2019/2020 CROP

TRIGO ARGENTINO

Institutional quality report

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Bread wheat
2019/2020 Crop

TRITICUM AESTIVUM L.

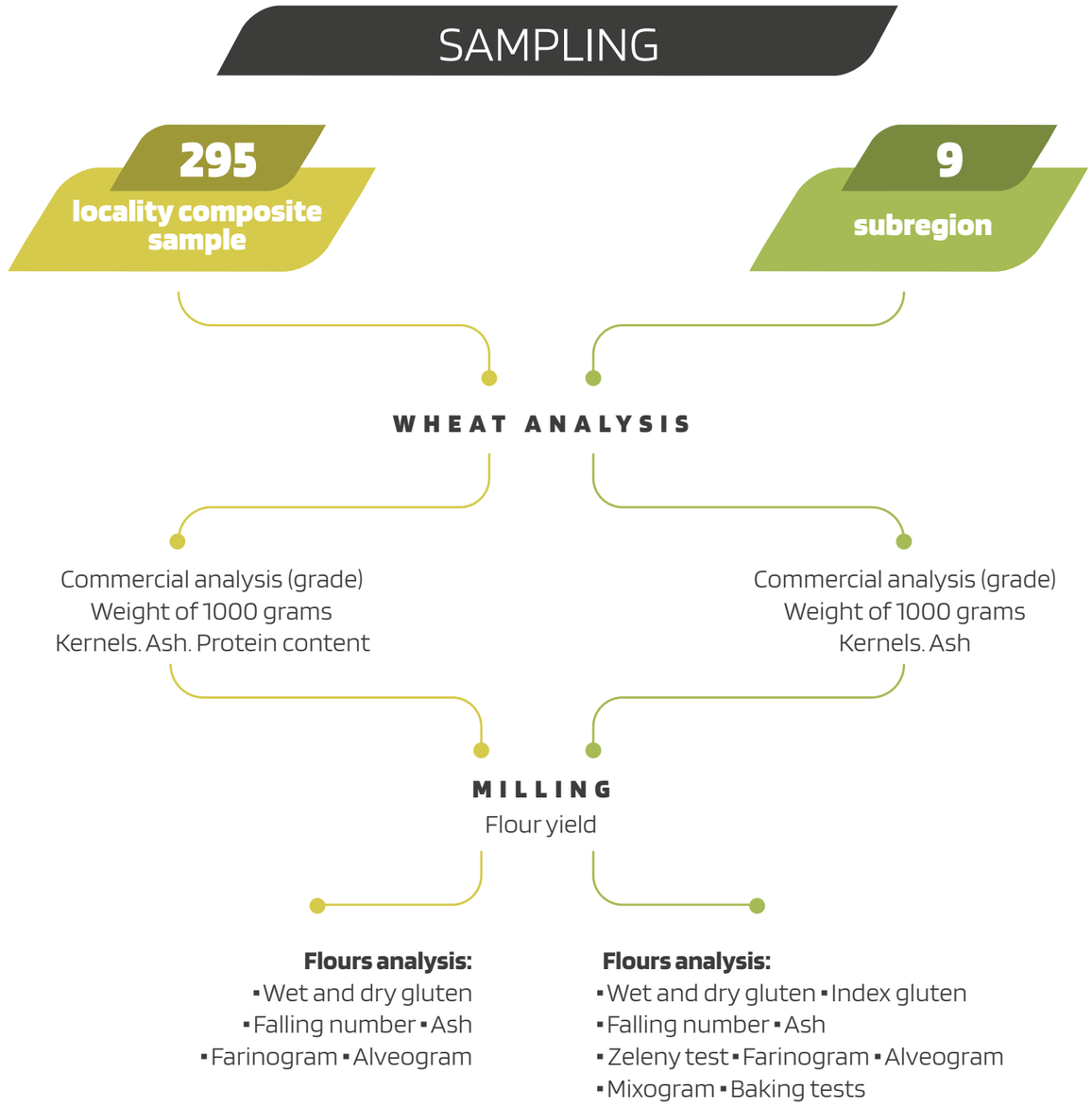
The 2019/20 wheat campaign was characterized by high grain yields in the main wheat producing areas, as has been the case for several crops and with slightly lower protein levels than in the 2018/19 harvest. National production is estimated at 19.8 million tons (MT), slightly higher than the 2018/19 harvest with 19.4 MT. 6.8 Mha were sown and 6.7 Mha were harvested, with a national average yield of 29.3 qq / ha. Regarding the health outlook, it was a campaign with high pressure of foliar diseases, mainly in the central zone, yellow rust in susceptible cultivars and rust or orange as the main disease. The first attacks of the latter were registered by tillering in cultivars with high susceptibility with the diffusion of two new virulent races. This forced producers and consultants to carry out chemical controls that were finally reflected in the excellent yields obtained. With regard to spike fusariosis, mild attacks were observed in most productive areas with minimal impact on production and quality.

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

SUBREGION	AREA PLANTED	AREA HARVESTED	YIELD	PRODUCTION
Sub I	867.000	848.554	2,86	2.431.630
Sub II N	1.015.710	994.050	3,74	3.724.782
Sub II S	980.967	994.050	3,65	3.738.124
Sub III	477.500	475.900	2,74	1.307.140
Sub IV	576.310	591.400	3,56	2.110.315
Sub V N	856.837	811.601	2,76	2.241.334
Sub V S	1.224.850	1.121.616	1,99	2.238.881
NEA	418.248	416.403	2,46	1.027.636
NOA	462.478	458.068	2,05	939.970
NATIONAL	**6.879.900**	**6.711.642**	**2,94**	**19.759.812**

SUBREGION	LOCALITY COMPOSITE	SAMPLING (TONS)	PRODUCTION (TONS)	PRODUCTION SAMPLED
I	21	73.360	2.431.630	3,02
II N	64	843.150	3.724.782	22,64
II S	47	158.000	3.738.124	4,23
III	31	97.415	1.307.140	7,45
IV	39	126.753	2.110.315	6,01
V N	37	156.480	2.241.334	6,98
V S	52	167.420	2.238.881	7,48
NEA	2	8.000	1.027.636	0,78
NOA	2	7.000	939.970	0,74
National	**295**	**1.510.825**	**17.649.497**	**8,29**

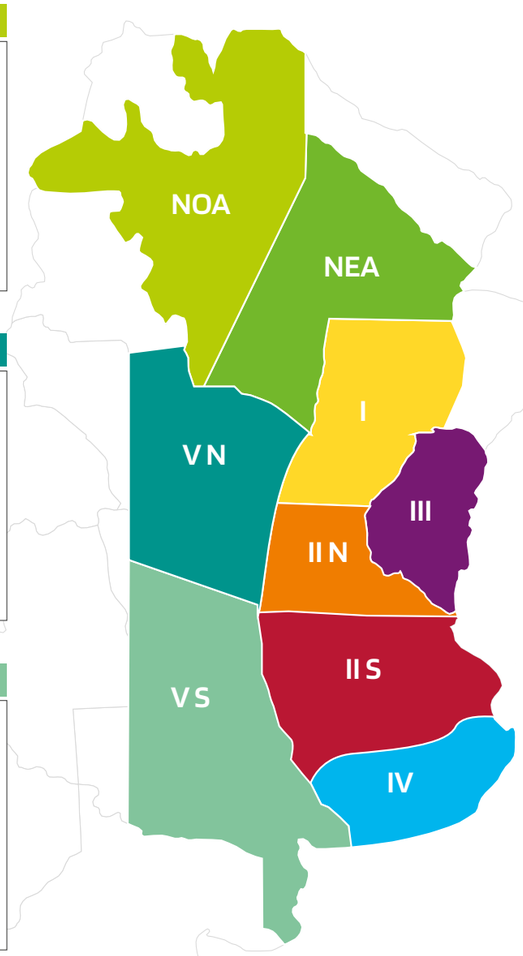
Procedure to ontain analytical results



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)	80,36	78,96	79,88	77,21	79,51	80,02	81,30	78,40	81,06	**79,40**
Weight of 1000 kernels (gr)	32,55	31,33	34,14	32,47	36,24	32,10	32,42	31,06	34,29	**32,31**
Ahs (dry basis) %	1,854	1,674	1,769	1,315	1,676	1,767	1,831	2,033	1,830	**1,700**
Protein (13,5% Moisture) (%)	10,2	11,1	11,2	11,1	11,2	11,1	12,6	12,8	12,5	**11,26**
Protein (dry basis) (%)	11,8	12,9	12,9	12,9	12,9	12,8	14,6	14,8	14,5	**13,01**
Ash (dry basis) %	0,708	0,569	0,558	0,605	0,587	0,623	0,695	0,643	0,577	**0,600**
Color	-	-	-	-	-	-	-	-	-	**-**
L	87,61	87,88	88,95	88,06	88,67	88,02	88,66	88,49	87,73	**88,14**
a	-1,61	-1,68	-1,83	-1,67	-1,7	-1,6	-1,63	-1,6	-1,45	**-1,68**
b	8,82	9,21	8,89	9,52	8,71	8,57	8,67	8,54	8,62	**9,02**
HARINA										
Moisture (%)	12,3	14,08	14,3	13,54	13,04	12,78	12,76	12,89	13,6	**13,6**
Protein (%)	9,6	10,8	10,1	10,2	9,9	10,4	11,8	10,4	10	**10,6**
Wet Gluten (%)	22,0	25,2	25,9	25,5	26,2	25,3	30,6	24,9	24,7	**25,80**
Dry Gluten (%)	7,8	8,9	9,6	8,8	9,3	9,00	10,6	9,2	9,2	**9,13**
Index Gluten (%)	22	95	100	96	99	100	99	98	97	**93**
Falling Number (seg)	401	434	424	408	425	453	414	345	375	**428**
Zeleny Test (cc)	30	35	40	30	34	43	41	34	29	**36**
FARINOGRAM										
Water Absorption (%)	62,9	56,1	55,2	55,6	57,5	55,4	59,3	55,7	58,0	**56,67**
Development Time (min)	4,9	6,6	17,9	7,6	11,00	10,5	9,1	11,5	9,1	**8,64**
Stability (min)	6,4	16,7	31,1	13,4	27,1	25,5	17,8	17,9	13,2	**19,18**
Degree pf Softening (U.F.)	61	30	21	73	22	29	36	41	49	**33,15**
Quality Number	-	-	-	-	-	-	-	-	-	**-**
MIXOGRAM										
Development Time (min)	6,42	5,07	5,4	5,25	5,99	6,4	5,31	5,08	4,82	**5,39**
ALVEOGRAM										
P (mm)	SD	79	93	77	98	78	89	96	99	**79,41**
L (mm)	SD	105	64	57	79	90	117	64	62	**91,39**
G	SD	19,9	22,1	25	19,9	22,5	24,1	21,2	17,9	**21,26**
W (Joules x 10-4)	SD	282	237	163	275	247	350	234	237	**261**
P/L	SD	0,75	1,45	1,35	1,24	0,87	0,76	1,50	1,60	**0,87**
Ie %	SD	64,2	68	57,1	62,2	64,8	65,6	61,8	55,2	**63,88**
W (40) (Joules x 10-4)	SD	177	148	92	169	145	152	155	190	**161**
RVA										
Maxim Viscosity (RVU)	146,58	203,58	200,75	206,83	219,25	199,33	218,83	113	140,58	**202,60**
Minimum Viscosity (RVU)	78,17	142,58	121,42	127,17	135,75	123,83	141,08	57,33	77,83	**133,57**
Final Viscosity (RVU)	161,5	242,92	238,83	240,33	242,92	226,08	250,33	122,75	152,33	**236,9**
BAKING										
Absorption (%)	61	62,5	62,5	61	62	62,5	63	62	62	**62,35**
Development Time (min)	03:00	04:00	04:00	03:00	03:30	04:00	04:00	03:30	03:30	**03:50**
Fermentation Time (min)	160	160	160	160	160	160	160	160	160	**160**
Loaf Volume (cc)	650	640	625	695	600	580	660	585	575	**634,94**
Specific Volume (cc/gr)	4,8	5	4,7	5,4	4,5	4,4	5	4,4	4,2	**4,88**

Argentine wheat
Main Quality Parameters



Subregion NOA

Test Weight (kg/hl)	81,06

Grade 1	2	3	F/E
0%	100%	0%	0%

Protein (13,5 Moisture) (%)	12,5
Protein (s.s.s.) (%)	14,5
Wet Gluten (%)	24,7
W. Alveograma (Joules 10-4)	237
Estabilidad Farino (min)	13,2

Subregion NEA

Test Weight (kg/hl)	78,40

Grade 1	2	3	F/E
0%	100%	0%	0%

Protein (13,5 Moisture) (%)	12,8
Protein (s.s.s.) (%)	14,8
Gluten Húmedo %	24,9
W. Alveograma (Joules 10-4)	234
Estabilidad Farino (min)	17,8

Subregion V N

Test Weight (kg/hl)	80,02

Grade 1	2	3	F/E
35,14%	64,86%	0%	0%

Protein (13,5 Moisture) (%)	11,1
Protein (s.s.s.) (%)	12,8
Wet Gluten (%)	25,3
W. Alveograma (Joules 10-4)	247
Estabilidad Farino (min)	25,5

Subregion I

Test Weight (kg/hl)	80,36

Grade 1	2	3	F/E
14,29%	57,14%	23,81%	4,76%

Protein (13,5 Moisture) (%)	10,2
Protein (s.s.s.) (%)	11,8
Wet Gluten (%)	22,0
W. Alveograma (Joules 10-4)	-
Estabilidad Farino (min)	6,4

Subregion V S

Test Weight (kg/hl)	81,30

Grade 1	2	3	F/E
9,62%	63,46%	26,92%	0%

Protein (13,5 Moisture) (%)	12,6
Protein (s.s.s.) (%)	14,6
Wet Gluten (%)	30,6
W. Alveograma (Joules 10-4)	350
Estabilidad Farino (min)	17,8

Subregion II N

Test Weight (kg/hl)	78,96

Grade 1	2	3	F/E
26,56%	67,19%	4,69%	1,56%

Protein (13,5 Moisture) (%)	11,1
Protein (s.s.s.) (%)	12,9
Wet Gluten (%)	25,2
W. Alveograma (Joules 10-4)	282
Estabilidad Farino (min)	16,7

Subregion IV

Test Weight (kg/hl)	79,51

Grade 1	2	3	F/E
21,21%	39,39%	0%	39,39%

Protein (13,5 Moisture) (%)	11,2
Protein (s.s.s.) (%)	12,9
Wet Gluten (%)	26,2
W. Alveograma (Joules 10-4)	275
Estabilidad Farino (min)	27,1

Subregion II S

Test Weight (kg/hl))	79,88

Grade 1	2	3	F/E
10,64%	85,11%	4,26%	0%

Protein (13,5 Moisture) (%)	11,2
Protein (s.s.s.) (%)	12,9
Wet Gluten (%)	25,9
W. Alveograma (Joules 10-4)	237
Estabilidad Farino (min)	31,1

Subregion III

Test Weight (kg/hl)	77,21

Grade 1	2	3	F/E
25,81%	32,26%	12,90%	29,03%

Protein (13,5 Moisture) (%)	11,1
Protein (s.s.s.) (%)	12,9
Wet Gluten (%)	25,5
W. Alveograma (Joules 10-4)	162,5
Estabilidad Farino (min)	13,4

National

Test Weight (kg/hl)	79,40

Grade 1	2	3	F/E
20%	62%	10%	0%

Protein (13,5 Moisture) (%)	11,3
Protein (s.s.s.) (%)	13
Wet Gluten (%)	25,8
W. Alveograma (Joules 10-4)	261
Estabilidad Farino (min)	19,2

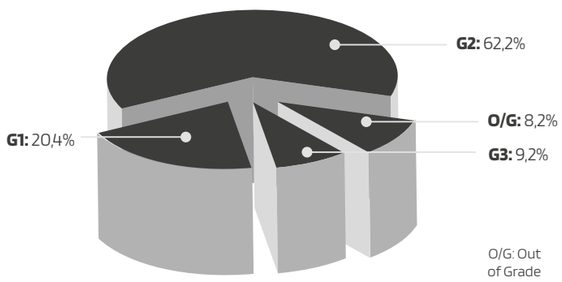
BREAD WHEAT

National averages

Weighted averages by tons produced in each region

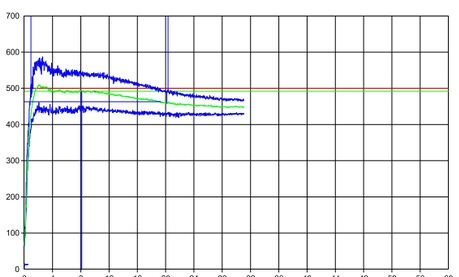
WHEAT ANALYSIS	MINIMUN	MAXIMUN	AVERAGE
Test Weight (kg/hl)	74,20	84,40	79,40
Total Damaged Kernels (%)	0,00	6,31	0,39
Foreign Material (%)	0,00	1,47	0,25
Shrunken and Broken Kernels (%)	0,07	1,98	0,43
Yellow Berry Kernels (%)	0,00	31,50	4,56
Protein (13,5% Moisture) (%)	9,20	15,00	11,26
Protein (dry basis) (%)	10,60	17,30	13,01
Weight of 1000 Kernels (g.)	26,20	41,66	32,31
Ash (dry basis.) (%)	0,900	2,180	1,700

Grade distribution

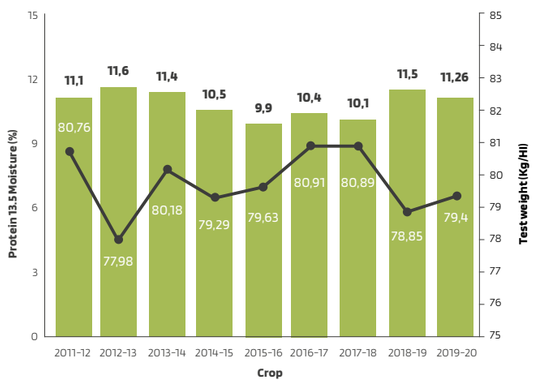


FLOUR ANALYSIS	MINIMUN	MAXIMUN	AVERAGE
MILLING			
Wet Gluten (%)	17,60	36,00	25,80
Dry Gluten (%)	6,50	12,60	9,13
Falling Number (sec.)	269	575	428
Flour Yield (%)	0,00	76,40	68,98
Ash (dry basis) (%)	0,455	1,866	0,596
FARINOGRAM			
Water Absorption (14% H°) (%)	50,60	70,00	56,67
Development Time (min.)	1,30	37,20	8,64
Stability (min.)	1,50	59,20	19,18
Degree of Softening (12 min.)	0	235	33,15
ALVEOGRAM			
P (mm)	48	131	79
L (mm)	27	164	91
W Joules x 10-4	123	446	261
P/L	0,17	4,81	0,95

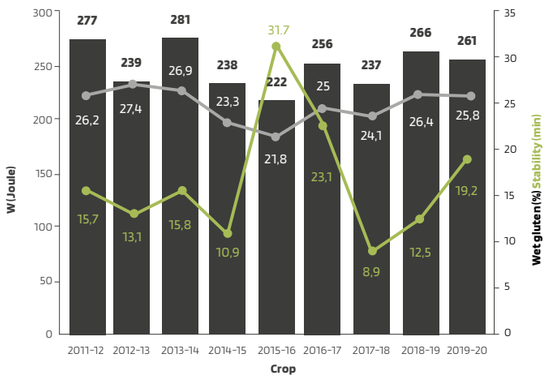
Alveogram



Protein 13,5% vs. Test weight



W, wet gluten y stability



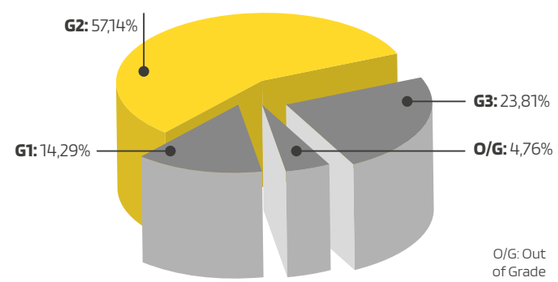
BREAD WHEAT

Subregion I. Analysis results

Weighted averages by tons of samples sets per location

GRAIN ANALYSIS	MINIMUN	MAXIMUN	AVERAGE
Test Weight (kg/hl)	78,70	81,70	80,36
Total Damaged Kernels (%)	0,24	3,16	1,53
Foreign Material (%)	0,04	0,75	0,27
Shrunken and Broken Kernels (%)	0,30	1,00	0,63
Yellow Berry Kernels (%)	9,40	31,50	18,12
Protein (13,5% Moisture) (%)	9,2	11,2	10,2
Protein (dry basis) (%)	10,6	12,9	11,8
Weight of 1000 Kernels (g.)	28,90	35,02	32,55
Ash (dry basis.) (%)	1,654	2,126	1,854

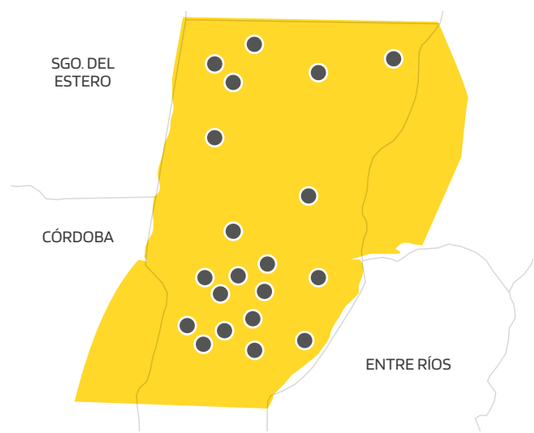
Grade distribution



FLOUR ANALYSIS	MINIMUN	MAXIMUN	AVERAGE
MILLING			
Wet Gluten (%)	17,6	26,5	22,0
Dry Gluten (%)	6,5	9,0	7,8
Falling Number (sec.)	269	450	401
Flour Yield (%)	63,9	70,9	68,3
Ash (dry basis) (%)	0,545	0,892	0,708
FARINOGRAM			
Water Absorption (14% H°) (%)	54,9	70,0	62,9
Development Time (min.)	1,3	23,2	4,9
Stability (min.)	1,5	19,0	6,4
Degree of Softening (12 min.)	7	102	61
ALVEOOGRAM (*)			
P (mm)	SD	SD	SD
L (mm)	SD	SD	SD
W Joules x 10-4	SD	SD	SD
P / L	SD	SD	SD

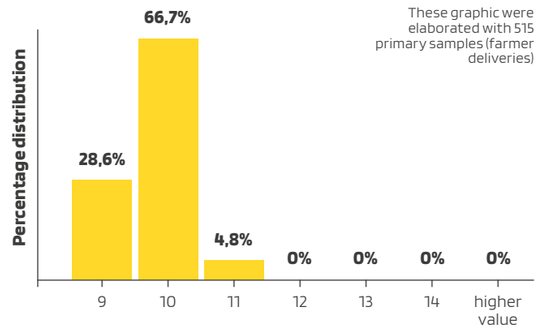
SD: No Statistical Data

(*) There is not enough data to estimate the statistical indicator

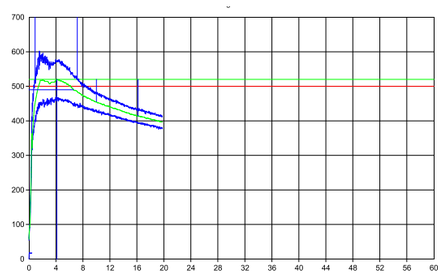


Protein (13.5% Moisture)

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



Farinogram



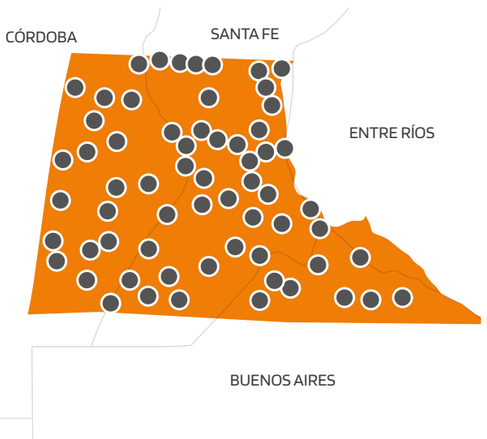
BREAD WHEAT

Subregion II N. Analysis results

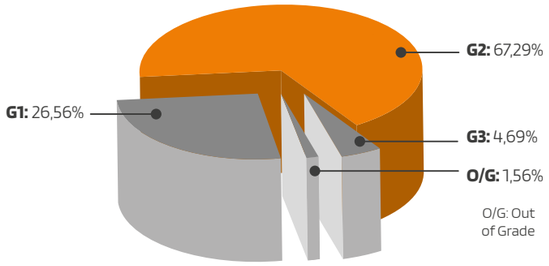
Weighted averages by tons of samples sets per location

GRAIN ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
Test Weight (kg/hl)	75,10	80,80	78,96
Total Damaged Kernels (%)	0,00	1,10	0,19
Foreign Material (%)	0,00	1,20	0,13
Shrunken and Broken Kernels (%)	0,10	1,00	0,35
Yellow Berry Kernels (%)	0,80	18,50	5,12
Protein (13,5% Moisture) (%)	10,2	11,7	11,1
Protein (dry basis) (%)	11,8	13,5	12,9
Weight of 1000 Kernels (g.)	28,70	33,80	31,33
Ash (dry basis.) (%)	1,195	2,085	1,674

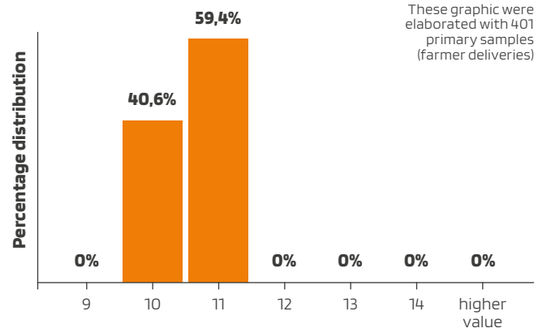
FLOUR ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
MILLING			
Wet Gluten (%)	21,0	27,7	25,2
Dry Gluten (%)	7,5	9,5	8,9
Falling Number (sec.)	354	510	434
Flour Yield (%)	0,0	72,9	69,8
Ash (dry basis) (%)	0,455	0,745	0,569
FARINOGRAM			
Water Absorption (14% H°) (%)	51,2	66,9	56,1
Development Time (min.)	1,7	27,2	6,6
Stability (min.)	2,1	44,8	16,7
Degree of Softening (12 min.)	0	84	30
ALVEOOGRAM			
P (mm)	48	113	79
L (mm)	46	144	105
W Joules x 10-4	147	339	282
P / L	0,17	2,26	0,75



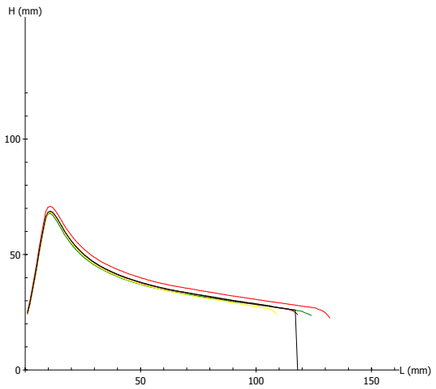
Grade distribution



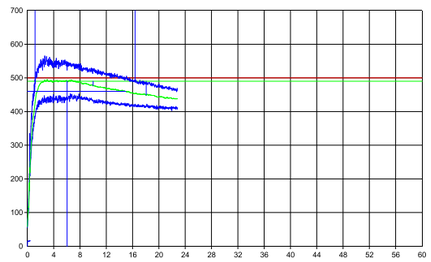
Protein (13.5% Moisture)



Alveogram



Farinogram



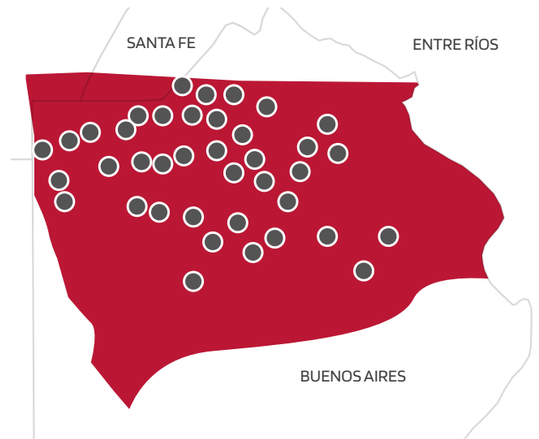
BREAD WHEAT

Subregion II S. Analysis results

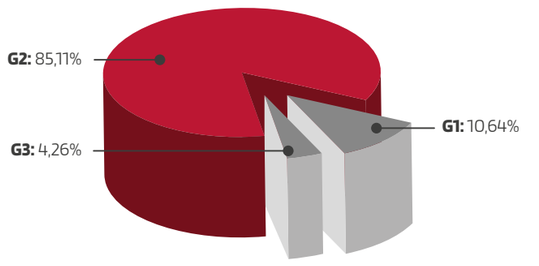
Weighted averages by tons of samples sets per location

GRAIN ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
Test Weight (kg/hl)	75,50	82,80	79,88
Total Damaged Kernels (%)	0,04	1,44	0,25
Foreign Material (%)	0,10	0,98	0,39
Shrunken and Broken Kernels (%)	0,12	0,74	0,31
Yellow Berry Kernels (%)	0,80	7,96	3,35
Protein (13,5% Moisture) (%)	9,5	12,5	11,2
Protein (dry basis) (%)	11,0	14,5	12,9
Weight of 1000 Kernels (g.)	29,40	39,19	34,14
Ash (dry basis.) (%)	1,579	2,065	1,769

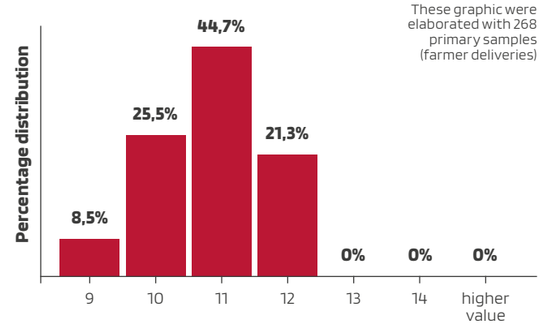
FLOUR ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
MILLING			
Wet Gluten (%)	19,7	31,5	25,9
Dry Gluten (%)	7,3	11,7	9,6
Falling Number (sec.)	357	470	424
Flour Yield (%)	60,9	75,9	68,3
Ash (dry basis) (%)	0,485	0,683	0,558
FARINOGRAM			
Water Absorption (14% H°) (%)	50,6	61,3	55,2
Development Time (min.)	3,6	37,2	17,9
Stability (min.)	6,5	59,2	31,1
Degree of Softening (12 min.)	6	45	21
ALVEOOGRAM			
P (mm)	68	126	93
L (mm)	31	102	64
W Joules x 10-4	143	335	237
P / L	0,78	3,60	1,45



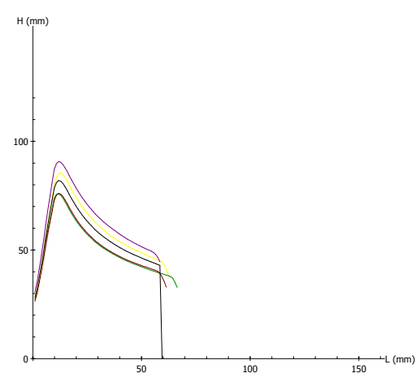
Grade distribution



Protein (13.5% Moisture)



Alveogram



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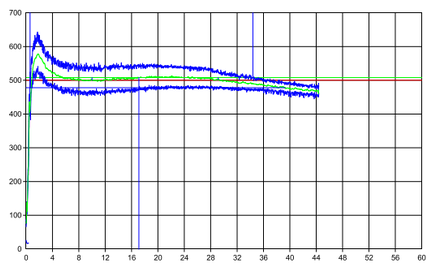


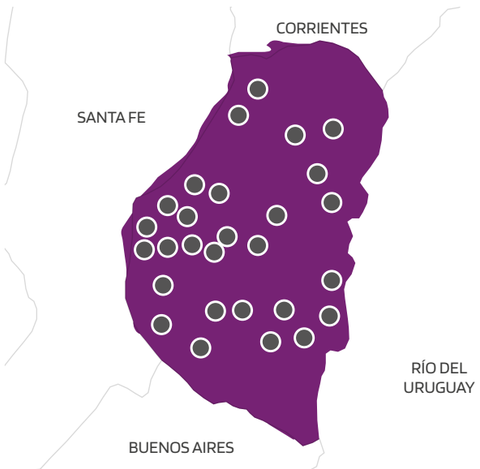
BREAD WHEAT

Subregion III. Analysis results

Weighted averages by tons of samples sets per location

GRAIN ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
Test Weight (kg/hl)	74,20	80,70	77,21
Total Damaged Kernels (%)	0,41	6,31	2,25
Foreign Material (%)	0,25	0,97	0,48
Shrunken and Broken Kernels (%)	0,32	1,63	0,71
Yellow Berry Kernels (%)	0,60	9,73	2,69
Protein (13,5% Moisture) (%)	10,3	12,0	11,1
Protein (dry basis) (%)	11,9	13,9	12,9
Weight of 1000 Kernels (g.)	27,98	35,94	32,47
Ash (dry basis.) (%)	0,900	1,890	1,315

FLOUR ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
MILLING			
Wet Gluten (%)	20,5	28,2	25,5
Dry Gluten (%)	7,5	9,3	8,8
Falling Number (sec.)	356	484	408
Flour Yield (%)	60,7	72,7	67,2
Ash (dry basis) (%)	0,470	0,740	0,605
FARINOGRAM			
Water Absorption (14% H°) (%)	52,9	59,5	55,6
Development Time (min.)	1,9	20,1	7,6
Stability (min.)	5,8	26,7	13,4
Degree of Softening (12 min.)	31	235	73
ALVEOOGRAM			
P (mm)	56	117	77
L (mm)	30	94	57
W Joules x 10-4	123	220	163
P / L	0,67	3,90	1,35



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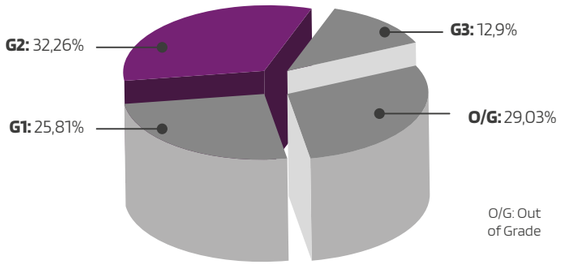
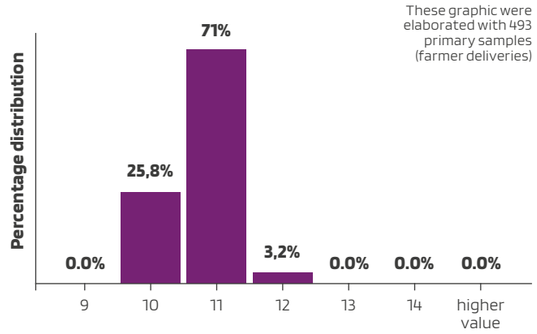


Protein (13.5% Moisture)



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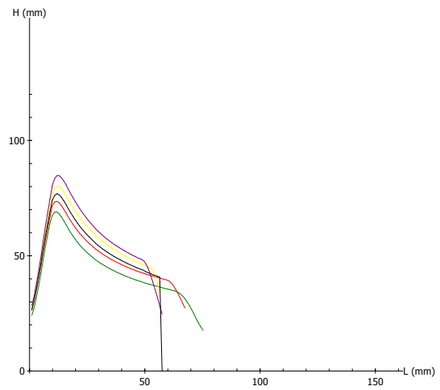

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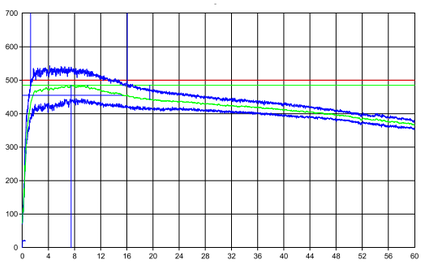


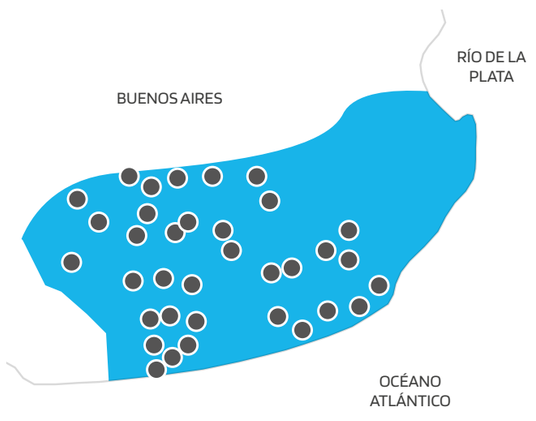
BREAD WHEAT

Subregion IV. Analysis results

Weighted averages by tons of samples sets per location

GRAIN ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
Test Weight (kg/hl)	77,10	83,25	79,51
Total Damaged Kernels (%)	0,00	0,54	0,13
Foreign Material (%)	0,08	1,30	0,40
Shrunken and Broken Kernels (%)	0,07	0,90	0,28
Yellow Berry Kernels (%)	0,00	6,40	1,45
Protein (13,5% Moisture) (%)	9,8	13,2	11,2
Protein (dry basis) (%)	11,3	15,3	12,9
Weight of 1000 Kernels (g.)	32,10	41,66	36,24
Ash (dry basis.) (%)	1,444	1,818	1,676

FLOUR ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
MILLING			
Wet Gluten (%)	19,9	34,4	26,2
Dry Gluten (%)	7,4	11,9	9,3
Falling Number (sec.)	333	544	425
Flour Yield (%)	53,3	76,4	69,3
Ash (dry basis) (%)	0,479	0,663	0,587
FARINOGRAM			
Water Absorption (14% H°) (%)	53,6	60,9	57,5
Development Time (min.)	3,4	36,6	11,0
Stability (min.)	10,0	52,1	27,1
Degree of Softening (12 min.)	0	67	22
ALVEOOGRAM			
P (mm)	69	131	98
L (mm)	27	151	79
W Joules x 10-4	162	374	275
P / L	0,46	4,81	1,24



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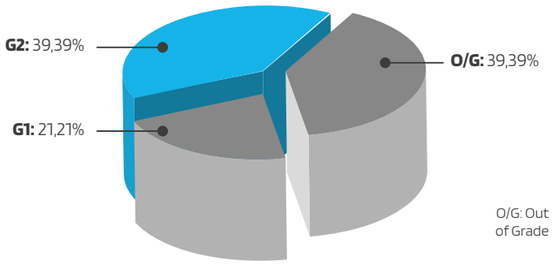
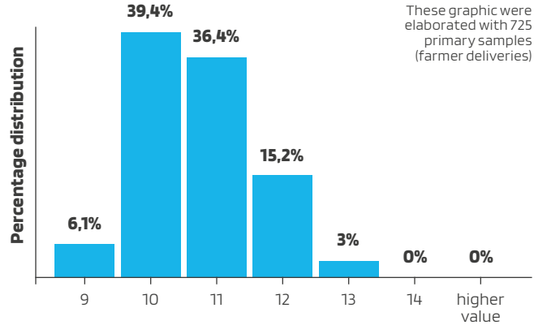
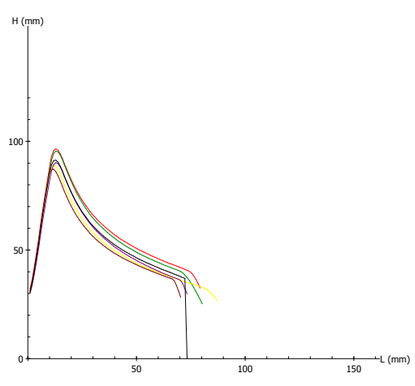


Protein (13.5% Moisture)



Alveogram



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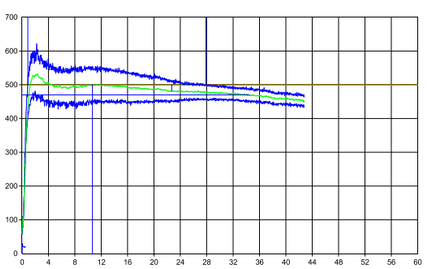

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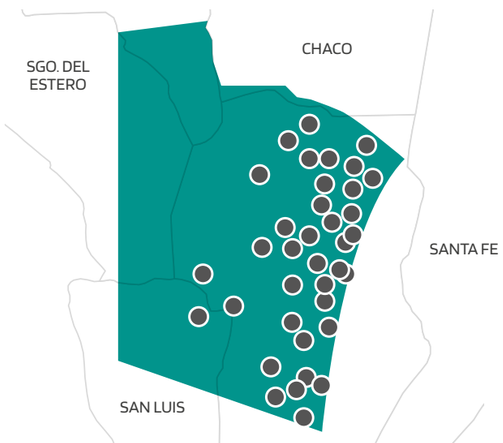
Subregion V N. Analysis results

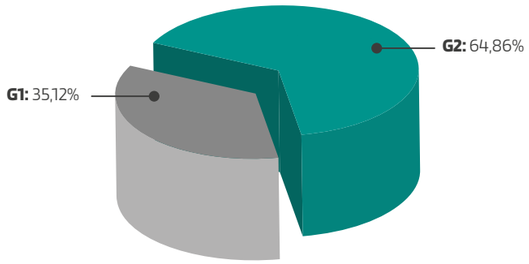
Weighted averages by tons of samples sets per location

GRAIN ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
Test Weight (kg/hl)	78,15	82,15	80,02
Total Damaged Kernels (%)	0,01	1,25	0,40
Foreign Material (%)	0,05	0,54	0,18
Shrunken and Broken Kernels (%)	0,12	1,19	0,49
Yellow Berry Kernels (%)	0,30	8,40	3,93
Protein (13,5% Moisture) (%)	9,6	12,4	11,1
Protein (dry basis) (%)	11,1	14,3	12,8
Weight of 1000 Kernels (g.)	28,20	36,65	32,10
Ash (dry basis.) (%)	1,526	2,129	1,767

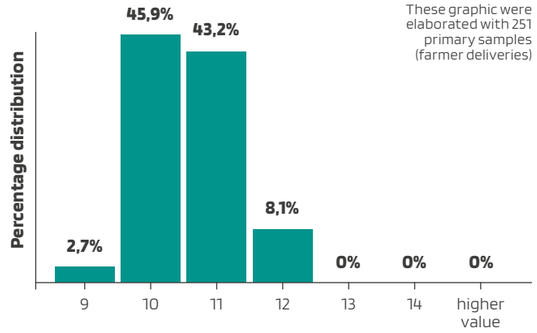
FLOUR ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
MILLING			
Wet Gluten (%)	19,7	30,7	25,3
Dry Gluten (%)	7,0	10,6	9,0
Falling Number (sec.)	338	575	453
Flour Yield (%)	49,1	73,2	67,4
Ash (dry basis) (%)	0,523	0,759	0,623
FARINOGRAM			
Water Absorption (14% H°) (%)	51,9	70,0	55,4
Development Time (min.)	2,0	35,7	10,5
Stability (min.)	2,0	58,3	25,5
Degree of Softening (12 min.)	6	92	29
ALVEOOGRAM			
P (mm)	50	131	78
L (mm)	36	146	90
W Joules x 10-4	159	300	247
P / L	0,35	3,64	0,87



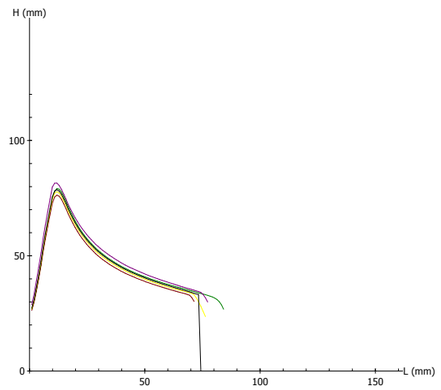
Grade distribution



Protein (13.5% Moisture)



Alveogram



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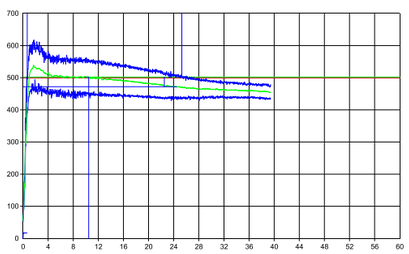


BREAD WHEAT

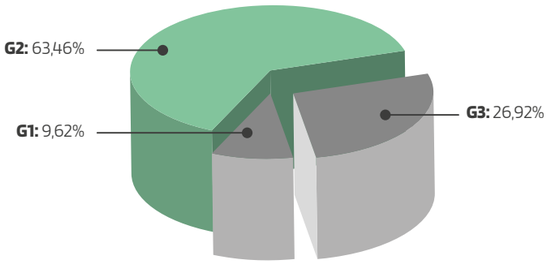
Subregion V S. Analysis results

Weighted averages by tons of samples sets per location

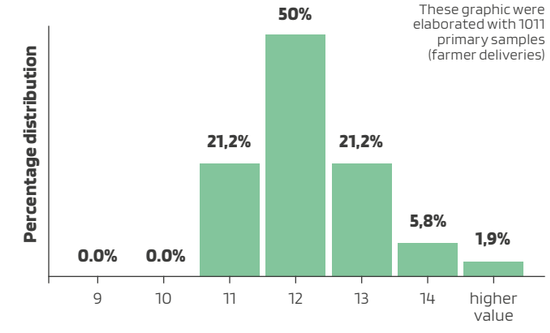
GRAIN ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
Test Weight (kg/hl)	77,00	84,40	81,30
Total Damaged Kernels (%)	0,00	0,48	0,10
Foreign Material (%)	0,10	1,47	0,54
Shrunken and Broken Kernels (%)	0,24	1,98	0,78
Yellow Berry Kernels (%)	0,00	6,80	1,07
Protein (13,5% Moisture) (%)	11,0	15,0	12,6
Protein (dry basis) (%)	12,7	17,3	14,6
Weight of 1000 Kernels (g.)	26,20	40,00	32,42
Ash (dry basis.) (%)	1,622	2,180	1,831

FLOUR ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
MILLING			
Wet Gluten (%)	25,4	36,0	30,6
Dry Gluten (%)	8,7	12,6	10,6
Falling Number (sec.)	363	508	414
Flour Yield (%)	63,6	74,7	68,5
Ash (dry basis) (%)	0,573	1,866	0,695
FARINOGRAM			
Water Absorption (14% H°) (%)	55,6	63,0	59,3
Development Time (min.)	4,8	35,7	9,1
Stability (min.)	6,9	44,5	17,8
Degree of Softening (12 min.)	6	69	36
ALVEOOGRAM			
P (mm)	66	120	89
L (mm)	81	164	117
W Joules x 10-4	270	446	350
P / L	0,40	1,43	0,76

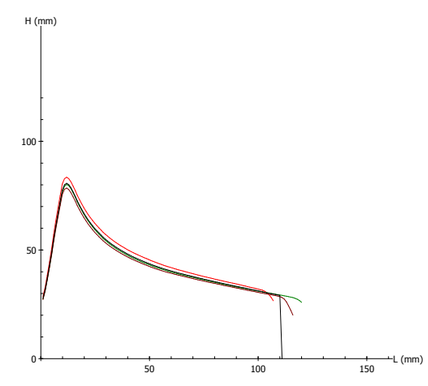
Grade distribution



Protein (13.5% Moisture)



Alveogram



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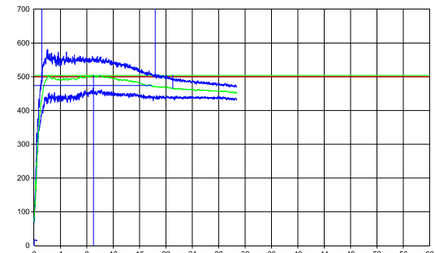


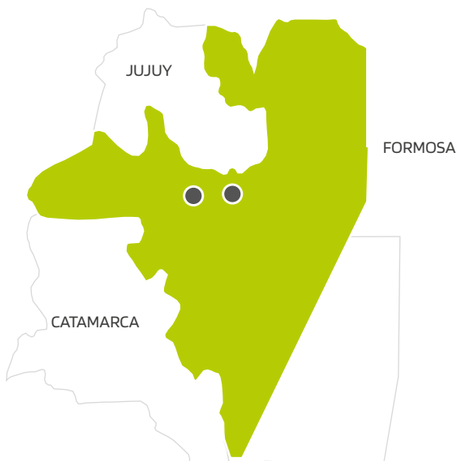
BREAD WHEAT

NOA. Analysis results

Weighted averages by tons of samples sets per location

GRAIN ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
Test Weight (kg/hl)	80,60	81,40	81,06
Total Damaged Kernels (%)	0,04	0,41	0,25
Foreign Material (%)	0,48	0,50	0,49
Shrunken and Broken Kernels (%)	0,12	0,68	0,36
Yellow Berry Kernels (%)	2,68	4,00	3,25
Protein (13,5% Moisture) (%)	12,2	12,9	12,5
Protein (dry basis) (%)	14,1	14,9	14,5
Weight of 1000 Kernels (g.)	33,38	34,97	34,29
Ash (dry basis.) (%)	1,815	1,850	1,830

FLOUR ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
MOLIENDA			
Wet Gluten (%)	23,9	25,3	24,7
Dry Gluten (%)	8,9	9,4	9,2
Falling Number (sec.)	364	389	375
Flour Yield (%)	63,8	64,4	64,2
Ash (dry basis) (%)	0,575	0,579	0,577
FARINOGRAMA			
Water Absorption (14% H°) (%)	57,4	58,4	58,0
Development Time (min.)	7,8	10,9	9,1
Stability (min.)	12,1	14,6	13,2
Degree of Softening (12 min.)	42	55	49
ALVEOOGRAMA			
P (mm)	99	99	99
L (mm)	60	64	62
W Joules x 10-4	234	240	237
P / L	1,55	1,65	1,60



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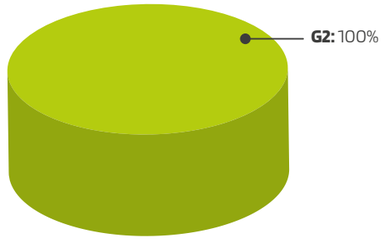
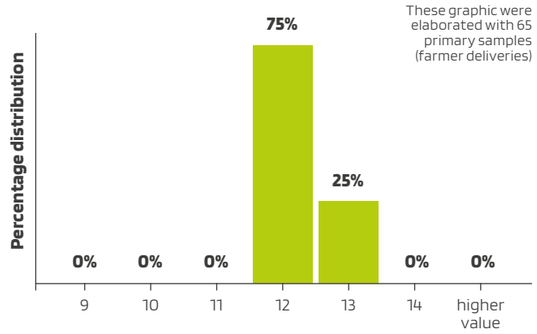


Protein (13.5% Moisture)



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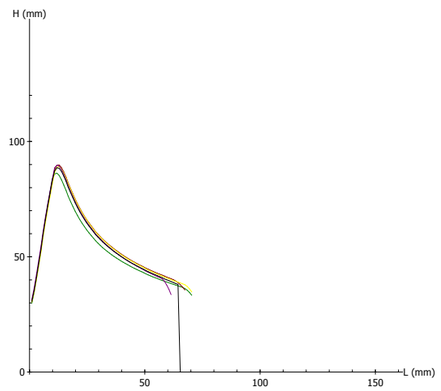

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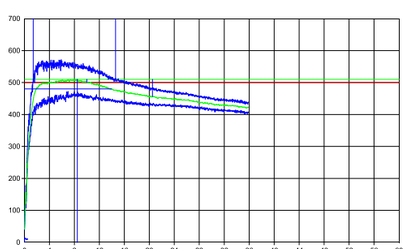

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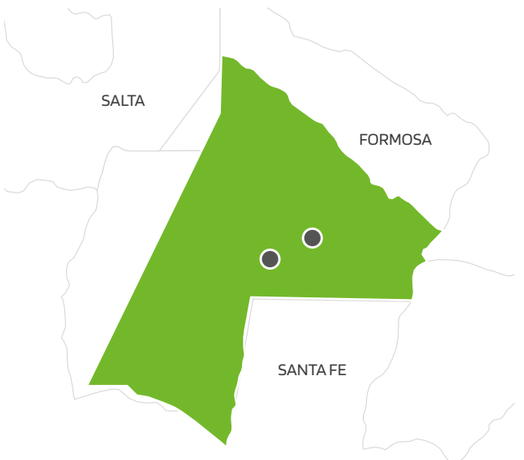
NEA. Analysis results

Weighted averages by tons of samples sets per location

GRAIN ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
Test Weight (kg/hl)	78,30	78,50	78,40
Total Damaged Kernels (%)	0,32	1,26	0,79
Foreign Material (%)	0,40	0,70	0,55
Shrunken and Broken Kernels (%)	0,14	0,30	0,22
Yellow Berry Kernels (%)	3,14	3,30	3,22
Protein (13,5% Moisture) (%)	12,6	13,0	12,8
Protein (dry basis) (%)	14,6	15,0	14,8
Weight of 1000 Kernels (g.)	30,69	31,42	31,06
Ash (dry basis.) (%)	1,950	2,116	2,033

FLOUR ANALYSIS	MINIMUN	MAXIMUM	AVERAGE
MOLIENDA			
Wet Gluten (%)	23,3	26,4	24,9
Dry Gluten (%)	8,6	9,8	9,2
Falling Number (sec.)	320	369	345
Flour Yield (%)	67,5	70,6	69,0
Ash (dry basis) (%)	0,628	0,658	0,643
FARINOGRAMA			
Water Absorption (14% H°) (%)	55,3	56,0	55,7
Development Time (min.)	11,2	11,8	11,5
Stability (min.)	16,3	19,4	17,9
Degree of Softening (12 min.)	29	52	41
ALVEOOGRAMA			
P (mm)	95	96	96
L (mm)	55	72	64
W Joules x 10-4	208	260	234
P / L	1,32	1,75	1,50



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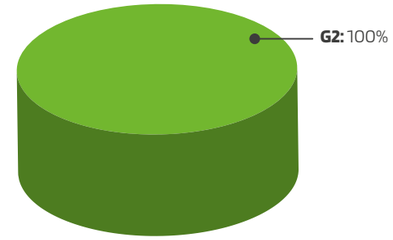
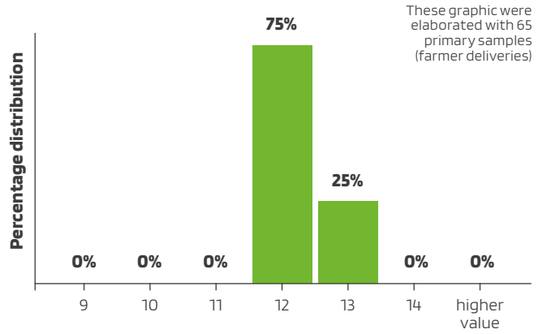


Protein (13.5% Moisture)



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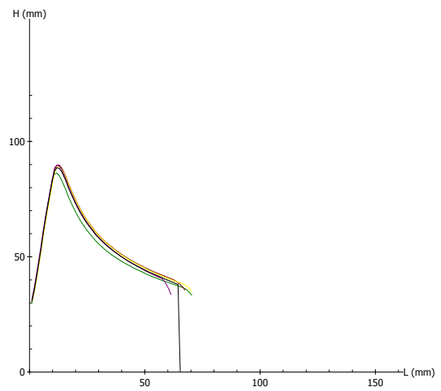

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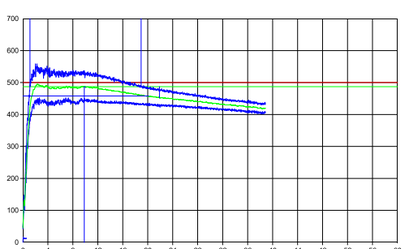


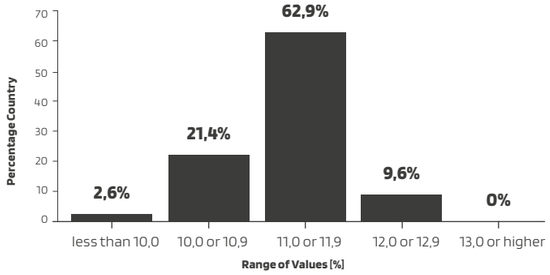
BREAD WHEAT

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.

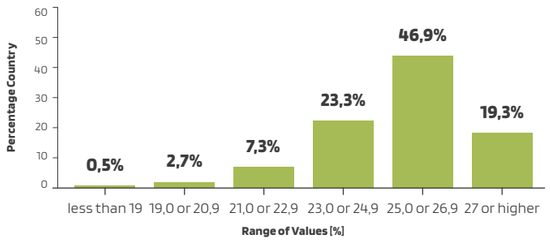
Protein

PROTEIN (13,5% MOISTURE)	WET GLUTEN W STABILITY	PERCENTAGE COUNTRY
Less than 10,0	20,3 · 225 · 18,4	2,6%
10,0 a 10,9	23,9 · 225 · 18,0	21,4%
11,0 a 11,9	25,7 · 248 · 19,4	62,9%
12,0 a 12,9	29,4 · 314 · 19,9	9,6%
13,0 or higher	32,4 · 358 · 18,5	0%



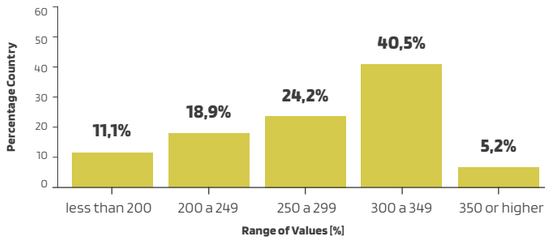
Wet Gluten

WET GLUTEN	PROTEIN W STABILITY	PERCENTAGE COUNTRY
Less than 19,0	9,6 · Sin Datos · 6,5	0,5%
19,0 a 20,9	10,2 · 173 · 18,3	2,7%
21,0 a 22,9	10,5 · 216 · 12,4	7,3%
23,0 a 24,9	11,0 · 236 · 19,5	23,3%
25,0 a 26,9	11,2 · 238 · 21,9	46,9%
13,0 or higher	12,2 · 310 · 19,0	19,3%



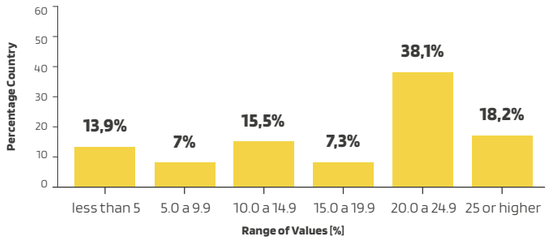
W

W	WET GLUTEN PROTEIN. STABILITY	PERCENTAGE COUNTRY
Less than 200	24,4 · 10,9 · 16,5	11,1%
200 a 249	24,3 · 11,0 · 20,3	18,9%
250 a 299	25,8 · 11,2 · 21,4	24,2%
300 a 349	29,3 · 12,2 · 20,0	40,5%
350 or higher	31,3 · 12,9 · 20,8	5,2%



Stability

STABILITY	WET GLUTEN PROTEIN W	PERCENTAGE COUNTRY
Less than 5	22,6 · 10,7 · 234	13,9%
5,0 a 9,9	26,0 · 11,3 · 219	7,0%
10,0 a 14,9	27,8 · 11,8 · 263	15,5%
15,0 a 19,9	27,2 · 11,6 · 295	7,3%
20,0 a 24,9	26,4 · 11,3 · 261	38,1%
25 or higher	25,8 · 11,2 · 263	18,2%

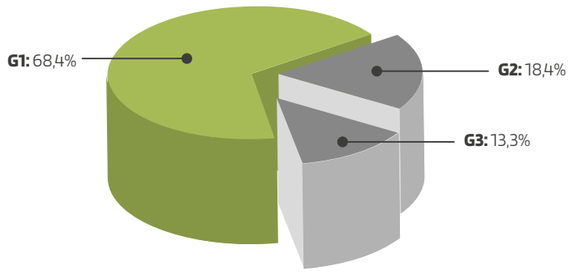


DURUM WHEAT

National averages
Analysis Results

WHEAT ANALYSIS	MINIMUN	MAXIMUN	AVERAGE
Test Weight (kg/hl)	75,20	82,85	**79,45**
Total Damaged Kernels (%)	0,00	1,56	**0,31**
Foreign Material (%)	0,08	3,40	**0,60**
Shrunken and Broken Kernels (%)	0,08	2,32	**0,49**
Vitreous Kernels (%)	4	88	**34**
Wheat (Triticum aestivum) (%)	0,16	24,48	**2,34**
Protein (13,5% Moisture) (%)	10,5	15,1	**12,4**
Protein (dry basis) (%)	12,1	17,5	**14,4**
Weight of 1000 Kernels (g.)	13,40	53,00	**44,99**
Ash (dry basis.) (%)	1,420	2,210	**1,770**

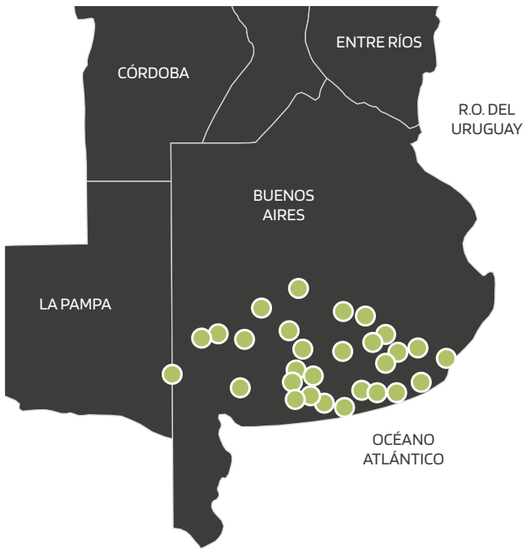
Grade distribution



WHEAT ANALYSIS	MINIMUN	MAXIMUN	AVERAGE
Falling Number (seg.)	406	594	**497**
Colour(B)	16,8	21,7	**19,6**
Wet Gluten (%)	0,0	36,3	**29,0**
Gluten Index	0	98	**74**
FARINOGRAM			
Energy Level	25,0	48,0	**34,3**
ALVEOOGRAM			
Degree Softening (%))	9	34	**24**

CROP 2019-2020	
Planted Area (ha)	53.480
Harvested Area (ha)	51.430
Average Yeld (Kq/ha)	3.041
Production (tn)	156.421

Reference: Secretaría de Agroindustria de la Nación



Bolsa de Cereales

Cámara Arbitral de Cereales Bahía Blanca - Argentina

Asociación de Cooperativas Argentinas

AFA

Bolsa de Comercio de Rosario

Cámara Arbitral de Cereales Rosario - BCR

Cámara Arbitral de Cereales BCSF

CABC Cámara Arbitral

BCCBA Bolsa de Cereales de Córdoba

Centro de Exportadores de Cereales

faim federación argentina de la industria molinera

INTA

senasa

Ministerio de Agricultura, Ganadería y Pesca
Presidencia de la Nación