1,3 %
NORTHWEST	6	24.000	505.958	4,7 %
TOTALES	**264**	**1.157.631**	**19.454.159**	**6,0 %**

SAMPLING

3729 primary samples

205 locality composite sample

9 subregion

WHEAT ANALYSIS

Protein content

Commercial Analysis (Gradel)
Weight of 1000 grams
Kernels. Ash

Commercial Analysis (Gradel)
Weight of 1000 grams
Kernels. Ash

MILLING

Flour Yield

Flour analysis:
- Wet and Dry Gluten
- Falling Number
- Ash
- Farinogram
- Alveogram

Flour analysis:
- Wet and Dry Gluten
- Index Gluten
- Falling Number
- Ash
- Zeleny Test
- Farinogram
- Alveogram
- Mixogram
- Baking tests

National summary by subregions
Results of all the analyzed variables

SUBREGIONS	I	II N	II S	III	IV	V N	V S	NEA	NOA	*Pondered Average
GRAIN										
Test Weight (kg/hl)	81,86	77,44	78,03	79,75	78,22	78,63	80,85	79,15	79,12	78.85
Weight of 1000 kernels (gr)	34,9	34,8	35,4	37,9	40,8	33,6	37,5	31,1	33,1	36.01
Ahs (dry basis) %	1,819	1,905	1,850	1,559	1,677	1,937	1,836	2,070	1,891	1.837
Protein (13,5% Moisture) (%)	11,0	11,8	11,1	10,0	11,1	12,1	11,5	11,9	11,7	11.5
Protein (dry basis) (%)	12,7	13,6	12,8	11,6	12,8	14,0	13,3	13,8	13,6	13.3
FLOUR										
Ash (dry basis) %	0,597	0,625	0,646	0,448	0,617	0,667	0,653	0,717	0,698	0,619
Color										
L	88,68	87,71	88,34	89,35	87,9	87,18	87,24	87,55	89,02	88,1
a	-1,72	-1,47	-1,54	-1,84	-1,44	-1,41	-1,42	-1,25	-1,39	-1,5
b	8,73	8,08	8,45	8,57	7,85	8,44	8,42	7,61	7,38	8,2
Moisture (%)	12,3	14,08	14,77	12,09	13,255	12,87	11,67	13,82	14,12	13,2
Protein (%)	10,2	10,7	10,1	9,1	10,2	11,2	10,2	11,5	11,0	10,5
Wet Gluten (%)	26,6	27,8	26,4	22,0	25,3	29,5	27,8	26,4	25,5	26,4
Dry Gluten (%)	9,3	9,5	9,8	8,0	9,1	10,3	9,7	9,8	9,5	9,4
Index Gluten (%)	99,0	98,0	99,0	99,0	98,5	99,0	98,0	99,0	98,0	98,6
Falling Number (seg)	403	374	380	345	389	369	423	259	247	367
Zeleny Test (cc)	43	47	40	36	42	45	34	37	50	41,6
FARINOGRAM										
Water Absorption (%)	56,4	58,2	56,8	55,6	58,4	59,8	59,5	57,8	61,7	58,2
Development Time (min)	6,0	5,2	6,5	6,5	5,6	5,4	7,7	3,9	4,0	5,8
Stability (min)	14,1	13,0	13,3	12,9	10,6	12,8	15,7	9,3	7,8	12,6
Degree pf Softening (U.F.)	38	43	48	44	10	41	38	63	84	43
Quality Number										
MIXOGRAM										
Development Time (min)	6,57	4,82	6,47	6,85	4,82	4,20	4,90	5,28	7,44	5,68
ALVEOGRAM										
P (mm)	74	84	89	78	88	80	101	95	115	88
L (mm)	112	107	75	87	78	121	93	72	60	92
G	21,6	21,4	22,7	21	19,8	24,8	22,5	21,9	17,7	21,5
W (Joules x 10-4)	269	292	235	233	237	321	291	261	247	266
P/L	0,66	0,79	1,20	0,90	1,22	0,66	1,08	1,32	1,91	0,96
Ie %	61,5	62	64,8	58,4	53,3	60,3	55,4	63,1	58,7	59,7
W (40) (Joules x 10-4)	146	171	141	143	175	136	130	142	215	155
RVA										
Maxim Viscosity (RVU)	188,33	155,83	184,33	178,42	183,92	103,33	195,08	100,42	32,17	146,87
Minimum Viscosity (RVU)	103,00	85,25	112,50	104,67	108,88	36,75	118,42	36,25	5,17	78,99
Final Viscosity (RVU)	199,83	178,08	201,42	198,25	204,17	89,25	219,50	83,83	11,58	153,99
BAKING										
Absorption (%)	62,00	62,50	62,00	62,00	62,25	62,50	61,00	62,00	62,00	62,03
Development Time (min)	03:30	04:00	03:30	03:30	03:50	04:00	03:00	03:30	03:30	03:35
Fermentation Time (min)	160	160	160	160	160	160	160	160	160	160
Loaf Volume (cc)	625	650	670	580	575	695	590	625	600	623
Specific Volume (cc/gr)	4,7	4,8	5,0	4,4	4,15	5,3	4,3	4,6	4,5	4,6

Argentine wheat
Main Quality Parameters

Subregion NORTHEAST

Test Weight (kg/hl)	80.16

Grade

1	2	3	F/E
--	100%	--	--

Protein (13,5 Moisture) (%)	10.7
Protein (s.s.s.) (%)	12.4
Wet Gluten (%)	25.2
W Alveograma (Joules 10-4)	271
Stability Farinogram (min)	10.1

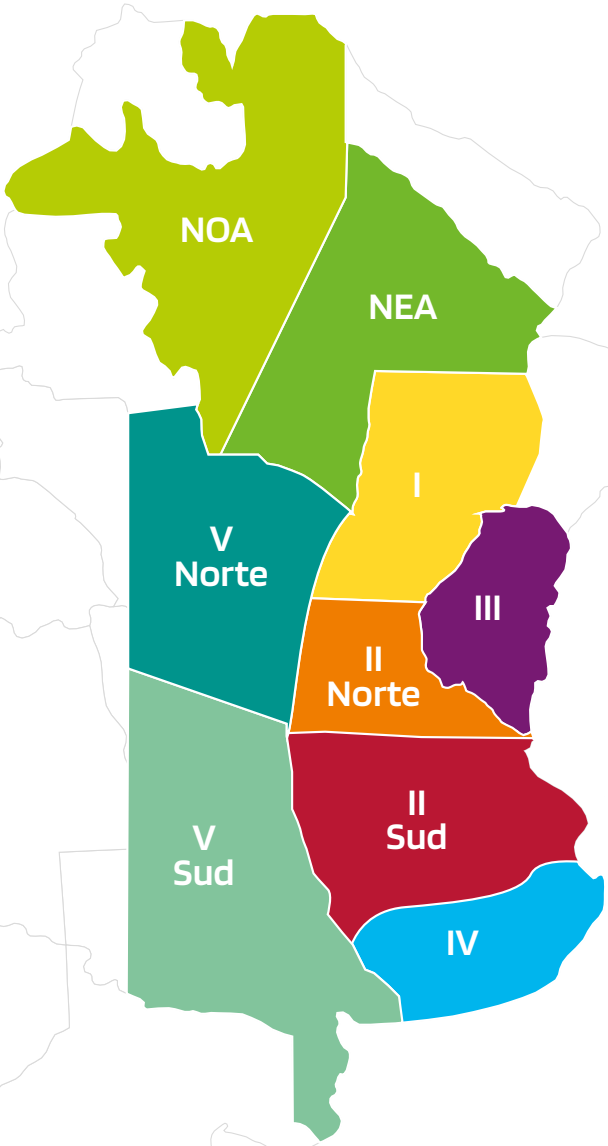
Subregion NORTHWEST

Test Weight (kg/hl)	78.98

Grade

1	2	3	F/E
--	100%	--	--

Protein (13,5 Moisture) (%)	11.2
Protein (s.s.s.) (%)	13.0
Wet Gluten (%)	27.3
W Alveograma (Joules 10-4)	294
Stability Farinogram (min)	16.4



Subregion V North

Test Weight (kg/hl)	78.63

Grade

1	2	3	F/E
11%	66%	18%	5%

Protein (13,5 Moisture) (%)	12.1
Protein (s.s.s.) (%)	14.0
Wet Gluten (%)	29.5
W Alveograma (Joules 10-4)	321
Stability Farinogram (min)	12.8

Subregion I

Test Weight (kg/hl)	81.86

Grade

1	2	3	F/E
55%	45%	0%	0%

Protein (13,5 Moisture) (%)	11.0
Protein (s.s.s.) (%)	12.7
Wet Gluten (%)	26.6
W Alveograma (Joules 10-4)	269
Stability Farinogram (min)	14.1

Subregion V South

Test Weight (kg/hl)	80.85

Grade

1	2	3	F/E
17%	71%	12%	0%

Protein (13,5 Moisture) (%)	11.5
Protein (s.s.s.) (%)	13.3
Wet Gluten (%)	24.6
W Alveograma (Joules 10-4)	258
Stability Farinogram (min)	7.8

Subregion II North

Test Weight (kg/hl)	77.44

Grade

1	2	3	F/E
6%	65%	22%	7%

Protein (13,5 Moisture) (%)	11.8
Protein (s.s.s.) (%)	13.6
Wet Gluten (%)	27.8
W Alveograma (Joules 10-4)	292
Stability Farinogram (min)	13.0

Subregion IV

Test Weight (kg/hl)	78.22

Grade

1	2	3	F/E
14%	78%	8%	0%

Protein (13,5 Moisture) (%)	11.1
Protein (s.s.s.) (%)	12.8
Wet Gluten (%)	29.5
W Alveograma (Joules 10-4)	321
Stability Farinogram (min)	12.8

Subregion II South

Test Weight (kg/hl)	78.03

Grade

1	2	3	F/E
12%	76%	12%	0%

Protein (13,5 Moisture) (%)	11.1
Protein (s.s.s.) (%)	12.8
Wet Gluten (%)	26.4
W Alveograma (Joules 10-4)	235
Stability Farinogram (min)	13.3

Subregion III

Test Weight (kg/hl)	79.8

Grade

1	2	3	F/E
35%	65%	0%	0%

Protein (13,5 Moisture) (%)	10.0
Protein (s.s.s.) (%)	11.6
Wet Gluten (%)	22.0
W Alveograma (Joules 10-4)	233
Stability Farinogram (min)	12.9

Nacional

Test Weight (kg/hl)	78.85

Grade

1	2	3	F/E
17%%	66%	4%	13%

Protein (13,5 Moisture) (%)	11.5
Protein (s.s.s.) (%)	13.3
Wet Gluten (%)	26.4
W Alveograma (Joules 10-4)	266
Stability Farinogram (min)	12.9

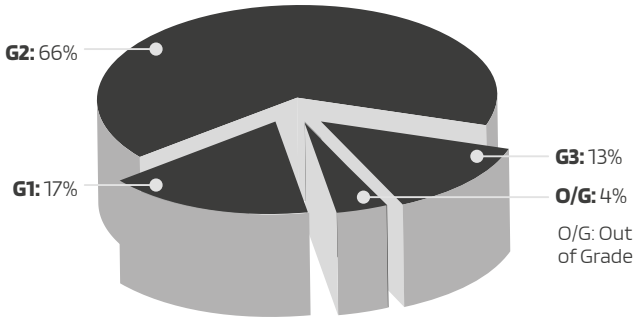
BREAD WHEAT

National averages
Weighted averages by tons produced in each region

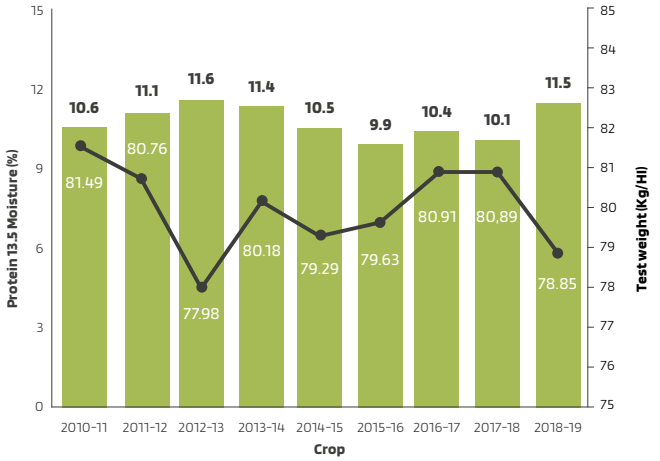
WHEAT ANALYSIS	MINIMUN	MAXIMUN	AVERAGE
Test Weight (kg/hl)	74,00	84,80	78,85
Total Damaged Kernels (%)	0,00	11,14	0,91
Foreign Material (%)	0,00	2,17	0,34
Shrunken and Broken Kernels (%)	0,00	1,60	0,36
Yellow Berry Kernels (%)	0,00	24,00	2,36
Protein (13,5% Moisture) (%)	9,50	14,0	11,5
Protein (dry basis) (%)	11,0	16,2	13,3
Weight of 1000 Kernels (g.)	30,26	46,50	36,01
Ash (dry basis.) (%)	1,310	2,257	1,837

FLOUR ANALYSIS	MINIMUN	MAXIMUN	AVERAGE
MILLING			
Wet Gluten (%)	18,3	34,5	26,4
Dry Gluten (%)	6,7	12	9,4
Falling Number (sec.)	150	561	367
Flour Yield (%)	52,87	73,6	67,43
Ash (dry basis) (%)	0,322	0,865	0,619
FARINOGRAM			
Water Absorption (14% H°) (%)	50	68,8	58,2
Development Time (min.)	1,3	17,6	5,8
Stability (min.)	1,7	36,4	12,6
Degree of Softening (12 min.)	11	149	43
ALVEOGRAM			
P (mm)	55	169	88
L (mm)	37	163	92
W Joules x 10-4	151	386	266
P/L	0,39	4,22	0,96

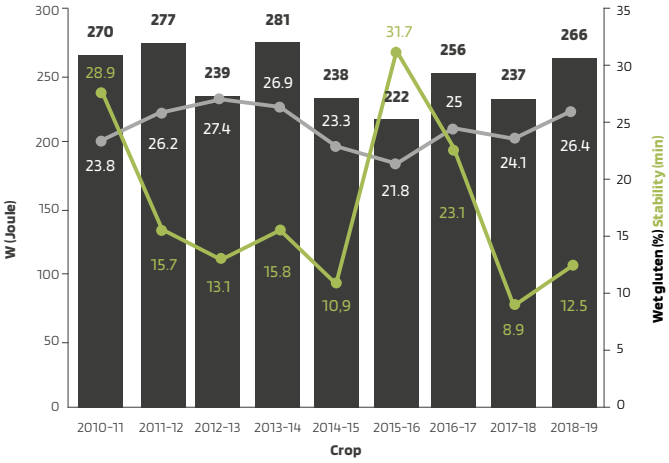
Grade distribution



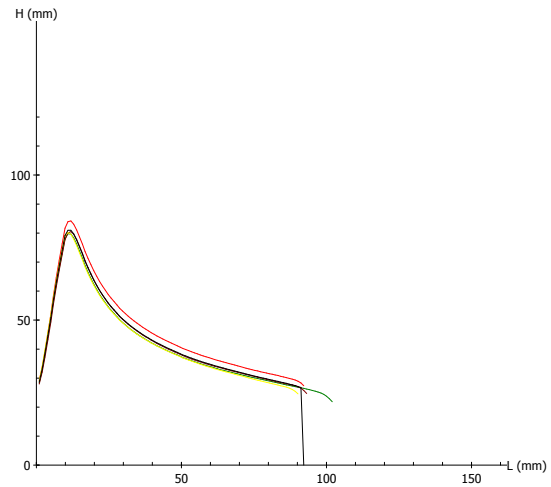
Protein 13.5% vs. Test weight



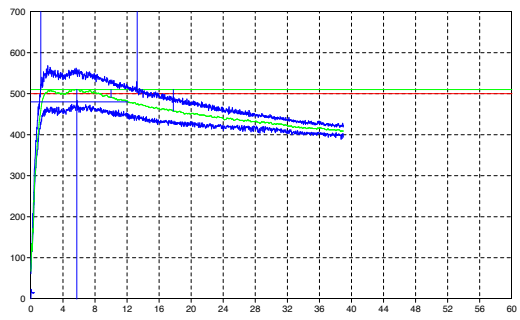
W, wet gluten y stability



Alveogram



Farinogram



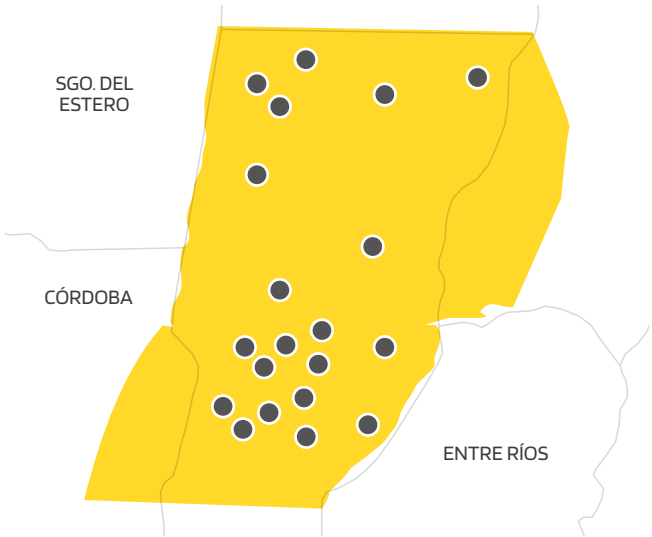
BREAD WHEAT

Subregion I. Analysis results

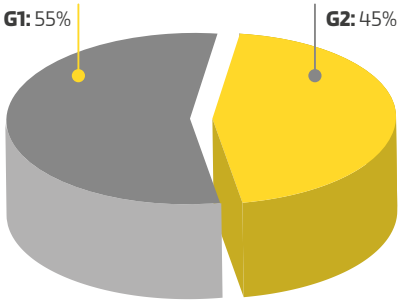
Weighted averages by tons of samples sets per location

GRAIN ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
Test Weight (kg/hl)	79,00	84,80	81,86
Total Damaged Kernels (%)	0,12	1,72	0,72
Foreign Material (%)	0,04	0,36	0,16
Shrunken and Broken Kernels (%)	0,20	0,55	0,37
Yellow Berry Kernels (%)	0,00	24,00	8,4
Protein (13,5% Moisture) (%)	9,9	12,6	11
Protein (dry basis) (%)	11,4	14,6	12,7
Weight of 1000 Kernels (g.)	30,26	39,80	34,89
Ash (dry basis.) (%)	1,6100	2,0960	1,819

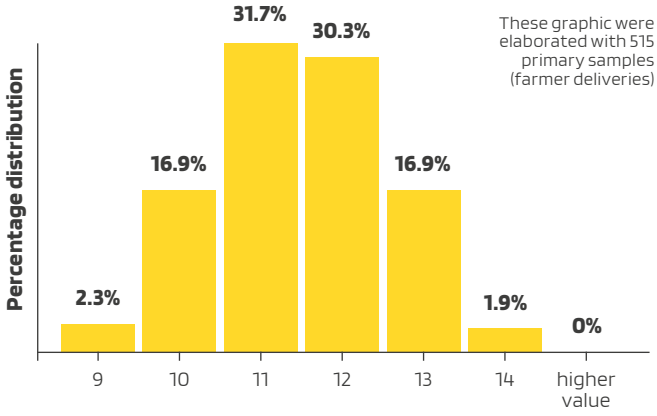
FLOUR ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
MILLING			
Wet Gluten (%)	21,9	30,8	26,6
Dry Gluten (%)	7,7	10,9	9,3
Falling Number (sec.)	351	561	403
Flour Yield (%)	54,50	68,20	60,25
Ash (dry basis) (%)	0,435	0,835	0,597
FARINOGRAM			
Water Absorption (14% H°) (%)	54,2	61,1	56,4
Development Time (min.)	1,7	14,1	6,0
Stability (min.)	2,4	29,9	14,1
Degree of Softening (12 min.)	20	57	38
ALVEOOGRAM			
P (mm)	59	104	74
L (mm)	72	160	112
W Joules x 10-4	219	386	269
P / L	0,39	1,44	0,66



Grade distribution

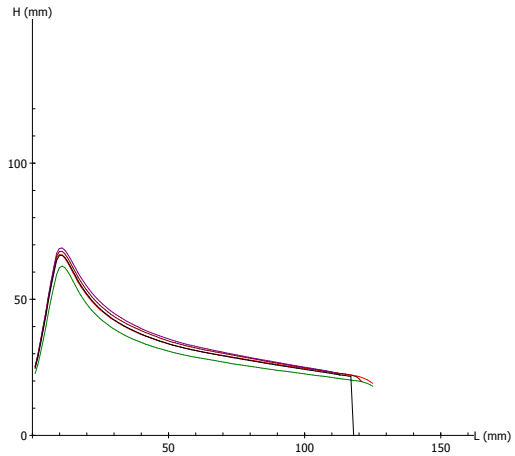


Protein (13.5% Moisture)

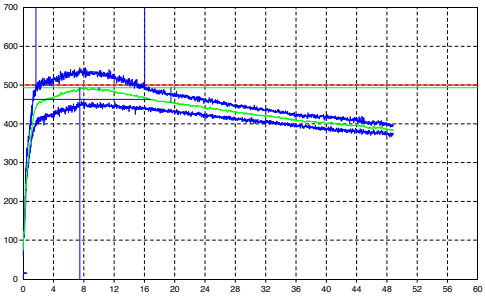


These graphic were elaborated with 515 primary samples (farmer deliveries)

Alveogram



Farinogram



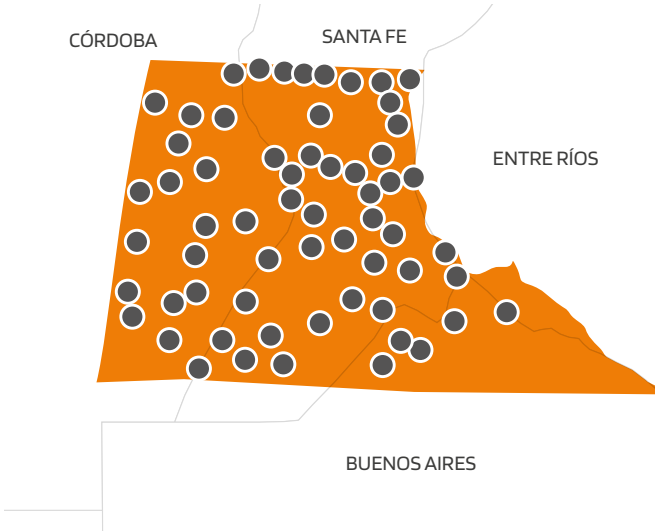
BREAD WHEAT

Subregion II North. Analysis results

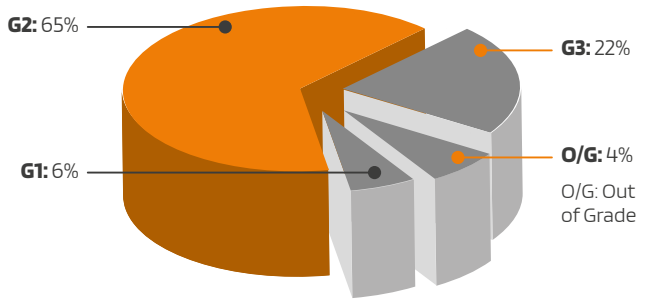
Weighted averages by tons of samples sets per location

GRAIN ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
Test Weight (kg/hl)	74,00	81,30	77,44
Total Damaged Kernels (%)	0,10	4,60	1,09
Foreign Material (%)	0,00	1,20	0,3
Shrunken and Broken Kernels (%)	0,00	1,10	0,37
Yellow Berry Kernels (%)	0,00	7,90	1,72
Protein (13,5% Moisture) (%)	9,9	14,0	11,8
Protein (dry basis) (%)	11,4	16,2	13,6
Weight of 1000 Kernels (g.)	31,70	38,10	34,82
Ash (dry basis.) (%)	1,6150	2,2550	1,905

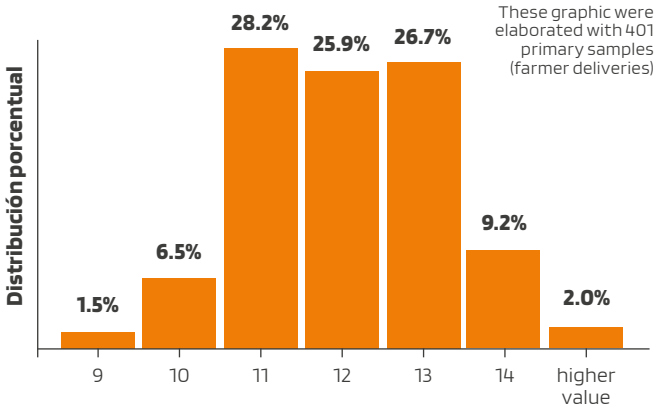
FLOUR ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
MILLING			
Wet Gluten (%)	22,8	33,4	27,8
Dry Gluten (%)	7,8	11,2	9,5
Falling Number (sec.)	283	463	374
Flour Yield (%)	52,87	71,63	66,87
Ash (dry basis) (%)	0,395	0,865	0,625
FARINOGRAM			
Water Absorption (14% H°) (%)	53,1	66,5	58,2
Development Time (min.)	1,3	17,6	5,2
Stability (min.)	1,7	36,4	13,0
Degree of Softening (12 min.)	11	93	43
ALVEOOGRAM			
P (mm)	57	129	84
L (mm)	54	163	107
W Joules x 10-4	203	384	292
P / L	0,39	2,24	0,79



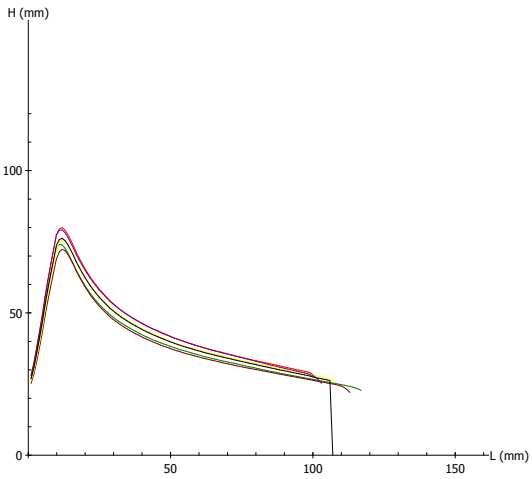
Grade distribution



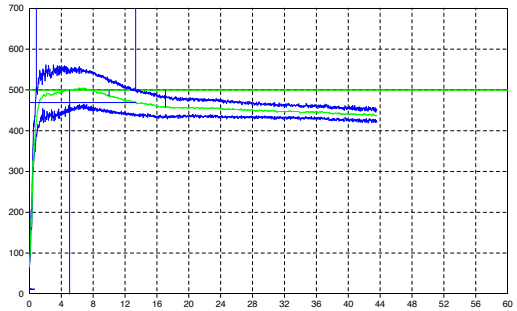
Protein (13.5% Moisture)



Alveogram



Farinogram



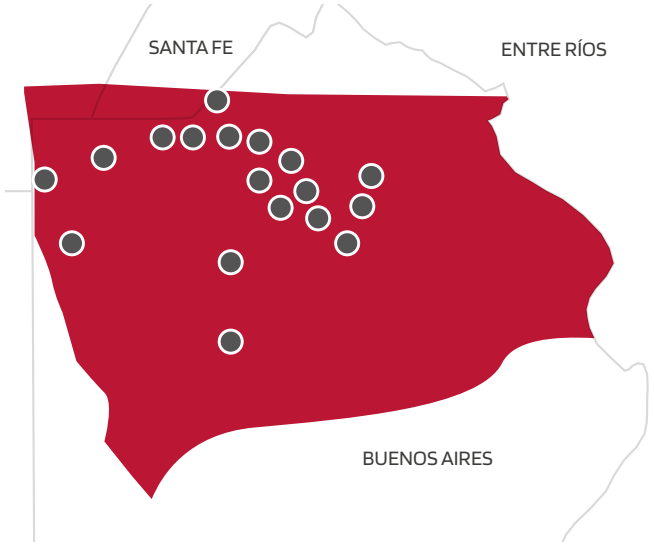
BREAD WHEAT

Subregion II South. Analysis results

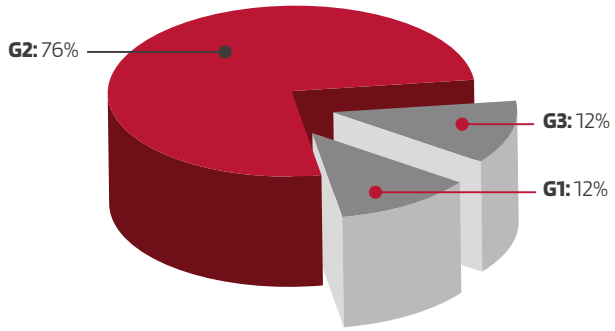
Weighted averages by tons of samples sets per location

GRAIN ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
Test Weight (kg/hl)	74,50	82,10	78,03
Total Damaged Kernels (%)	0,27	1,17	0,51
Foreign Material (%)	0,15	1,12	0,37
Shrunken and Broken Kernels (%)	0,16	1,42	0,35
Yellow Berry Kernels (%)	0,00	5,52	1,86
Protein (13,5% Moisture) (%)	10,0	11,9	11,1
Protein (dry basis) (%)	11,6	13,8	12,8
Weight of 1000 Kernels (g.)	33,50	37,47	35,37
Ash (dry basis.) (%)	1,7080	2,1640	1,85

FLOUR ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
MILLING			
Wet Gluten (%)	20,9	29,6	26,4
Dry Gluten (%)	7,8	11,0	9,8
Falling Number (sec.)	349	418	380
Flour Yield (%)	68,90	73,60	70,88
Ash (dry basis) (%)	0,529	0,785	0,646
FARINOGRAM			
Water Absorption (14% H°) (%)	50,0	61,0	56,8
Development Time (min.)	3,1	10,7	6,5
Stability (min.)	6,3	18,2	13,3
Degree of Softening (12 min.)	28	69	48
ALVEOOGRAM			
P (mm)	55	129	89
L (mm)	51	122	75
W Joules x 10-4	199	287	235
P / L	0,45	2,53	1,20

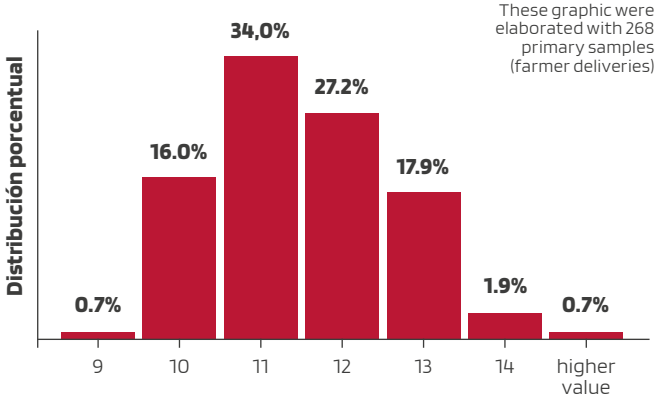


Grade distribution

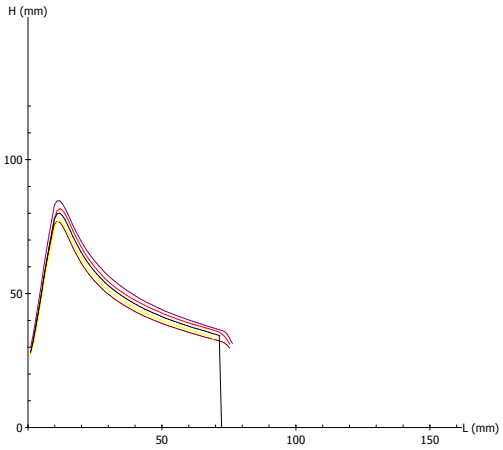


Protein (13.5% Moisture)

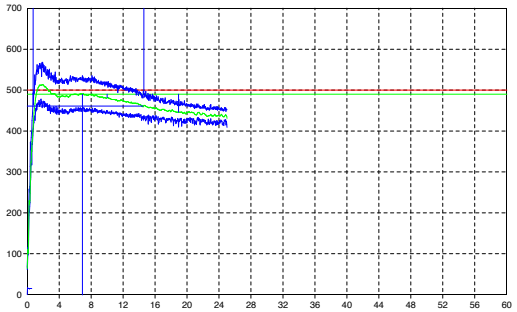
These graphic were elaborated with 268 primary samples (farmer deliveries)



Alveogram



Farinogram



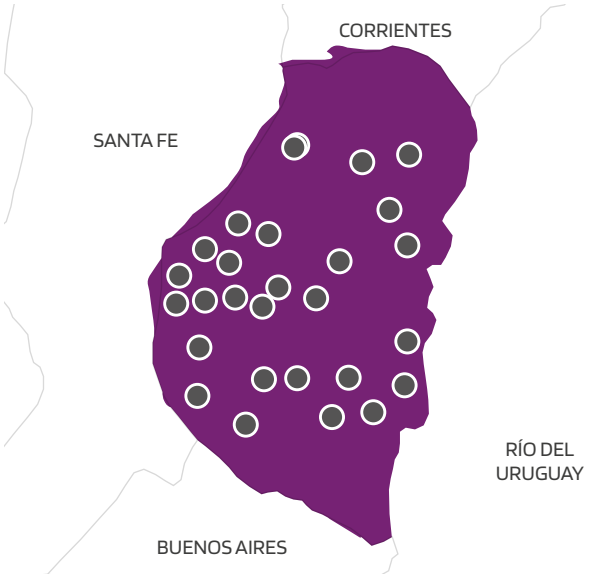
BREAD WHEAT

Subregion III. Analysis results

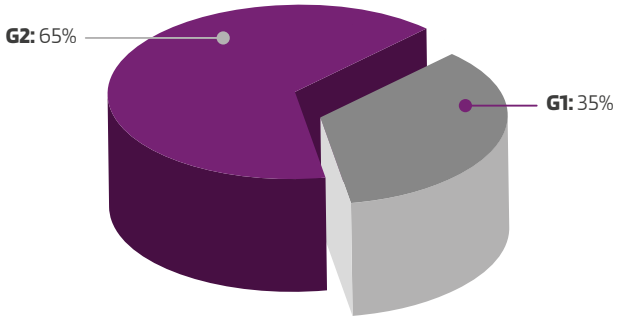
Weighted averages by tons of samples sets per location

GRAIN ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
Test Weight (kg/hl)	78,20	81,80	79,75
Total Damaged Kernels (%)	0,18	2,00	0,93
Foreign Material (%)	0,04	0,44	0,16
Shrunken and Broken Kernels (%)	0,18	0,68	0,39
Yellow Berry Kernels (%)	1,20	12,00	5,35
Protein (13,5% Moisture) (%)	9,5	10,6	10
Protein (dry basis) (%)	11,0	12,3	11,6
Weight of 1000 Kernels (g.)	34,80	40,20	37,94
Cenizas (S.S.S.) (%)	1,3100	1,8600	1,559

FLOUR ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
MILLING			
Wet Gluten (%)	18,3	25,3	22,0
Dry Gluten (%)	6,7	9,1	8,0
Falling Number (sec.)	302	398	345
Flour Yield (%)	62,10	66,00	64,08
Ash (dry basis) (%)	0,322	0,556	0,448
FARINOGRAM			
Water Absorption (14% H°) (%)	52,8	57,5	55,6
Development Time (min.)	1,6	14,4	6,5
Stability (min.)	1,9	26,0	12,9
Degree of Softening (12 min.)	17	74	44
ALVEOOGRAM			
P (mm)	60	100	78
L (mm)	58	116	87
W Joules x 10-4	216	260	233
P / L	0,52	1,72	0,90

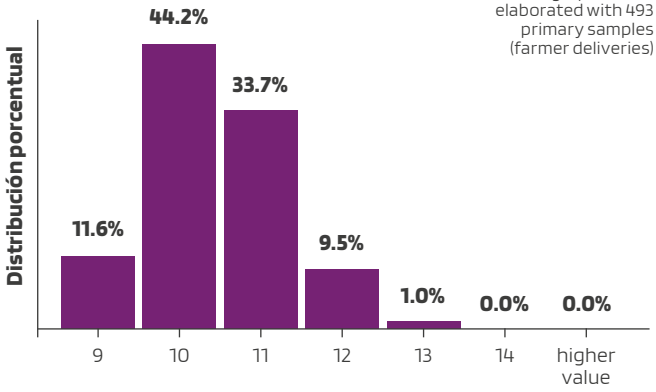


Grade distribution

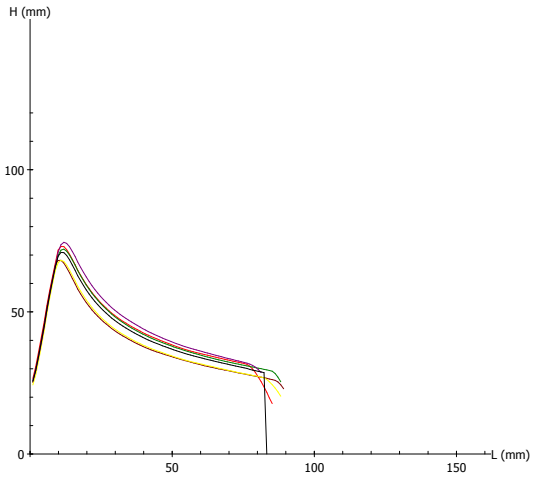


Protein (13.5% Moisture)

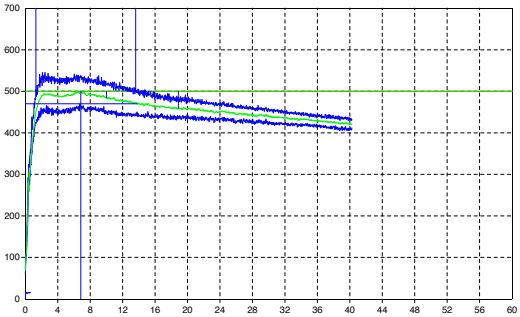
These graphic were elaborated with 493 primary samples (farmer deliveries)



Alveogram



Farinogram



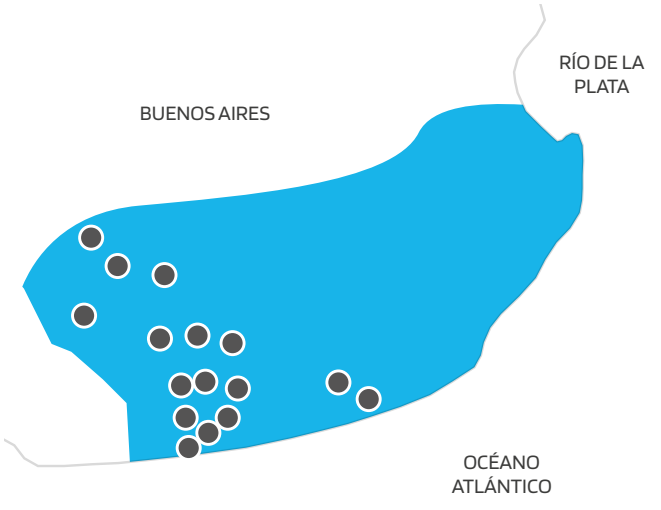
BREAD WHEAT

Subregion IV. Analysis results

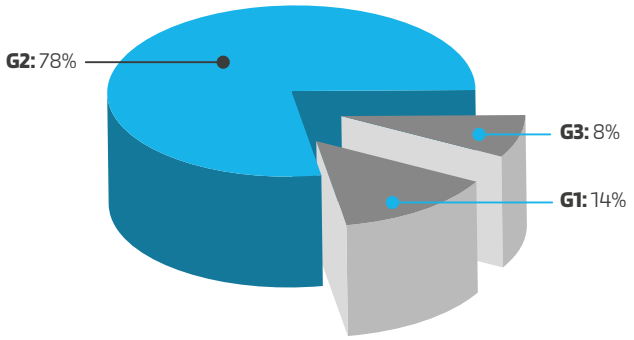
Weighted averages by tons of samples sets per location

GRAIN ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
Test Weight (kg/hl)	75,00	83,05	78,22
Total Damaged Kernels (%)	0,10	1,62	0,63
Foreign Material (%)	0,06	1,54	0,39
Shrunken and Broken Kernels (%)	0,04	0,36	0,2
Yellow Berry Kernels (%)	0,00	10,80	1,38
Protein (13,5% Moisture) (%)	9,9	12,5	11,1
Protein (dry basis) (%)	11,4	14,5	12,8
Weight of 1000 Kernels (g.)	36,10	46,50	40,75
Ash (dry basis.) (%)	1,4430	1,9030	1,677

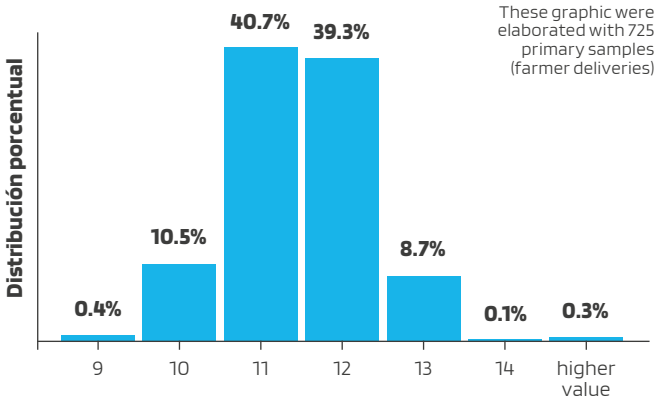
FLOUR ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
MILLING			
Wet Gluten (%)	19,4	28,6	25,3
Dry Gluten (%)	6,8	10,6	9,1
Falling Number (sec.)	321	460	389
Flour Yield (%)	65,00	72,20	68,91
Ash (dry basis) (%)	0,530	0,753	0,617
FARINOGRAM			
Water Absorption (14% H°) (%)	55,2	62,1	58,4
Development Time (min.)	1,7	8,8	5,6
Stability (min.)	1,7	15,1	10,6
Degree of Softening (12 min.)	27	71	10
ALVEOGRAM			
P (mm)	60	110	88
L (mm)	47	128	78
W Joules x 10-4	191	311	237
P / L	0,56	2,19	1,22



Grade distribution

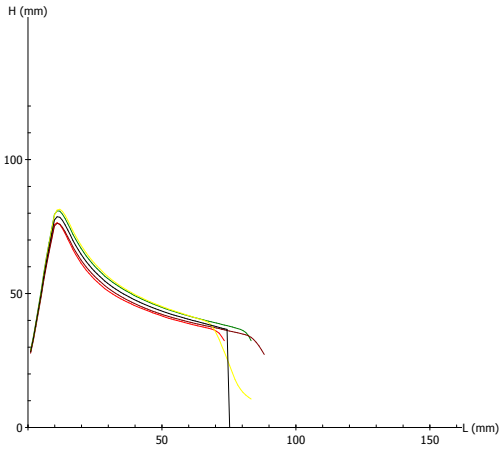


Protein (13.5% Moisture)

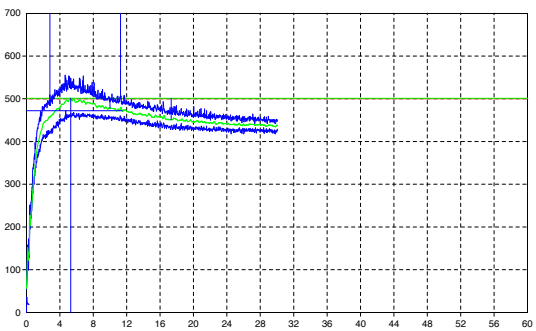


These graphic were elaborated with 725 primary samples (farmer deliveries)

Alveogram



Farinograma



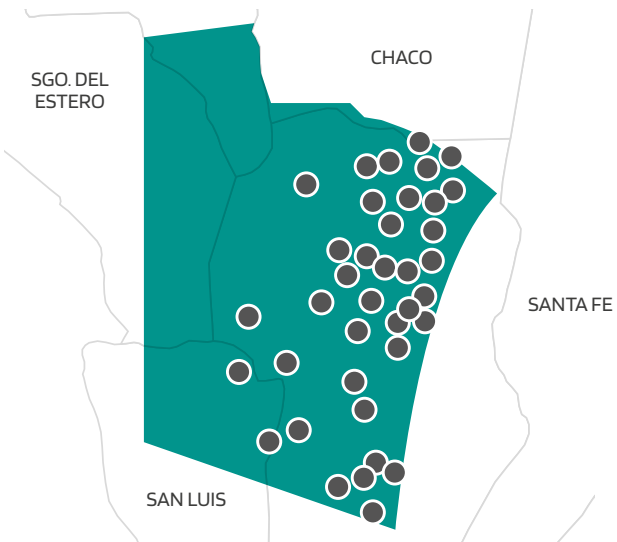
BREAD WHEAT

Subregión V North. Analysis results

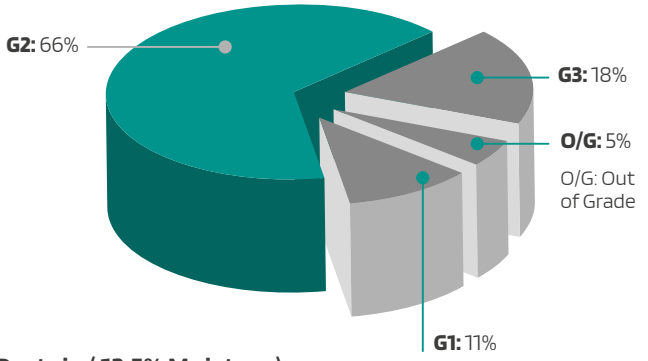
Weighted averages by tons of samples sets per location

GRAIN ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
Test Weight (kg/hl)	76,10	81,70	78,63
Total Damaged Kernels (%)	0,37	6,90	1,47
Foreign Material (%)	0,06	0,75	0,22
Shrunken and Broken Kernels (%)	0,12	1,60	0,52
Yellow Berry Kernels (%)	0,00	5,50	0,86
Protein (13,5% Moisture) (%)	11,3	13,3	12,1
Protein (dry basis) (%)	13,1	15,4	14
Weight of 1000 Kernels (g.)	30,56	37,76	33,6
Cenizas (S.S.S.) (%)	1,5500	2,2570	1,937

FLOUR ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
MILLING			
Wet Gluten (%)	25,6	34,5	29,5
Dry Gluten (%)	8,7	12,0	10,3
Falling Number (sec.)	258	486	369
Flour Yield (%)	68,10	71,00	69,47
Ash (dry basis) (%)	0,467	0,827	0,667
FARINOGRAM			
Water Absorption (14% H°) (%)	55,2	66,3	59,8
Development Time (min.)	2,0	12,9	5,4
Stability (min.)	1,9	25,5	12,8
Degree of Softening (12 min.)	19	89	41
ALVEOOGRAM			
P (mm)	67	106	80
L (mm)	67	161	121
W Joules x 10-4	219	386	321
P / L	0,42	1,45	0,66

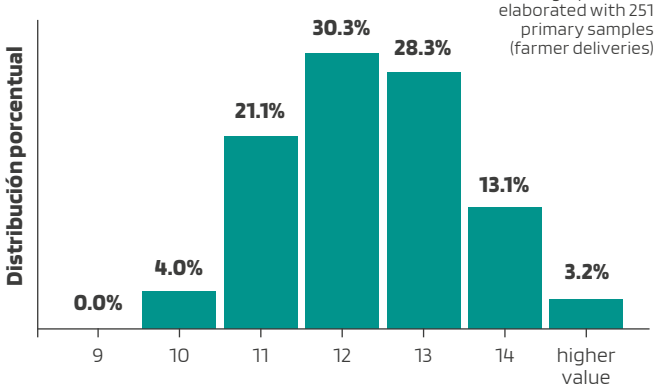


Grade distribution

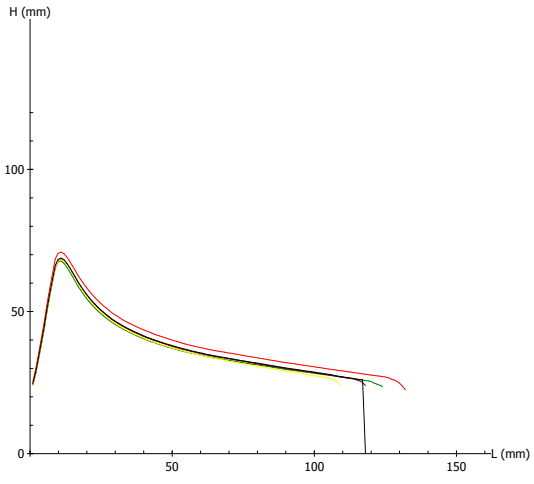


Protein (13.5% Moisture)

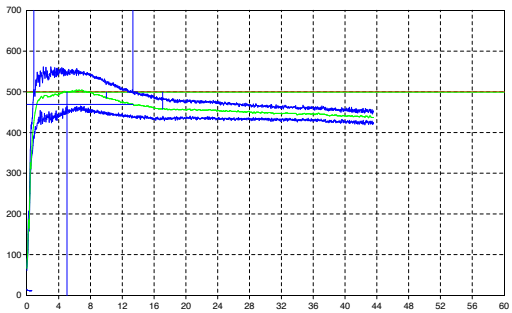
These graphic were elaborated with 251 primary samples (farmer deliveries)



Alveogram



Farinogram



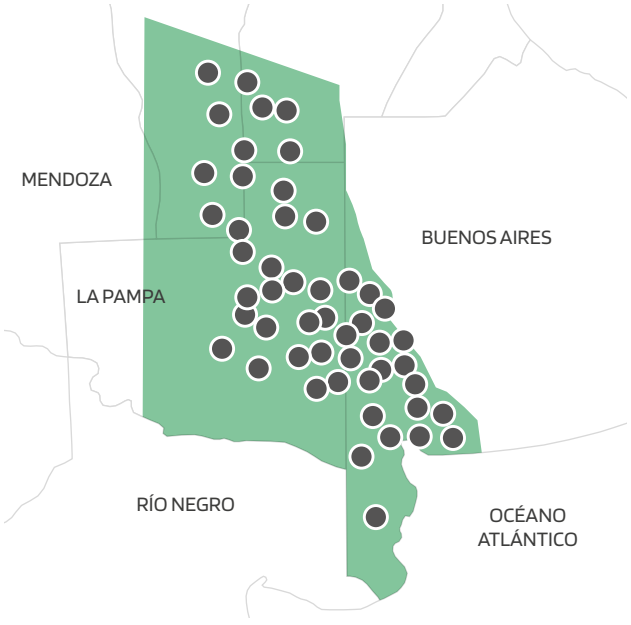
BREAD WHEAT

Subregión V South. Analysis results

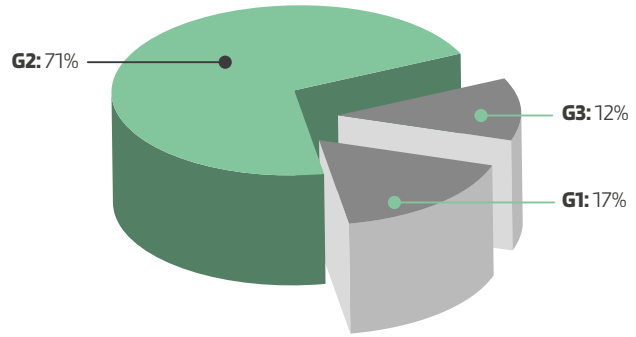
Weighted averages by tons of samples sets per location

GRAIN ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
Test Weight (kg/hl)	76,10	83,50	80,85
Total Damaged Kernels (%)	0,00	0,66	0,15
Foreign Material (%)	0,08	1,50	0,51
Shrunken and Broken Kernels (%)	0,04	1,14	0,31
Yellow Berry Kernels (%)	0,00	7,20	2,03
Protein (13,5% Moisture) (%)	9,6	13,3	11,5
Protein (dry basis) (%)	11,1	15,4	13,3
Weight of 1000 Kernels (g.)	33,40	41,30	37,45
Cenizas (S.S.S.) (%)	1,6340	2,0170	1,836

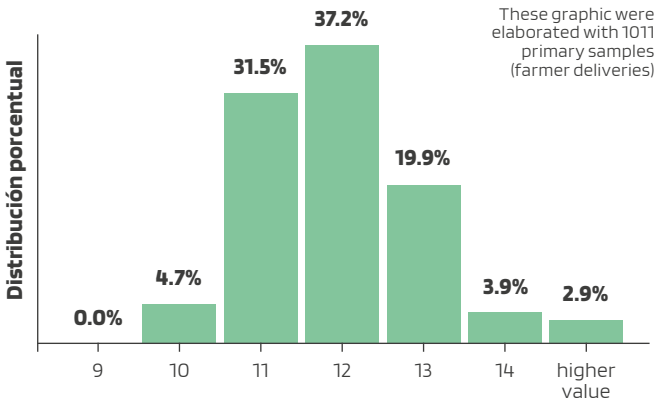
FLOUR ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
MILLING			
Wet Gluten (%)	21,7	33,0	27,8
Dry Gluten (%)	7,5	11,5	9,7
Falling Number (sec.)	339	477	423
Flour Yield (%)	66,20	73,20	69,64
Ash (dry basis) (%)	0,556	0,740	0,653
FARINOGRAM			
Water Absorption (14% H°) (%)	54,9	68,8	59,5
Development Time (min.)	1,7	12,7	7,7
Stability (min.)	6,0	26,2	15,7
Degree of Softening (12 min.)	17	79	38
ALVEOOGRAM			
P (mm)	63	169	101
L (mm)	41	150	93
W Joules x 10-4	151	363	291
P / L	0,42	3,59	1,08



Grade distribution

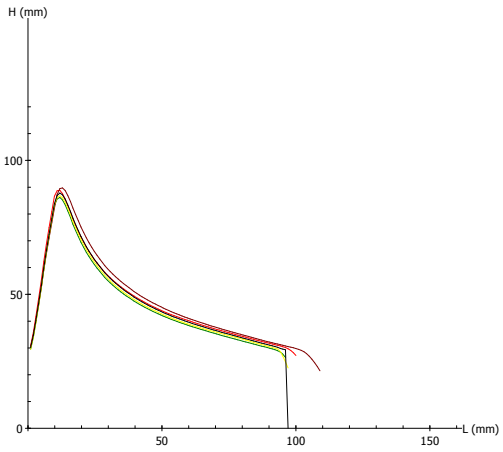


Protein (13.5% Moisture)

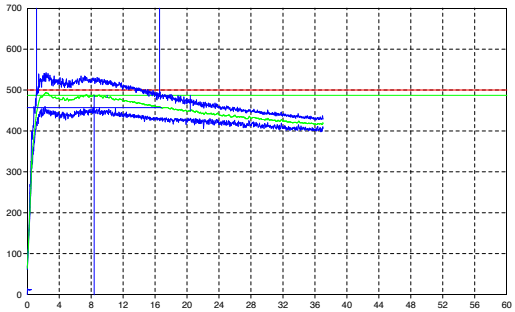


These graphic were elaborated with 1011 primary samples (farmer deliveries)

Alveogram



Farinogram



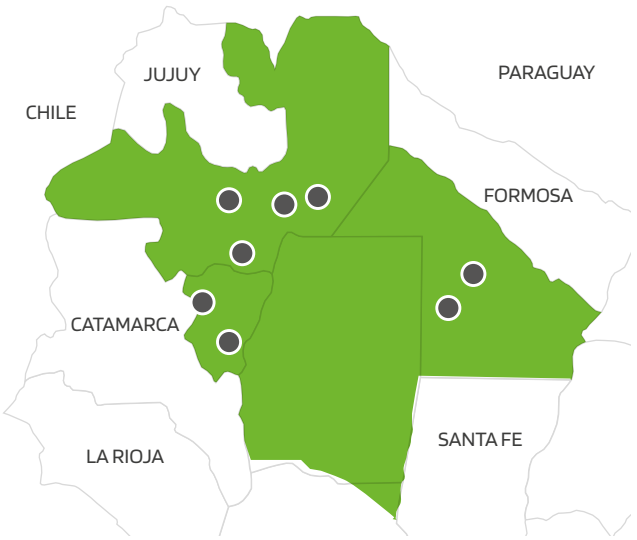
BREAD WHEAT

NORTH OF THE COUNTRY. Analysis results

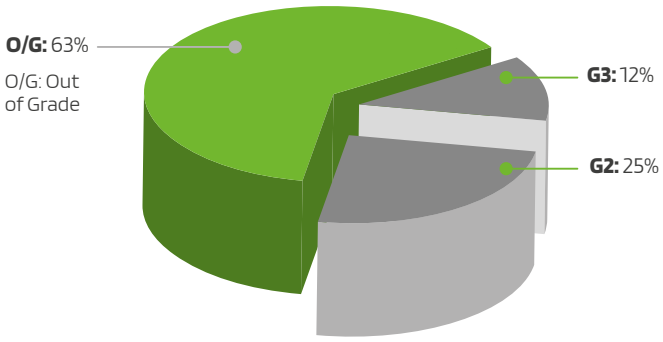
Weighted averages by tons of samples sets per location

ANÁLISIS DE GRANO	MÍNIMO	MÁXIMO	PROMEDIO
Test Weight (kg/hl)	77,10	81,00	79,13
Total Damaged Kernels (%)	0,48	11,14	3,41
Foreign Material (%)	0,07	2,17	0,85
Shrunken and Broken Kernels (%)	0,29	0,79	0,47
Yellow Berry Kernels (%)	0,68	3,06	2
Protein (13,5% Moisture) (%)	10,6	12,7	11,8
Protein (dry basis) (%)	12,3	14,6	13,6
Weight of 1000 Kernels (g.)	30,67	34,52	32,58
Cenizas (S.S.S.) (%)	1,6990	2,0920	1,936

FLOUR ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
MILLING			
Wet Gluten (%)	22,6	28,2	25,7
Dry Gluten (%)	8,4	10,8	9,6
Falling Number (sec.)	150	369	250
Flour Yield (%)	68,40	70,00	69,35
Ash (dry basis) (%)	0,650	0,736	0,703
FARINOGRAM			
Water Absorption (14% H°) (%)	56,0	65,7	60,7
Development Time (min.)	2,0	6,6	4,0
Stability (min.)	2,0	15,5	8,2
Degree of Softening (12 min.)	32	149	79
ALVEOOGRAM			
P (mm)	60	156	110
L (mm)	37	97	63
W Joules x 10-4	181	287	251
P / L	0,62	4,22	1,74

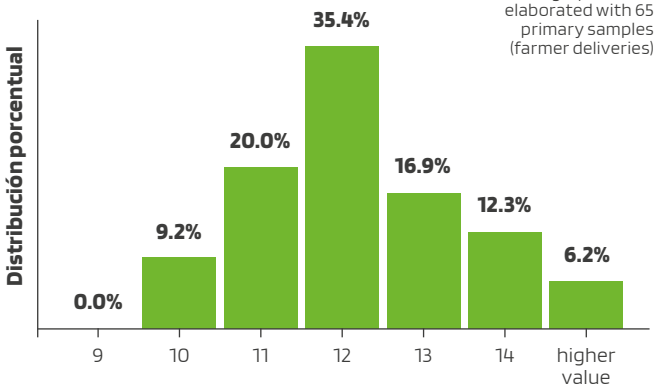


Grade distribution

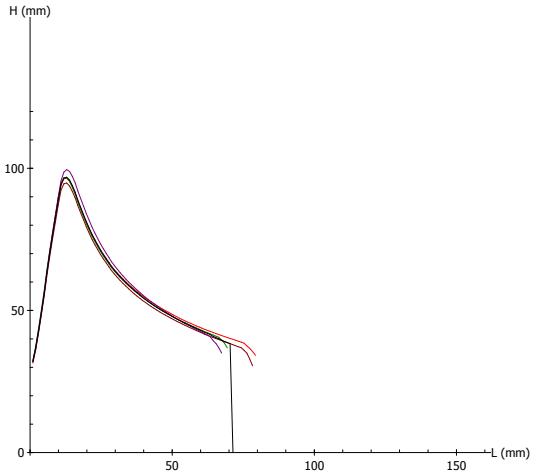


Protein (13.5% Moisture)

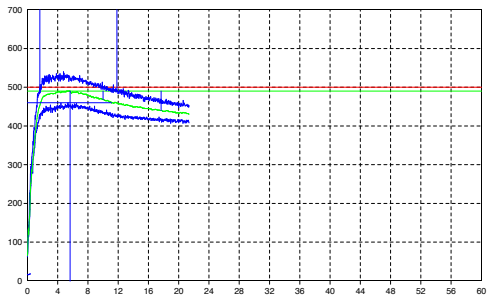
These graphic were elaborated with 65 primary samples (farmer deliveries)



Alveogram



Farinogram

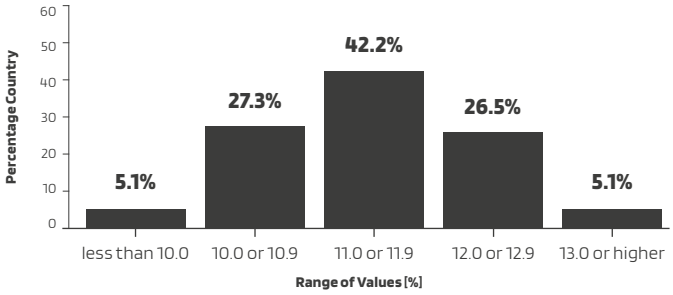


Analysis of variables by ranges

Tables summarize the analysis of four variables: protein in grain, wet gluten, strength determined by alveograph measurement and farinographic stability. Each variable was separated in ranges (first column). Averages were estimated for each range for each remaining variables (center column). This last column shows the percentage that corresponds to each range nationwide.

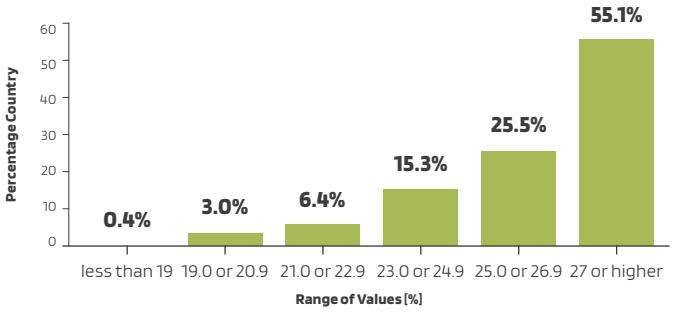
Protein

PROTEIN (13.5% MOISTURE)	WET GLUTEN W STABILITY	PERCENTAGE COUNTRY
Less than 10.0	21.6 · 243 · 8.0	5.1%
10.0 a 10.9	24.4 · 243 · 12.2	27.3%
11.0 a 11.9	27.4 · 281 · 13.2	42.2%
12.0 a 12.9	29.6 · 307 · 15.1	26.5%
13.0 or higher	32,0 · 335 · 16.7	5.1%



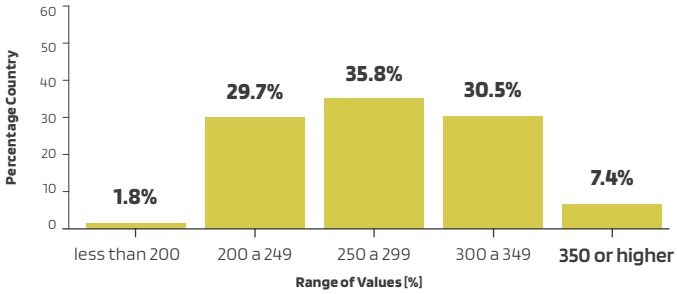
Wet Gluten

WET GLUTEN	PROTEIN W STABILITY	PERCENTAGE COUNTRY
Less than 19.0	9.7 · 231 · 23.5	0.4%
19.0 a 20.9	10.0 · 234 · 12.3	3.0%
21.0 a 22.9	10.1 · 239 · 10.6	6.4%
23.0 a 24.9	10.7 · 242 · 11.2	15.3%
25.0 a 26.9	11.1 · 268 · 11.4	25.5%
13.0 or higher	12.0 · 298 · 14.9	55.1%



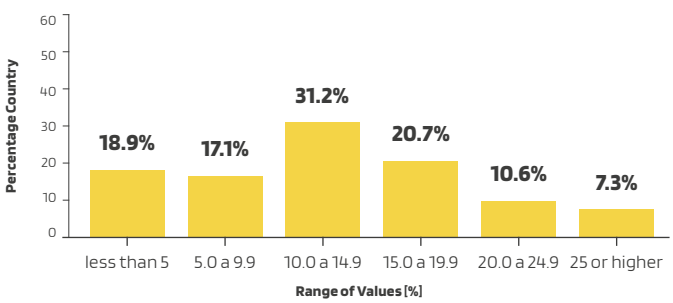
W

W	WET GLUTEN PROTEIN. STABILITY	PERCENTAGE COUNTRY
Less than 200	25.6 · 11.1 · 9.1	1.8%
200 a 249	24.4 · 10.7 · 11.2	29.7%
250 a 299	27.0 · 11.4 · 12.8	35.8%
300 a 349	29.1 · 12.1 · 16.0	30.5%
350 or higher	30.0 · 12.3 · 14.3	7.4%



Stability

STABILITY	WET GLUTEN PROTEIN W	PERCENTAGE COUNTRY
Less than 5	24.8 · 10.9 · 263	18.9%
5.0 a 9.9	27.0 · 11.4 · 262	17.1%
10.0 a 14.9	27.1 · 11.4 · 270	31.2%
15.0 a 19.9	27.8 · 11.7 · 291	20.7%
20.0 a 24.9	26.7 · 11.4 · 283	10.6%
25 or higher	27.5 · 11.8 · 307	7.3%



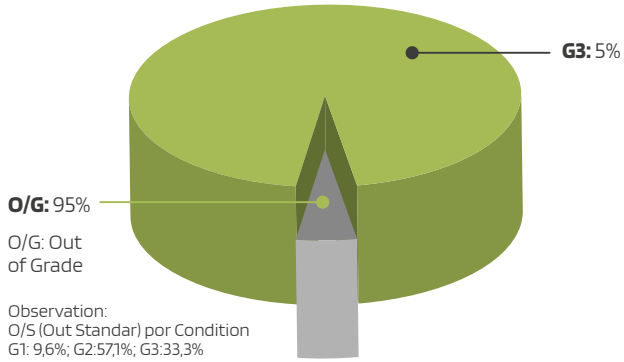
DURUM WHEAT

National averages
Analysis Results

WHEAT ANALYSIS	MINIMUN	MAXIMUN	AVERAGE
Test Weight (kg/hl)	74.10	80.35	**76.85**
Total Damaged Kernels (%)	0.08	34.76	**3.86**
Foreign Material (%)	0.10	3.56	**0.58**
Shrunken and Broken Kernels (%)	0.18	2.10	**0.66**
Vitreous Kernels (%)	3	66	**22**
Wheat (Triticum aestivum) (%)	1.34	10.44	**4.19**
Protein (13,5% Moisture) (%)	9.5	13.6	**12.06**
Protein (dry basis) (%)	11.0	15.7	**13.9**
Weight of 1000 Kernels (g.)	36.61	54.22	**46.82**
Ash (dry basis.) (%)	1.713	2.137	**1.892**

Total damaged kernels includes 0,16 % frostand kernels, 3,26 % sprouted kernels, 0,07 % insect chewed kernels, 0,11 % kernels with fusarium and 0,42 % germ-chewed.

Grade distribution

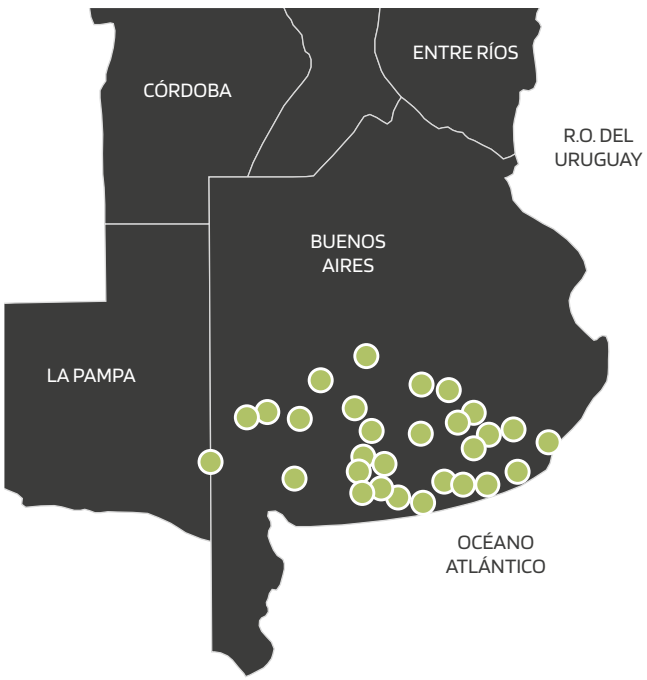


WHEAT ANALYSIS	MINIMUN	MAXIMUN	AVERAGE
Falling Number (seg.)	99	442	**332**
Colour(B)	17.4	24.6	**19.6**
Wet Gluten (%)	26.0	34.8	**30.2**
Gluten Index	4	97	**57**
FARINOGRAM			
Energy Level	25.0	36.8	**31.2**
ALVEOOGRAM			
Degree Softening (%)	24	41	**33**

These results were elaborated with 22 composite samples

CROP 2018-2019	
Planted Area (ha)	46.995
Harvested Area (ha)	40.965
Average Yeld (Kq/ha)	3,623
Production (tn)	148.410

Reference: Secretaría de Agroindustria de la Nación




Trigo Argentino
INFORME DE SU CALIDAD

Bolsa de Cereales

Bolsa de Cereales y Productos · Bahía Blanca

Asociación de Cooperativas Argentinas

AFA SCL Agricultores Federados Argentinos

Bolsa de Comercio de Rosario

Cámara Arbitral de Cereales · Bahía Blanca · Argentina

Cámara Arbitral de Cereales de Bahía Blanca

Cámara Arbitral de Cereales · Rosario · BCR

Cámara Arbitral de Cereales

BCSF

CABC Cámara Arbitral de la Bolsa de Cereales

Bolsa de Cereales de Córdoba
Cámara de Cereales y Afines de Córdoba
Tribunal Arbitral

Centro de Exportadores de Cereales

faim federación argentina de la industria molinera

Asociación Centros y Entidades Gremiales de Acopiadores de Cereales · Buenos Aires

INTA

senasa

Ministerio de Agroindustria
Presidencia de la Nación

Trigo Argentino
Informe de su calidad