2007/2008 Crop

ARGENTINE WHEAT

Institutional Quality Report

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Elaborated by:

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- **Bolsa de Cereales de Bahía Blanca.**
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- **Bolsa de Cereales de Buenos Aires.**
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- **Bolsa de Comercio de Rosario.**
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  Bahía Blanca Grain Arbitration Chamber.
- **Cámara Arbitral de Cereales de Entre Ríos.**
  Entre Ríos Grain Arbitration Chamber.
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  Grain Exporters Association.
- **Federación Argentina de la Industria Molinera.**
  Argentine Federation of Milling Industry.
- **Federación de Centros y Entidades Gremiales de Acopiadores de Cereales.**
  Federation of Country Elevators Association.

- **Secretaría de Agricultura, Ganadería, Pesca y Alimentos (SAGPyA).**
  Secretariat of Agriculture, Livestock, Fishery and Food.
- **Instituto Nacional de Tecnología Agropecuaria (INTA).**
  Argentine Institute for Agricultural Technology.
- **Servicio Nacional de Sanidad y Calidad Agroalimentaria (SENASA).**
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- **Chacra Experimental Integrada Barrow (Convenio INTA – MAA, Bs. As.)**
  Barrow Experimental Station.

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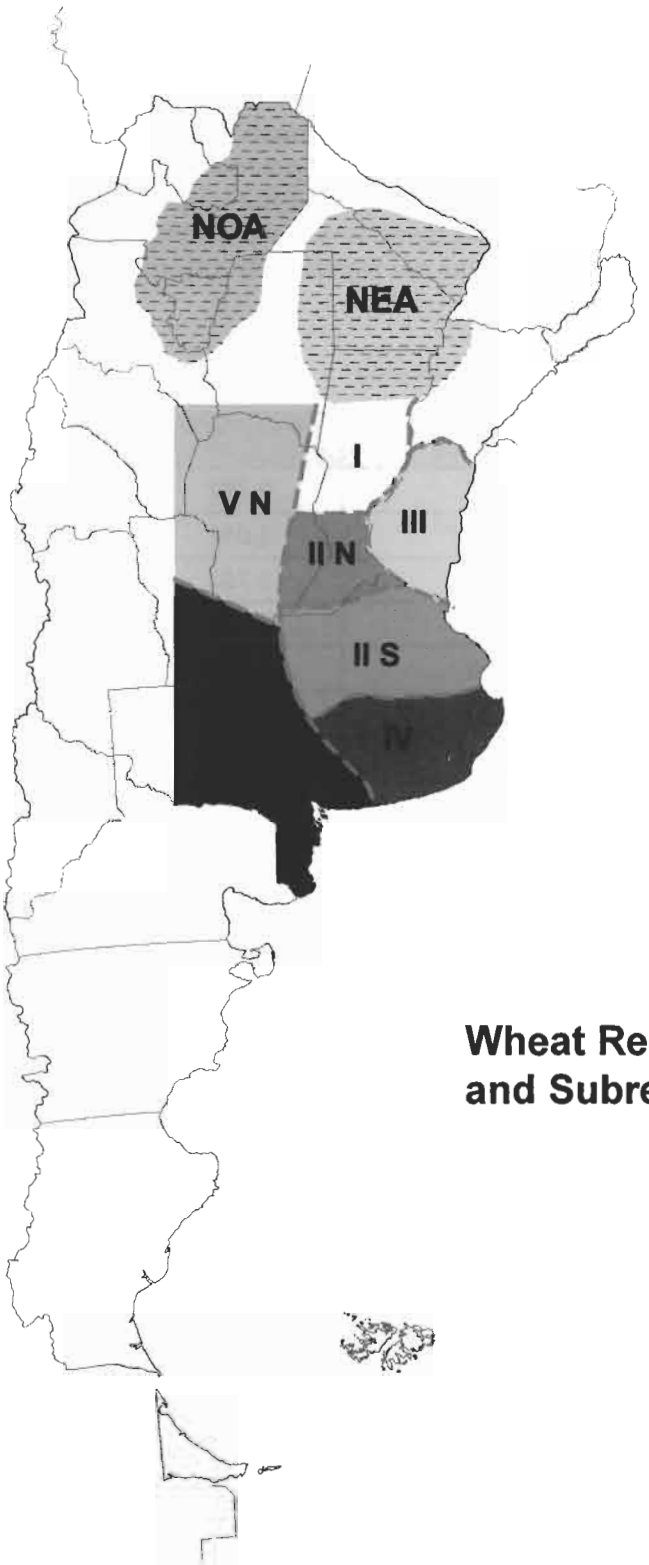
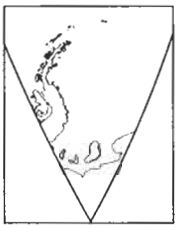


Wheat Region and Subregions



BREAD WHEAT

Triticum aestivum

Introduction

During 2007/08, wheat sowed area with wheat at national level increased around 2.6 % compared to 2006/07 campaign. In a similar percentage was the increase in production, although there were important losses especially in the South of Sub-region II South and Sub-region IV due to damages caused by frost during November. It is considered that these losses were compensated by the high yields achieved in central region of the country that was not significantly affected.

Sowed, harvested area, yields and production per sub-region

Subregion	Sowed Area (ha)	Harvested area (ha)	Yield (Kg/ha)	Production (tn)
I	434,900	427,200	2,787	1,190,470
II North	765,270	758,470	4,018	3,047,270
II South	794,000	787,100	3,707	2,917,550
III	310,800	309,100	3,089	954,798
IV	1,044,326	968,326	2,407	2,330,590
V North	670,300	669,300	2,960	1,981,240
V South	1,461,741	1,434,991	2,313	3,319,290
North of the country	421,630	380,380	1,171	445,100
National	**5,902,967**	**5,734,867**	**2,820**	**16,186,308**

Based on data from the Secretariat of Agriculture, Liverstock, Fishery and Food. 2008

There was a general enlargement of the cycle, which started with a delay in germination.

During grain filling high maximum temperatures were not recorded that could cause a premature ripeness, on the contrary there was a good grain development.

In Argentina, wheat cultivation is done mostly via Direct Sowing. Technology applied depends on the regions, but most of the cultivations are done using fertilizers with Nitrogen, Phosphorous and in many cases Sulfur. Cutting edge producers perform the cultivation with high technology.

In some regions there was an impact of foliar diseases, bacteriosis and spike fusariosis.

Yields were very variable, even between near places, given the irregularity of rains during all the cycle and particularly the damage caused by late frost on November 15th. National average was estimated in 2,800 kg/ha.

Organization and Methodology:

Sampling structure

It was agreed to obtain samples which represent about 4,000 tons each, reaching a total of 283 analysis to be performed.

The sampling was planned proportionally to the territorial division (district or department) sown area, and the average yield registered the last three years, according to the Secretariat of Agriculture, Livestock, Fishery and Food data. In accordance with the estimated production resulting, the composite sample number to be obtained by each district or department was determined to achieve a proportional representativeness of each locality.

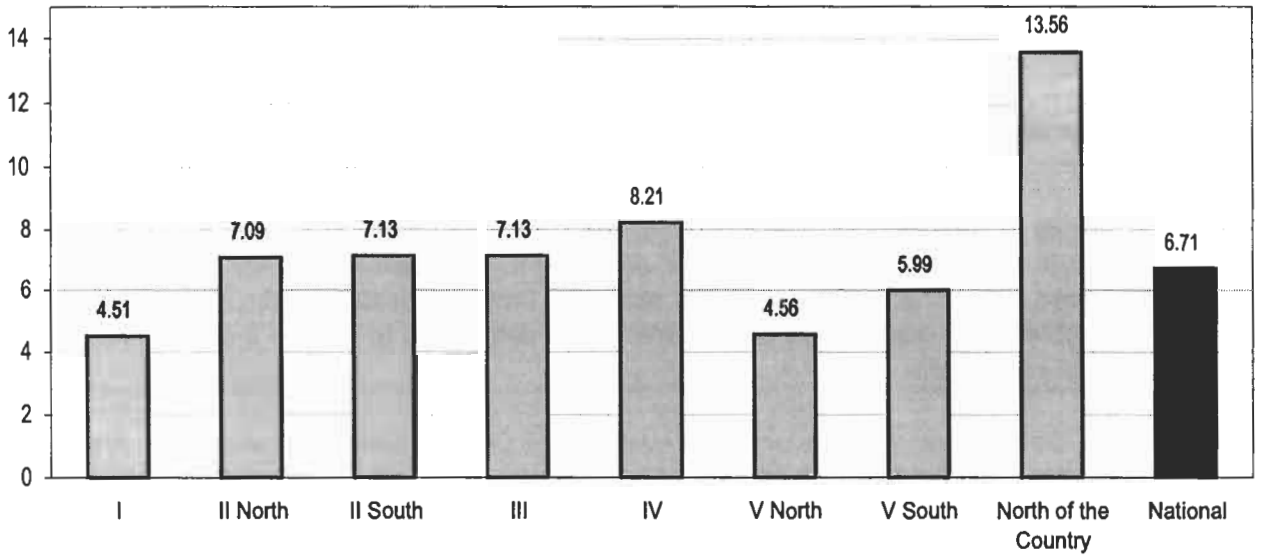
The Argentine Cooperatives Association, the Federation of Country Elevators Association, Argentine Federated Farmers and the Argentine Federation of Milling Industry, through the cooperatives, country elevators and mills selected for each locality, submitted the primary operations samples (trade samples of farmer deliveries) which were starting points to make the locality composite samples, according to instructions given to those in charge of the sampling.

Likewise the Coordination of Offices in the interior of the country of SAGPyA bring the support in the sampling.

Subregion	Locality Composite	Sampling (tons)	Production (tons)	Production Sampled (%)
I	15	53,640	1,190,470	4.51
II North	54	216,000	3,047,270	7.09
II South	52	208,000	2,917,550	7.13
III	18	68,078	954,798	7.13
IV	49	191,247	2,330,590	8.21
V North	23	90,247	1,981,240	4.56
V South	57	198,677	3,319,290	5.99
North of the country	15	60,370	445,100	13.56
TOTALS	283	1,086,259	16,186,308	6.71

Based on data from the Secretariat of Agriculture, Liverstock, Fishery and Food. 2008

These primary samples had to represent between 100 and 250 ton, and be selected so they reflected the zone production conditions as well as possible, being 5,176 samples used for this sampling program, in such a way a sampled tonnage of 6.71% of the national wheat production, which amounted to 16,186,308 tons, was reached.



Procedure

The primary samples were sent to the respective Arbitration Chambers Laboratories according to the wheat subregion of origin. The Santa Fe Arbitration Chamber received samples from the Subregion I and the NE of the country, the Rosario Chamber those from the Subregion II N and NEA, the Buenos Aires Chamber those from the Subregions II S, IV and NOA, the Entre Ríos Chamber those from the Subregion III, the Bahía Blanca Chamber those from the Subregions IV and V S, and the Córdoba Chamber those from the Subregion V N.

These Arbitration Chambers made **Locality Composite Samples** of 4 kg of wheat, representative of 4000 tons each one. These ones performed the commercial analysis (grade), weight of 1000 kernels, and ash .

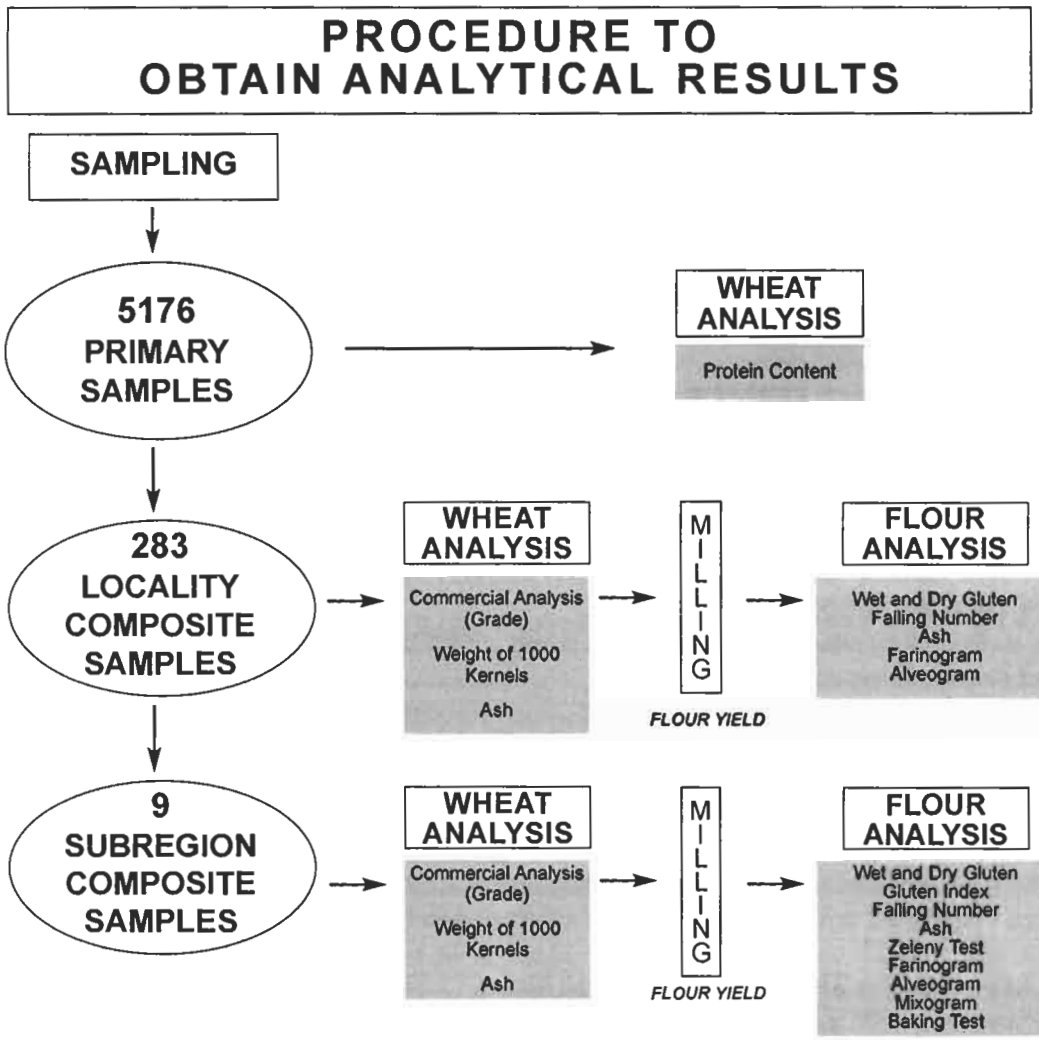
The composite samples were sent to the SENASA Laboratory to carry out the Bühler grinding, reserving a part in order to prepare the Subregion Composite Samples. It was decided to use only one mill for all the composite samples by locality, so as to minimize differences in the flour features due to the grinding.

With the flour resulting from the grinding, the Arbitration Chambers, in this case Buenos Aires, Bahía Blanca and Rosario, carried out the analyses of Falling Number, Gluten, Alveogram, Farinogram and Ash.

Prior to performing the analysis a ring test was carried out among the participating laboratories so that the results could be comparative.

On the other hand, with the locality composite samples portions kept apart, and in proportion to their representativeness, The Arbitration Chambers made the **Composite Sample of each Subregion**, 7 in total, weighing 4 kg each one, and performing Test Weight, Proteins, Ash and Weight of 1000 kernels in wheat. These samples were used by the SENASA to perform the grinding in Bühler mill and then, The Marcos Juarez Experimental Station of INTA carried out the following analyses in flour: Falling Number, Gluten, Ash, Zeleny Test, Alveogram, Farinogram, Mixogram and Baking Test.

The present report was coordinated by the Agrifood Quality Direction of the SENASA.



Methodologies for quality analysis

In order to evaluate the industrial quality of wheat, characteristics of grain, its behavior in milling, different analytical values, alveographic and farinographic curves, and bread quality, are taken into consideration. Agricultural and weather conditions can easily affect quality, and even the most remarkable varieties can present a questionable quality. Consequently any qualitative abnormality must be observed in different environments or periods of cultivation in order to assure that the result is due tothe variety.

Grain characteristics are prominent quality factors in wheat appraisal. To a low test weight corresponds an unsatisfactory milling, low flour yield and inferior quality.

Behavior in the milling is another important aspect in the quality criterion. Wheat of low extraction of flour or high ash content constitutes a real problem. While some areas are favorable for the highest amount of minerals, there are certain varieties which have lower ash content in the grain and, therefore, in the flour.

The quantity and quality of flour proteins are essential to determine the bread quality. Rheologic analysis include indirect determinations of quality such as alveographic, mixographic and farinographic curves which provide the necessary information to evaluate bread force, time for dough development, water absorption and stability or behavior during kneading.

Bread quality of wheat is determined by flour absorption of water, time of kneading, dough aspect, volume of bread, porosity and whiteness of the crumb. All those characteristics constitute the bread value of wheat, being some of them considered in a subjective way and others through equipement.

The volume of bread is one of the most important factors of flour potential force, since it demonstrates the gluten capacity of expansion through gas produced by the contact between yeast and sugars, and at the same time, the ability to hold the gas during the whole expansion.
Wheat with a low loaf volume, or with a high one, but with huge alveolus or holes inside, are not desired, as they are the evidence of weak flours. It is essential to know the flour protein content during baking, since at a low level there will be less expansion and final volume, which is not due to the quality but to the quantity of proteins.

WHEAT

Test Weight (SAGPyA 557/97 Resolution)
It is an important quality factor around the world and it is influenced by grain shape, uniformity, density and size. The content of foreign material and broken kernels have also an influence on it. To a high Test weight in a certain wheat corresponds high flour yield. It is defined as the weight of 100 litres wheat volume, as is, expressed in kg/hl. It is determined by the use of a Schopper balance.

Moisture (IRAM* 15850)
This test is carried out by previous milling and then drying at 130° C +/- 3° C under normal pressure in an oven with forced air circulation, during an hour.

Foreign material (SAGPyA 557/97 Resolution)
All kernels or pieces of kernels, other than wheat, and any other inert material.

Total damaged kernels (SAGPyA 557/97 Resolution)
Kernels or pieces of wheat kernels that are substantially altered in their structure, such us: heat damaged, green, frozen, sprouted, calcinated and germ or insect chewed kernels.

Smutty kernels (SAGPyA 557/97 Resolution)
Wheat kernels that have been changed into a black mass due to fungus (Tilletia spp.) attack. Kernel external appearance is often round and gray.

Shrunken and broken kernels (SAGPyA 557/97 Resolution)
Kernels or pieces of kernels that have readily passed through a 1,6 x 9,5 mm oblong-hole sieve. This determination shall be done after separating foreign material, damaged and smutty kernels.

Yellow berry kernels (SAGPyA 557/97 Resolution)
Kernels with starchy endosperm in more than a half of their structure, showing a yellowish appearance.

Protein Content - 13.5% moisture basis (SAGPyA 557/97 Resolution - Chemist Method from ICC Nº 105 – IRAM* 15852)
Proteins are complex organic compounds containing nitrogen. Flour proteins are responsible for obtaining gluten, once this one and water were put in contact. Proteins were determined in flour by the Kjeldahl method, while they were quantified in grain by rapid methods based on reflectance and transmittance (NIR - NIRT).

Weight of 1000 kernels (IRAM* 15853)
Its value is related to the quantity of flour that is possible to obtain from a wheat. This analysis is carried out by the counting of kernels using an electronic seed counter, and weighing them. Broken kernels and foreing material are previously removed from the sample by hand-picking.

Ash (Method from ICC N° 104 – IRAM* 15851)

Ash determination conforms one of the best methods to measure the milling process efficiency. The ash content of certain flour can give an idea about the percentage of bran or minerals that it has.
The mineral matter is found in the residue that remains when the flour is ignited. The organic matters, such as starch, proteins, sugars (carbon hydrates), etc., are ignited, but the mineral matter remains as ash.
Ash content is determined by ignition at 900° C +/- 25° C using furnace until a constant weight is reached.

MILLING (IRAM* 15854 - Part I and II)

Grain must be prepared to reach 15,5 % of moisture, which is the appropriated state to mill, in order to separate the bran from the endosperm. The milling is performed in an automatic experimental MLU–202 Bühler mill.

FLOUR

Moisture (IRAM* 15850)

This test is carried out by drying at 130° C +/- 3° C under normal pressure conditions in an oven with forced air circulation, during an hour.

Gluten (AACC 3812 - IRAM* 15864 3rd edition)

Gluten is a plastic - elastic substance with a yellowish colour wich is isolated by washing the dough with a solution of sodium chloride and subsequently centrifugation to remove the starch and the soluble proteins (albumins and globulins), remaining the insoluble (gliadins and glutenins), which constitute wet gluten and dry gluten. The result is expressed in percentage .
The gluten main characteristic is the coherence and the agglutination that it gives to starch cells. During baking gluten is the one that retains gases, which are originated during the fermentation due to yeast effect.
The methodology is carried out using the "Glutomatic" system.

Zeleny Test (AACC N° 56-61-IRAM* 15875)

This is an orientation test on the quality of a protein, estimating the gluten strength. It is associated with the quantity and the quality of proteins. The isopropyl alcohol in a slightly acid media (lactic acid solution) acts on the gluten (proteins) producing a swelling. The bigger this swelling is, the more precipitate volume will be obtained, and consequently the volume of bread will be better.

Falling Number (Hagberg – Perten Method - AACC N° 56-81-IRAM* 15862)

This test measures flour alpha amylase activity, from which depends the fermentative capacity of dough during baking. These enzymes activity in wheat is variable, being affected by climate harvest conditions. Wet and hot conditions contribute to an increase in the enzymes activity, especially in germinated kernels, making the dough more liquid and obtaining sticky - crumbed breads. In order to know the alpha amylase activity, the Falling Number is used. A general idea of the enzyme activity is obtained through this method, according to the falling time in seconds. It is determinated on a 7g of flour with 15% of moisture.

RHEOLOGY

Farinogram (Brabender Farinograph - ICC N° 115 – IRAM* 15855)

It is used to prove dynamically dough properties in order to evaluate the quality of flour and the properties of dough process. The parameters recorded during the analysis show the behavior in the kneading, the water absorption capacity, the time that dough takes to get the best consistency and the stability or flour tolerance to mixing.

Mixogram (Swanson Mixograph - AACC Nº 54-40)

It determines the time of mixing or development (DT), and stability through a graphic drawn by the equipment due to the resistance of dough. Low value of DT is evidence of a bad bakery quality.

Alveogram (Chopin Alveograph - ICC Nº 121 – IRAM* 15857). Chopin Manufacturer's Method. Boulogne, France.

The alveograph test simulates graphically the dough behavior during the fermentation process, imitating the dough alveolus formation due to CO2 produced by yeast action in large scale. By air inflation, this test measures the resistance to deformation and extensibility of test pieces from the dough with a certain thickness, thus obtaining curves called alveograms, where the area under it suggests the bakery strength (W). The maximum over pressure, which is related to the resistance of dough to deformation (P) is the tenacity, and the abscissa at the rupture point expresses the curve length (L), extensibility or index of swelling (G). P/L or P/G curve configuration ratios designs the dough equilibrium.

BAKING TEST (Official Method modified by EEA Marcos Juárez Laboratory) IRAM* 15858-1

Is the most representative test of wheat industrial quality since, in a small scale, is a direct testing in which the flour aptitude to make a bread with good characteristics is evaluated. It allows to value the different stages in dough manufacturing, noticing the time it takes to develop and gain consistence, its behavior during fermentation, the bread volume and its inner and outer appearance.

The outcoming values reflect the behaviour of the flour in an experimental method with short fermentation terms, while in industrial bread-making, with longer fermentation terms, such results can be different.

* References: IRAM: Instituto Argentino de Normalización y Certificación (Argentine Standards and Certification Institute).

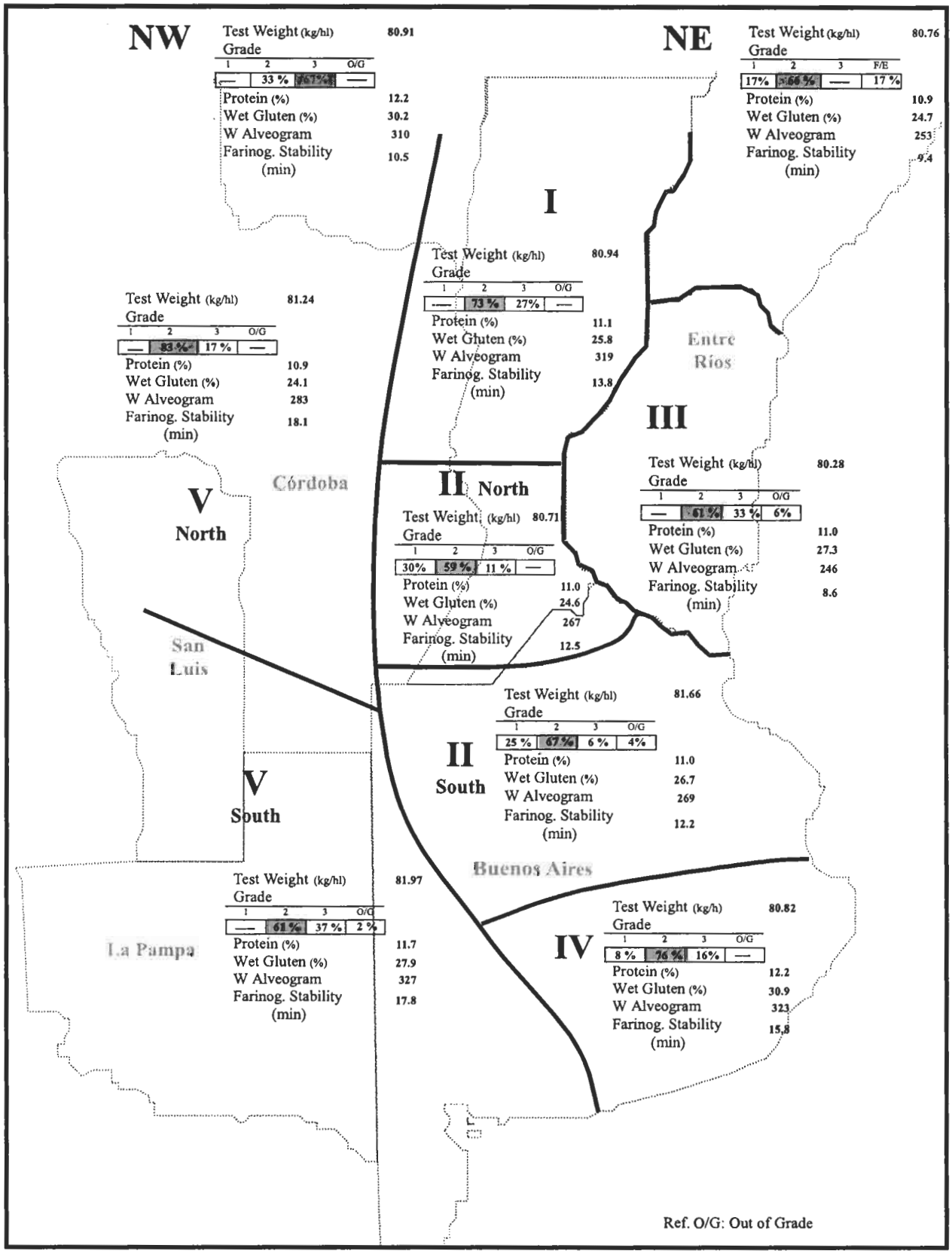
SAGPyA N° 1262 / 04
ARGENTINE STANDARD FOR WHEAT

GRADE	Bonus and Discounts per Grade %	Minimum Test Weight per hectolitre Kg/hl	PERCENTS MAXIMUM LIMITS OF: Foreign Material %	PERCENTS MAXIMUM LIMITS OF: Damaged Kernels: Heat Damaged Kernels %	PERCENTS MAXIMUM LIMITS OF: Damaged Kernels: Total %	PERCENTS MAXIMUM LIMITS OF: Smutty Kernels %	PERCENTS MAXIMUM LIMITS OF: Yellow Berry Kernels %	PERCENTS MAXIMUM LIMITS OF: Shrunken and Broken Kernels % (1)	Insect Bored Kernels %	Sweet clover seeds (Melilotus sp.) Seeds/ 100 g	MOISTURE Max %	Live Insects and arachnids	PROTEIN CONTENT Bonus and Discounts (for each percentage or proportional fraction of the protein content)
1	+ 1.5	79.00	0.20	0.50	1.00	0.10	15.00	0.50	0.50	8	14.0	FREE	More than 11.0 %: Bonus 2 % 11.0 %: - 10.0-10.9 %: Discount 2 % 9.0-9.9 %: Discount 3 % Less than 9.0 %: Discount 4 %
2	-	76.00	0.80	1.00	2.00	0.20	25.00	1.20					
3	- 1.0	73.00	1.50	1.50	3.00	0.30	40.00	2.00					

(1) All Wheat kernels or pieces of them that pass through a sieve with 1,6 mm wide and 9,5 mm long holes, excluding damaged kernels.

Protein content: basis 11 % (moisture basis of 13,5 %)
According to protein content there will be bonus or discounts. Those lots which test weight is under 75 Kg/hl are excluded of bonus.

Argentine Wheat
Main Quality Parameters



Subregion I
Background for the crop

Sowing was carried out with very good humidity (140 to 190mm of useful water up to 1m deep in the soil) for short cycles (June sowing), getting delayed sowing at mid May and start of June for long cycles, due to the hydric excess given March flooding.

Temperatures were lower than the historical average (records of - 7 ºC), hence, emergence was slow.

During tillering stage, temperatures were very low and ideal for a good development of tillers and humidity was optimal with rains higher than the historical mean. This fact helped diseases not to develop in wheat cultivation and stored water for sowing, and it allowed an excellent development due to low temperatures.

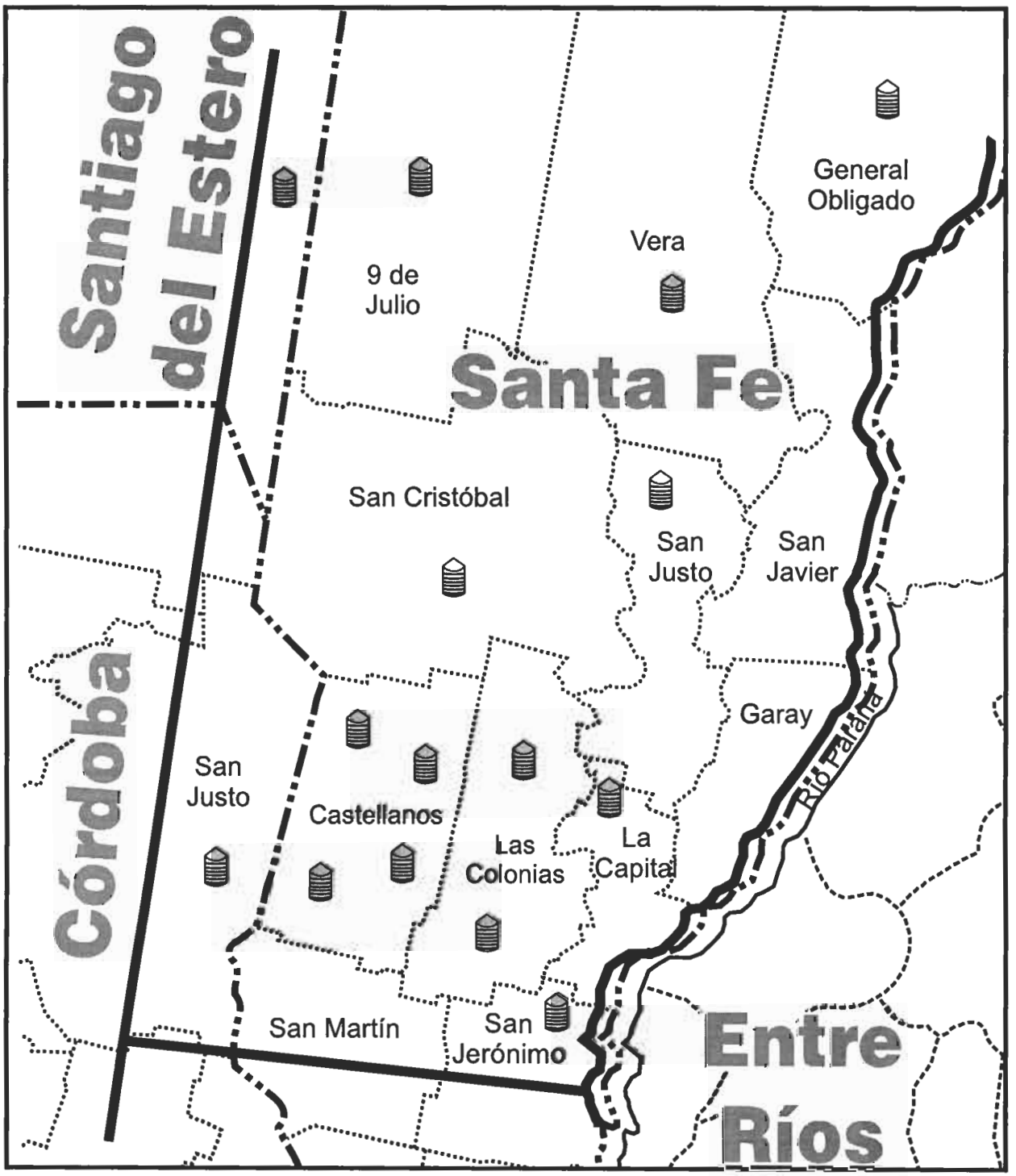
During heading stage, rains were more frequent than the historical mean (40 or 100mm more) and temperatures were very low. They headed 15 to 20 days later than normal due to low temperatures.

There was a low presence of diseases and spraying to control them was scarce.

During grain filling, temperatures continued to be low, without hydric stress obtaining an optimum grain filling.

Harvest was normal and with no rain problems considering quality. In some lots it was concomitant with high temperatures that affected gluten quality.

Yields were higher than historical mean, which caused in some cases a fall in the level of proteins.



Each reference represents near 4,000 tns sampled.

Subregion I Wheat

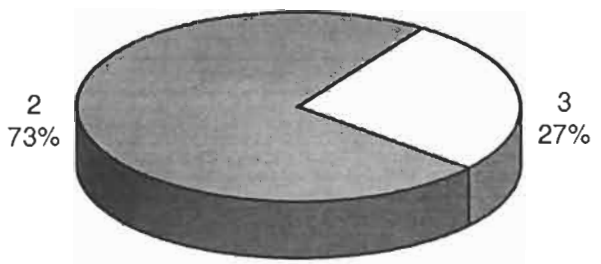
Results of the Analyses

Composite Samples by Locality. Averages were weighted by Tonnage.

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	77.60	82.60	80.94	1.55	0.02
Total Damaged Kernels (%)	0.18	1.50	0.67	0.37	0.55
Foreign Material (%)	0.14	0.72	0.40	0.17	0.44
Shrunken and Broken Kernels (%)	0.64	1.62	1.11	0.30	0.27
Yellow Berry Kernels (%)	0.00	2.64	0.78	0.69	0.89
Protein (13,5% Moisture) (%)	10.1	12.5	11.1	0.6	0.06
Weight of 1000 Kernels (gr.)	25.75	34.80	31.26	2.47	0.08
Ash (% dry basis)	1.740	2.310	1.940	0.164	0.08

Total damaged kernels includes 0.23% green kernels, 0.1% sprouted kernels, 0.24% calcinated kernels and 0.1% insect chewed kernels

Grade Distribution



Flour Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Wet Gluten (%)	22.3	32.1	25.8	2.3	0.09
	Dry Gluten (%)	7.7	11.3	8.8	0.8	0.09
	Falling Number (sec.)	312	391	368	19	0.05
	Flour Yield (%)	67.2	73.4	71.1	1.7	0.02
	Ash (dry basis) (%)	0.575	0.735	0.640	0.046	0.07
FARINOGRAM	Water Absorption (14 % H°) (%)	58.9	62.1	60.6	1.1	0.02
	Development Time (min.)	4.2	19.3	8.2	2.9	0.35
	Stability (min.)	7.4	27.9	13.8	4.3	0.31
	Degree of Softening (12 min.)	20	87	51	15	0.30
ALVEOGRAM	P (mm)	82	131	113	14	0.12
	L (mm)	55	96	78	12	0.15
	W Joules x 10^{-4}	269	402	319	34	0.11
	P / L	0.85	2.38	1.45	0.42	0.28

These results were elaborated with 15 composite samples prepared proportionally from 296 primary samples (farmer deliveries)

Subregion Data

In this subregion the wheat production was 1,190,470 tons., the 7.4% of the national total. Were sampled 53,640 tons., the 4.51% of the subregion production.

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION			WHEAT ANALYSIS								
Sample Number	Locality, district or department	Tonnage	Grade	Test Weight (Kg/hl)	Total Damaged Kernels (%)	Foreign Material (%)	Shrunken and Broken Kernels (%)	Yellow Berry Kernels (%)	Protein (13.5 % Moisture) (%)	Weight of 1000 Kernels (gr.)	Ash (dry basis) (%)
1	Castellanos	4020	3	81.40	0.40	0.46	1.38	1.50	10.7	31.20	2.300
2	Castellanos	4080	3	82.60	0.34	0.56	1.46	0.50	10.1	29.70	2.310
3	Castellanos	4120	3	82.60	0.44	0.30	1.36	0.00	10.6	29.95	1.980
4	Castellanos	4100	3	82.60	0.40	0.24	1.62	0.66	10.8	31.45	1.780
5	La Capital	2350	2	79.60	1.50	0.46	0.74	0.60	11.5	33.35	1.970
6	Las Colonias	4160	2	80.70	1.22	0.50	1.04	2.64	10.7	32.94	1.910
7	Las Colonias	6070	2	81.90	0.70	0.58	1.12	0.90	10.5	32.80	1.850
8	San Cristobal	2200	2	81.70	0.74	0.34	1.08	1.10	11.2	32.85	1.840
9	San Justo (Sta.Fe)	6160	2	79.30	0.50	0.22	0.68	0.70	11.0	34.80	2.000
10	Gral. Obligado	4210	2	81.80	0.34	0.14	0.64	0.72	11.2	33.70	1.920
11	Vera	4070	3	77.60	1.34	0.20	1.34	1.50	12.5	29.35	1.770
12	San Jerónimo	4100	3	81.30	0.96	0.58	1.38	0.00	10.9	28.75	1.740
13	9 de Julio	4000	2	78.60	0.92	0.72	0.92	0.00	12.3	25.75	1.950
15	San Justo (Córdoba)	4000	2	82.60	0.18	0.20	0.84	0.86	11.1	33.05	1.800
17	Santiago del Estero	4000	2	79.90	0.52	0.44	1.08	0.00	11.3	28.10	1.970

Subregion I Wheat

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION		FLOUR ANALYSIS												
						FARINOGRAM				ALVEOGRAM				
Sample Number	Locality, district or department	Wet Gluten (%)	Dry Gluten (%)	Falling Number (sec.)	Flour Yield (%)	% WA (14 % H°)	D. T. (min.)	Stability (min.)	Degree Softening (12 min.)	P	L	W	P/L	Ash (dry basis) (%)
1	Castellanos	25.0	8.7	391	67.2	60.5	10.4	15.2	53	131	61	311	2.15	0.685
2	Castellanos	24.2	8.0	375	71.3	61.5	7.0	12.0	52	131	55	283	2.38	-
3	Castellanos	24.6	8.4	312	70.6	62.0	9.3	11.4	63	123	67	308	1.84	-
4	Castellanos	27.0	9.2	346	71.5	61.7	7.4	10.8	62	112	83	324	1.35	0.630
5	La Capital	27.8	9.5	362	70.3	59.8	6.7	7.4	87	82	96	269	0.85	0.620
6	Las Colonias	28.1	9.4	370	71.2	59.3	6.8	11.3	66	88	95	289	0.93	0.590
7	Las Colonias	22.3	7.7	377	73.2	59.1	4.2	11.4	49	95	78	271	1.22	-
8	San Cristobal	25.3	8.8	383	72.0	58.9	19.3	27.9	29	109	71	313	1.54	0.615
9	San Justo (Santa Fe)	25.9	8.9	382	69.8	62.1	8.6	11.0	58	130	65	313	2.00	0.640
10	Gral. Obligado	27.0	9.2	360	73.1	60.8	9.3	14.5	47	113	84	348	1.35	0.595
11	Vera	24.5	8.3	388	68.8	60.9	8.7	14.1	46	107	90	350	1.19	0.680
12	San Jerónimo	24.0	8.4	380	71.5	61.6	8.3	10.8	64	112	87	339	1.29	0.660
13	9 de Julio	32.1	11.3	373	70.6	60.4	4.2	19.4	24	118	87	402	1.36	0.575
15	San Justo (Córdoba)	26.3	9.3	362	70.4	59.3	8.3	21.5	20	117	72	324	1.63	-
17	Santiago del Estero	24.5	8.4	352	72.2	60.1	10.2	15.7	45	111	87	351	1.28	0.735

Subregion II North
Background for the crop

Long cycle wheat early sowings (May-June) started with good edaphic humidity in the profile which allowed a good implantation. June and July scarce rains will not affect the normal growth and development due to the quantity of useful water accumulated in the soil.

During jointing and heading critical stages, weather conditions were normal.

Average temperatures were lower to 2006 campaign, which caused a higher number of fertile stalks per area unit and a 10 to 15-day enlargement during emergence – heading stages.

Maximum and minimum temperatures during the first period for grain filling were lower compared to the previous campaign, mainly maximum temperatures, which determined an average grain weight higher than 7% to those recorded during 2006, although the period length was similar in both campaigns. November 4th and 15th late frosts did not cause serious damages since the cultivation was in an advanced development stage.

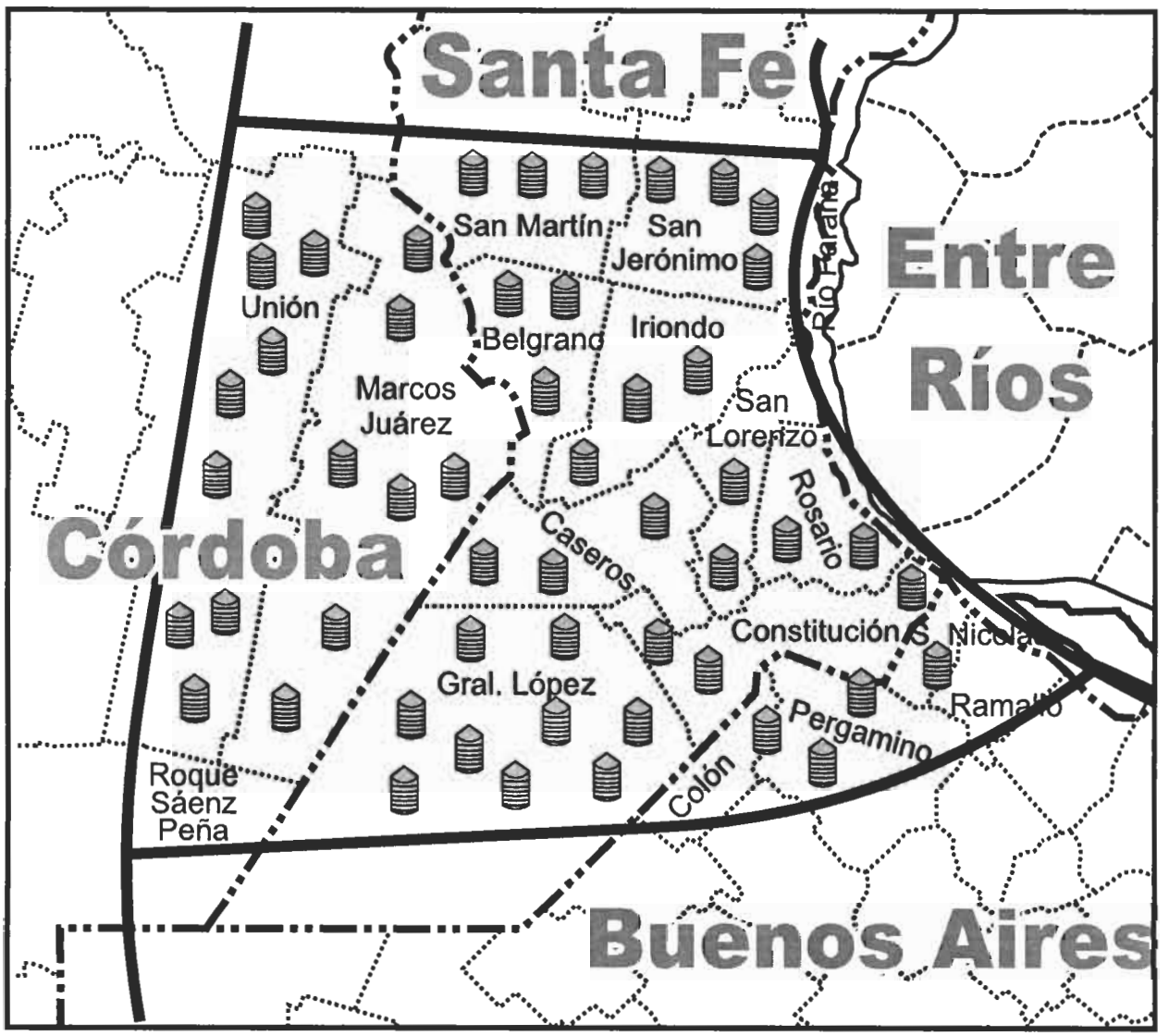
Sun radiation was not limiting to achieve high yields in grain, given a higher number of spikes per plant and weight of grains, which generated a high number of grains per area unit.

Diseases having a higher impact were leaf rust (Puccinia triticina) and septoria leaf spot (Septoria tritici). In some areas spike fusariosis (Fusarium sp.) was detected.

Wheat cultivation in Sub-region II N is carried out by means of Direct Sowing and production technology applied in general is prone to the use of fertilizers, mostly with Nitrogen, Phosphorous and Sulfur and the use of fungicides.

In the central zone of our country, yields were very high with peaks of 6,500 to 7,400 kg/ha and averages on nucleus area of 4,000-4,500 kg/ha. In Noetinger, yields were 3,000-3,500 kg/ha, not frequent in this zone, and in Bell Ville, Corral de Bustos, Monte Buey and Marcos Juárez averages rounded 4,000 kg/ha. In Oliveros, the average yield of long and short cycle varieties was 5,233 kg/ha, exceeding 56.5% the average of the five past campaigns.

Subregion II North Wheat



Each reference represents near 4,000 tns sampled.

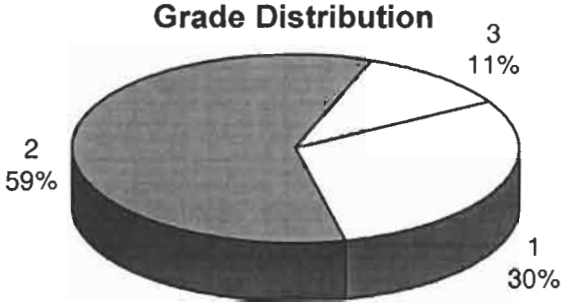
Results of the Analyses

Composite Samples by Locality. Averages were weighted by Tonnage.

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	78.30	82.40	80.71	0.93	0.01
Total Damaged Kernels (%)	0.00	1.00	0.39	0.24	0.62
Foreign Material (%)	0.10	0.90	0.26	0.16	0.64
Shrunken and Broken Kernels (%)	0.10	1.50	0.71	0.35	0.49
Yellow Berry Kernels (%)	0.00	1.10	0.05	0.22	4.16
Protein (13,5% Moisture) (%)	10.1	11.9	11.0	0.4	0.03
Weight of 1000 Kernels (gr.)	31.00	37.40	34.26	1.44	0.04
Ash (% dry basis)	1.574	1.968	1.766	0.089	0.05

Total damaged kernels includes 0.02% heat damaged kernels, 0.03% green kernels, 0.07% frosty kernels, 0.14% calcinated kernels, 0.06% insect chewed kernels and 0.07% germ-chewed kernel.

Grade Distribution



Flour Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Wet Gluten (%)	20.6	28.4	24.6	1.5	0.06
	Dry Gluten (%)	7.1	9.7	8.3	0.5	0.07
	Falling Number (sec.)	313	463	393	36	0.09
	Flour Yield (%)	64.4	69.8	67.5	1.4	0.02
	Ash (dry basis) (%)	0.490	0.760	0.615	0.044	0.07
FARINOGRAM	Water Absorption (14 % H°) (%)	56.6	61.4	58.8	0.8	0.01
	Development Time (min.)	4.9	12.2	7.4	1.5	0.20
	Stability (min.)	6.9	20.5	12.5	2.9	0.23
	Degree of Softening (12 min.)	31	85	51	11	0.22
ALVEOGRAM	P (mm)	71	129	107	11	0.11
	L (mm)	52	106	71	12	0.16
	W Joules x 10^{-4}	193	323	267	26	0.10
	P / L	0.88	2.38	1.51	0.38	0.24

These results were elaborated with 54 composite samples prepared proportionally from 682 primary samples (farmer deliveries)

Subregion Data

In this subregion the wheat production was 3,047,270 tons., the 18.80% of the national total. Were sampled 216,000 tons., the 7.09% of the subregion production.

Subregion II North Wheat

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION			WHEAT ANALYSIS								
Sample Number	Locality, district or department	Tonnage	Grade	Test Weight (Kg/hl)	Total Damaged Kernels (%)	Foreign Material (%)	Shrunken and Broken Kernels (%)	Yellow Berry Kernels (%)	Protein (13.5 % Moisture) (%)	Weight of 1000 Kernels (gr.)	Ash (dry basis) (%)
101	San Martín	4000	3	80.80	0.20	0.70	1.50	0.00	11.0	32.30	1.762
102	San Martín	4000	2	81.40	0.10	0.30	0.80	1.10	10.4	33.10	1.804
103	San Martín	4000	1	80.60	0.20	0.20	0.50	1.00	10.5	34.90	1.779
104	San Jerónimo	4000	2	80.80	0.60	0.30	0.80	0.00	11.5	33.30	1.916
105	San Jerónimo	4000	2	80.60	0.60	0.20	0.90	0.00	11.3	31.40	1.968
106	San Jerónimo	4000	3	80.60	0.80	0.30	1.30	0.00	11.1	33.20	1.916
107	San Jerónimo	4000	3	79.30	0.95	0.40	1.50	0.00	11.6	31.00	1.904
108	Caseros	4000	2	81.60	0.80	0.30	0.70	0.00	10.7	34.80	1.790
109	Caseros	4000	2	81.50	0.70	0.10	0.70	0.00	10.7	33.20	1.682
110	Caseros	4000	2	81.70	1.00	0.10	0.80	0.00	10.8	32.70	1.727
111	Belgrano	4000	2	81.60	0.20	0.10	1.10	0.00	10.4	35.50	1.947
112	Belgrano	4000	2	82.40	0.10	0.20	0.90	0.00	10.2	36.50	1.807
113	Belgrano	4000	3	82.20	0.50	0.30	1.30	0.00	10.1	35.30	1.821
114	Iriondo	4000	2	82.30	0.80	0.20	1.00	0.00	10.7	32.90	1.789
115	Iriondo	4000	1	82.20	0.30	0.20	0.50	0.00	10.4	35.10	1.793
116	Iriondo	4000	2	81.60	0.35	0.20	0.90	0.00	10.4	31.50	1.806
117	San Lorenzo	4000	2	81.80	0.20	0.20	0.90	0.00	10.9	34.00	1.743
118	San Lorenzo	4000	2	81.60	0.40	0.20	0.60	0.00	10.8	33.50	1.762
119	Rosario	4000	2	80.50	0.15	0.30	0.80	0.00	10.7	33.20	1.787
120	Rosario	4000	1	81.40	0.70	0.20	0.50	0.00	11.9	34.00	1.837
121	Constitución	4000	3	79.20	0.60	0.50	1.30	0.00	11.2	33.00	1.811
122	Constitución	4000	2	78.70	0.50	0.50	1.00	0.00	11.5	31.80	1.846
123	Constitución	4000	3	78.30	0.80	0.90	0.70	0.00	11.0	33.30	1.801
124	General López	4000	1	80.70	0.20	0.10	0.40	0.00	10.7	35.30	1.641
125	General López	4000	1	81.50	0.20	0.10	0.30	0.80	10.6	35.60	1.697
126	General López	4000	1	81.00	0.20	0.20	0.30	0.00	11.1	37.40	1.626
127	General López	4000	1	80.50	0.30	0.20	0.10	0.00	11.3	35.00	1.655
128	General López	4000	1	81.30	0.20	0.10	0.30	0.00	11.1	35.50	1.605
129	General López	4000	1	81.30	0.15	0.10	0.30	0.00	11.5	36.40	1.718
130	General López	4000	1	80.60	0.35	0.10	0.40	0.00	11.3	35.20	1.733

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION			WHEAT ANALYSIS								
Sample Number	Locality, district or department	Tonnage	Grade	Test Weight (Kg/hl)	Total Damaged Kernels (%)	Foreign Material (%)	Shrunken and Broken Kernels (%)	Yellow Berry Kernels (%)	Protein (13.5 % Moisture) (%)	Weight of 1000 Kernels (gr.)	Ash (dry basis) (%)
131	General López	4000	1	80.50	0.30	0.20	0.20	0.00	11.0	34.30	1.643
132	General López	4000	1	80.20	0.60	0.10	0.20	0.00	11.0	36.20	1.702
133	Marcos Juárez	4000	1	80.50	0.55	0.10	0.20	0.00	11.1	35.90	1.789
134	Marcos Juárez	4000	1	81.00	0.60	0.10	0.50	0.00	11.5	33.80	1.807
135	Marcos Juárez	4000	1	81.60	0.35	0.10	0.30	0.00	10.7	34.00	1.785
136	Marcos Juárez	4000	2	81.30	0.25	0.50	0.30	0.00	10.8	35.00	1.735
137	Marcos Juárez	4000	2	80.80	0.25	0.30	0.80	0.00	11.0	33.70	1.768
138	Marcos Juárez	4000	2	79.70	0.45	0.30	0.30	0.00	11.0	33.10	1.894
139	Marcos Juárez	4000	2	81.30	0.20	0.10	0.90	0.00	10.9	36.00	1.876
140	Marcos Juárez	4000	2	81.20	0.30	0.10	0.70	0.00	11.0	36.10	1.798
141	Marcos Juárez	4000	2	79.90	0.00	0.30	0.50	0.00	10.8	33.70	1.811
142	Unión	4000	2	80.00	0.05	0.30	1.20	0.00	11.3	34.40	1.574
143	Unión	4000	2	80.80	0.00	0.10	0.60	0.00	10.9	36.20	1.731
144	Unión	4000	2	79.20	0.23	0.20	0.80	0.00	11.3	36.20	1.737
145	Unión	4000	2	79.60	0.30	0.40	1.20	0.00	11.4	35.70	1.652
146	Unión	4000	2	80.50	0.20	0.20	1.00	0.00	10.8	35.40	1.622
147	Unión	4000	2	79.00	0.55	0.50	0.80	0.00	11.4	34.80	1.879
148	Unión	4000	1	80.80	0.50	0.10	0.50	0.00	11.3	34.80	1.679
149	Unión	4000	2	80.90	0.30	0.40	0.40	0.00	11.4	33.80	1.690
150	Unión	4000	2	79.50	0.20	0.30	0.60	0.00	11.3	33.20	1.795
151	Prov. Buenos Aires	4000	2	80.20	0.30	0.40	0.80	0.00	11.0	32.90	1.763
152	Prov. Buenos Aires	4000	2	80.30	0.45	0.20	0.60	0.00	10.9	34.80	1.724
153	Prov. Buenos Aires	4000	2	80.40	0.50	0.50	1.00	0.00	10.5	33.00	1.800
154	Prov. Buenos Aires	4000	2	79.60	0.30	0.30	1.00	0.00	10.7	33.30	1.645

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION		FLOUR ANALYSIS												
						FARINOGRAM				ALVEOGRAM				
Sample Number	Locality, district or department	Wet Gluten (%)	Dry Gluten (%)	Falling Number (sec.)	Flour Yield (%)	% WA (14 % H°)	D. T. (min.)	Stability (min.)	Degree Softening (12 min.)	P	L	W	P/L	Ash (dry basis) (%)
101	San Martín	24.7	8.5	386	69.7	58.2	5.9	12.8	42	100	80	280	1.25	0.655
102	San Martín	23.9	8.0	313	69.7	59.0	6.4	9.2	66	71	79	193	0.90	0.625
103	San Martín	22.0	8.2	319	67.7	57.5	6.3	13.3	45	105	70	265	1.50	0.670
104	San Jerónimo	25.5	8.7	387	69.1	59.3	6.6	11.1	57	99	74	256	1.34	0.635
105	San Jerónimo	25.2	8.6	377	65.0	58.0	9.9	17.4	36	106	72	280	1.47	0.575
106	San Jerónimo	24.6	7.5	448	67.2	58.9	9.2	16.4	37	119	59	269	2.02	0.645
107	San Jerónimo	27.2	9.3	397	68.4	60.0	6.3	9.4	61	106	81	292	1.31	0.605
108	Caseros	25.6	8.6	397	69.0	59.7	6.2	10.6	58	121	54	247	2.24	0.585
109	Caseros	25.3	8.6	392	68.3	59.4	6.1	10.4	60	114	73	282	1.56	0.615
110	Caseros	25.1	8.4	397	68.9	59.4	6.0	9.9	63	93	88	270	1.06	0.660
111	Belgrano	21.9	7.5	427	65.7	57.9	9.0	14.1	41	98	75	262	1.31	0.620
112	Belgrano	20.6	7.1	378	65.5	58.2	10.0	17.0	38	124	52	253	2.38	0.640
113	Belgrano	22.0	8.0	432	66.0	57.9	10.1	18.3	41	115	56	248	2.05	0.665
114	Iriondo	24.3	8.1	420	67.5	59.3	5.3	9.6	61	102	71	257	1.44	0.595
115	Iriondo	23.9	7.9	431	67.4	58.6	7.5	12.2	49	100	71	254	1.41	0.595
116	Iriondo	24.0	8.4	430	67.8	58.8	8.0	14.4	41	101	65	240	1.55	0.610
117	San Lorenzo	24.9	8.4	439	66.0	59.6	7.9	15.5	31	109	74	284	1.47	0.566
118	San Lorenzo	25.9	7.5	448	67.1	59.8	7.3	10.8	53	111	80	281	1.39	0.570
119	Rosario	23.7	8.2	354	66.6	57.6	9.4	17.8	39	116	63	265	1.84	0.605
120	Rosario	23.5	8.2	402	65.3	57.9	12.2	20.5	35	121	55	267	2.20	0.634
121	Constitución	25.2	8.6	387	67.9	60.3	6.8	11.0	56	126	56	270	2.25	0.610
122	Constitución	26.2	8.9	342	68.2	60.4	6.2	9.0	63	104	76	268	1.37	0.640
123	Constitución	22.9	8.5	377	64.4	57.6	6.7	12.7	49	114	57	248	2.00	0.630
124	General López	23.6	8.1	430	68.1	58.5	6.3	10.8	55	100	68	272	1.47	0.585
125	General López	23.6	8.0	417	69.6	58.7	5.1	6.9	71	93	59	195	1.58	0.605
126	General López	24.8	8.0	378	68.3	58.3	7.0	12.6	58	99	82	293	1.21	0.635
127	General López	25.6	8.6	420	68.4	58.7	6.2	11.2	50	100	75	271	1.33	0.628
128	General López	25.3	8.6	445	69.8	58.2	7.3	10.7	60	111	63	261	1.76	0.490
129	General López	28.4	9.6	463	68.9	58.8	6.3	11.3	53	88	100	289	0.88	0.550
130	General López	25.9	8.6	375	68.0	59.0	6.2	12.4	53	104	82	304	1.27	0.610

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION		FLOUR ANALYSIS												
						FARINOGRAM				ALVEOGRAM				
Sample Number	Locality, district or department	Wet Gluten (%)	Dry Gluten (%)	Falling Number (sec.)	Flour Yield (%)	% WA (14 % H°)	D. T. (min.)	Stability (min.)	Degree Softening (12 min.)	P	L	W	P/L	Ash (dry basis) (%)
131	General López	26.5	8.8	434	67.7	58.5	7.1	12.2	45	103	78	283	1.32	0.600
132	General López	26.1	7.6	412	68.5	58.7	6.5	9.5	57	83	86	238	0.97	0.580
133	Marcos Juárez	24.9	8.3	392	67.4	56.6	7.8	12.0	67	93	80	270	1.16	0.650
134	Marcos Juárez	26.6	9.7	354	67.8	58.6	8.1	13.1	46	97	87	290	1.11	0.675
135	Marcos Juárez	24.7	8.3	407	69.6	57.6	8.3	15.1	39	100	71	255	1.41	0.575
136	Marcos Juárez	25.9	8.9	371	69.6	59.2	7.9	12.9	52	108	74	286	1.46	0.640
137	Marcos Juárez	24.7	8.1	394	68.9	59.0	5.5	10.0	64	111	64	260	1.73	0.635
138	Marcos Juárez	22.9	7.8	390	66.4	58.7	6.1	10.3	46	115	52	229	2.21	0.645
139	Marcos Juárez	23.1	7.9	411	66.5	59.8	7.4	10.2	62	125	59	276	2.12	0.645
140	Marcos Juárez	24.6	8.8	372	66.8	58.9	6.7	11.3	52	108	66	260	1.64	0.610
141	Marcos Juárez	24.5	8.6	420	65.3	58.7	8.3	15.8	33	114	73	289	1.56	0.590
142	Unión	22.9	7.8	381	66.9	58.5	8.1	12.2	48	105	64	250	1.64	0.630
143	Unión	23.1	7.9	353	67.8	58.3	7.6	13.9	42	113	56	248	2.02	0.560
144	Unión	24.6	8.5	421	67.2	58.8	8.4	14.1	47	114	75	304	1.52	0.595
145	Unión	24.9	8.4	333	67.5	59.0	7.7	11.1	58	125	56	268	2.23	0.555
146	Unión	24.8	8.6	409	66.2	61.4	8.4	14.6	33	129	67	313	1.93	0.630
147	Unión	24.9	8.1	368	65.2	58.6	6.2	11.4	46	100	74	260	1.35	0.620
148	Unión	24.3	8.3	394	66.8	58.2	9.1	17.4	32	104	76	287	1.37	0.582
149	Unión	26.8	9.3	384	67.0	59.2	6.7	10.8	60	93	106	323	0.88	0.565
150	Unión	24.8	8.4	333	67.1	58.4	10.0	16.0	42	115	72	296	1.60	0.555
151	Prov. Buenos Aires	27.1	9.5	346	65.5	59.9	8.1	13.5	45	106	79	285	1.34	0.625
152	Prov. Buenos Aires	25.7	8.2	438	66.8	60.1	7.3	10.2	59	121	66	274	1.83	0.615
153	Prov. Buenos Aires	22.8	7.9	403	69.6	58.6	5.7	9.6	64	106	63	238	1.68	0.760
154	Prov. Buenos Aires	21.7	7.3	317	67.4	58.4	4.9	6.9	85	99	55	199	1.80	0.735

Subregion II South
Background for the crop

In Ecologic Sub-region II South an increase in the sowed area and production was recorded of about 12%. Yields were very good in areas not damage by frost, with an average of around 4,000 kg/ha. In some lots maximum yields were of 8,500 kg/ha.

Weather conditions at the time of sowing were good. Since January there was 644mm of rain, which is enough for wheat to germinate normally. During tillering and jointing stage there was a period without rains that wheat was able to tolerate given the good humidity accumulated. During October and November there was low intensity, but frequent rains, favoring grain filling.

Continuous frost was recorded during most of the cultivation. Wheat developed with 96 days of below zero temperature, a figure much higher than the historical mean, which is around 52 days. This condition did not damage wheat cultivation during vegetative period, but did damage those lots in the South of the Sub-region which were damaged by two frosts on November 4th and 15th, in which wheat was in the middle of flowering period or grain filling. There were no maximum temperatures recorded, on the contrary there was a good development of grains.

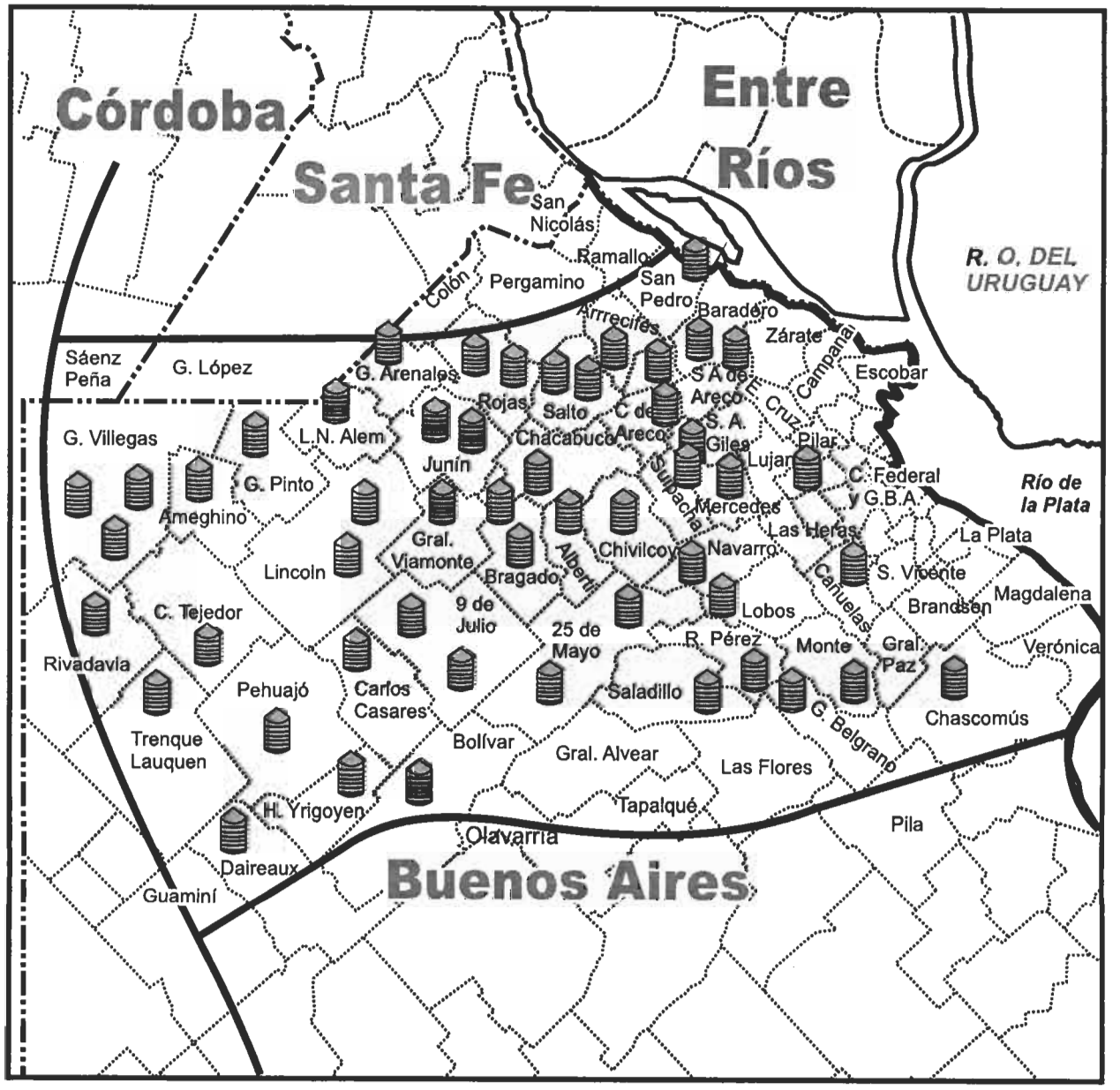
An enlargement of the cycle was observed in general, which started with a delay in germination and continued until ripening.

Most of wheat cultivations were performed with Direct Sowing and fertilized with Nitrogen, Phosphorous and in less frequent cases Sulfur was used. Commonest doses were 80 Kg/ha of Diamonic or Monoamonic Phosphate and 120-150 Kg/ha of Urea. There were cases in which these doses were duplicated especially with those first ranked producers that cultivate under high technology conditions.

The incidence of foliar spots was low. With respect to leaf rust, highly serious attacks were observed in late sowing and in the cases of highly susceptible varieties, where a re-infection was observed, after fungicide treatments. Lots with serious attacks of Spike Fusariosis were observed with highly susceptible varieties in which flowering period was concomitant with intermittent rains during the month of October.

Harvest was delayed in 10 days compared to the normal date and was done under good weather conditions. The high hectoliter weight and weight of 1,000 seeds impacted positively on the final yield.

Subregion II South Wheat



Each reference represents near 4,000 tns sampled.

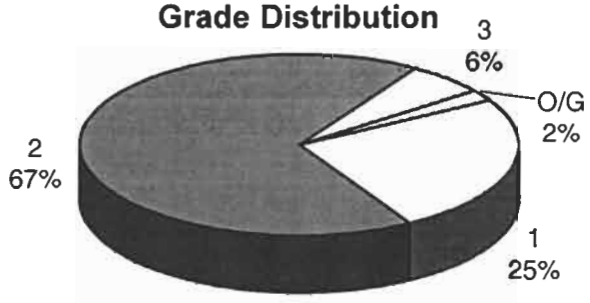
Results of the Analyses

Composite Samples by Locality. Averages were weighted by Tonnage.

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	75.45	84.40	81.66	1.69	0.02
Total Damaged Kernels (%)	0.09	3.32	0.68	0.63	0.93
Foreign Material (%)	0.04	1.37	0.34	0.23	0.68
Shrunken and Broken Kernels (%)	0.09	1.32	0.54	0.26	0.48
Yellow Berry Kernels (%)	0.00	7.32	2.78	1.27	0.46
Protein (13,5% Moisture) (%)	9.9	12.6	11.0	0.6	0.06
Weight of 1000 Kernels (gr.)	29.40	39.10	35.54	1.89	0.05
Ash (% dry basis)	1.538	1.886	1.699	0.084	0.05

Total damaged kernels includes 0.20% frosty kernels, 0.20% calcinated kernels, 0.14% insect chewed kernels and 0.14% germ-chewed kernels.

Grade Distribution



O/G: Out of Grade

Flour Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Wet Gluten (%)	22.7	36.2	26.7	2.7	0.10
	Dry Gluten (%)	8.4	13.4	9.9	1.0	0.10
	Falling Number (sec.)	295	452	372	45	0.12
	Flour Yield (%)	64.7	73.0	69.7	1.9	0.03
	Ash (dry basis) (%)	0.511	0.712	0.602	0.047	0.08
FARINOGRAM	Water Absorption (14 % H°) (%)	56.7	66.3	60.8	2.0	0.03
	Development Time (min.)	2.9	20.0	6.8	2.6	0.38
	Stability (min.)	5.5	31.6	12.2	4.5	0.37
	Degree of Softening (12 min.)	17	99	58	19	0.32
ALVEOGRAM	P (mm)	85	151	114	13	0.12
	L (mm)	39	125	69	19	0.28
	W Joules x 10^{-4}	186	400	269	52	0.20
	P / L	0.78	3.31	1.66	0.63	0.35

These results were elaborated with 52 composite samples prepared proportionally from 1,393 primary samples (farmer deliveries)

Subregion Data

In this subregion the wheat production was 2,917,550 tons., the 18.0% of the national total. Were sampled 208,000 tons., the 7.13% of the subregion production.

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION			WHEAT ANALYSIS								
Sample Number	Locality, district or department	Tonnage	Grade	Test Weight (Kg/hl)	Total Damaged Kernels (%)	Foreign Material (%)	Shrunken and Broken Kernels (%)	Yellow Berry Kernels (%)	Protein (13.5 % Moisture) (%)	Weight of 1000 Kernels (gr.)	Ash (dry basis) (%)
200	Gral. Viamonte	4000	2	82.60	0.36	0.48	0.52	3.32	10.7	38.30	1.695
201	Ameghino	4000	2	81.95	0.45	0.48	0.40	2.76	11.2	37.80	1.673
202	Gral. Pinto	4000	1	82.15	0.10	0.16	0.36	1.52	10.8	37.60	1.564
203	Rivadavia	4000	2	81.05	0.59	0.35	0.75	3.70	10.4	35.70	1.562
204	Gral. Villegas	4000	1	81.25	0.18	0.20	0.44	3.43	11.1	35.20	1.791
205	Gral. Villegas	4000	1	80.60	0.22	0.13	0.40	3.36	11.4	34.70	1.604
206	Cañuelas	4000	2	79.70	0.84	0.28	0.76	3.96	10.6	33.30	1.803
207	Chascomus	4000	2	81.70	0.60	0.28	0.81	4.56	10.2	39.10	1.618
208	San Antonio de Areco	4000	2	83.50	0.28	0.28	0.60	2.08	9.9	33.40	1.538
209	San Pedro	4000	1	82.40	0.42	0.12	0.34	2.89	10.4	35.80	1.690
210	Baradero	4000	1	84.40	0.48	0.09	0.40	3.23	10.3	36.50	1.733
211	Arrecifes	4000	1	84.15	0.14	0.08	0.20	1.24	10.3	35.60	1.701
212	Navarro	4000	2	79.70	1.68	0.69	0.32	4.18	10.6	34.70	1.681
213	San Miguel del Monte	4000	O/G	75.45	3.32	0.31	0.89	2.04	11.8	29.40	1.807
214	Lobos	4000	2	78.35	1.15	0.26	0.71	2.80	11.7	30.60	1.771
215	Saladillo	4000	2	77.25	0.62	0.40	1.16	1.92	10.9	32.50	1.728
216	Capitán Sarmiento	4000	1	83.50	0.58	0.09	0.28	3.66	10.2	34.40	1.689
217	Gral. Belgrano	4000	3	79.25	2.41	0.68	0.88	3.76	10.9	33.30	1.790
218	Suipacha	4000	1	82.85	0.59	0.04	0.20	0.30	10.9	38.70	1.753
219	L.N. Alem	4000	1	83.95	0.32	0.17	0.24	1.44	10.9	37.40	1.552
220	Gral. Pinto	4000	2	82.85	0.52	0.48	0.76	3.08	10.9	36.50	1.644
221	Alberti	4000	2	78.35	1.26	0.76	0.36	1.52	12.2	37.90	1.826
222	9 de Julio	4000	2	81.50	1.95	0.65	0.53	2.24	11.9	37.12	1.736
223	9 de Julio	4000	2	81.25	1.64	0.17	0.43	2.72	11.8	34.46	1.747
224	Bragado	4000	2	82.60	0.58	0.30	0.27	5.20	10.7	35.89	1.635
225	Chivilcoy	4000	2	82.60	0.17	0.42	0.63	3.44	11.3	38.72	1.800
226	Mercedes	4000	2	80.80	0.59	0.40	0.56	7.32	10.0	35.84	1.785
227	San Andrés de Giles	4000	1	82.15	0.21	0.04	0.09	0.00	10.6	36.17	1.753
228	Chacabuco	4000	1	81.70	0.23	0.12	0.39	1.41	10.9	34.87	1.605
229	Carmen de Areco	4000	2	81.95	0.28	0.40	0.41	3.43	10.8	34.99	1.729
230	Rojas	4000	1	80.60	0.57	0.30	0.25	4.08	11.2	35.88	1.794

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION			WHEAT ANALYSIS								
Sample Number	Locality, district or department	Tonnage	Grade	Test Weight (Kg/hl)	Total Damaged Kernels (%)	Foreign Material (%)	Shrunken and Broken Kernels (%)	Yellow Berry Kernels (%)	Protein (13.5 % Moisture) (%)	Weight of 1000 Kernels (gr.)	Ash (dry basis) (%)
231	Gral. Arenales	4000	2	82.60	0.57	0.25	0.46	2.12	10.3	36.69	1.582
232	Junín	4000	2	81.70	1.46	0.31	0.55	1.15	10.9	34.87	1.597
233	Carlos Tejedor	4000	2	81.25	0.16	0.30	0.24	2.50	11.5	33.62	1.739
234	Arrecifes	4000	2	83.70	0.30	0.34	0.30	1.51	10.5	33.13	1.653
235	Salto	4000	2	81.95	0.20	0.42	0.41	3.22	11.0	36.70	1.886
236	25 de Mayo	4000	2	82.15	0.92	0.23	0.75	3.47	11.5	34.82	1.650
237	25 de Mayo	4000	2	82.40	1.43	0.64	1.06	3.72	10.8	34.44	1.603
238	Lincoln	4000	1	83.05	0.09	0.17	0.42	4.56	10.6	36.93	1.587
239	Rojas	4000	2	80.15	0.60	0.39	0.55	4.45	10.6	36.08	1.723
240	Salto	4000	2	82.85	0.84	0.14	0.56	3.24	10.2	34.24	1.705
241	Junín	4000	2	81.05	1.19	0.29	0.18	2.35	11.1	35.02	1.755
242	Bragado	4000	2	82.40	0.68	0.30	0.76	2.48	11.2	36.05	1.739
243	Roque Perez	4000	2	82.85	0.47	0.18	1.02	2.88	10.6	34.96	1.741
244	Gral. Villegas	4000	2	82.60	0.19	0.10	0.57	2.66	11.3	35.74	1.802
245	Daireaux	4000	2	82.15	0.23	0.24	0.55	1.54	12.6	34.61	1.742
246	Hipólito Yrigoyen	4000	2	82.40	0.34	0.60	0.54	2.16	11.9	34.27	1.740
247	Lincoln	4000	2	81.70	0.22	0.46	0.39	2.64	10.7	35.46	1.763
248	Bolivar	4000	2	81.95	0.35	0.70	0.71	2.47	11.8	37.77	1.742
249	Bolivar	4000	3	80.35	0.54	1.37	0.56	1.20	12.5	37.40	1.690
250	Carlos Casares	4000	2	83.05	0.92	0.32	0.60	1.68	11.3	36.54	1.571
251	Pehuajó	4000	3	81.95	0.18	0.56	1.32	2.04	11.7	36.25	1.565

Subregion II South Wheat

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION		FLOUR ANALYSIS												
						FARINOGRAM				ALVEOGRAM				
Sample Number	Locality, district or department	Wet Gluten (%)	Dry Gluten (%)	Falling Number (sec.)	Flour Yield (%)	% WA (14 % H°)	D. T. (min.)	Stability (min.)	Degree Softening (12 min.)	P	L	W	P/L	Ash (dry basis) (%)
200	Gral. Viamonte	25.5	9.4	325	69.5	60.2	8.9	17.3	40	112	77	298	1.45	0.600
201	Ameghino	27.1	10.0	361	70.7	59.4	9.6	16.6	40	108	90	333	1.20	0.588
202	Gral. Pinto	25.9	9.6	330	70.9	60.5	4.1	12.9	36	114	74	292	1.54	0.635
203	Rivadavia	25.1	9.3	303	70.9	56.7	5.9	14.7	36	111	66	272	1.68	0.602
204	Gral. Villegas	27.2	10.1	304	70.0	58.6	12.3	20.9	34	121	69	313	1.75	0.611
205	Gral. Villegas	26.9	10.0	335	71.1	59.2	7.4	19.7	26	123	69	314	1.78	0.628
206	Cañuelas	23.5	8.7	324	68.7	62.4	4.5	7.8	75	122	40	190	3.05	0.599
207	Chascomus	23.5	8.7	345	72.2	60.0	4.9	7.4	84	110	44	186	2.50	0.585
208	San Antonio de Areco	22.7	8.4	350	72.2	61.1	4.6	10.7	45	129	45	235	2.87	0.626
209	San Pedro	26.6	9.9	380	71.6	66.3	4.4	6.9	72	123	45	209	2.73	0.634
210	Baradero	26.0	9.6	295	73.0	65.7	4.2	6.0	74	129	39	199	3.31	0.634
211	Arrecifes	24.2	8.9	360	70.9	65.2	2.9	5.5	79	125	47	219	2.66	0.629
212	Navarro	24.6	9.1	309	66.7	62.6	6.8	8.3	75	102	71	232	1.44	0.619
213	San Miguel del Monte	26.4	9.8	300	64.7	61.7	7.2	8.9	70	105	60	210	1.75	0.660
214	Lobos	26.9	10.0	324	65.8	62.0	6.2	10.6	70	122	64	271	1.91	0.619
215	Saladillo	25.5	9.4	319	66.4	59.9	5.9	10.4	62	111	58	230	1.91	0.619
216	Capitán Sarmiento	23.0	8.5	304	72.4	58.7	8.1	19.7	24	133	41	230	3.24	0.517
217	Gral. Belgrano	25.3	9.4	369	66.6	63.8	6.4	9.4	81	133	43	224	3.09	0.594
218	Suipacha	26.6	9.9	332	72.2	62.8	6.2	8.8	81	141	50	264	2.82	0.574
219	L.N. Alem	26.3	9.7	317	72.3	60.5	5.0	10.1	71	112	68	267	1.65	0.511
220	Gral. Pinto	25.9	9.6	374	70.8	60.5	8.7	12.4	59	107	73	265	1.47	0.535
221	Alberti	30.4	11.3	347	68.0	63.3	6.2	6.0	99	89	79	204	1.13	0.646
222	9 de Julio	26.8	9.9	429	69.5	60.5	8.2	11.8	60	100	61	211	1.64	0.540
223	9 de Julio	28.1	10.4	371	69.4	61.0	5.7	10.8	61	93	75	225	1.24	0.554
224	Bragado	26.2	9.7	420	68.9	60.2	6.1	11.0	65	85	69	193	1.23	0.626
225	Chivilcoy	30.4	11.2	384	69.5	61.9	7.5	8.4	90	85	79	201	1.08	0.712
226	Mercedes	23.1	8.6	393	70.0	58.6	6.0	9.7	80	103	61	228	1.69	0.621
227	San Andrés de Giles	26.5	9.8	399	72.1	57.9	4.3	18.0	27	122	59	285	2.07	0.591
228	Chacabuco	28.0	10.4	403	70.7	59.0	4.0	10.0	53	108	75	288	1.44	0.593
229	Carmen de Areco	23.8	8.8	420	71.8	60.2	5.8	12.4	48	127	57	274	2.23	0.522
230	Rojas	25.9	9.6	415	67.8	61.8	7.5	10.3	71	122	66	295	1.85	0.590

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION		FLOUR ANALYSIS												
						FARINOGRAM				ALVEOGRAM				
Sample Number	Locality, district or department	Wet Gluten (%)	Dry Gluten (%)	Falling Number (sec.)	Flour Yield (%)	% WA (14 % H°)	D. T. (min.)	Stability (min.)	Degree Softening (12 min.)	P	L	W	P/L	Ash (dry basis) (%)
231	Gral. Arenales	24.4	9.0	437	71.7	57.5	6.8	13.3	59	106	69	264	1.54	0.582
232	Junín	28.4	10.5	357	70.5	61.0	9.1	14.3	51	116	71	287	1.63	0.593
233	Carlos Tejedor	27.9	10.3	430	70.1	61.2	8.3	14.7	48	120	73	307	1.64	0.674
234	Arrecifes	29.6	11.0	452	70.8	62.8	4.7	8.6	69	126	61	283	2.07	0.671
235	Salto	26.1	9.7	358	69.9	62.1	6.5	11.1	62	121	56	252	2.16	0.608
236	25 de Mayo	26.3	9.7	340	69.2	60.2	5.2	13.2	44	117	64	277	1.83	0.585
237	25 de Mayo	24.9	9.2	358	68.8	59.5	7.0	12.3	52	108	68	257	1.59	0.616
238	Lincoln	26.0	9.6	400	70.4	59.5	4.0	10.0	51	121	63	285	1.92	0.572
239	Rojas	25.1	9.3	325	70.1	58.9	6.8	9.9	63	96	67	219	1.43	0.544
240	Salto	23.7	8.8	373	69.7	59.8	8.8	12.8	56	112	66	263	1.70	0.624
241	Junín	26.8	9.9	363	68.1	62.4	7.4	9.0	78	119	58	243	2.05	0.569
242	Bragado	30.2	11.2	390	66.2	62.4	8.7	11.4	65	121	70	290	1.73	0.596
243	Roque Perez	22.8	8.4	395	69.6	59.7	5.4	14.3	38	121	56	248	2.16	0.554
244	Gral. Villegas	29.6	11.0	435	69.7	57.7	5.5	19.4	23	111	101	384	1.10	0.542
245	Daireaux	36.2	13.4	450	68.3	60.5	8.0	14.6	43	98	125	387	0.78	0.517
246	Hipólito Yrigoyen	30.2	11.2	416	66.7	60.5	6.7	12.4	49	102	109	352	0.94	0.535
247	Lincoln	26.5	9.8	410	69.9	59.1	7.1	14.9	41	102	84	290	1.21	0.687
248	Bolivar	33.5	12.4	409	69.2	61.3	6.8	11.3	61	99	113	343	0.88	0.650
249	Bolivar	30.9	11.5	420	68.5	62.0	10.5	12.3	71	101	117	361	0.86	0.710
250	Carlos Casares	29.0	10.7	446	68.9	61.9	6.0	10.6	65	108	93	326	1.16	0.642
251	Pehuajó	27.7	10.3	435	70.4	58.8	20.0	31.6	17	151	64	400	2.36	0.625

Subregion III
Background for the crop

During 2007, general temperature conditions were exceptionally cold. As of May, cold increased and an important number of frosts were recorded.

Although annual rains were higher than the historical mean, scarce rains during optimum period to sow short cycle cultivars delayed the implantation thereof and low temperature conditions delayed the emergence thereof.

Radiation received during wheat critical period was lower than the historical mean. Notwithstanding the foregoing, grain yields did not decrease significantly.

The disease having a higher impact on cultivation was Spike Fusariosis. The last epiphyte of this disease occurred in 2002 campaign. Relative high humidity conditions during September and October 2007 predisposed the development of this disease, especially in areas near big rivers. Although there was a high level of symptoms of this disease, the impact thereof in yield was lower than the expected one. Leaf diseases were not relevant on yield, out of which foliar spots and leaf rust were the more frequent ones.

Late frosts in Pampeana region did not affect significantly the cultivation, since grain was already formed.

The use of fertilizers, although massive, depends on the producer, and whereas in those who used significant doses thereof added to the use of fungicides obtained around 4,500 kg/ha yields, on the other side, there were 1,000 kg/ha yields with little use of fertilizers and zero fungicides. Mean yield for the Sub-region was around 3,000 kg/ha.

Each reference represents near 4,000 tns sampled.

Subregion III Wheat

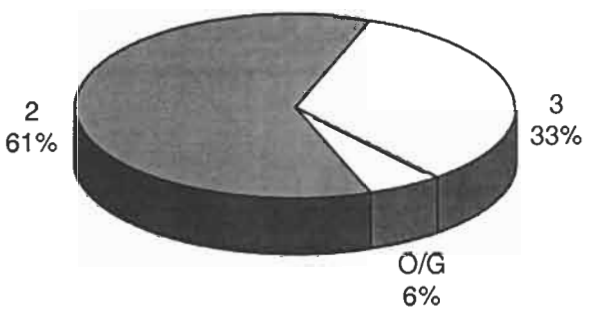
Results of the Analyses

Composite Samples by Locality. Averages were weighted by Tonnage.

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	77.60	81.80	80.28	1.05	0.01
Total Damaged Kernels (%)	0.88	2.28	1.58	0.40	0.25
Foreign Material (%)	0.21	1.80	0.46	0.39	0.85
Shrunken and Broken Kernels (%)	0.36	1.68	1.02	0.32	0.31
Yellow Berry Kernels (%)	0.15	2.40	1.04	0.60	0.58
Protein (13,5% Moisture) (%)	10.6	11.9	11.0	0.3	0.03
Weight of 1000 Kernels (gr.)	29.40	33.80	31.85	1.14	0.04
Ash (% dry basis)	1.600	1.920	1.804	0.101	0.06

Total damaged kernels includes 0,74% calcinated kernels, 0.34% green kernels, 0.17% sprouted kernels and 0.07% insect chewed kernels.

Grade Distribution



O/G: Out of Grade

Flour Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Wet Gluten (%)	24.7	29.6	27.3	1.3	0.05
	Dry Gluten (%)	8.3	10.4	9.3	0.5	0.05
	Falling Number (sec.)	395	456	433	19	0.04
	Flour Yield (%)	67.4	71.9	69.3	1.4	0.02
	Ash (dry basis) (%)	0.500	0.760	0.611	0.059	0.10
FARINOGRAM	Water Absorption (14 % H°) (%)	57.1	63.3	60.9	1.8	0.03
	Development Time (min.)	4.9	7.6	6.0	0.7	0.12
	Stability (min.)	6.3	11.2	8.6	1.5	0.18
	Degree of Softening (12 min.)	48	86	65	10	0.15
ALVEOGRAM	P (mm)	76	107	89	9	0.10
	L (mm)	67	96	82	7	0.09
	W Joules x 10^{-4}	204	304	246	23	0.09
	P / L	0.83	1.49	1.09	0.17	0.16

These results were elaborated with 18 composite samples prepared proportionally from 545 primary samples (farmer deliveries)

Subregion Data

In this subregion the wheat production was 954,798 tons., the 5.9% of the national total. Were sampled 63,078 tons., the 7.13% of the subregion production.

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION			WHEAT ANALYSIS								
Sample Number	Locality, district or department	Tonnage	Grade	Test Weight (Kg/hl)	Total Damaged Kernels (%)	Foreign Material (%)	Shrunken and Broken Kernels (%)	Yellow Berry Kernels (%)	Protein (13.5 % Moisture) (%)	Weight of 1000 Kernels (gr.)	Ash (dry basis) (%)
300	Paraná	4032	2	79.10	1.39	0.69	0.81	2.40	11.1	32.00	1.760
301	Paraná	4048	3	80.50	0.88	0.24	1.68	1.50	10.7	32.80	1.650
302	Paraná	4038	2	81.20	1.36	0.42	0.93	0.90	10.7	33.40	1.620
303	Villaguay	3999	O/G	78.40	1.26	1.80	1.23	0.15	11.4	29.70	1.820
304	Diamante	4031	2	80.20	1.82	0.21	1.02	0.90	10.7	33.80	1.600
305	Diamante	4108	3	79.70	2.28	0.69	1.02	2.10	10.6	31.40	1.920
306	Diamante	2004	2	81.40	1.22	0.36	1.14	1.20	10.9	32.00	1.890
307	Rosario del Tala	2096	3	81.00	1.69	0.21	1.35	0.60	11.2	31.40	1.820
308	La Paz	2002	3	78.80	1.94	0.48	0.87	0.60	11.9	33.40	1.810
309	Gualeguay	4057	2	81.00	1.45	0.21	0.63	1.50	11.1	31.60	1.890
310	Gualeguay	2055	2	80.60	1.87	0.30	1.08	0.60	11.0	32.00	1.780
311	Gualeuaychú	4099	3	80.00	0.96	0.21	1.47	1.17	11.2	32.60	1.760
312	Gualeguaychú	2072	3	77.60	2.22	0.69	1.44	0.90	11.4	29.40	1.810
313	Nogoyá	4100	2	80.70	1.33	0.40	1.05	0.36	11.0	31.40	1.870
314	Nogoyá	4081	2	81.80	1.95	0.36	0.96	1.20	10.8	31.00	1.830
315	Conc. del Uruguay	4103	2	80.00	1.95	0.21	0.96	0.45	11.2	30.40	1.870
316	Victoria	4074	2	81.70	1.46	0.24	0.36	0.60	11.3	32.20	1.910
317	Victoria	4079	2	80.30	1.83	0.39	0.80	0.90	10.9	32.40	1.900

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION		FLOUR ANALYSIS												
						FARINOGRAM				ALVEOGRAM				
Sample Number	Locality, district or department	Wet Gluten (%)	Dry Gluten (%)	Falling Number (sec.)	Flour Yield (%)	% WA (14 % H°)	D. T. (min.)	Stability (min.)	Degree Softening (12 min.)	P	L	W	P/L	Ash (dry basis) (%)
300	Paraná	26.6	9.3	411	68.2	59.6	6.2	7.9	71	106	71	249	1.49	0.615
301	Paraná	26.4	9.1	445	71.9	58.4	7.6	11.2	55	88	85	258	1.04	0.630
302	Paraná	26.6	8.8	430	70.8	60.9	6.3	8.2	71	85	83	240	1.02	0.605
303	Villaguay	29.1	9.8	450	70.5	60.1	5.1	6.3	86	76	92	212	0.83	0.760
304	Diamante	26.5	8.8	456	71.4	59.0	5.9	9.0	58	82	83	229	0.99	0.625
305	Diamante	24.7	8.3	411	68.8	57.1	6.3	9.6	69	83	67	204	1.24	0.620
306	Diamante	27.2	9.0	438	71.5	59.1	7.3	11.1	64	95	77	268	1.23	0.595
307	Rosario del Tala	26.7	8.8	396	70.2	61.4	5.7	8.8	59	94	72	226	1.31	0.690
308	La Paz	29.0	9.8	441	69.8	61.1	6.2	9.2	56	91	86	259	1.06	0.605
309	Gualeguay	26.9	9.2	395	69.7	62.6	6.2	10.7	48	107	84	304	1.27	0.505
310	Gualeguay	26.4	9.0	447	67.8	62.3	6.3	10.1	48	99	74	255	1.34	0.575
311	Gualeuaychú	27.6	9.6	446	68.3	62.6	5.2	7.1	64	93	84	255	1.11	0.500
312	Gualeguaychú	29.6	10.4	443	67.8	62.4	5.0	6.3	81	94	76	224	1.24	0.675
313	Nogoyá	28.5	9.6	441	69.5	61.4	6.0	8.4	73	82	96	248	0.85	0.590
314	Nogoyá	25.9	8.6	427	67.5	61.7	6.8	9.9	64	91	81	266	1.12	0.605
315	Conc. del Uruguay	27.9	9.7	455	67.4	61.1	5.5	7.5	71	83	85	254	0.98	0.592
316	Victoria	29.3	9.9	411	68.3	63.3	5.2	6.9	67	78	78	252	1.00	0.635
317	Victoria	28.0	9.5	450	68.3	63.2	4.9	7.3	60	87	85	232	1.02	0.625

Subregion IV
Background for the crop

During past years an irregularity of the yields in the sub-region is observed, due to the incidence of adverse weather factors during cultivation cycle. Yields varied, even among near places, due to the irregularity of rains during all the cycle, and particularly the damage caused by late frost of November 15th. This frost impacted on almost all the sub-region from lots that were not damaged, or with little damage, to total losses, even among near places, causing an important decrease in the sub-region production.

During the second consecutive year, during April and June, rains were inferior to the mean. This caused a delay in the sowing of long cycle cultivars, which are the ones, mostly used, but also damaged low cycle wheat sowing.

In general, between cultivation sowing and birth, 40 to 45 days elapsed, or even more in some cases, given the combination of hydric stress and very low temperatures. During the quarter June-August there were around 60 frosts. Such delay in birth caused a loss of plants in many cases, particularly towards the South West of the sub-region.

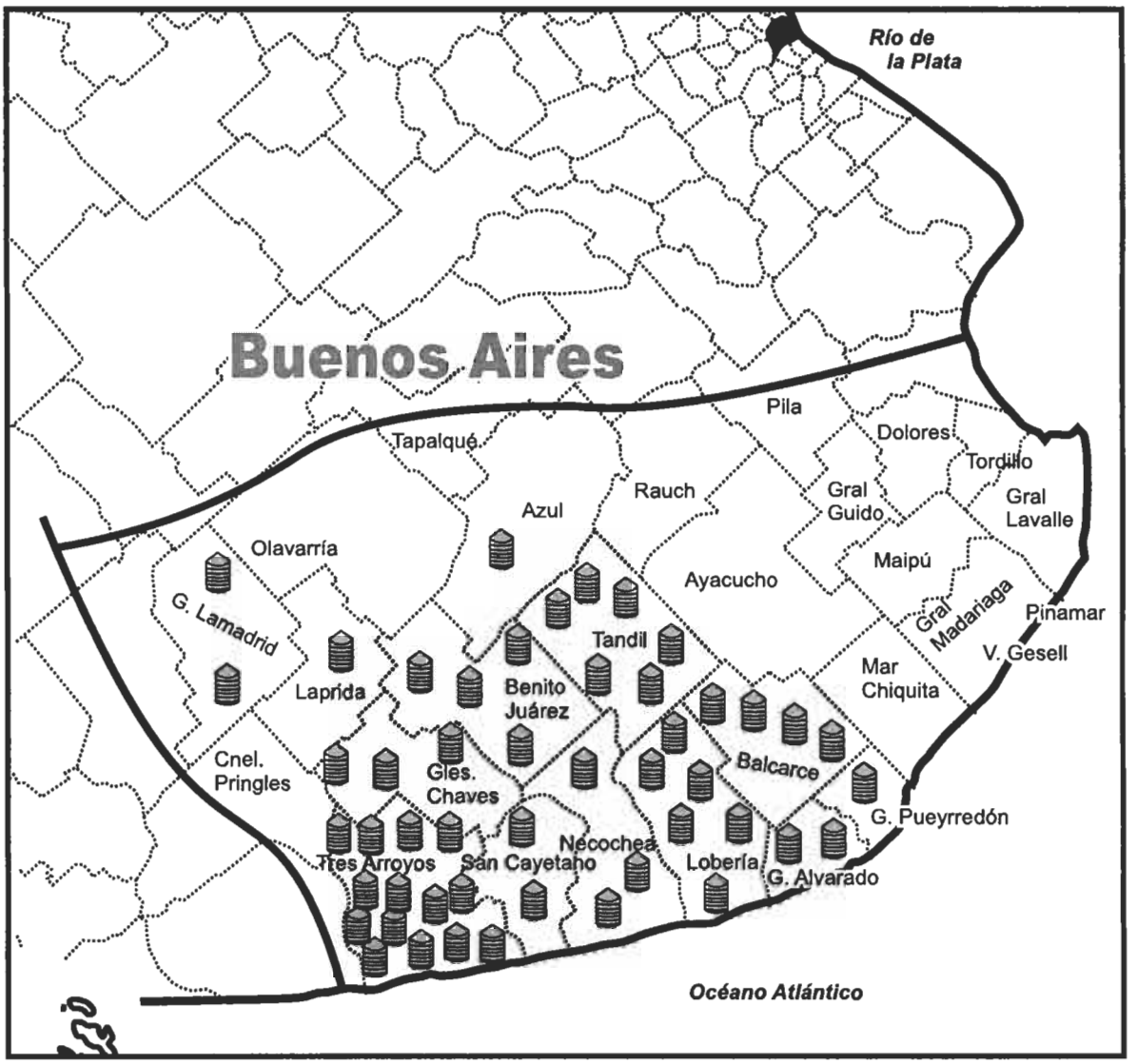
During July and August the situation worsened, with almost no rains. Towards mid September there were significant rains, that duplicated the historical mean and allowed a recovery of cultivations. During October, mean temperature was a little higher than the historical mean, but thermal amplitude was lower, creating favorable conditions for development. October rains were appropriate and November rains reached a 50-60% of the historical mean. Despite this fact, cultivations continued to develop adequately, but delayed in their cycle around 7 to 10 days, heading during mid November in many cases, moment when frost occurred.

Foliar diseases, in general, did not impact strongly. Only in more advanced or susceptible lots in the South area, there were some damages caused by leaf bacteriosis (Pseudomonas spp.)

First days of December were hot with maximum temperatures higher than 30° C and some with strong winds. This caused a premature dryness of leaves and a consequent shortening of grain filling period.

As a result of weather problems, average yield can amount to 2,200 to 2,400 kg/ha, in many cases with lower commercial and industrial quality due to the presence of frozen grains.

Subregion IV Wheat



Each reference represents near 4,000 tns sampled

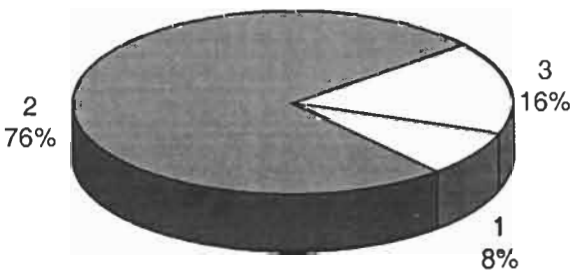
Results of the Analyses

Composite Samples by Locality. Averages were weighted by Tonnage.

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	78.00	82.85	80.82	1.08	0.01
Total Damaged Kernels (%)	0.00	0.32	0.09	0.09	0.99
Foreign Material (%)	0.14	1.08	0.53	0.25	0.47
Shrunken and Broken Kernels (%)	0.18	1.20	0.65	0.28	0.43
Yellow Berry Kernels (%)	0.00	4.34	0.91	0.79	0.87
Protein (13,5% Moisture) (%)	10.7	13.8	12.2	0.8	0.06
Weight of 1000 Kernels (gr.)	31.30	39.62	35.94	1.91	0.05
Ash (% dry basis)	1.534	1.967	1.746	0.082	0.05

Total damaged kernels includes 0.03% green kernels, 0.01% frosty kernels, 0.01% sprouted kernels and 0.02% insect chewed kernels.

Grade Distribution



Flour Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Wet Gluten (%)	25.9	36.4	30.9	2.6	0.08
	Dry Gluten (%)	9.1	13.4	11.0	1.0	0.09
	Falling Number (sec.)	407	491	440	20	0.05
	Flour Yield (%)	63.6	73.1	69.2	1.8	0.03
	Ash (dry basis) (%)	0.502	0.741	0.597	0.044	0.07
FARINOGRAM	Water Absorption (14 % H°) (%)	56.6	64.0	59.3	1.2	0.02
	Development Time (min.)	4.6	29.5	8.8	4.2	0.47
	Stability (min.)	7.6	34.9	15.8	6.1	0.39
	Degree of Softening (12 min.)	10	70	39	13	0.34
ALVEOGRAM	P (mm)	64	122	93	13	0.14
	L (mm)	70	169	105	18	0.18
	W Joules x 10^{-4}	187	438	323	45	0.14
	P / L	0.38	1.61	0.89	0.26	0.28

These results were elaborated with 49 composite samples prepared proportionally from 900 primary samples (farmer deliveries)

Subregion Data

In this subregion the wheat production was 2,330,590 tons., the 14.4% of the national total. Were sampled 191.247 tons., the 8.21% of the subregion production.

Subregion IV Wheat

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION			WHEAT ANALYSIS								
Sample Number	Locality, district or department	Tonnage	Grade	Test Weight (Kg/hl)	Total Damaged Kernels (%)	Foreign Material (%)	Shrunken and Broken Kernels (%)	Yellow Berry Kernels (%)	Protein (13.5 % Moisture) (%)	Weight of 1000 Kernels (gr.)	Ash (dry basis) (%)
400	Balcarce	4100	1	81.90	0.04	0.18	0.26	0.64	12.1	36.78	1.723
401	Lobería	4008	2	81.00	0.06	0.24	0.46	0.29	12.2	38.40	1.720
402	Lobería	4020	2	81.10	0.22	0.29	0.61	0.58	11.8	39.14	1.708
403	Balcarce	4050	1	82.50	0.10	0.17	0.29	0.08	12.1	39.45	1.695
404	Tandil	4060	2	80.30	0.05	0.67	0.56	0.82	12.3	36.00	1.761
405	Tandil	4040	3	79.40	0.05	1.01	0.56	0.48	12.5	37.53	1.765
406	Tandil	4310	3	80.60	0.10	1.08	0.38	0.70	12.2	36.68	1.745
407	Gral. Alvarado	4000	1	81.50	0.04	0.18	0.18	3.46	10.8	36.91	1.534
408	Gral. Alvarado	4000	2	81.20	0.00	0.23	0.22	1.53	10.7	38.69	1.536
409	Balcarce	4000	2	80.70	0.09	0.40	0.36	0.26	12.2	37.13	1.610
410	Lobería	4075	2	81.00	0.08	0.42	0.30	0.16	12.4	38.10	1.795
411	Balcarce	3965	1	82.00	0.14	0.19	0.27	4.34	11.6	39.58	1.615
412	Lobería	4019	2	78.90	0.07	0.54	0.54	1.06	12.8	36.17	1.837
413	Azul	4027	2	78.00	0.24	0.68	0.52	0.28	13.5	34.20	1.731
414	Tres Arroyos	4038	2	82.20	0.02	0.69	0.61	1.02	12.4	34.95	1.755
415	Tres Arroyos	4040	2	80.90	0.00	0.56	0.42	1.00	11.9	34.16	1.703
416	Tandil	4000	2	80.50	0.27	0.36	0.64	0.40	13.6	39.25	1.711
417	Tandil	4000	2	81.10	0.02	0.47	0.77	0.47	12.1	37.39	1.744
418	Necochea	4000	2	81.10	0.00	0.28	0.26	0.93	10.9	37.83	1.757
419	Necochea	4000	2	81.90	0.03	0.39	0.52	1.44	11.3	35.61	1.728
420	Necochea	4000	2	82.80	0.12	0.22	0.29	1.21	11.3	36.22	1.599
421	Gral. Pueyrredón	4000	2	82.40	0.02	0.52	0.31	0.32	10.7	39.62	1.607
422	Lobería	4000	2	81.70	0.12	0.41	0.70	1.75	11.8	35.15	1.587
423	Lobería	4000	2	81.70	0.06	0.36	0.87	1.28	12.2	34.59	1.736
500	Benito Juárez	3415	3	82.15	0.12	0.84	1.02	1.80	12.3	35.70	1.807
501	Benito Juárez	4017	2	79.70	0.28	0.70	0.40	0.40	13.7	34.50	1.801
502	Benito Juárez	4060	3	80.35	0.28	0.84	0.68	0.60	13.2	32.60	1.789
503	Benito Juárez	4022	2	79.90	0.22	0.66	0.68	0.40	12.9	31.30	1.773
504	General Lamadrid	4000	3	81.50	0.32	1.00	0.92	0.60	13.8	37.10	1.967
505	General Lamadrid	3993	3	79.70	0.10	0.94	0.94	0.40	13.0	37.10	1.809

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION			WHEAT ANALYSIS								
Sample Number	Locality, district or department	Tonnage	Grade	Test Weight (Kg/hl)	Total Damaged Kernels (%)	Foreign Material (%)	Shrunken and Broken Kernels (%)	Yellow Berry Kernels (%)	Protein (13.5 % Moisture) (%)	Weight of 1000 Kernels (gr.)	Ash (dry basis) (%)
506	Gonzales Chaves	4001	3	81.05	0.24	0.98	1.00	0.80	12.9	35.30	1.826
507	Gonzales Chaves	4000	2	80.35	0.00	0.32	0.98	0.00	12.8	35.00	1.820
508	Gonzales Chaves	3250	2	79.90	0.16	0.70	0.78	1.20	13.0	33.30	1.791
509	Laprida	1943	2	80.35	0.06	0.68	1.20	2.20	11.8	34.80	1.800
510	San Cayetano	4000	2	79.90	0.00	0.44	1.06	0.40	12.9	34.20	1.809
511	San Cayetano	3750	2	81.25	0.00	0.22	0.62	0.00	13.4	35.90	1.779
512	Tandil	4000	2	79.00	0.00	0.30	0.46	0.40	13.1	36.40	1.807
513	Tres Arroyos	4003	2	80.35	0.12	0.66	1.06	1.80	11.7	34.10	1.776
514	Tres Arroyos	4000	2	80.35	0.12	0.70	0.96	0.80	11.9	34.80	1.783
515	Tres Arroyos	4000	2	81.25	0.00	0.54	0.76	0.60	12.0	35.30	1.795
516	Tres Arroyos	4000	2	79.45	0.00	0.42	0.78	0.80	12.3	34.40	1.811
517	Tres Arroyos	3750	2	81.25	0.00	0.14	0.60	0.50	12.2	35.50	1.755
518	Tres Arroyos	3994	3	80.15	0.00	0.84	1.12	0.60	12.5	33.50	1.746
519	Tres Arroyos	4002	2	79.70	0.06	0.54	0.88	1.20	11.4	34.40	1.852
520	Tres Arroyos	4003	2	79.90	0.12	0.54	0.94	0.90	11.9	33.60	1.751
521	Tres Arroyos	4000	2	79.70	0.00	0.66	1.18	1.40	11.7	34.50	1.775
522	Tres Arroyos	4000	2	82.15	0.12	0.72	0.98	0.90	11.3	36.10	1.764
523	Tres Arroyos	4009	2	82.85	0.06	0.62	0.72	1.20	11.9	35.00	1.788
524	Tres Arroyos	2283	2	81.70	0.06	0.72	0.76	0.90	12.4	35.70	1.684

Subregion IV Wheat

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION		FLOUR ANALYSIS												
						FARINOGRAM				ALVEOGRAM				
Sample Number	Locality, district or department	Wet Gluten (%)	Dry Gluten (%)	Falling Number (sec.)	Flour Yield (%)	% WA (14 % H°)	D. T. (min.)	Stability (min.)	Degree Softening (12 min.)	P	L	W	P/L	Ash (dry basis) (%)
400	Balcarce	32.7	12.1	434	72.1	59.8	10.0	18.7	31	67	119	280	0.56	0.581
401	Lobería	30.8	11.4	491	70.5	59.2	11.7	19.3	41	101	109	366	0.93	0.694
402	Lobería	30.8	11.4	435	69.6	59.1	10.1	17.0	40	108	98	367	1.10	0.642
403	Balcarce	31.5	11.7	420	70.6	59.7	10.3	18.9	41	100	131	438	0.76	0.633
404	Tandil	32.4	12.0	416	67.9	59.3	11.8	16.1	47	106	96	342	1.10	0.617
405	Tandil	32.9	12.2	460	68.6	58.9	8.8	15.6	45	82	127	334	0.65	0.572
406	Tandil	32.4	12.0	420	69.0	58.9	11.7	16.7	47	88	124	352	0.71	0.542
407	Gral. Alvarado	25.9	9.6	425	69.8	56.9	6.2	19.4	18	108	83	303	1.30	0.605
408	Gral. Alvarado	27.4	10.1	438	70.0	56.6	6.4	22.2	10	109	80	298	1.36	0.523
409	Balcarce	32.0	11.8	423	69.1	58.5	13.5	18.9	44	96	105	331	0.91	0.530
410	Lobería	35.4	13.1	424	68.4	58.9	8.2	10.4	70	82	120	302	0.68	0.585
411	Balcarce	30.6	11.3	429	72.3	59.0	9.5	15.0	45	93	109	333	0.85	0.580
412	Lobería	35.7	13.2	450	68.1	60.0	7.2	11.8	57	84	134	331	0.63	0.618
413	Azul	36.1	13.4	423	68.1	59.6	12.3	12.5	65	64	169	325	0.38	0.619
414	Tres Arroyos	28.8	10.7	464	68.8	59.7	23.5	29.9	29	122	87	392	1.40	0.741
415	Tres Arroyos	28.5	10.6	459	69.3	57.5	7.1	18.5	25	90	113	331	0.80	0.549
416	Tandil	32.5	12.0	456	68.3	62.4	11.4	11.9	65	108	114	385	0.95	0.649
417	Tandil	29.8	11.0	441	70.1	59.5	20.7	25.9	40	117	100	421	1.17	0.620
418	Necochea	27.9	10.3	407	69.7	57.1	4.6	14.8	34	100	99	322	1.01	0.544
419	Necochea	30.0	11.1	408	68.5	57.6	6.2	14.4	41	90	101	290	0.89	0.576
420	Necochea	26.0	9.6	420	69.5	58.9	6.0	13.3	45	102	89	303	1.15	0.532
421	Gral. Pueyrredón	26.5	9.8	415	69.8	58.0	4.8	14.2	35	104	95	334	1.09	0.502
422	Lobería	30.2	11.2	416	69.1	59.2	9.8	15.6	37	98	101	330	0.97	0.539
423	Lobería	31.5	11.7	430	67.9	59.2	6.7	15.4	37	93	127	360	0.73	0.556
500	Benito Juárez	30.7	10.5	441	63.6	60.4	6.3	13.5	28	100	98	335	1.02	0.627
501	Benito Juárez	32.8	11.1	439	69.8	61.1	7.5	11.4	38	78	116	281	0.67	0.627
502	Benito Juárez	32.9	11.2	431	69.7	60.5	6.7	10.4	46	79	109	265	0.72	0.616
503	Benito Juárez	33.0	11.2	444	69.9	60.3	5.5	11.0	34	79	115	281	0.69	0.624
504	General Lamadrid	36.4	12.2	445	73.1	64.0	7.0	8.4	43	78	127	280	0.61	0.655
505	General Lamadrid	32.8	11.1	427	70.8	59.6	6.7	9.4	53	68	90	187	0.76	0.609

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION		FLOUR ANALYSIS												
						FARINOGRAM				ALVEOGRAM				
Sample Number	Locality, district or department	Wet Gluten (%)	Dry Gluten (%)	Falling Number (sec.)	Flour Yield (%)	% WA (14 % H°)	D. T. (min.)	Stability (min.)	Degree Softening (12 min.)	P	L	W	P/L	Ash (dry basis) (%)
506	Gonzales Chaves	31.7	10.9	444	68.6	60.4	7.8	13.6	36	101	94	343	1.07	0.643
507	Gonzales Chaves	32.2	11.1	460	67.9	59.7	7.8	12.4	45	86	124	350	0.69	0.601
508	Gonzales Chaves	32.2	11.0	452	69.8	59.2	8.3	16.5	26	83	114	334	0.73	0.564
509	Laprida	27.6	9.4	449	72.3	60.2	9.3	16.4	19	113	70	288	1.61	0.604
510	San Cayetano	32.8	11.1	487	70.4	59.3	9.2	12.8	40	86	116	347	0.74	0.601
511	San Cayetano	34.9	11.7	465	71.8	60.0	6.2	10.5	44	84	115	327	0.73	0.602
512	Tandil	32.3	11.0	454	71.0	59.5	7.2	12.7	43	79	123	318	0.64	0.593
513	Tres Arroyos	27.5	9.4	422	69.3	58.8	6.3	10.5	42	89	92	276	0.97	0.619
514	Tres Arroyos	28.9	9.7	452	72.1	58.9	5.2	7.6	58	84	85	242	0.99	0.607
515	Tres Arroyos	29.7	10.1	454	69.4	59.0	6.4	12.5	45	92	96	312	0.96	0.608
516	Tres Arroyos	31.0	10.4	475	70.1	58.7	5.7	11.7	47	90	102	325	0.88	0.588
517	Tres Arroyos	30.3	10.3	483	69.7	59.4	6.5	9.5	54	83	99	286	0.84	0.606
518	Tres Arroyos	30.7	10.7	458	66.9	59.1	6.4	10.4	47	87	94	284	0.93	0.606
519	Tres Arroyos	27.4	9.3	409	65.9	58.8	8.1	19.6	22	103	70	269	1.47	0.631
520	Tres Arroyos	29.7	10.4	440	64.9	58.5	7.2	16.6	21	95	95	322	1.00	0.588
521	Tres Arroyos	28.9	9.8	445	68.5	58.2	8.3	17.6	27	99	78	293	1.27	0.562
522	Tres Arroyos	26.3	9.1	435	67.7	60.1	9.0	34.9	18	120	78	361	1.54	0.568
523	Tres Arroyos	29.2	10.0	439	68.8	59.9	8.5	33.7	10	112	92	381	1.22	0.597
524	Tres Arroyos	31.1	10.6	416	65.5	60.2	29.5	32.7	30	111	94	387	1.18	0.563

Climate and Wheat crop 2007 – 2008 in Argentina

Juan A. Forte Lay – José L. Aiello.

We are going to describe the climate behavior during the 2007-2008 wheat crop; for that purpose we will use a method to estimate the water reserves in the soil and its anomalies. The last ones, which we denominate Classification of the Soil Humidity, were figured out as monthly average during the whole wheat cycle, although they come from a daily analysis and express the degree of separation from the habitual conditions particular to each region and period of the year. Humidity classification is a suitable climate indicator, since it summarizes the behavior of the most relevant climate variables, such as the space and time distributions of rain and its interaction with the evaporation and transpiration, which depend in turn on the environment, radiation, the wind and atmospheric humidity.

The maps are monthly in this case, and they contain a political subdivision by district or department, which can be associated with the well known wheat zones of the country and which only represent the five pampas provinces here. The presentation of the sequence of soil humidity map classification, and a description of its behavior let the reader have a clear idea of the climate evolution during the wheat campaign. We must point out that the habitual or normal conditions are not always the most appropriate for the crop in all the regions and seasons of the year; thus, during the winter and beginning of spring, normal conditions could result in hydrological deficiencies in western and north-western areas, such as the V North wheat subregion; instead, those same conditions could be representing situations of certain water excess in the soil to the east-center and south-east of the wheat region.

MAY 2007

At the beginning of the wheat cultivation cycle it was possible to see a good degree of edaphic humidity due to the intense rains of previous months. However, throughout the month there was a general decrease in humidity values in the soil which caused certain superficial deficiencies, which were more marked in the south of Córdoba, north of La Pampa, some areas in the west and far south of Buenos Aires and in the northeastern tip of the wheat-cultivating region. However, the humidity was sufficient for sowing to begin in almost all the northern sector of the wheat-cultivating region.

JUNE 2007

The dominant cold and dry conditions during this month decreased humidity and there was an increase in areas with abnormal dryness throughout the soil profile. However, some slight rains in the middle of the month in areas in the south of Córdoba, north of La Pampa and in the central area of the Pampas region were sufficient to improve superficial humidity and make sowing possible. The situation was not so good in the southeastern areas of the wheat-cultivating region. There was abnormal dryness in the northeast of Entre Ríos, although the absolute values of humidity for that region during the winter season were not those indicating severe lack of humidity.

JULY 2007

There was a prevalence of a general deficiency of edaphic humidity. There was abnormal dryness in areas of Entre Ríos, north of Santa Fe, center and far southeast of Buenos Aires due to lack of superficial humidity and this affected sowing. Abnormal, very low temperatures were seen with frosts and even abnormal snowfalls, especially in the southwest of Córdoba and east of San Luis. Wheat that had sprouted grew at an abnormally slow rate. In some areas damage to the tips of the leaves was seen due to excessive cold.

AUGUST 2007

Soil humidity improved markedly in the coastal region of the east and southeast of Buenos Aires, this was just in time for the last sowing in the area. There was a marked negative abnormal lack of edaphic humidity in areas of Entre Ríos and the center and far southwest of Buenos Aires. The initial stages of wheat growth took place during one of the coldest and longest winters of the last decades, this limited aerial plant growth but favored root development, thereby improving the plant's resistance to drought. There was a continued general lack of humidity, which delayed or suspended sowing in some areas.

SEPTEMBER 2007

Contrary to what had been seen during preceding months, weather conditions were favorable during September, there were general rains and a marked increase in temperature which provided an adequate environment for the rapid recovery of the growth of wheat. The good root development mentioned above favored an adequate tillering and towards the end of the month conditions were good for booting throughout the center and the north of the region. There were important and beneficial rains in the south and southwest of the region. There was less rainfall in the marginal areas of the northwest of Córdoba and Santa Fe. In the center of the region some negative abnormalities persisted but were of little importance.

OCTOBER 2007

Good rainfall and temperatures persisted which improved the availability of edaphic water for wheat at the key moments of booting and heading in the center and north of the region and of tillering and booting in the southeast. There continued to be deficiencies in the far northwest in the marginal area of the region and to a lesser degree there continued to be low humidity in the soil in the center of the region. There were positive abnormalities, especially in Entre Ríos, with excessive edaphic humidity, which was not severe but could predispose to criptogamic diseases.

NOVEMBER 2007

Once more conditions were drier and colder than normal, putting a stop to the improvement seen in September-October. Only certain areas of the southeast, east and northeast of the region had an average edaphic humidity above normal, in other areas this was below normal. However, in most areas the wheat crop had already advanced beyond the critical stage of growth and water restriction was favorable to ripening. The strong and abnormal late frosts, at a sensitive time for wheat, on the 4th and 15th, caused great damage in the southeast of Buenos Aires and also affected some areas of the south of Córdoba and Entre Ríos with less marked consequences.

DECEMBER 2007

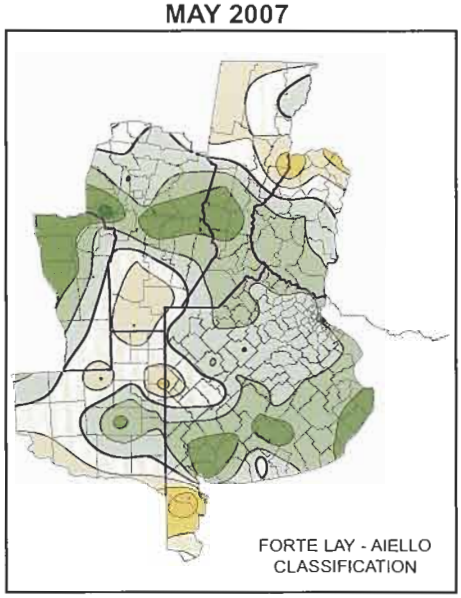
Similarly to what had been seen in November, there continued to be a lack of rain, with an almost generalized edaphic humidity below normal for the time of year. Consequently, conditions for harvesting were adequate in the center and north and for ripening in the far southeast of the wheat-cultivating region, in this last area the results seen were widely different due to the late frosts in November.

JANUARY 2008

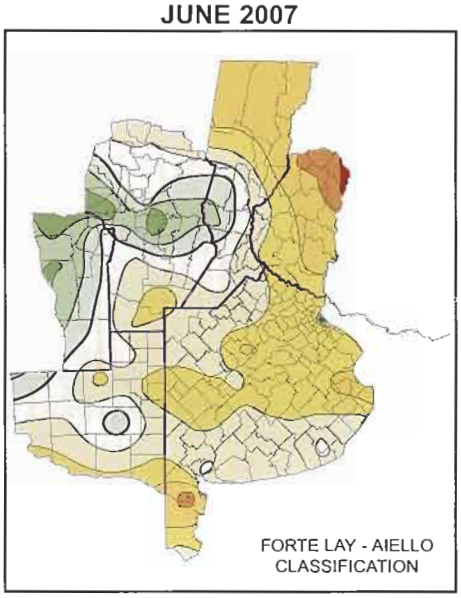
We attach the map of the average rainfall for this month since harvest is still taking place in the far southeast of the wheat-cultivating region. In this area conditions were drier than normal for the time of year, and therefore harvesting was not affected by rain.

SOIL HUMIDITY CLASSIFICATIO

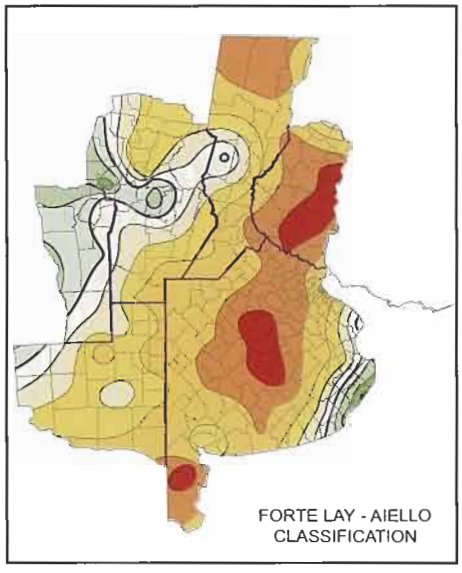
MAY 2007



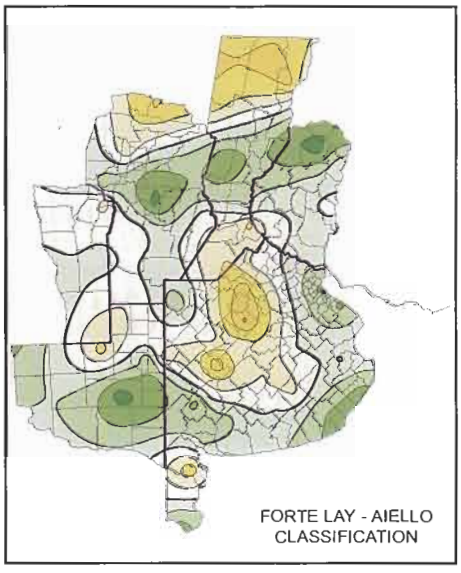
JUNE 2007



AUGUST 2007



SEPTEMBER 2007



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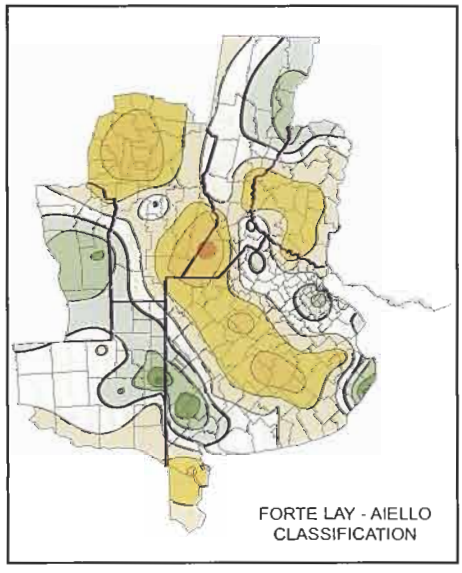
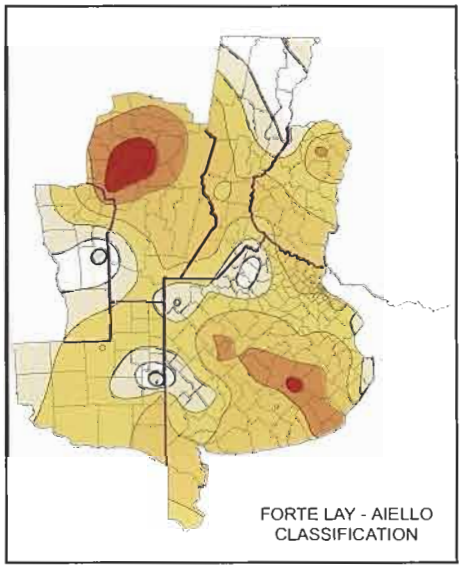
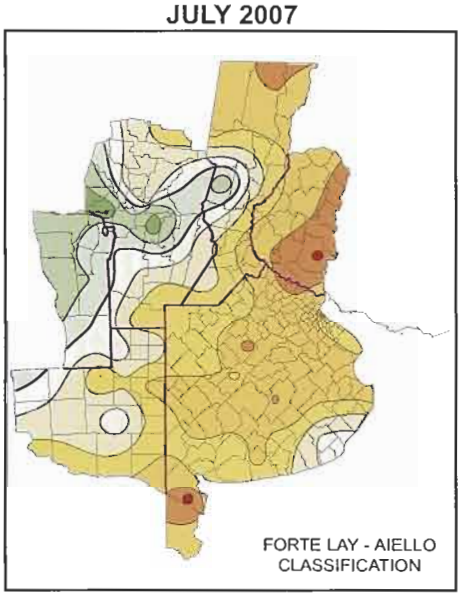


DECEMBER 2007

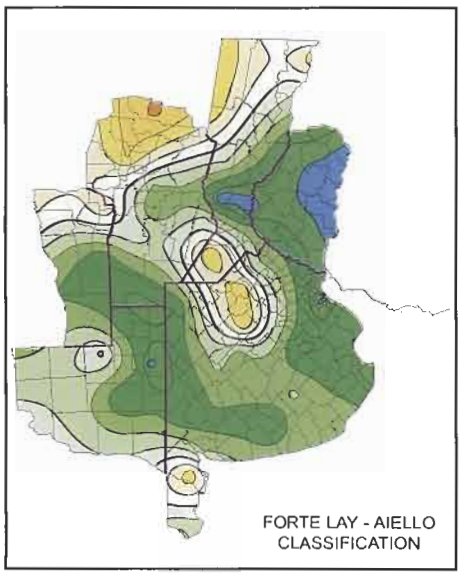


2007/2008 WHEAT CROP

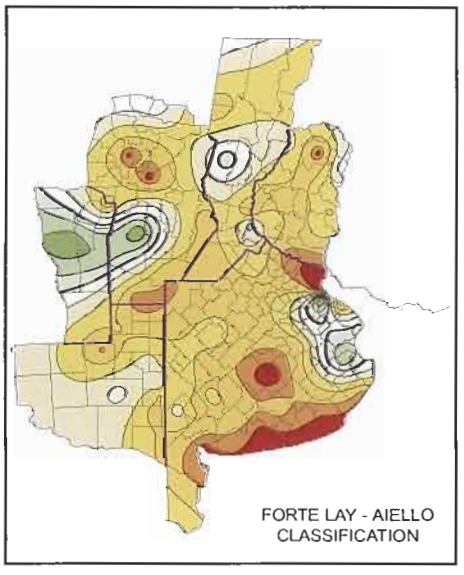
JULY 2007



OCTOBER 2007



JANUARY 2008



Extremely wetter than usual.
Much wetter than usual.
Wetter than usual.
Approximately normal for the season.
Drier than usual.
Much drier than usual.
Extremely drier than usual.

Subregion V North
Background for the crop

During March 2007 rains amounted to 110 and 300mm more than 2006, which allowed a sowing with good water content soils, making the use of water more efficient.

Weather conditions were different from the previous campaign, particularly from the thermal viewpoint, since sun radiation was normal. Mean temperature from May to October 2007 was under the records for the same period of 2006.

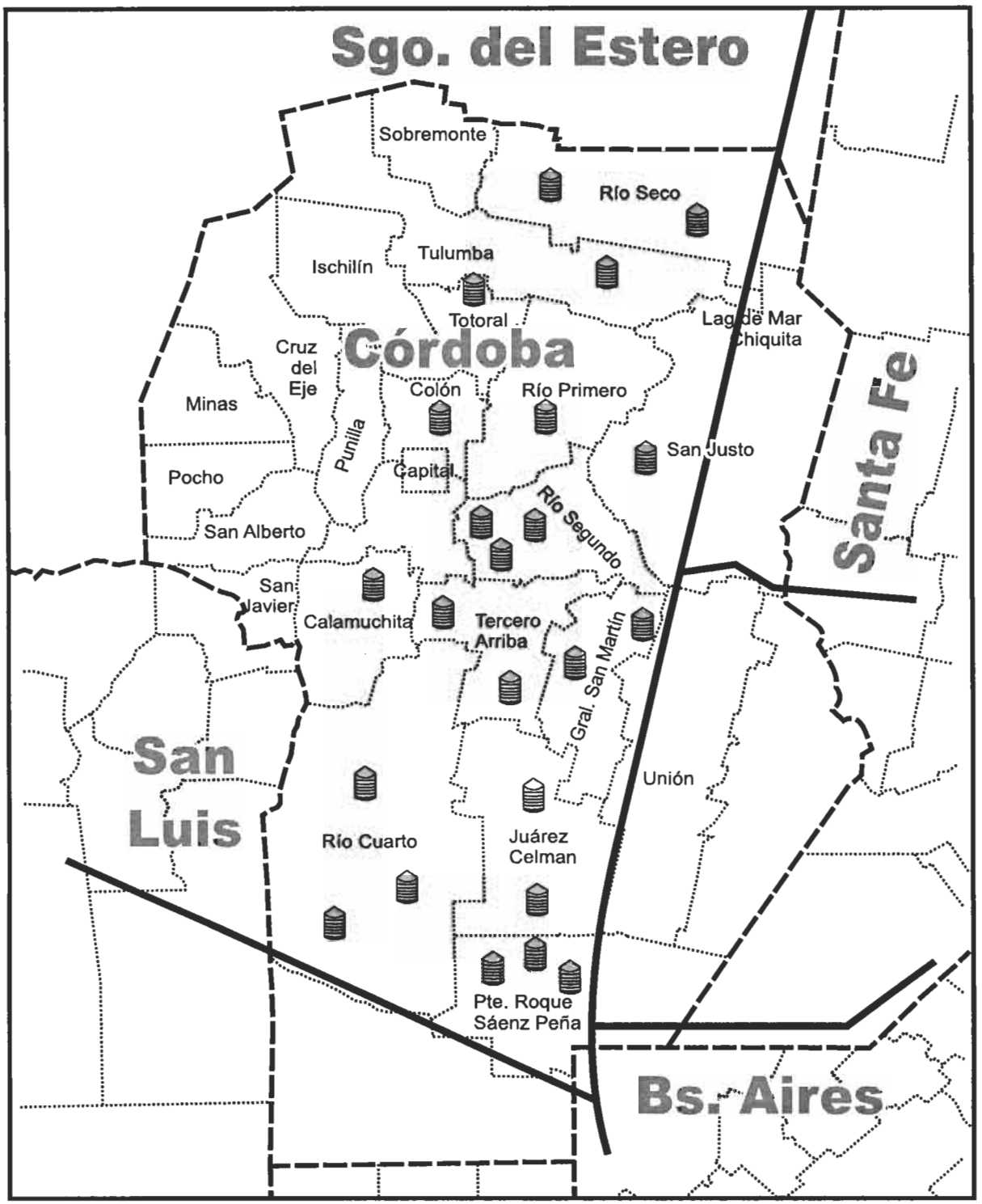
Actually, lower temperatures gave a longer cycle for 2007, which allowed the cultivation capturing a higher quantity of radiation and increasing its growth. In those cases, in which this effect continued during the growth period of spikes and without frosts at flowering period, cultivation was more able to fix grains and yield better.

Considering temperature and water availability, cultivation consumed less water and took profit thereof more efficiently, which allowed starting the spike growth period with an optimum coverage level to maximize radiation capture. These conditions con-tributed to define yield high levels for 2007 campaign.

Efficiency value of water usage recorded in 2007 is similar to values normally achieved in the South East of the Province of Buenos Aires. This shows the highly fa-vorable condition of 2007 for wheat production in the entire region. Efficiency values of water usage were 7 and 15kg grain/mm for 2006 and 2007, respectively.

Yield levels depended on the type of technology applied, but for those rotations where wheat participated with soy and corn, nutrient doses were adjusted, mainly Ni-trogen and in Direct Sowing more than 3,000 kg/ha were obtained, with peaks of 4,500 kg/ha. Yield levels were higher than the previous year, particularly in those zones in which frosts did not affect cultivation during flowering period.

Subregion V North Wheat



Each reference represents near 4,000 tns sampled

Subregion V North Wheat

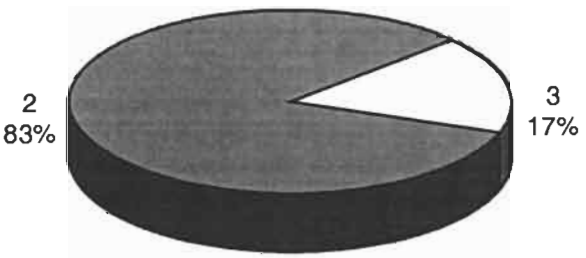
Results of the Analyses

Composite Samples by Locality. Averages were weighted by Tonnage.

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	79.00	83.95	81.24	1.25	0.02
Total Damaged Kernels (%)	0.14	0.81	0.47	0.16	0.35
Foreign Material (%)	0.12	0.64	0.29	0.13	0.45
Shrunken and Broken Kernels (%)	0.16	1.44	0.92	0.27	0.30
Yellow Berry Kernels (%)	0.00	1.10	0.10	0.21	2.11
Protein (13,5% Moisture) (%)	9.8	12.0	10.9	0.6	0.05
Weight of 1000 Kernels (gr.)	30.80	37.00	34.01	1.52	0.04
Ash (% dry basis)	1.679	2.214	1.935	0.149	0.08

Total damaged kernels includes 0.09% green kernels, 0.05% frosty kernels, 0.05% sprouted kernels and 0.07% insect chewed kernels.

Grade Distribution



Flour Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Wet Gluten (%)	19.8	31.4	24.1	2.7	0.11
	Dry Gluten (%)	7.0	10.4	8.3	0.9	0.10
	Falling Number (sec.)	382	509	429	29	0.07
	Flour Yield (%)	63.5	72.1	69.0	1.8	0.03
	Ash (dry basis) (%)	0.560	0.690	0.635	0.034	0.05
FARINOGRAM	Water Absorption (14 % H°) (%)	57.8	62.3	60.2	1.4	0.02
	Development Time (min.)	6.2	11.4	9.0	1.5	0.17
	Stability (min.)	10.9	27.2	18.1	4.9	0.27
	Degree of Softening (12 min.)	9	62	30	15	0.52
ALVEOGRAM	P (mm)	92	167	118	14	0.12
	L (mm)	45	98	66	13	0.20
	W Joules x 10^{-4}	209	341	283	32	0.11
	P / L	1.02	3.63	1.79	0.56	0.30

These results were elaborated with 23 composite samples prepared proportionally from 161 primary samples (farmer deliveries)

Subregion Data

In this subregion the wheat production was 1,981,240 tn tons., the 12.2% of the national total. Were sampled 90,247 tons., the 4.56% of the subregion production.

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION			WHEAT ANALYSIS								
Sample Number	Locality, district or department	Tonnage	Grade	Test Weight (Kg/hl)	Total Damaged Kernels (%)	Foreign Material (%)	Shrunken and Broken Kernels (%)	Yellow Berry Kernels (%)	Protein (13.5 % Moisture) (%)	Weight of 1000 Kernels (gr.)	Ash (dry basis) (%)
600	San Justo	4085	3	82.15	0.36	0.20	1.33	0.10	10.4	31.40	2.214
601	Río Primero	4012	2	82.60	0.40	0.20	1.05	0.00	12.0	32.70	2.190
602	Gral. San Martín	4000	2	80.60	0.50	0.33	1.14	0.00	9.8	32.90	1.948
603	Gral. San Martín	4000	2	81.95	0.66	0.35	0.82	0.16	10.9	34.70	2.126
604	Santa María	5000	3	80.80	0.50	0.24	1.27	0.00	11.6	30.80	2.004
605	Río II	4000	2	80.15	0.32	0.56	0.80	0.16	10.3	33.40	1.973
606	Río II	4000	2	82.15	0.22	0.43	1.10	0.00	10.6	32.20	2.056
607	Río Seco	4000	3	80.15	0.68	0.64	1.44	0.00	11.8	33.40	2.028
608	Río II	4000	2	80.80	0.34	0.14	1.04	0.00	10.2	36.60	2.086
609	Tercero Arriba	4000	2	81.05	0.72	0.17	0.67	0.00	10.7	36.00	1.988
610	Tercero Arriba	4000	3	79.45	0.34	0.18	1.31	0.00	11.0	33.60	1.893
611	Totoral	5350	2	83.95	0.58	0.21	0.79	0.00	11.5	35.70	1.900
612	Colón	1800	2	82.60	0.60	0.34	1.13	0.46	11.0	37.00	1.976
613	Tulumba	2000	2	83.05	0.23	0.32	0.43	0.40	10.3	33.40	1.866
614	Río Seco	2000	2	83.70	0.14	0.21	0.16	1.10	10.8	34.80	1.831
615	Roque Sáenz Peña	4000	2	81.05	0.58	0.32	0.75	0.60	10.7	34.40	1.679
616	Roque Sáenz Peña	4000	2	81.05	0.50	0.34	0.73	0.16	11.1	35.10	1.739
617	Roque Sáenz Peña	4000	2	81.25	0.35	0.12	0.62	0.13	10.7	34.80	1.781
618	Juárez Celman	4000	2	81.05	0.39	0.26	0.67	0.00	10.3	34.30	1.887
619	Juárez Celman	5000	2	81.70	0.63	0.33	0.89	0.00	10.6	34.00	2.025
620	Río Cuarto	5000	2	81.05	0.33	0.17	0.85	0.00	11.6	34.00	1.697
621	Río Cuarto	4000	2	79.25	0.81	0.48	0.64	0.00	10.2	35.80	1.794
622	Río Cuarto	4000	2	79.00	0.35	0.30	0.92	0.00	11.2	33.30	1.792

Subregion V North Wheat

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION		FLOUR ANALYSIS												
						FARINOGRAM				ALVEOGRAM				
Sample Number	Locality, district or department	Wet Gluten (%)	Dry Gluten (%)	Falling Number (sec.)	Flour Yield (%)	% WA (14 % H°)	D. T. (min.)	Stability (min.)	Degree Softening (12 min.)	P	L	W	P/L	Ash (dry basis) (%)
600	San Justo	22.7	7.8	434	67.3	61.0	10.6	25.4	13	131	57	287	2.30	0.666
601	Río Primero	24.5	8.4	439	69.7	62.3	11.2	27.2	17	147	58	340	2.53	0.684
602	Gral. San Martín	24.1	8.3	428	71.7	60.7	9.2	22.0	20	116	61	276	1.90	0.659
603	Gral. San Martín	23.3	8.2	414	68.3	61.3	7.9	14.8	30	123	56	267	2.20	0.617
604	Santa María	27.6	9.5	403	67.5	62.2	10.2	19.0	26	120	69	307	1.74	0.568
605	Río II	22.0	8.0	395	68.2	60.2	9.1	22.0	17	120	48	226	2.50	0.645
606	Río II	19.8	7.0	432	68.7	61.4	9.6	17.9	23	133	46	251	2.89	0.644
607	Río Seco	27.5	9.6	410	67.8	61.4	7.5	12.3	37	97	88	274	1.10	0.658
608	Río II	21.8	7.6	436	63.5	61.0	10.5	21.7	12	118	45	209	2.62	0.690
609	Tercero Arriba	21.7	7.4	382	67.5	60.7	8.4	20.9	15	112	67	276	1.67	0.617
610	Tercero Arriba	21.0	7.1	391	69.6	60.7	11.4	25.4	9	129	60	299	2.15	0.641
611	Totoral	27.1	9.3	401	71.0	62.1	7.8	12.7	44	111	79	318	1.41	0.627
612	Colón	21.8	7.5	433	71.8	58.9	9.9	20.8	28	118	63	298	1.87	0.668
613	Tulumba	21.3	7.9	415	71.2	-	-	-	-	122	63	297	1.94	0.635
614	Río Seco	20.8	7.5	444	69.2	-	-	-	-	167	46	323	3.63	0.620
615	Roque Sáenz Peña	24.8	8.6	450	72.1	58.6	8.8	14.9	42	113	56	248	2.02	0.675
616	Roque Sáenz Peña	24.6	8.7	470	68.2	58.3	8.0	12.3	59	111	67	271	1.66	0.560
617	Roque Sáenz Peña	26.1	9.1	422	69.2	59.5	6.2	10.9	58	104	73	269	1.42	0.612
618	Juárez Celman	25.1	8.5	453	69.7	59.7	7.4	12.3	39	107	80	293	1.34	0.673
619	Juárez Celman	22.2	7.7	434	69.0	58.7	8.2	19.1	20	123	69	300	1.78	0.605
620	Río Cuarto	22.8	7.8	509	68.7	58.5	11.0	19.2	28	120	67	294	1.79	0.635
621	Río Cuarto	31.4	10.4	429	69.6	59.0	9.7	20.2	23	100	98	341	1.02	0.610
622	Río Cuarto	24.4	8.2	435	71.2	57.8	6.5	11.2	62	92	80	259	1.15	0.640

Subregion V South
Background for the crop

2007/08 campaign has been very irregular for this sub-region.

January – April period was humid, well above the rain historical mean on most wheat cultivation area, although in some places, when implantation time arrived, there was a lack of humidity.

Those areas that could use more technology developed better cultivations. May-August period was short of rains, cultivations suffered due to the lack of water and late sowing had lots of problems.

Those four months were dry and very cold, with heavy frosts that delayed cultivation development, which started to recover in September and October but again were limited due to the lack of humidity during grain filling period.

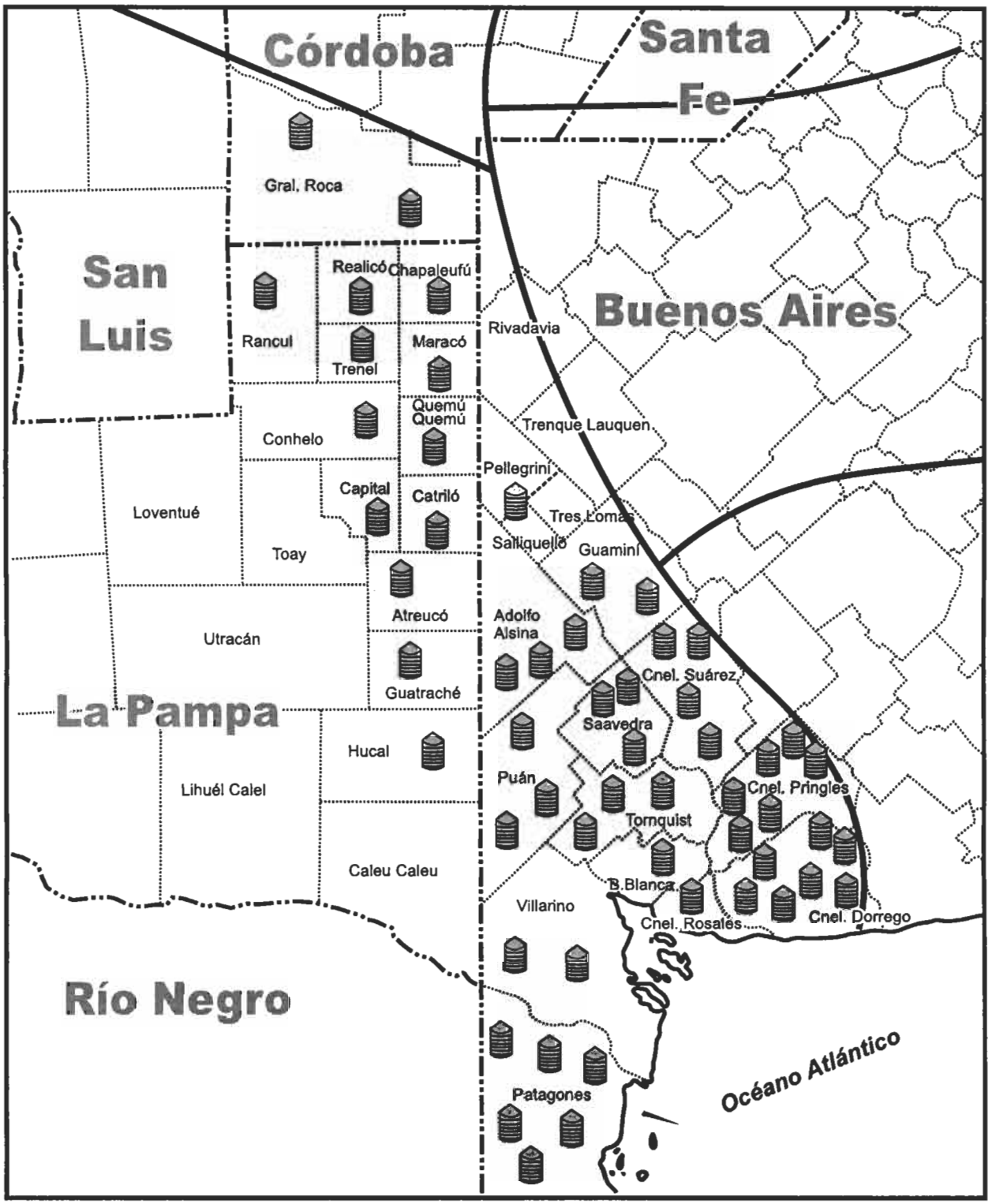
November 4th and 15th frosts also affected this area, depending on losses on cold intensity in each place and the phenologic state of cultivations, observing damages in a great area.

Plague or diseases were not observed during the year.

Technology applied to cultivations, such as fertilization and weed control is more generalized in direct sowing lots, as has been happening in the last years.

Due to yield average data of different areas within the sub-region VS, Province of Buenos Aires went back to 2001 to exceed 2047 kg/ha on average of this campaign, although District of Patagones, affected by the lack of rains in Spring, yielded only 510 kg/ha. In the Province of La Pampa yields were close to 2000 kg/ha, being the highest values of the last 10 years.

Subregion V South Wheat



Each reference represents near 4,000 tns sampled.

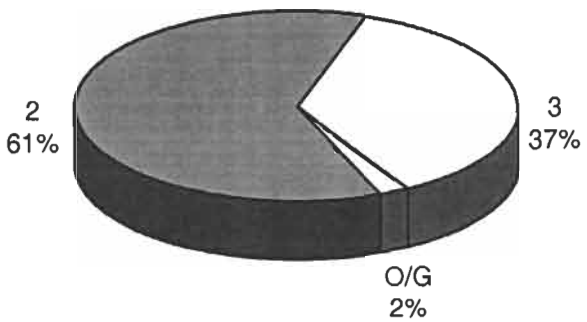
Results of the Analyses

Composite Samples by Locality. Averages were weighted by Tonnage.

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	79.70	84.85	81.97	1.10	0.01
Total Damaged Kernels (%)	0.00	0.30	0.11	0.09	0.80
Foreign Material (%)	0.14	1.48	0.62	0.28	0.45
Shrunken and Broken Kernels (%)	0.38	2.24	1.06	0.40	0.38
Yellow Berry Kernels (%)	0.00	7.80	2.22	1.94	0.88
Protein (13,5% Moisture) (%)	10.5	13.5	11.7	0.6	0.05
Weight of 1000 Kernels (gr.)	30.00	40.20	35.60	2.31	0.06
Ash (% dry basis)	1.604	1.910	1.767	0.076	0.04

Total damaged kernels includes 0.03% green kernels, 0.01% sprouted kernels and 0.07% germ-chewed kernels.

Grade Distribution



O/G: Out of Grade

Flour Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Wet Gluten (%)	23.7	32.6	27.9	2.1	0.08
	Dry Gluten (%)	8.2	11.3	9.6	0.7	0.08
	Falling Number (sec.)	375	470	430	22	0.05
	Flour Yield (%)	63.1	74.1	68.6	2.1	0.03
	Ash (dry basis) (%)	0.487	0.704	0.591	0.036	0.06
FARINOGRAM	Water Absorption (14 % H°) (%)	57.4	63.5	60.6	1.5	0.03
	Development Time (min.)	4.7	19.0	8.4	2.6	0.31
	Stability (min.)	7.2	41.2	17.8	8.8	0.49
	Degree of Softening (12 min.)	0	66	31	16	0.51
ALVEOGRAM	P (mm)	78	133	109	12	0.11
	L (mm)	62	112	84	13	0.15
	W Joules x 10^{-4}	250	446	327	44	0.13
	P / L	0.71	2.10	1.30	0.32	0.24

These results were elaborated with 57 composite samples prepared proportionally from 994 primary samples (farmer deliveries)

Subregion Data

In this subregion the wheat production was 3,319,290 tons., the 20.5% of the national total. Were sampled 198,677 tons., the 5.99% of the subregion production.

Subregion V South Wheat

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION			WHEAT ANALYSIS								
Sample Number	Locality, district or department	Tonnage	Grade	Test Weight (Kg/hl)	Total Damaged Kernels (%)	Foreign Material (%)	Shrunken and Broken Kernels (%)	Yellow Berry Kernels (%)	Protein (13.5 % Moisture) (%)	Weight of 1000 Kernels (gr.)	Ash (dry basis) (%)
700	Atreuco	4000	2	83.05	0.22	0.44	1.06	1.20	11.5	36.80	1.894
701	Capital (Sta. Rosa)	2002	2	84.85	0.06	0.28	0.90	3.60	11.2	36.80	1.761
703	Catriló	2000	2	81.70	0.16	0.28	1.12	0.30	10.9	34.30	1.713
704	Chapaleufú	2078	2	82.15	0.08	0.70	0.90	2.20	11.2	37.40	1.720
705	Conhelo	4065	3	83.25	0.12	0.60	1.22	6.20	11.2	40.20	1.832
707	Guatraché	4000	3	79.70	0.00	0.64	1.78	0.00	13.3	30.00	1.706
708	Hucal	4000	3	80.35	0.00	0.62	1.32	0.00	12.0	34.90	1.656
709	Maracó	2221	2	83.05	0.18	0.14	1.02	2.80	11.2	37.20	1.769
710	Quemu-Quemu	2301	2	83.25	0.12	0.38	0.40	2.40	11.5	39.30	1.845
711	Rancul	2082	2	82.40	0.10	0.48	0.62	6.80	11.1	37.40	1.887
712	Realicó	2248	2	83.05	0.12	0.44	0.78	3.20	11.0	36.80	1.880
713	Trenel	2001	3	83.95	0.12	0.40	1.42	2.60	10.7	35.10	1.868
714	Adolfo Alsina	4000	2	79.90	0.06	0.70	1.18	0.90	11.6	31.60	1.705
715	Adolfo Alsina	4000	2	81.25	0.00	0.44	0.68	1.10	11.6	37.60	1.756
716	Adolfo Alsina	4010	2	81.50	0.06	0.18	0.78	2.80	11.5	37.10	1.751
717	Adolfo Alsina	3573	2	80.80	0.14	0.20	0.88	0.30	12.0	36.70	1.767
718	Bahia Blanca	4001	3	82.60	0.00	0.58	1.44	2.60	10.7	35.00	1.811
719	Coronel Dorrego	3990	2	82.60	0.12	0.54	0.90	2.80	11.1	35.20	1.799
720	Coronel Dorrego	4000	2	81.25	0.12	0.54	0.92	3.40	11.3	34.30	1.712
721	Coronel Dorrego	4002	2	79.70	0.00	0.46	1.12	2.60	12.3	34.00	1.643
722	Coronel Dorrego	3931	2	82.15	0.00	0.52	0.80	2.20	11.5	36.50	1.700
723	Coronel Dorrego	3990	2	81.70	0.00	0.56	1.00	5.80	11.1	35.00	1.604
724	Coronel Dorrego	4000	2	82.15	0.00	0.60	0.80	3.80	13.5	34.10	1.654
725	Coronel Dorrego	3990	2	81.95	0.24	0.24	0.60	3.80	11.3	34.30	1.661
726	Coronel Pringles	4000	2	82.60	0.12	0.62	1.06	0.80	11.7	34.20	1.717
727	Coronel Pringles	4003	2	81.25	0.08	0.76	1.06	0.60	11.8	33.90	1.765
728	Coronel Pringles	4000	3	80.80	0.08	0.46	1.60	2.20	11.0	32.80	1.772
729	Coronel Pringles	4000	3	81.25	0.20	0.92	1.36	1.80	11.4	37.40	1.791
730	Coronel Pringles	4001	3	81.95	0.14	0.82	1.04	1.80	11.6	36.00	1.823

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION			WHEAT ANALYSIS								
Sample Number	Locality, district or department	Tonnage	Grade	Test Weight (Kg/hl)	Total Damaged Kernels (%)	Foreign Material (%)	Shrunken and Broken Kernels (%)	Yellow Berry Kernels (%)	Protein (13.5 % Moisture) (%)	Weight of 1000 Kernels (gr.)	Ash (dry basis) (%)
731	Coronel Pringles	2003	3	79,90	0,18	0,92	1,42	0,00	11,7	33,50	1,697
732	Coronel Rosales	1537	3	81,50	0,12	0,84	0,88	1,20	11,1	37,50	1,721
733	Coronel Suárez	3992	2	84,40	0,06	0,68	0,64	0,60	11,8	39,20	1,827
734	Coronel Suárez	4000	2	82,60	0,16	0,62	0,38	0,20	12,4	38,60	1,897
735	Coronel Suárez	4001	2	83,25	0,18	0,76	0,52	2,20	11,9	38,70	1,826
736	Coronel Suárez	4000	3	82,40	0,06	1,08	0,94	0,80	12,6	37,00	1,910
737	Guaminí	3836	2	81,95	0,00	0,34	0,78	0,40	11,8	39,90	1,714
738	Guaminí	2000	2	83,05	0,00	0,64	0,92	3,40	12,2	38,30	1,703
739	Patagones	4000	3	82,60	0,00	1,02	1,24	5,20	11,5	34,90	1,673
740	Patagones	4004	3	81,70	0,24	0,98	1,26	6,20	10,6	36,90	1,714
741	Patagones	4002	3	82,60	0,30	1,12	1,58	6,40	10,5	34,90	1,712
742	Patagones	2637	3	82,60	0,20	1,02	1,30	7,80	11,3	32,10	1,708
743	Patagones	4001	3	82,15	0,12	0,92	0,82	4,80	11,1	34,30	1,747
744	Patagones	2006	3	82,60	0,22	1,12	1,84	2,40	10,6	32,50	1,733
745	Pellegini-Salliqueló-Tres Lomas	4043	2	81,70	0,08	0,22	0,40	0,20	12,1	37,60	1,739
746	Puán	4000	3	81,95	0,10	1,48	1,22	0,80	12,4	36,00	1,818
747	Puán	4002	2	81,70	0,20	0,78	1,06	4,10	11,8	37,30	1,784
748	Puán	4000	2	81,70	0,16	0,66	0,88	0,40	11,9	35,70	1,822
749	Saavedra	4000	2	84,40	0,00	0,32	0,56	0,40	12,1	36,90	1,798
750	Saavedra	4100	2	83,25	0,06	0,46	0,66	0,80	11,5	38,40	1,887
751	Saavedra	2001	2	82,40	0,28	0,66	0,98	2,60	12,1	36,60	1,743
752	Tornquist	4000	3	80,80	0,06	0,64	1,72	0,60	12,8	30,90	1,872
753	Tornquist	4017	3	82,15	0,12	0,68	1,74	0,20	11,9	32,80	1,890
754	Tornquist	2000	2	82,60	0,18	0,62	1,04	0,90	12,0	35,10	1,814
755	Villarino	4006	O/G	81,50	0,10	1,04	2,24	0,90	12,5	32,60	1,812
756	Villarino	4000	3	81,70	0,00	0,64	1,80	1,60	11,7	32,10	1,805
757	General Roca (Córdoba)	4000	2	80,35	0,28	0,18	1,06	2,60	11,3	34,20	1,736
758	General Roca (Córdoba)	4000	2	81,05	0,24	0,22	0,68	1,10	11,3	36,00	1,642

Subregion V South Wheat

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION		FLOUR ANALYSIS												
						FARINOGRAM				ALVEOGRAM				
Sample Number	Locality, district or department	Wet Gluten (%)	Dry Gluten (%)	Falling Number (sec.)	Flour Yield (%)	% WA (14 % H°)	D. T. (min.)	Stability (min.)	Degree Softening (12 min.)	P	L	W	P/L	Ash (dry basis) (%)
700	Atreuco	27.6	9.5	431	67.2	61.4	7.4	14.7	27	107	80	297	1.34	0.625
701	Capital (Sta. Rosa)	24.5	8.6	406	70.2	62.6	5.8	9.6	57	112	77	305	1.45	0.704
703	Catriló	29.2	10.0	436	70.7	59.8	5.7	9.5	54	91	96	298	0.95	0.584
704	Chapaleufú	26.5	9.3	430	70.1	59.7	10.4	17.3	21	118	66	299	1.79	0.559
705	Conhelo	26.2	9.0	438	69.1	60.8	8.2	16.7	24	117	63	280	1.86	0.614
707	Guatraché	32.6	11.3	465	69.3	63.2	9.0	26.0	21	121	98	430	1.23	0.639
708	Hucal	32.2	11.3	448	70.5	61.4	13.5	19.2	27	100	98	352	1.02	0.560
709	Maracó	27.1	9.3	454	68.9	60.8	7.8	13.1	40	119	67	298	1.78	0.579
710	Quemu-Quemu	28.0	9.5	434	68.7	62.9	8.3	14.1	30	120	79	344	1.52	0.602
711	Rancul	25.6	8.7	441	71.1	61.7	7.5	19.6	18	130	62	302	2.10	0.648
712	Realicó	26.1	8.9	452	68.4	61.1	6.9	14.1	30	122	62	299	1.97	0.597
713	Trenel	25.8	8.8	427	68.8	61.7	7.6	12.8	31	122	68	313	1.79	0.651
714	Adolfo Alsina	29.1	9.9	432	70.6	57.9	7.0	13.0	39	91	90	307	1.01	0.632
715	Adolfo Alsina	26.9	9.4	419	68.4	60.8	6.2	12.8	35	111	73	303	1.52	0.599
716	Adolfo Alsina	29.8	10.2	387	71.2	61.4	7.3	10.1	45	105	91	322	1.15	0.487
717	Adolfo Alsina	28.1	9.6	427	70.9	62.5	8.0	13.3	32	116	81	327	1.43	0.630
718	Bahia Blanca	24.0	8.3	425	66.9	58.9	9.1	16.0	25	107	77	312	1.39	0.589
719	Coronel Dorrego	25.5	8.8	435	69.1	59.5	9.5	31.1	16	119	67	306	1.78	0.602
720	Coronel Dorrego	26.0	9.0	453	68.7	59.0	9.6	34.0	8	113	78	330	1.45	0.608
721	Coronel Dorrego	28.0	9.6	462	70.4	57.4	9.5	18.2	27	94	83	299	1.13	0.546
722	Coronel Dorrego	28.2	9.7	451	68.0	59.1	11.0	32.8	14	114	76	339	1.50	0.554
723	Coronel Dorrego	26.7	9.0	434	66.3	57.7	12.4	32.6	10	106	66	278	1.61	0.526
724	Coronel Dorrego	25.2	8.6	414	68.3	58.2	8.3	36.8	14	119	71	338	1.68	0.551
725	Coronel Dorrego	27.3	9.3	405	68.4	59.2	10.4	41.2	1	121	71	334	1.70	0.556
726	Coronel Pringles	28.4	9.8	430	67.1	60.8	7.7	14.8	30	116	88	381	1.32	0.611
727	Coronel Pringles	28.6	9.9	396	67.2	61.9	8.6	26.4	0	126	79	373	1.59	0.597
728	Coronel Pringles	25.5	8.8	375	66.8	58.3	8.1	18.0	26	108	80	319	1.35	0.573
729	Coronel Pringles	26.0	8.8	460	70.8	58.7	6.7	11.9	46	90	87	270	1.03	0.617
730	Coronel Pringles	27.7	9.4	430	70.2	58.7	6.7	11.0	40	114	86	332	1.33	0.613

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION		FLOUR ANALYSIS												
						FARINOGRAM				ALVEOGRAM				
Sample Number	Locality, district or department	Wet Gluten (%)	Dry Gluten (%)	Falling Number (sec.)	Flour Yield (%)	% WA (14 % H°)	D. T. (min.)	Stability (min.)	Degree Softening (12 min.)	P	L	W	P/L	Ash (dry basis) (%)
731	Coronel Pringles	28.1	9.5	452	71.6	58.2	6.5	9.2	57	80	112	291	0.71	0.595
732	Coronel Rosales	24.9	8.7	441	66.6	61.6	8.8	28.9	14	132	70	357	1.89	0.605
733	Coronel Suárez	29.8	10.1	404	65.8	62.4	6.8	11.3	37	105	85	320	1.24	0.616
734	Coronel Suárez	31.4	10.7	395	65.5	62.1	5.5	7.7	49	96	95	308	1.01	0.630
735	Coronel Suárez	29.2	9.9	439	71.5	61.9	7.5	11.5	34	99	90	293	1.10	0.567
736	Coronel Suárez	31.6	10.6	467	72.5	61.7	6.2	7.5	62	78	106	250	0.74	0.568
737	Guaminí	29.3	9.9	411	70.3	62.3	5.9	8.6	53	97	90	284	1.08	0.597
738	Guaminí	29.5	10.2	453	74.1	60.4	5.7	7.2	64	83	108	286	0.77	0.595
739	Patagones	28.2	9.9	411	64.3	62.2	9.5	19.7	15	124	91	403	1.36	0.610
740	Patagones	25.4	8.6	419	66.8	60.8	8.5	30.4	10	119	71	317	1.68	0.582
741	Patagones	23.7	8.2	378	66.0	60.7	9.5	18.5	26	127	63	313	2.02	0.621
742	Patagones	28.0	9.6	437	68.8	61.3	6.2	16.2	29	103	95	327	1.08	0.538
743	Patagones	26.7	9.0	427	70.3	61.8	7.3	10.7	45	117	77	323	1.52	0.551
744	Patagones	25.1	8.5	433	66.8	62.0	4.7	8.2	66	114	78	305	1.46	0.612
745	Pellegini-Salliqueló-T res Lomas	29.5	10.1	433	71.6	59.8	6.4	14.4	32	108	92	352	1.17	0.553
746	Puán	29.6	10.1	414	63.1	61.0	19.0	28.9	14	108	101	390	1.07	0.583
747	Puán	27.9	9.5	406	66.3	60.7	5.7	9.6	46	90	93	270	0.97	0.606
748	Puán	29.0	9.9	443	66.5	61.2	6.0	8.5	57	94	90	294	1.04	0.583
749	Saavedra	28.4	10.0	437	69.3	61.6	12.5	29.5	16	113	105	440	1.08	0.585
750	Saavedra	27.2	9.3	429	69.4	62.5	7.2	15.7	24	121	85	361	1.42	0.616
751	Saavedra	30.2	10.2	438	70.0	59.7	6.0	8.8	64	90	89	288	1.01	0.593
752	Tornquist	31.2	10.8	470	69.9	63.5	14.7	30.7	10	133	91	446	1.46	0.604
753	Tornquist	27.8	9.8	459	68.5	60.3	5.8	10.1	48	95	90	300	1.06	0.634
754	Tornquist	28.9	9.8	448	67.9	61.6	6.5	10.2	45	103	100	338	1.03	0.681
755	Villarino	30.9	10.8	458	69.5	61.3	9.4	16.1	36	108	111	401	0.97	0.579
756	Villarino	28.7	9.8	419	64.2	60.4	7.9	12.8	42	108	94	357	1.15	0.588
757	General Roca (Córdoba)	25.3	8.7	425	68.1	58.8	7.9	13.3	42	107	70	287	1.53	0.574
758	General Roca (Córdoba)	25.7	8.7	441	68.6	58.9	10.9	17.4	25	117	67	316	1.75	0.527

Nortwest of the Country (NOA)
Background for the crop

In this last campaign, wheat sowed area in Tucuman Province was of 216,280 ha, somewhat lower than 2006 campaign. Sowing period started during the last days of April up to the first days of June, depending on soy harvest.

At sowing, hydric contents varied in the different zones and in some lots implantation was compromised.

Plagues present in this campaign were mites and leaf and spike aphids, plus important attacks of Spodoptera and soil cutworms when starting, which in some cases was necessary to re-sow some lots.

With respect to foliar diseases, Yellow Spot was observed early, with marked symptoms in more sensitive varieties, whereas Leaf Rust was not significant even in sensitive cultivars.

2007 campaign had low temperatures during almost all the cycle, together with frosts of variable intensity and length depending on the zone, which affected the cultivation more or less depending on when they took place. Besides, there were practically no hydric relevant contributions during cultivation critical stage.

Hence, final yields varied, being able to harvest up to 2,000 kg/ha, approximately, in less damaged areas, or total loss of lots in marginal areas mainly in the East of the Province.

Northeast of the Country (NEA)
Background for the crop

In the North East of Argentina 2007 campaign suffered from a serious hydric deficit from January to September. Sowings started in May, with long cycle varieties, continued during the end of May and the start of June with short and intermediate cycle cultivars and ended up at the beginning of July with shot cycle cultivars.

Long cycle early sowings (May) started with little humidity which prevented cultivation from having a good emergence. However, during June rains were abundant (even exceeding the 80-year 48-ml media) which favored short and intermediate cycle wheat implantations. During July, August and September rains were scarce (less than the 80-year mean), affecting the normal growth and development. During jointing and heading critical stages, cultivation tolerated the hydric deficit.

Average temperatures were lower than 2006 campaign, which turned out in more fertile stalks per area unit and an enlargement of approximately 10 days during emergence and heading stages.

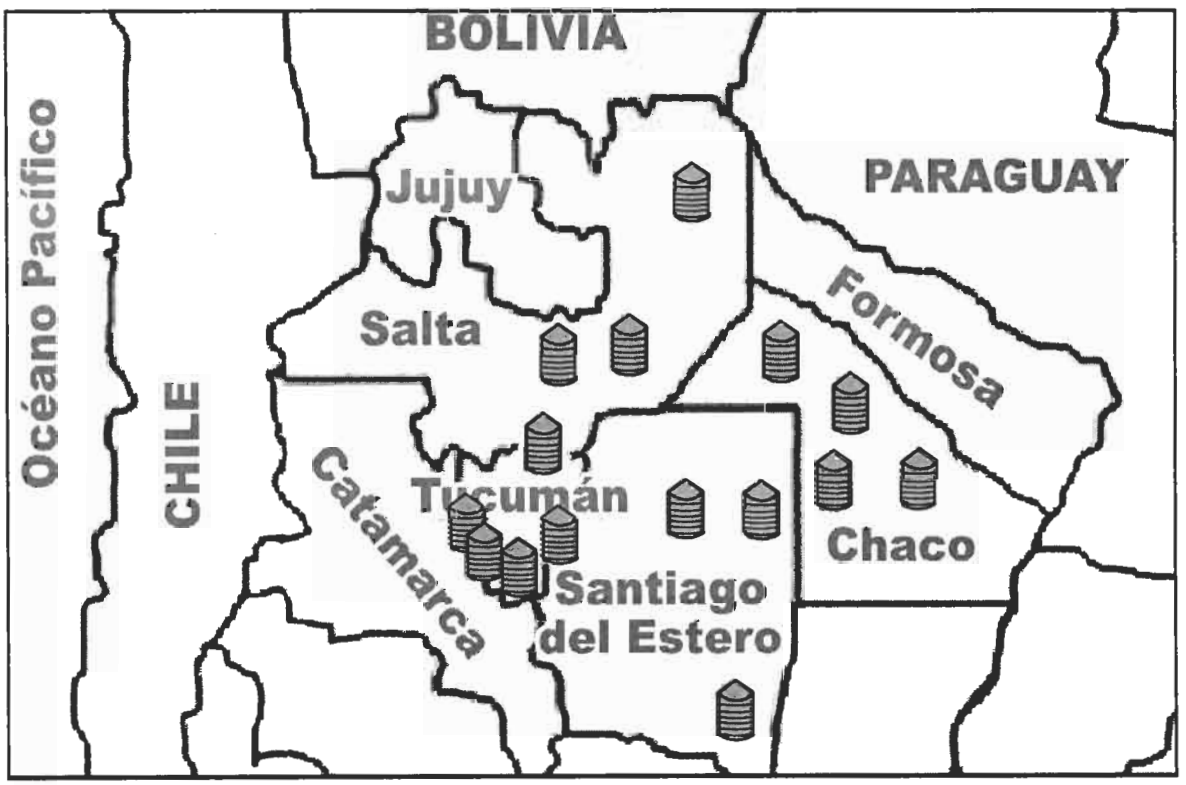
Maximum and minimum temperatures, during the first part of the grain filling process were lower than the previous campaign, mainly maximum temperatures, giving a normal grain filling rate and the length of such period was similar in both campaigns (2006-2007). Late frost of September 5th, 7th, 10th, 11th and 27th damaged cultivations since they were at the grain filling stage (short and intermediate cycles). Instead, damaged produced to long cycles was less important, since they were at the last stage of grain filling. Sun radiation was not limiting.

Diseases having a higher impact were Leaf Rust (Puccinia triticina) and Septoria Leaf Spot (Septoria tritici). In some areas, Spike Fusariosis (Fusarium sp.) was detected.

In Chaco Province, the sowed area was of 18,150ha. In this area of the country, yields were low from 1,000 kg/ha and 1,600-1,800 kg/ha on average. The lack of humidity in the soil was the key factor that prevented from obtaining higher yields. However, in some high technology productions, yields of 3,000-3,200 kg/ha were achieved.

NOA
NEA
Wheat

North of the Country



Each reference represents near 4,000 tns sampled.

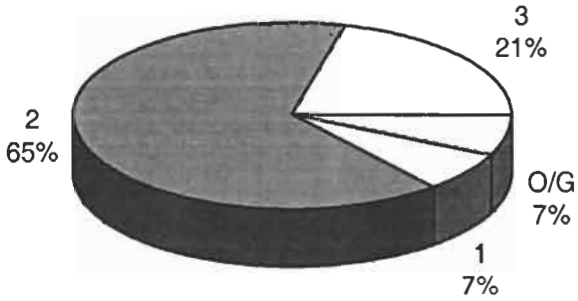
Results of the Analyses

Composite Samples by Locality. Averages were weighted by Tonnage.

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	76.50	83.50	80.84	1.74	0.02
Total Damaged Kernels (%)	0.00	0.60	0.26	0.17	0.65
Foreign Material (%)	0.13	1.64	0.62	0.46	0.74
Shrunken and Broken Kernels (%)	0.30	1.32	0.71	0.27	0.37
Yellow Berry Kernels (%)	0.00	6.04	1.12	1.83	1.63
Protein (13,5% Moisture) (%)	9.7	14.0	11.6	1.1	0.09
Weight of 1000 Kernels (gr.)	29.99	34.90	32.29	1.45	0.04
Ash (% dry basis)	1.586	1.960	1.759	0.087	0.05

Total damaged kernels includes 0,02% heat damaged kernels, 0,04% green kernels, 0,07% frosty kernels, 0,07% calcinated kernels, 0,04% insect chewed kernels and 0,03% germ-chewed kernel.

Grade Distribution



O/G: Out of Grade

Flour Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Wet Gluten (%)	21,8	35,2	27,6	4,2	0,15
	Dry Gluten (%)	7,5	13,0	10,0	1,7	0,17
	Falling Number (sec.)	334	449	390	39	0,10
	Flour Yield (%)	66,5	72,0	69,8	1,3	0,02
	Ash (dry basis) (%)	0,550	0,750	0,639	0,060	0,09
FARINOGRAM	Water Absorption (14 % H°) (%)	57,3	64,9	61,5	2,6	0,04
	Development Time (min.)	2,0	9,7	7,2	2,0	0,27
	Stability (min.)	1,7	12,7	10,0	2,5	0,25
	Degree of Softening (12 min.)	45	172	71	29	0,41
ALVEOGRAM	P (mm)	79	150	110	15	0,14
	L (mm)	48	105	76	17	0,22
	W Joules x 10^{-4}	157	400	283	60	0,21
	P / L	1,05	3,13	1,46	0,49	0,32

These results were elaborated with 15 composite samples prepared proportionally from 205 primary samples (farmer deliveries)

Subregion Data

In this subregion the wheat production was 445,100 tons., the 2.7% of the national total. Were sampled 60,370 tons., the 13.56% of the subregion production.

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION			WHEAT ANALYSIS									
Sample Number	Locality, district or department	Tonnage	Grade	Test Weight (Kg/hl)	Total Damaged Kernels (%)	Foreign Material (%)	Shrunken and Broken Kernels (%)	Yellow Berry Kernels (%)	Protein (13.5 % Moisture) (%)	Weight of 1000 Kernels (gr.)	Ash (dry basis) (%)
1	Anta	4000	3	78,60	0,12	1,42	0,31	6,04	10,8	31,10	1,807
2	Anta	4000	3	83,50	0,00	0,13	1,32	0,27	12,1	29,99	1,799
3	Burruyacu	4000	2	81,05	0,27	0,37	0,51	2,42	12,3	32,16	1,737
4	Burruyacu	4000	2	81,50	0,34	0,55	0,81	1,60	12,2	31,47	1,789
5	Metan / Rosario de la Frontera	4000	2	78,60	0,10	0,80	0,68	4,44	11,7	32,50	1,725
6	Tucuman	4000	2	82,15	0,20	0,44	0,80	2,12	11,9	30,10	1,729
7	Cruz Alta	4000	2	81,50	0,00	0,29	0,48	0,00	12,6	31,23	1,724
8	Leales	4000	2	80,35	0,51	0,66	0,75	0,00	14,0	32,58	1,754
9	Santiago del Estero	4000	3	81,50	0,42	1,20	1,04	0,00	9,7	32,00	1,586
10	Santiago del Estero	4000	2	82,10	0,30	0,20	0,80	0,00	10,8	33,80	1,692
11	Santiago del Estero	4000	2	81,50	0,30	0,20	0,80	0,00	10,7	33,80	1,786
12	Chaco	4000	2	80,50	0,60	0,60	0,80	0,00	11,2	33,70	1,884
13	Chaco	4000	1	81,20	0,10	0,20	0,30	0,00	10,6	34,10	1,728
14	Chaco	4000	2	82,40	0,35	0,50	0,40	0,00	10,5	34,90	1,661
15	Chaco	4370	O/G	76,50	0,34	1,64	0,84	0,00	12,4	31,10	1,960

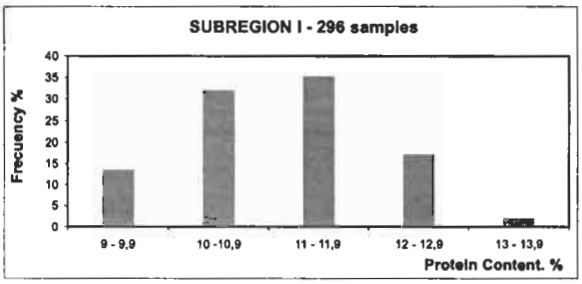
Appendix of Locality Composite Samples.

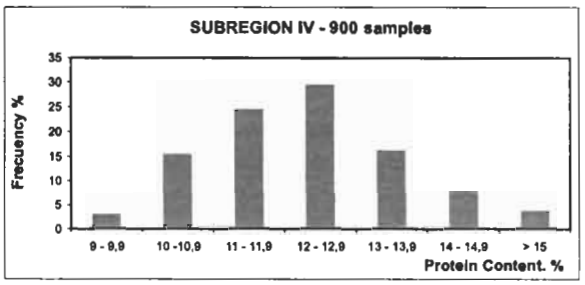
SAMPLE IDENTIFICATION		FLOUR ANALYSIS												
						FARINOGRAM				ALVEOGRAM				
Sample Number	Locality, district or department	Wet Gluten (%)	Dry Gluten (%)	Falling Number (sec.)	Flour Yield (%)	% WA (14 % H°)	D. T. (min.)	Stability (min.)	Degree Softening (12 min.)	P	L	W	P/L	Ash (dry basis) (%)
1	Anta	21,8	8,1	355	69,9	61,9	7,7	10,9	63	116	65	268	1,78	0,713
2	Anta	30,0	11,1	449	69,2	64,9	7,2	8,3	79	114	105	363	1,09	0,660
3	Burruyacu	31,9	11,8	362	70,9	62,5	9,7	11,1	83	119	78	310	1,53	0,645
4	Burruyacu	32,8	12,1	334	69,8	63,8	6,7	9,7	77	118	67	275	1,76	0,705
5	Metan / Rosario de la Frontera	29,4	10,9	343	72,0	60,9	9,0	11,4	60	97	92	291	1,05	0,563
6	Tucuman	28,5	10,6	350	70,2	63,6	5,3	12,7	51	150	48	289	3,13	0,617
7	Cruz Alta	32,1	11,9	438	70,2	63,0	9,5	10,2	81	114	93	337	1,23	0,616
8	Leales	35,2	13,0	444	68,1	64,7	9,7	9,7	72	109	102	347	1,07	0,720
9	Santiago del Estero	23,7	8,8	401	70,6	64,3	2,0	1,7	172	79	61	157	1,30	0,597
10	Santiago del Estero	22,5	8,8	404	69,9	58,4	6,0	10,5	55	112	59	240	1,90	0,550
11	Santiago del Estero	24,3	8,4	428	66,5	58,2	7,4	12,1	45	105	68	259	1,54	0,585
12	Chaco	25,2	8,5	386	68,4	58,7	5,9	9,2	63	103	67	241	1,54	0,670
13	Chaco	22,9	7,5	392	69,7	57,3	6,6	9,6	59	96	66	223	1,45	0,580
14	Chaco	23,8	8,1	426	70,1	58,0	6,7	11,1	49	101	68	239	1,49	0,610
15	Chaco	30,1	10,4	349	71,5	62,8	8,6	11,2	62	119	93	400	1,28	0,750

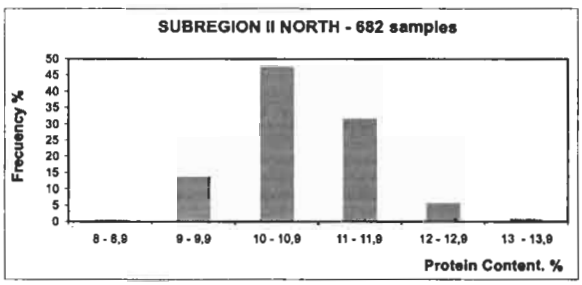
Protein Content Wheat

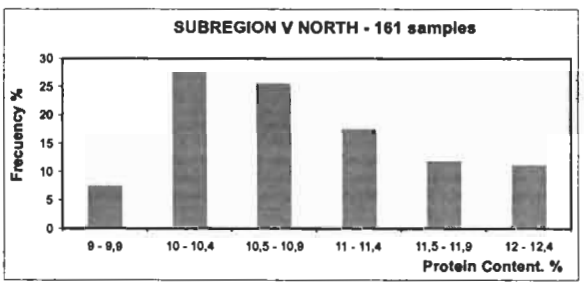
Protein Content

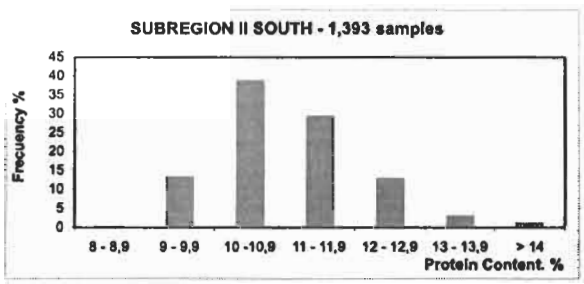
Distribution by ranges
Results obtained on 5,176 Primary Samples

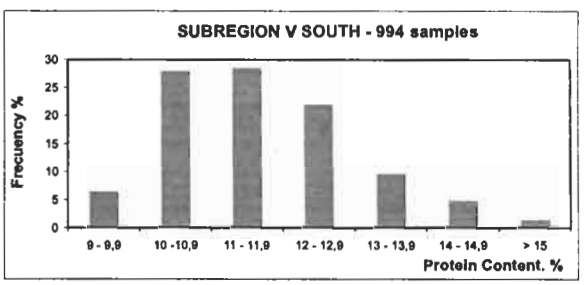


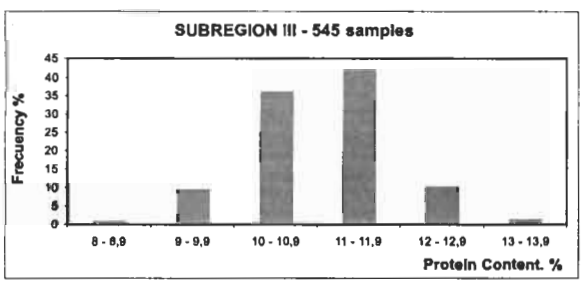


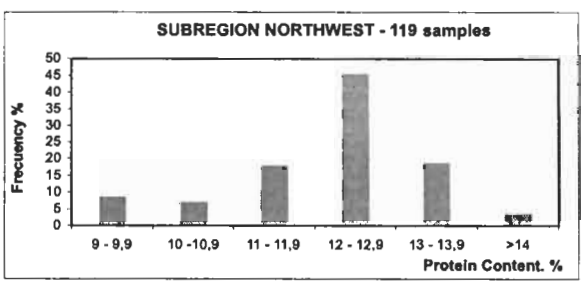


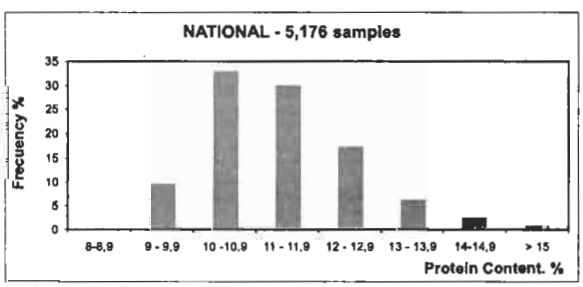


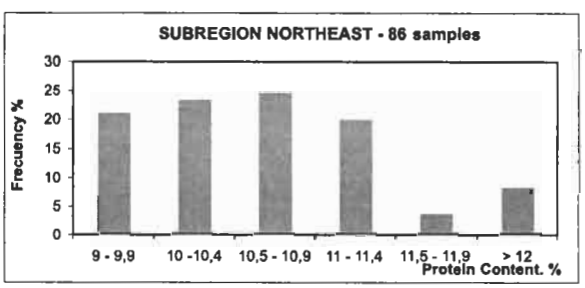












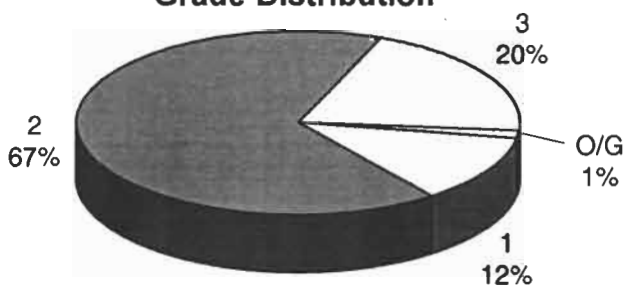
Wheat National Averages

Results of the Analyses

Composite Samples by Locality. Averages were weighted by Tonnage.

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	75,45	84,85	81,18	1,39	0,02
Total Damaged Kernels (%)	0,00	3,32	0,42	0,49	1,16
Foreign Material (%)	0,04	1,80	0,43	0,29	0,67
Shrunken and Broken Kernels (%)	0,09	2,24	0,79	0,38	0,48
Yellow Berry Kernels (%)	0,00	7,80	1,28	1,55	1,21
Protein (13,5% Moisture) (%)	9,7	14,0	11,4	0,8	0,07
Weight of 1000 Kernels (gr.)	25,75	40,20	34,60	2,35	0,07
Ash (% dry basis)	1,534	2,310	1,776	0,121	0,07

Grade Distribution



O/G: Out of Grade

Flour Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Wet Gluten (%)	19,8	36,4	27,1	3,2	0,12
	Dry Gluten (%)	7,0	13,4	9,5	1,3	0,13
	Falling Number (sec.)	295	509	408	42	0,10
	Flour Yield (%)	63,1	74,1	69,0	2,0	0,03
	Ash (dry basis) (%)	0,487	0,760	0,609	0,047	0,08
FARINOGRAM	Water Absorption (14 % H°) (%)	56,6	66,3	60,1	1,8	0,03
	Development Time (min.)	2,0	29,5	7,8	2,8	0,36
	Stability (min.)	1,7	41,2	14,1	6,1	0,43
	Degree of Softening (12 min.)	0	172	47	20	0,43
ALVEOGRAM	P (mm)	64	167	106	15	0,14
	L (mm)	39	169	80	20	0,25
	W Joules x 10-4	157	446	292	50	0,17
	P / L	0,38	3,63	1,34	0,54	0,40

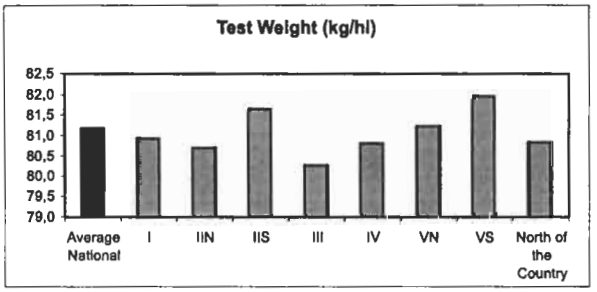
Weighting basis: Tonnage of the production sampled by Subregion, according to chart data on page 7.

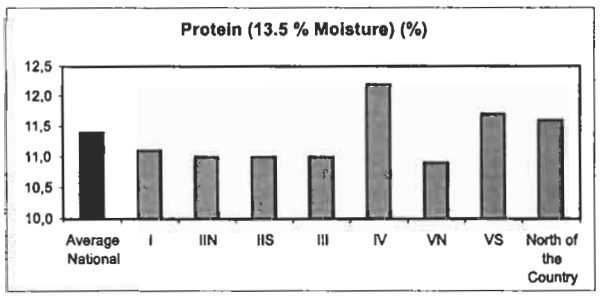
National Averages Wheat

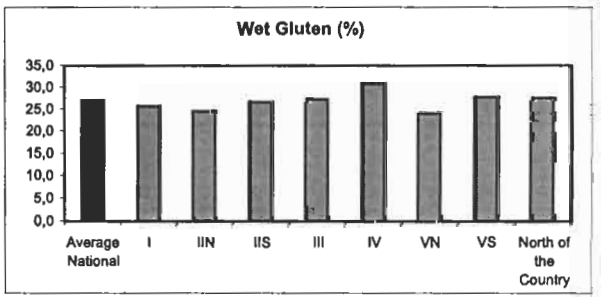
Wheat National and Subregions Averages

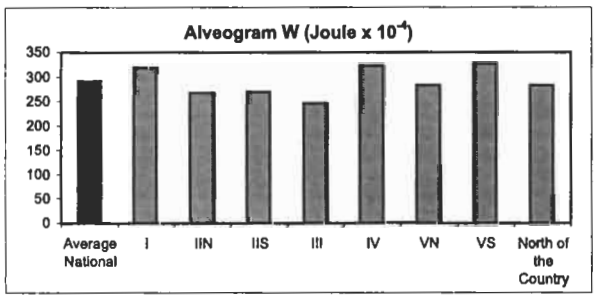
Comparative Graphics

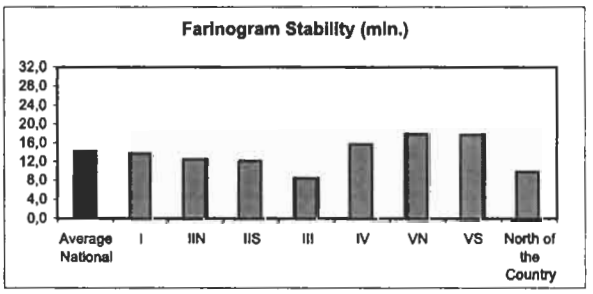
Composite Samples by Locality. Averages were weighted by Tonnage.











Statistical Analysis. 2007/2008 Crop

By Agr. Eng. (Ms.Sci.) Nelly Salomón, Agronomy Department, Universidad Nacional del Sur

Mean Comparison among Subregions:

An analysis of the variation of the measured data was carried out (ANOVA) among the wheat subregions. Taking into account that the amount of points of sampling was different in each subregion (unbalanced), a comparison test of means was applied that permits to compare them although they are based on different number of data.

The obtained results are reliable because we could demonstrate if there were differences among the subregions with a very small experimental error. This was due to the fact that the averages were calculated with a high sampling intensity.

The interpretation of the results should be carried out observing the letters that figure to the right of each value in the variables. Those subregions named with the same letter did not show any significant difference.

All the opposing difference have a probable error of 5 %. All the likeness was accepted with a level of confidence close to 50 %.

Subreg.	N° Samples	Test Weight		Subreg.	Total Damaged Kernels		Subreg.	Foreign Material		Subreg.	Shrunken and Broken Kernels	
V South	57	82.05	a	IV	0.09	a	II North	0.26	a	II South	0.54	a
II South	52	81.66	ab	V South	0.11	ab	V North	0.30	a	IV	0.66	ab
V North	23	81.33	abc	North count.	0.26	abc	II South	0.34	ab	North count.	0.71	ab
I	15	80.95	abc	II North	0.39	bcd	I	0.40	abc	II North	0.71	ab
North count.	15	80.86	bc	V North	0.46	cde	III	0.45	abc	V North	0.89	bc
IV	49	80.82	bc	II South	0.68	de	IV	0.54	bc	III	1.04	c
II North	54	80.71	bc	I	0.70	e	North count.	0.61	c	V South	1.06	c
III	18	80.22	c	III	1.60	f	V South	0.62	c	I	1.11	c

Subreg.	Yellow Berry Kernels		Subreg.	Protein		Subreg.	Weight 1000 Kernels		Subreg.	Ash	
II North	0,05	a	IV	12,2	a	IV	35,91	a	II South	1,699	a
V North	0,14	ab	V South	11,6	b	V South	35,66	ab	IV	1,746	ab
I	0,78	ab	North count.	11,6	bc	II South	35,54	ab	North count.	1,757	ab
IV	0,92	ab	I	11,1	bcd	II North	34,26	b	II North	1,766	ab
III	1,00	ab	III	11,1	cd	V North	34,10	b	V South	1,767	ab
North count.	1,13	b	II South	11,0	d	North count.	32,30	c	III	1,806	b
V South	2,27	c	II North	11,0	d	III	31,83	c	V North	1,934	c
II South	2,78	c	V North	10,8	d	I	31,18	c	I	1,939	c

Subreg.	Wet Gluten		Subreg.	Dry Gluten		Subreg.	Falling Number		Subreg.	Flour Yield	
IV	30,8	a	IV	11,0	a	I	368	a	I	70,9	a
V South	27,8	b	North count.	10,0	b	II South	372	a	North count.	69,8	ab
North count.	27,6	b	II South	9,9	b	North count.	391	a	II South	69,7	ab
III	27,4	b	V South	9,5	bc	II North	393	a	III	69,3	b
II South	26,7	b	III	9,3	bc	V North	429	b	IV	69,2	b
I	25,9	bc	I	8,9	cd	V South	431	b	V North	69,2	b
II North	24,6	c	II North	8,3	d	III	433	b	V South	68,7	bc
V North	23,8	c	V North	8,3	d	IV	440	b	II North	67,5	c

Statistical Analysis Wheat

Subreg.	Water Absorption (%)		Subreg.	D.T. (min.)		Subreg.	Stability (min.)		Subreg.	Degree Softening	
North count.	61,5	a	V North	9,0	a	V North	18,2	a	North count.	71	a
III	61,0	a	IV	9,0	a	V South	17,2	ab	III	65	ab
II South	60,8	a	I	8,6	a	IV	16,0	abc	II South	58	ab
V South	60,7	ab	V South	8,2	ab	I	14,3	abcd	I	51	bc
I	60,5	ab	II North	7,4	ab	II North	12,5	bcde	II North	51	bc
V North	60,2	ab	North count.	7,2	ab	II South	12,2	cde	IV	39	cd
IV	59,3	bc	II South	6,8	ab	North count.	10,0	de	V South	32	d
II North	58,8	c	III	6,0	b	III	8,6	e	V North	30	d

Subreg.	P		Subreg.	L		Subreg.	W		Subreg.	P/L	
V North	119	a	V North	65	d	V South	325	a	IV	0,94	a
II South	114	ab	II South	69	cd	IV	323	a	III	1,12	ab
I	112	ab	II North	71	bcd	I	320	ab	V South	1,35	bc
North count.	110	ab	North count.	75	bcd	V North	284	bc	I	1,49	bcd
V South	109	ab	I	79	bc	North count.	283	cd	North count.	1,54	cd
II North	107	b	III	81	bc	II South	269	cd	II North	1,57	cde
IV	94	c	V South	84	b	II North	267	cd	II South	1,81	de
III	90	c	IV	104	a	III	246	d	V North	1,94	e

Subreg.	Flour Ash	
V South	0,594	a
IV	0,597	ab
II South	0,602	abc
III	0,614	abc
II North	0,615	abc
V North	0,637	bc
I	0,639	c
North count.	0,639	c

Analysis of Variables by Ranges

The charts show the summary of an analysis carried out to four variables: protein in grain, wet gluten, strength measured by Alvegraph and Farinograph stability.

Each variable was divided in ranges (first column), they were calculated the averages of each range corresponding to each one of the remaining variables (central column), the percentages are also shown from each range to national level.

PROTEIN RANGE	Average Gluten W Stability	% Country
< 10	23.2 220 9.1	1.07
10 - 10,9	24.8 267 12.8	33.92
11,0 --11,9	**26.9** **293** **14.7**	**44.52**
12,0 - 12,9	31.0 345 15.4	16.25
13,0 - 14,0	33.0 328 14.7	4.24

WET GLUTEN RANGE	Average Protein W Stability	% Country
21 - 24,9	10.8 264 13.8	28.01
25 - 27,9	**11.1** **284** **14.3**	**36.52**
28 - 31,9	11.8 322 14.3	25.89
32 - 34,9	12.7 331 14.3	7.45
> 35,0	13.2 338 11.2	2.13

Alveograph W RANGE	Average Gluten Protein Stability	% Country
190 - 249	25.3 10.9 10.1	17.73
250 - 299	**26.3** **11.2** **12.9**	**42.76**
300 - 349	28.2 11.6 15.9	26.86
350 - 400	29.6 12.1 19.3	8.83
> 400	30.3 12.3 22.9	3.53

Farinograph STABILITY RANGE	Average Gluten Protein W	% Country
1 - 9,9	27.3 11.3 247	21.43
10,0 - 19,9	**27.1** **11.4** **298**	**67.14**
20 - 29,9	26.0 11.6 329	7.14
30 - 39,9	27.5 11.7 349	3.93
40 - 49,9	27.3 11.3 334	0.36

Subregion Composite Samples Wheat

Composite Sample of each Subregion

Results of the Analyses

Along with the analisis of samples corresponding to different localities, a further evaluation was performed in order to analyze Composite Samples of each Subregion directly, which were made proportionally from the composite samples corresponding to each locality, such as it is detailed in Organization and Methodology.

		Subregions									Pondered Average	Average last Quinquenio
		I	II N	II S	III	IV	V N	V S	NEA	NOA		
WHEAT	Test Weight (kg/hl)	81.4	81.4	82.6	80.3	80.55	81.25	81.70	82.10	81.50	81.47	80.74
	Weight of 1000 Kernels (gr.)	30.90	35.60	35.59	32.40	35.92	33.90	35.20	35.20	30.90	34.86	34.71
	Ash (dry basis) (%)	1.880	1.820	1.577	1.880	1.755	1.800	1.742	1.744	1.971	1.755	1.775
	Protein (13.5% Moisture) (%)	11.1	10.9	11.1	11.1	12.2	10.5	11.6	10.8	11.8	11.3	11.2
MILLING	Flour Yield (%)	69.4	69.0	68.7	69.5	68,8	70.4	70.2	70.2	68.5	69.3	69.1
	Ash (dry basis) (%)	0.631	0.616	0.564	0.601	0.571	0.682	0.591	0.618	0.619	0.599	0.575
FLOUR	Moisture (%)	12.8	12.6	13.0	12.3	13.1	13.8	12.2	13.7	13.7	12.8	13.7
	Wet Gluten (%)	27.7	25.1	25.2	26.9	30.4	24.9	28.1	24.4	28.1	26.9	25.8
	Dry Gluten (%)	9.4	8.3	8.8	9.2	10.2	8.2	9.3	8.1	9.2	9.0	9.2
	Index Gluten (%)	98	88	98	75	96	97	96	98	88	93	97 *
	Falling Number (sec.)	441	357	373	480	437	413	450	474	362	411	372
	Zeleny Test (cc)	44	35	40	36	45	37	40	34	35	39	37
	FARINOGRAM											
	Water Absorption (%)	59.8	60.4	59.6	60.0	58.4	59.7	58.6	59.2	62.0	59.5	59.1
	Development Time (min.)	7.3	7.2	6.0	5.0	7.5	6.4	7.5	5.3	5.3	6.8	8.2
	Stability (min.)	13.1	9.2	8.8	8.6	14.7	12.9	15.3	11.9	12.3	11.8	15.5
	Degree of Softening	43	58	48	61	30	36	32	37	38	43	35
	Quality Number	156	108	110	108	215	158	186	150	149	150	196 **
	MIXOGRAM											
	Development Time (min.)	4.38	4.22	4.26	3.35	5.47	4.43	5.19	4.53	4.62	4.62	4.78
	ALVEOGRAM											
	P (mm)	96	87	104	75	88	97	76	81	109	89	100
	L (mm)	85	75	68	104	94	77	112	84	75	86	83
	G	20.5	19.3	18.4	22.7	22	19.5	23.6	20.4	19.3	21	20 **
	W (Joules x 10^{-4})	292	234	266	239	292	271	286	236	297	268	296
	P/L	1.13	1.16	1.53	0.72	0.94	1.26	0.68	0.96	1.45	1.09	1.26
	Ie %	58.9	56.5	57.3	53.1	61.2	58.6	59.7	56.9	57.6	58.2	59.9 *
	BAKING											
	Absoprtion (%)	62.0	60.0	62.0	61.0	62.0	62.0	62.0	61.0	62.0	61.5	62.3
	Development Time (min.)	3' 00	2' 30	3' 00	3' 00	3' 15	3' 00	3' 00	3' 00	3' 00	3' 00	3' 00
	Fermentation Time (min.)	160'	160'	160'	160'	160'	160'	160'	160'	160'	160'	160'
	Loaf Volume (cc)	635	600	640	630	698	640	625	625	615	638	679
	Specific Volume	4.7	4.4	4.7	4.6	5.1	4.7	4.6	4.7	4.6	4.7	5.0

*** Average based in 3 dates**
**** Average based in 4 dates**

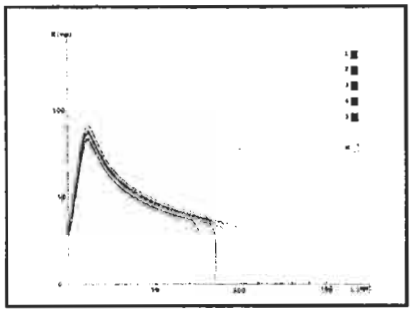
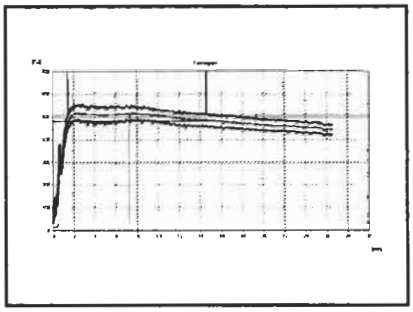
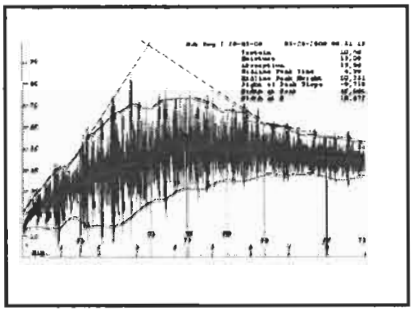
NEA: Northeast of the Country
NOA: Northwest of the Country

*Weighting basis: Tonnage of the production sampled by Subregion, according to chart data, on page 7.

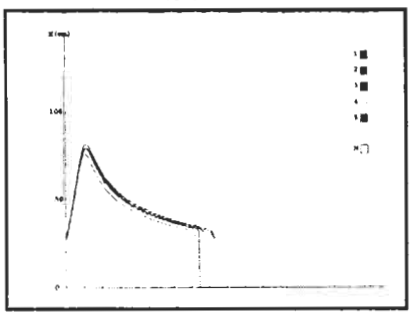
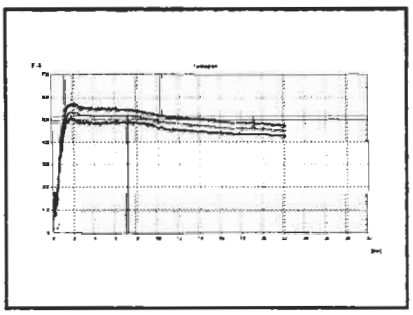
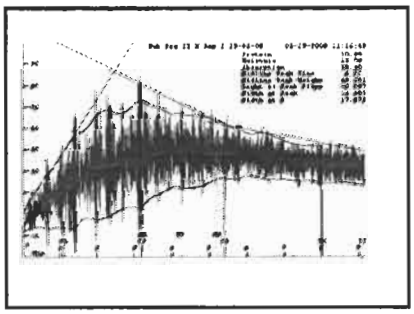
Results of the Analyses

Subregion Composite Samples Wheat

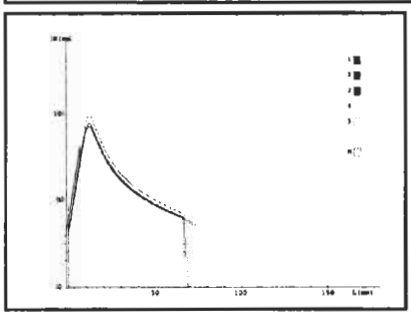
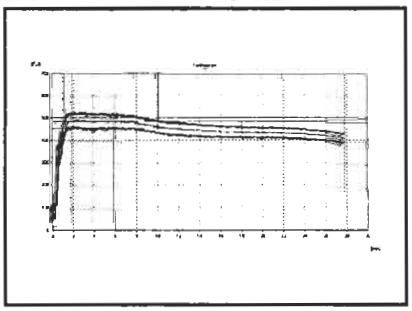
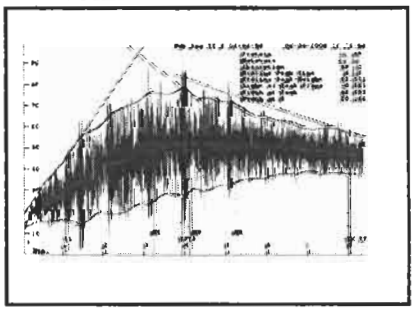
Subregion I

Alveogram	Farinogram	Mixogram
		

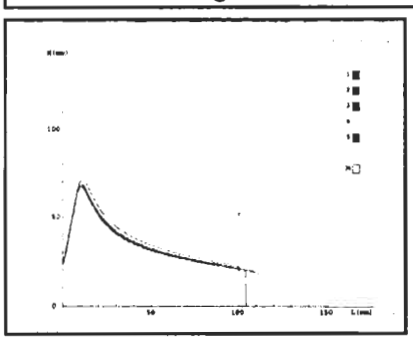
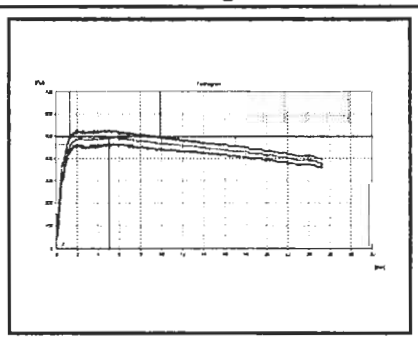
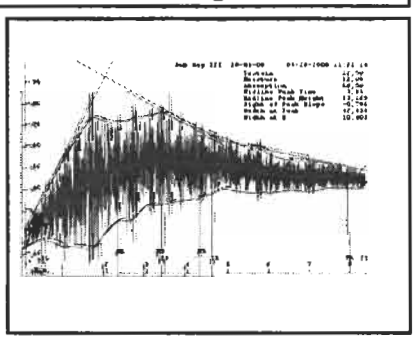
Subregion II North

Alveogram	Farinogram	Mixogram
		

Subregion II South

Alveogram	Farinogram	Mixogram
		

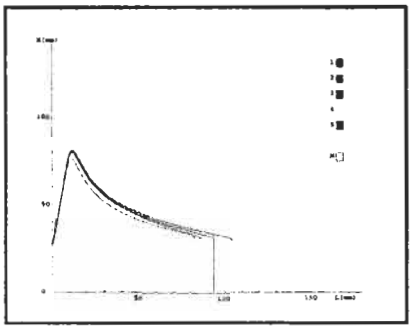
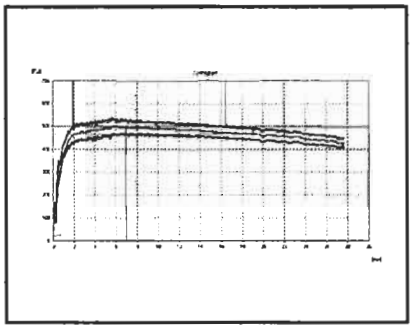
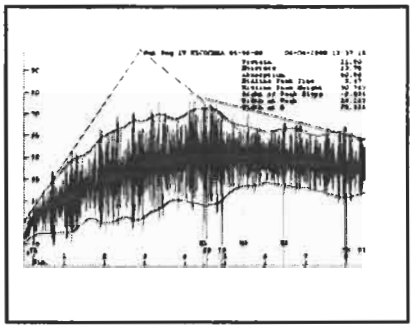
Subregion III

Alveogram	Farinogram	Mixogram
		

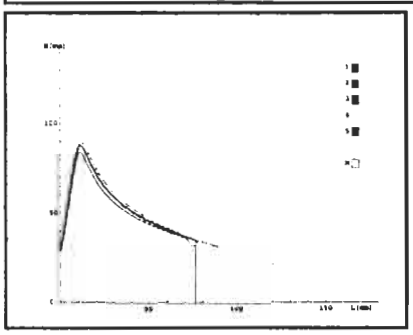
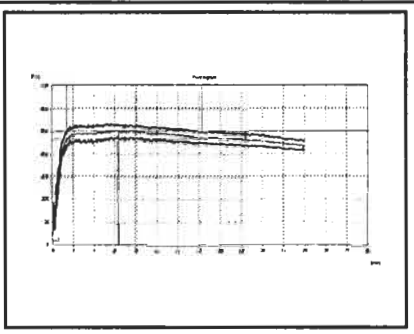
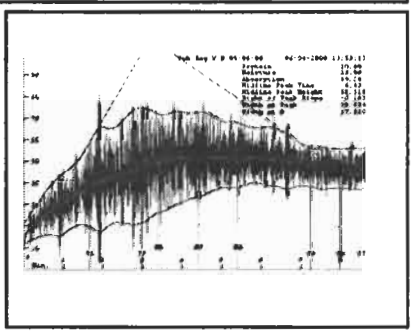
Subregion Composite Samples Wheat

Results of the Analyses

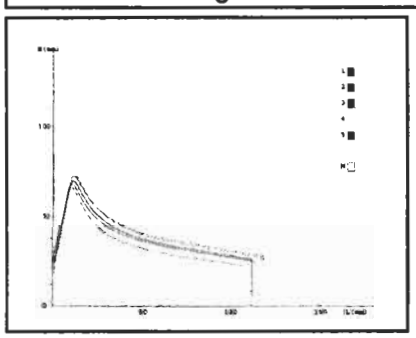
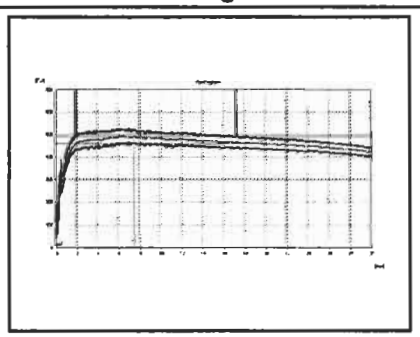
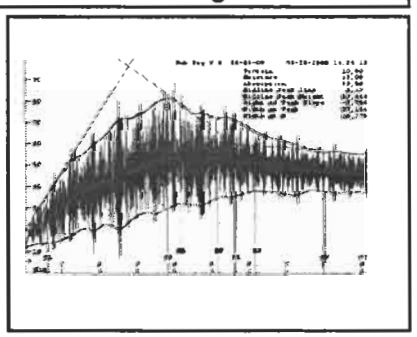
Subregion IV

Alveogram	Farinogram	Mixogram
		

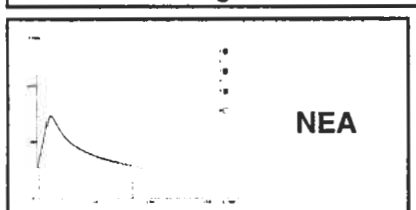
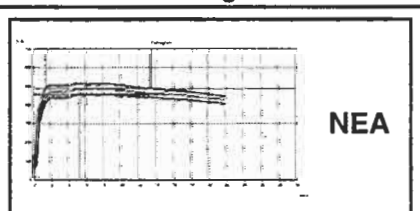
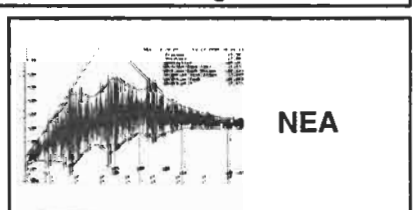
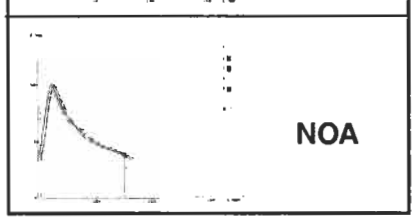
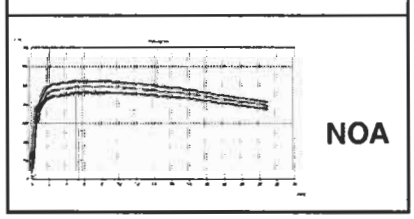
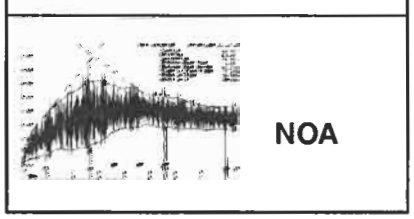
Subregion V North

Alveogram	Farinogram	Mixogram
		

Subregion V South

Alveogram	Farinogram	Mixogram
		

North of Country

Alveogram	Farinogram	Mixogram
 NEA	 NEA	 NEA
 NOA	 NOA	 NOA

DURUM WHEAT

Triticum turgidum vd. Durum L.

Organization and Methodology

Although durum wheat production is minor compared with wheat (Triticum aestivum), and its area is very localized (from SE to SW of Buenos Aires Province and the east part of La Pampa Province , it is still a traditional alternative for an interesting number of farmers.

07/08 Crop

Sown Area (ha)	59.417
Harvested Area (ha)	57,717
Average Yield (Kg/ha)	2,405
Production (tn)	138,810

Source: SAGPyA

Sampling Structure

Because of the specific conditions under which most durum wheat is produced, where farmers and industries agree on a contract, the samples were requested from the industries receivals, obtaining 40 composite samples.

They were organized according to theirs origin region, mainly in the Subregions IV and V South.

Procedure

Composite samples were sent to Bahía Blanca and Buenos Aires Arbitration Chamber Laboratories, where the commercial analysis (grade), ash and weight per 1000 kernels were performed.

Afterward, composite samples were referred to Grain Quality Laboratory of Chacra Experimental Integrada Barrow to carry out grinding in a Buhler 202 D mill. In the semolina obtained, Falling Number, Gluten, Color and Farinogram were analyzed.

Methodology

The evaluation of the industrial quality of durum wheat is based on grain characteristics, milling,behavior in milling, gluten quality, semolina color and rheological properties of dough.

Some traits like protein content and vitreous kernels percentage are affected by agricultural and weather conditions. Percentage of hard vitreous kernels is an important grading factor in durum wheat. Industry prefers vitreous kernels because of theirs high correlation with protein content, semolina yield and cooking quality.

On the other hand, gluten quality (measured as Gluten Index), semolina color and rheological characteristics, are strongly influenced by genotype.

The reasons why durum wheat produces good quality pasta are the following:
- Its yellow pigment content doubles the wheat (Triticum aestivum).
- Durum gluten is stronger and more cohesive than wheat (Triticum aestivum).
- Due to its kernel hardness,semolina yield is superior to other wheats. Durum semolina has many advantages with regard to wheat flour in the manufacturing of pasta: it requires less water to form a dough; consequently, drying cycle is cheaper.
- The main difference between durum and wheat (Triticum aestivum) is that pasta elaborated with durum semolina has more stability when cooked, doesn't disintegrate when boiling and stands overcooking.

Methodology for durum wheat includes some of the tests regularly used for wheat (Resolution SAGPyA 557/97) plus the following specific ones:

GRAIN

Vitreous Kernels Percentage (Resolution N° 1075/94 – Standard XXI - Ex. SAGyP)
Percent in weight of vitreous kernels present in the sample, being vitreous the ones that are completely translucid, without points, opaque stains or bleached grains.

MILLING (Experimental Milling Buhler 202-D)

Grain is dampered to 15.8 % humidity and tempered during 20 hours. Semolina yield (Particle size between 125- 355 microns) is reported.

SEMOLINA

Color (Minolta Chromameter CR-310, Manufacturer's Method)
Spaghetti color is due to a balance between pigment content (carotenes and xanthophylls) and lipoxigenasic activity which destroys color.
Lightness (L), redness (a) and yellowness (b) of Hunter data are determined using the tristimulus method, with Minolta CR-310 reflectance colorimeter.

Gluten Index (Glutomatic Perten 2200). Manufacturer's Registry.
Once the wet gluten test is done, the centrifuge forces the gluten to pass through a sieve that has been specially designed. The amount of gluten that goes through the sieve is a measure of gluten characteristics. This method is done as follows: both fractions, the one that passes through the sieve, and the one which is retained in it, are gathered and weighed, obtaining, thus, a percentage.

FARINOGRAM (Brabender's Farinograph)

The method in use is described by Irvine, Bradley and Martin's technique (Cereal Chemistry, Vol 38, N° 2, 1961), using fixed water absortion (45 %), fixed time of kneeding (8 min) and small stainless steel bowl (50 g). The following data are reported:

Dough development time (min)
Energy Level= Max Height (UF) / 20+ Area (cm2)
Tolerance Index (%)= Max Height - Final Height / Max Height.

Argentine Standard for Durum Wheat

(Resolution Nº1075/94 - Standard XXI. Ex Secretariat of Agriculture, Livestock and Fishery)

Durum Wheat

GRADE	Test Weight Min. (Kg/hl)	PERCENT MAXIMUM LIMITS OF: Foreign Material (%)	Damaged Kernels: Heat Damaged Kernels (%)	Damaged Kernels: Total (%)	Shrunken and Broken Kernels (1) (%)	Smutty Kernels (%)	Insect Bored Kernels Max. (%)	Sweet Clover Seeds Melilotus spp Seeds/ 100 g. Max.	MOISTURE Max. (%)	Wheat (Triticum aestivum) Max. (%)	Vitreous Kernels Min (%)
1	78	0.75	0.50	1.00	1.50	0.10					
2	76	1.50	1.00	2.00	3.00	0.20	0.50	8	14.0	3.00	40
3	72	3.00	1.50	3.00	5.00	0,30					

VITREOUS KERNELS

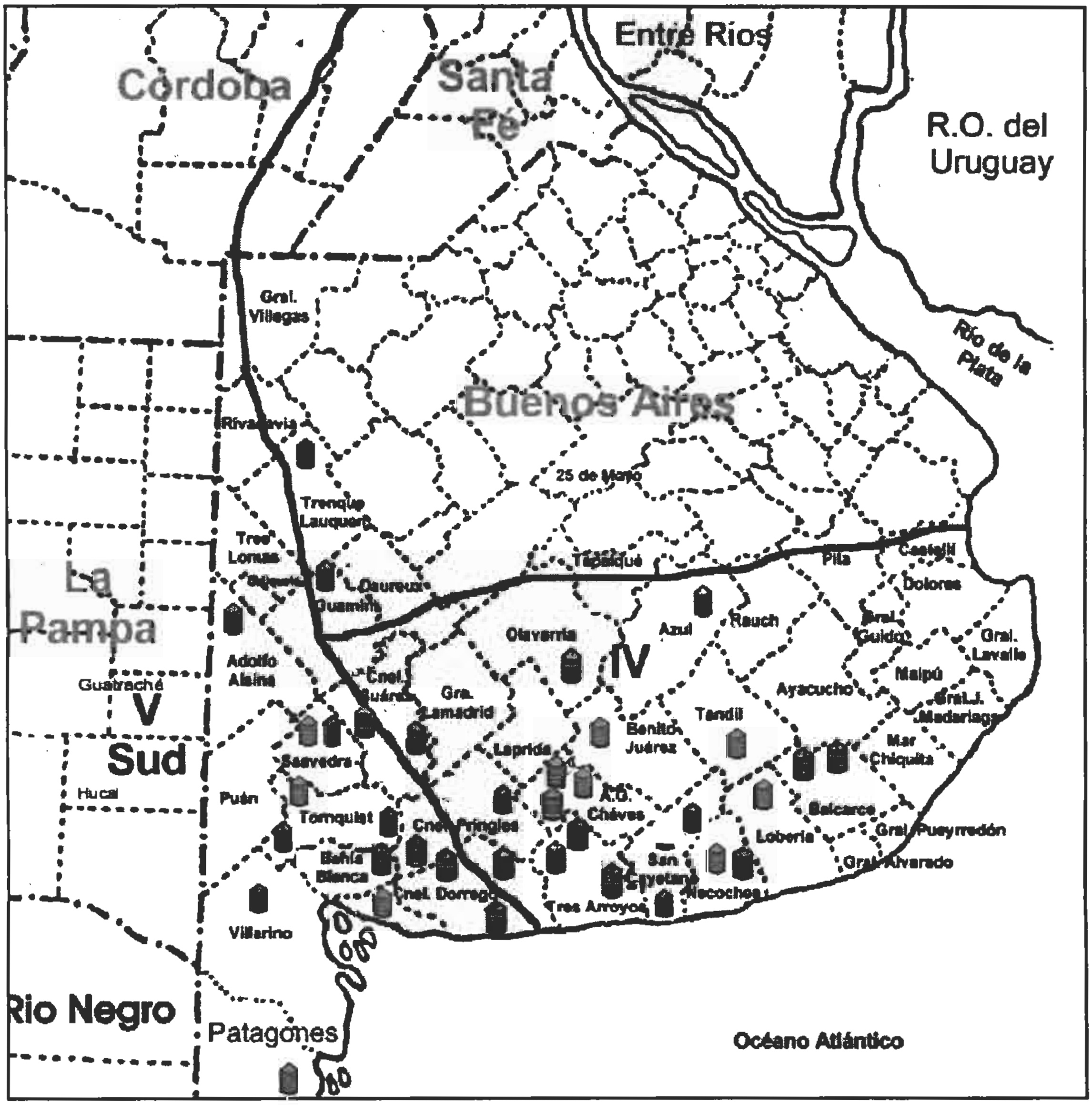
Bonifications	Discounts
51 a 55% 0,5 %	46 a 49% 1,0%
56 a 60% 1,0%	41 a 45% 3,0%
61 a 65% 1,5%	36 a 40% 5,0%
66 a 70% 2,0%	31 a 35% 7,0%
71 a 75% 3,0%	26 a 30% 9,0%
76 a 80% 4,0%	21 a 25% 11,0%
81 a 85% 5,0%	16 a 20% 13,0%
86 a 90% 6,0%	11 a 15% 15,0%
91 a 95% 7,0%	6 a 10% 17,0%
96 a 100% 8,0%	0 a 5% 19,0%

PROTEIN

More than 11% (moisture basis 13,5 %) there will be bonifications of 2 % for each % or fraction	Less than 10% (moisture basis 13,5 %) there will be discounts of 2 % for each % or fraction

LIVING INSECTS AND ARACHNIDS: FREE

(1) All Durum Wheat kernels or pieces of them that pass through a sieve with 1,6 mm wide and 9,5 mm long holes, excluding damaged kernels.


Entre Ríos
Córdoba
Santa Fe
R.O. del
Uruguay
Río de la Plata
Buenos Aires
La Pampa
IV
V
Sud
Rio Negro
Patagones
Océano Atlántico

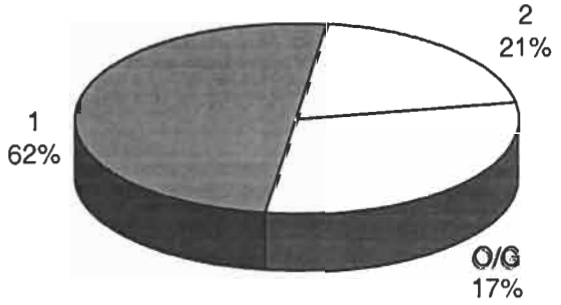
Results of the Analyses

Composite Samples by Locality

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	77,25	82,15	80,07	1,31	0,02
Total Damaged Kernels (%)	0,00	0,56	0,13	0,17	1,31
Foreign Material (%)	0,16	1,98	0,51	0,39	0,75
Shrunken and Broken Kernels (%)	0,06	2,66	0,82	0,55	0,66
Vitreous Kernels (%)	45	96	72	15	0,21
Wheat (Triticum aestivum) (%)	0,50	6,68	2,20	1,31	0,60
Proteins (13,5% Moisture) (%)	11,8	15,0	13,0	0,7	0,06
Weight of 1000 Kernels (gr.)	39,00	53,20	45,35	3,68	0,08
Ash (% dry basis)	1,635	1,923	1,789	0,066	0,04

Total damaged kernels includes 0.01% green kernels, 0.06% sprouted kerneles and 0.06% germ - chewed kernels.

Grade Distribution



O/G: Out of Grade

Semolin Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Falling Number (sec.)	476	736	586	76	0,13
	Color (b)	19,9	24,6	22,9	1,1	0,05
	Wet Gluten (%)	29,7	41,7	34,1	3,5	0,10
	Gluten Index (%)	24	84	58	18	0,31
FARINOGRAM	Energy Level	22,7	41,5	33,3	3,8	0,11
	Degree Softening (%)	25	41	33	4	0,12

These results were elaborated with 30 composite sample.

Subregion V South Durum Wheat

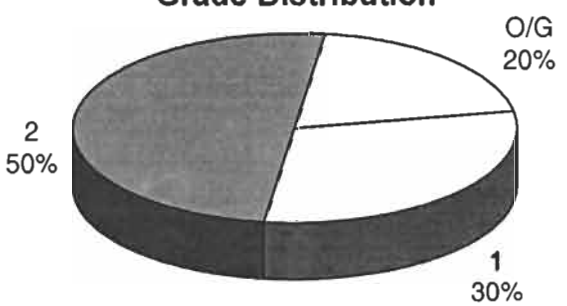
Results of the Analyses

Composite Samples by Locality

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	77,00	81,05	79,43	1,43	0,02
Total Damaged Kernels (%)	0,00	0,88	0,42	0,34	0,82
Foreign Material (%)	0,26	1,28	0,76	0,33	0,43
Shrunken and Broken Kernels (%)	0,24	1,60	0,89	0,42	0,48
Vitreous Kernels (%)	47	89	73	15	0,20
Wheat (Triticum aestivum) (%)	0,54	5,60	2,35	1,74	0,74
Proteins (13,5% Moisture) (%)	10,6	13,3	12,3	0,9	0,08
Weight of 1000 Kernels (gr.)	35,40	48,90	42,20	4,70	0,11
Ash (% dry basis)	1,587	1,949	1,779	0,119	0,07

Total damaged kernels includes 0.05% green kernels, 0.09% sprouted kernels and 0.28% germ-chewed kernels.

Grade Distribution



O/G: Out of Grade

Semolin Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Falling Number (sec.)	498	690	605	72	0,12
	Color (b)	21,6	25,9	23,3	1,4	0,06
	Wet Gluten (%)	27,8	34,4	31,9	2,2	0,07
	Gluten Index (%)	46	85	67	12	0,18
FARINOGRAM	Energy Level	31,6	43,1	35,9	4,0	0,11
	Degree Softening (%)	23	33	29	3	0,12

These results were elaborated with 10 composite sample.

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION			WHEAT ANALYSIS									
Sample Number	Subregion	Locality, district or department	Grade	Test Weight (Kg/hl)	Total Damaged Kernels(%)	Foreign Materials Kernels (%)	Shrunken and Broken Kernels (%)	Vitreous Kernels (%)	Wheat (Triticum aestivum) (%)	Protein (13.5 % Moisture) (%)(%)	Weight of 1000 Kernels (gr.)	Ash (dry basis) (%)
1	IV	Coronel Pringles	1	78.80	0.00	0.46	0.96	80	1.00	12.8	42.00	1.837
2	IV	Coronel Suárez	1	80.35	0.26	0.52	0.84	57	1.46	12.1	45.00	1.790
3	IV	General Alvarado	1	82.15	0.00	0.22	0.08	67	1.94	12.4	50.90	1.713
4	IV	General Pueyrredón	1	82.15	0.00	0.22	0.58	60	1.84	11.9	47.60	1.635
5	IV	Gonzales Chaves	1	79.45	0.30	0.30	0.84	59	2.68	13.3	41.20	1.923
6	IV	Guamini	2	80.60	0.16	0.76	1.12	66	1.72	12.5	50.40	1.786
7	IV	Loberia	1	79.45	0.12	0.36	0.24	68	1.56	13.1	45.70	1.839
8	IV	Miramar	1	81.25	0.10	0.16	0.06	61	1.46	12.0	49.00	1.818
9	IV	Necochea	1	79.45	0.20	0.28	0.50	59	1.38	12.4	45.70	1.793
10	IV	Olavarría	1	79.90	0.36	0.46	0.44	58	2.64	13.1	47.20	1.815
11	IV	Tandil	1	81.25	0.00	0.64	0.44	49	1.70	13.0	51.30	1.711
12	IV	Tres Arroyos	1	80.60	0.10	0.74	0.48	45	0.78	13.9	44.60	1.874
13	IV	Gonzales Chaves	1	78.60	0.20	0.60	0.70	92	0.86	14.0	42.30	1.774
14	IV	San Cayetano	1	81.70	0.24	0.16	1.28	71	1.92	13.4	49.50	1.812
15	IV	Tres Arroyos	1	80.35	0.08	0.44	0.42	79	2.48	13.6	46.30	1.831
16	IV	Tres Arroyos	1	80.60	0.38	0.30	0.94	74	1.94	13.1	41.80	1.740
17	IV	Coronel Suárez	O/G	80.60	0.00	0.32	1.10	69	3.50	12.2	46.40	1.729
18	IV	Trenque Lauquen	2	79.00	0.52	0.54	1.66	47	0.56	12.9	43.10	1.786
19	IV	Coronel Suarez	2	78.35	0.56	1.42	0.98	66	1.58	11.8	53.20	1.801
20	IV	Gonzales Chaves	2	81.70	0.00	0.92	1.06	87	2.78	13.7	48.60	1.705
21	IV	Gonzales Chaves	1	81.95	0.00	0.38	0.54	95	2.82	13.3	45.50	1.721
22	IV	La Costa-Tres Arroyos	O/G	80.15	0.00	0.44	0.54	88	3.66	12.8	41.60	1.870
23	IV	Orense	2	77.25	0.00	0.48	0.34	96	2.68	15.0	39.00	1.875
24	IV	San Cayetano	O/G	79.25	0.00	1.98	1.22	78	6.68	12.4	44.10	1.815
25	IV	San Cayetano	O/G	78.35	0.08	0.64	1.46	77	4.24	13.8	45.50	1.768
26	IV	Tres Arroyos	1	79.45	0.00	0.24	0.62	89	2.18	13.1	41.10	1.750
27	IV	Tres Arroyos	O/G	79.90	0.00	0.24	1.42	78	4.04	12.9	45.10	1.887
28	IV	Tres Arroyos	2	81.25	0.00	0.24	2.66	96	1.22	13.4	41.10	1.696
29	IV	Tres Arroyos	1	78.15	0.00	0.42	0.36	91	0.50	12.0	40.30	1.783
30	IV	Tres Arroyos	2	76.35	0.00	0.58	1.02	81	1.36	13.2	36.80	1.696
31	VS	Adolfo Alsina	2	81.05	0.24	1.28	0.56	81	2.76	10.6	44.00	1.827
32	VS	Balcarce	1	79.45	0.32	0.26	0.24	60	1.24	12.7	48.60	1.587
33	VS	La Pampa	O/G	80.80	0.62	0.92	1.06	47	5.60	12.9	43.70	1.900
34	VS	Tornquist	O/G	78.60	0.00	0.56	0.98	89	3.76	12.3	35.40	1.949
35	VS	Bajo Hondo	2	77.00	0.32	0.88	0.74	77	0.54	12.9	40.60	1.713
36	VS	Coronel Dorrego	2	78.35	0.00	0.96	0.82	85	1.58	13.2	37.20	1.744
37	VS	Coronel Dorrego	1	79.45	0.16	0.66	1.14	72	1.60	11.9	42.80	1.678
38	VS	Tornquist	1	81.05	0.84	0.52	0.94	66	0.80	12.0	41.50	1.757
39	VS	Puán	2	80.35	0.72	0.64	1.60	85	3.00	13.3	39.40	1.818
40	VS	Villarino	2	79.00	0.88	0.94	0.70	82	1.16	11.6	48.90	1.840

Appendix of Locality Composite Samples.

SAMPLE IDENTIFICATION			SEMOLIN ANALYSIS					
Sample Number	Suregion	Locality, district or department	Falling Number (sec.)	Color (b)	Wet Gluten (%)	Gluten Index (%)	Farinogram Energy Level	Farinogram Degree of Softening (12 min.)
1	IV	Coronel Pringles	520	24.6	32.6	81	33.4	31
2	IV	Coronel Suárez	496	23.9	31.1	71	29.7	36
3	IV	General Alvarado	498	23.2	31.3	63	36.5	32
4	IV	General Pueyrredón	476	23.5	29.7	70	35.8	33
5	IV	Gonzales Chaves	511	24.0	34.0	63	32.2	31
6	IV	Guamini	490	21.7	34.9	26	28.4	41
7	IV	Loberia	539	24.6	33.6	75	37.1	31
8	IV	Miramar	529	24.5	29.8	70	39.9	26
9	IV	Necochea	536	19.9	30.8	65	34.8	29
10	IV	Olavarría	515	21.6	41.7	48	22.7	41
11	IV	Tandil	545	22.9	39.7	68	32.4	35
12	IV	Tres Arroyos	555	21.8	37.4	24	31.3	38
13	IV	Gonzales Chaves	736	23.4	36.5	75	36.3	32
14	IV	San Cayetano	568	22.5	37.3	47	33.6	36
15	IV	Tres Arroyos	663	22.9	36.0	43	35.4	31
16	IV	Tres Arroyos	700	23.0	32.9	63	32.0	29
17	IV	Coronel Suárez	670	23.9	30.5	56	29.9	33
18	IV	Trenque Lauquen	693	23.7	31.8	75	29.5	32
19	IV	Coronel Suárez	592	23.0	30.1	52	32.3	35
20	IV	Gonzales Chaves	540	21.5	37.4	33	31.4	38
21	IV	Gonzales Chaves	613	21.6	36.5	25	28.5	35
22	IV	La Costa-Tres Arroyos	634	23.3	31.6	78	36.9	27
23	IV	Orense	714	23.1	41.3	57	41.5	28
24	IV	San Cayetano	578	22.1	32.0	65	34.1	30
25	IV	San Cayetano	659	22.0	36.2	42	32.3	33
26	IV	Tres Arroyos	659	24.0	31.8	83	35.3	25
27	IV	Tres Arroyos	547	22.1	33.6	42	34.2	35
28	IV	Tres Arroyos	587	22.6	36.6	46	31.9	33
29	IV	Tres Arroyos	639	23.6	29.7	84	36.0	30
30	IV	Tres Arroyos	609	24.0	31.7	81	35.9	25
31	VS	Adolfo Alsina	560	25.9	27.8	46	32.2	23
32	VS	Balcarce	522	22.9	33.7	72	43.1	32
33	VS	La Pampa	498	22.4	33.4	62	35.9	26
34	VS	Tornquist	560	21.6	31.4	61	31.6	31
35	VS	Bajo Hondo	678	23.5	33.3	70	34.9	28
36	VS	Coronel Dorrego	632	24.0	33.9	72	39.3	28
37	VS	Coronel Dorrego	598	23.2	31.2	65	35.1	33
38	VS	Tornquist	690	23.0	30.9	66	32.4	29
39	VS	Puán	686	22.3	34.4	77	38.5	28
40	VS	Villarino	642	22.9	31.1	85	33.5	31

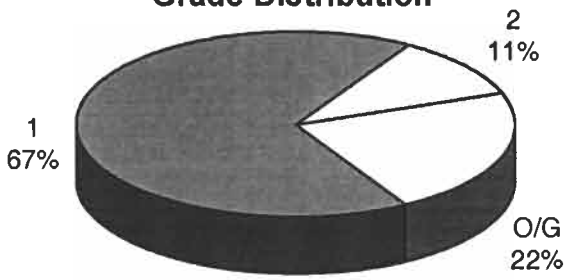
Durum Wheat Averages

Results of the Analysis

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	76,35	82,15	79,84	1,42	0,02
Total Damaged Kernels (%)	0,00	0,88	0,19	0,25	1,28
Foreign Material (%)	0,16	1,98	0,58	0,37	0,65
Shrunken and Broken Kernels (%)	0,06	2,66	0,84	0,50	0,59
Vitreous Kernels (%)	45	96	73	14	0,20
Wheat (Triticum aestivum) (%)	0,50	6,68	2,18	1,35	0,62
Proteins (13,5% Moisture) (%)	10,6	15,0	12,8	0,8	0,06
Weight of 1000 Kernels (gr.)	35,40	53,20	44,35	4,19	0,09
Ash (% dry basis)	1,587	1,949	1,785	0,078	0,04

Total damaged kernels includes 0.02% green kernels, 0.06% sprouted kernels and 0.11% insect chewed kernels.

Grade Distribution



O/G: Out of Grade

Semolin Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Falling Number (sec.)	476	736	592	72,8	0,12
	Color (b)	19,9	25,9	23,0	1,1	0,05
	Wet Gluten (%)	27,8	41,7	33,5	3,2	0,10
	Gluten Index (%)	24	85	61	17	0,27
FARINOGRAM	Energy Level	22,7	43,1	33,9	3,8	0,11
	Degree Softening (%)	23	41	32	4	0,13

Country elevators, Cooperatives and Mills that contributed in the sampling

LOCALITY	DENOMINATION
BUENOS AIRES PROVINCE	
Adolfo Alsina	Productores Agropecuarios del Oeste S.A.
Adolfo Alsina	Unigran S.A.
Alberti	Rivara S.A.
Ameghino / Gral. Pinto	Rucamalen S.A.
Arrecifes	Agricultores Federados Argentinos S.C.L. Arrecifes
Arrecifes	Francisco Sellart S.A.
Ayacucho	Ayagranos S.A.
Azul	Cerealera Azul S.A.
Azul	Coop. Agrícola Ganadera de Rauch Ltda..
Azul	H.J. Navas y Cía.S.A.
Bajo Hondo	Acopio A.C.A.
Bajo Hondo	Coop. Agrícola de Bajo Hondo Ltda.
Balcarce	Acopio Balcarce S.A.
Balcarce	Coop. Agrícola General Necochea Ltda.
Balcarce	P.A.I.S. S.A.
Balcarce	Scorziello y Gallela S.C.
Balcarce	Siagro S.R.L.
Balcarce	Tolvas S.A.
Baradero	Julio Do Campo
Baradero	Luis A. Ducret y Cía.
Benito Juárez	Campoamor Hnos. S. A.
Benito Juárez	Coop. Agropecuaria de Tandil Ltda.
Bolivar	Oscar A. Gallo y Cía. S.RL.
Bolivar	Coop. Agropecuaria de Bolivar Ltda.
Bragado	Acopio A.C.A.
Cabildo	Cooperativa Agrícola Ganadera e Industrial Sombra de Toro Limitada
Cañuelas/R. Perez	
Chascomús/Gral. Belgrano	Molino Cañuelas S.A.
Capitán Sarmiento	Agropecuaria Surita Hnos. S.A.
Carhué	Cooperativa Agrícola Ganadera Limitada de Adolfo Alsina
Carlos Casares	Grobocopatel Hnos. S.A.
Carlos Casares	Lagomarsino Andrés e Hijos S.A.
Carlos Casares	Las Lagunas y Asociados S.A.
Carlos Casares	Los Grobo Agropecuaria S.A.
Carlos Casares	Tomás Hnos. y Cía. S.A.
Carlos Tejedor	Ramón Rosa y Cía S.A.
Carmen de Areco	Coop. Agrop. de Carmen de Areco Ltda.
Carmen de Patagones	Coop. Agríc. Gan. e Ind. de Patagones y Viedma Ltda.
Casbas	Ganadera Salliqueló S.A.
Colón	Graneros y Elevadores Argentinos de Colón
Coronel Dorrego	Casa Balda S.A.
Coronel Dorrego	Castell Hnos. S.A.
Coronel Dorrego	Coop. Agricola Ltda. de Lartigau
Coronel Dorrego	Perez Raúl Horacio - Agronomía
Coronel Dorrego	Suc. A. Moreno
Coronel Pringles	López y Ramos S.C.
Coronel Pringles	Pucará S.A.
Coronel Pringles	Sembrante S.A.

LOCALITY	DENOMINATION
BUENOS AIRES PROVINCE	
Coronel Suárez	Agro Coronel Suárez S.A.C.I.F.I
Coronel Suárez	Agro El Renacer S.A. de Kopelson
Coronel Suárez	Agronomía Alvarez - Alvarez Mario Alberto
Coronel Suárez	Bertolami Cereales S.A.
Coronel Suárez	Cooperativa Agropecuaria General San Martín Limitada
Cte. N. Otamendi	Coop. Agrícola General Necochea Ltda.
Cte. N. Otamendi	Rural Ceres S.A.
Chacabuco	Coop. Agrop. de Granjeros Unidos Ltda.
Chivilcoy	Coop. Agrícola Ganadera de Chivilcoy Ltda.
Daireaux	Aripar Cereales S.A.
Daireaux	Camafer S.A.
Darregueira	La Emancipación Sociedad Cooperativa Mixta de Consumo Limitada
Darregueira	Cooperativa Agropecuaria Darregueira Limitada
Dudignac	Cooperativa Agrícola Ganadera de Dudignac Lda.
Genaral Arenales	Junarsa S.A.C.I.F.I.A.
General Lamadrid	Productores General Lamadrid
Gonzáles Chaves	Agro Chaves S.A.
Gonzáles Chaves	Barcellandi, Enrique Javier
Gonzáles Chaves	De la Garma Cereales S.R.L.
Gonzáles Chaves	Molina, Lucas
Gral . Viamonte	Coop. Rural Gral. Viamonte Ltda. de Los Toldos Ltda.
Gral. Arenales	Junarsa S.A.
Gral. Belgrano	Barensi S.A.C.I.F.I.A.
Gral. Madariaga	Rural Ceres S.A.
Gral. Villegas	Alzamora Miguel
Gral. Villegas	Bandagro S.A.
Gral. Villegas	Cereales Gimenez S.R.L.
Gral. Villegas	Cerealoeste S.A.
Gral. Villegas	Sánchez y Cía. S.C.
Gral. Villegas	Semillera Fuertes S.A.
Gral. Villegas	Sigra Villegas S.A.
Guamini	Cooperativa Agrícola Ganadera de Garré Limitada
Guaminí	Cooperativa Agrícola Ganadera Guaminí Limitada
Henderson	Coop. Agropecuaria El Progreso de Henderson Ltda.
Hipólito Irigoyen	Coop. El Progreso de Henderson Ltda.
Huanguelén	Acopio A.C.A.
Junín	Liga Agrícola Ganadera Ltda.
L. N. Alem	Cargill S.A.
Laprida	Héctor Vagnini Cereales.
Lartigau	Cooperativa Agrícola Ganadera de Lartigau Limitada
Las Flores	Asociación de Cooperativas Agricolas

LOCALITY	DENOMINATION
BUENOS AIRES PROVINCE	
Leandro N. Alem	Cooperativa Agrícola Ganadera Ltda. de Ascensión
Licenciado Matienzo	Cantabria S.A.
Lincoln	Cargill S.A.C.I.
Lincoln	Juan Ricardo Rosa e Hijos
Lobería	Baron y Cía. S.A.
Lobería	Cantabria S.A.
Lobería	Forner Hnos. y Cía. S.A.
Lobería	Marzu S.A.
Lobos	Aggollia Hns
Lobos	Angel Regueira y Cia
Lobos	Biroccio Cereales S.A.
Mar del Plata	Adolfo A. Quaglia
Mar del Plata	Héctor Luciano Villar
Médanos	Cooperativa Agropecuaria e Industrial de Médanos Limitada
Micaela Cascallares	Cooperativa Agrícola Limitada de Micaela Cascallares
Miramar	Granel Sur S.A.
Navarro	Abel Anibal Bruno SA
Navarro/Lobos	Omar Echeverry S.R.L.
Necochea	Alea y Cía. S.A.
Necochea	Evasio Marmeto S.A.
Necochea	Pro Agro S.A.
Necochea - Gral. Pueyrredón	Coop. Agropecuaria Gral. Necochea Ltda.
Nueve de Julio	La Bragadense S.A.
Olavarría	Asociación de Cooperativas Argentinas Coop. Ltda.
Patagones	Agropecuaria Villalonga S.R.L.
Patagones	Cooperativa Agrícola Ganadera e Industrial de Patagones y Viedma Limitada
Patagones	Fibiger S.R.L. Benito
Patagones	Novick y Cía. S.R.L.
Pehuajó	Acopio A.C.A. de Pehuajó
Pehuajó	Cargill S.A.
Pehuajó	Las Lagunas y Asociados S.A.
Pehuajó	Molinos Pehuajó de Rosaser S.A.
Pellegrini	Ganadera Salliquelo S.A.
Pellegrini	Morero Semillas y Cereales S.A.
Pergamino	Agricultores Federados Argentinos S.C.L. Pergamino
Pergamino	Mario Calandri e hijos S.A.
Pigüé	La Alianza Cooperativa Agrícola Ganadera Limitada
Pigüé	Molino Cañuelas S.A.C.I.F.I.A.
Puan	Bertín y Cía. S.C.A.
Puan	Cooperativa Agrícola Ganadera Limitada de Puan
Puan	Torre Hnos. S.A.
Quequén	Promotora Agropecuaria Comercial Industrial
Ramallo	Cooperativa Agrícola de Ramallo Ltda.
Rauch	Coop. Agrícola Ganadera de Rauch Ltda.
Rivadavia	Cargill SA
Rivadavia	Glencore Acopio
Rivadavia	Prunder S.A.
Rivera	Ganadera Salliquelo S.A.
Rojas	Agricultores Federados Argentinos S.C.L. Rojas
Roque Pérez	Cooperativa Agricola Ganadera Saladillo

LOCALITY	DENOMINATION
BUENOS AIRES PROVINCE	
Saavedra	Cooperativa Agrícola Ganadera de Espartillar Ltda.
Saavedra	Los Grobo Agropecuaria S.A.
Saladillo	Coop. Agrícola Ganadera de Saladillo Ltda.
Salto	Mario Calandri e Hijos S.A.
Salliqueló	Ganadera Salliqueló S.A. - Filiales Salliqueló, Tres Lomas, Casbas y Rivera
San A. de Areco/S.M. del Monte	Molino Cañuelas S.A.
San Andrés de Giles	Cereales Puggioni S.A.
San Antonio de Areco	Coop. Agropecuaria de San Antonio de Areco Ltda.
San Cayetano	Oostdijk, Oscar Fabián
San Cayetano	Rizzi, Joel Juan y Mauro
San Manuel	Usandizaga, Perrone y Juliarena S.A.
San Miguel Arcangel	Cooperativa Agrícola Ganadera Limitada San Miguel
San Pedro	Ramon Rosa y Cía.
Stroeder	Cooperativa Agrícola Ganadera e Industrial de Patagones y Viedma (Deleg.Stroeder) Limitada
Suipacha / Mercedes	Coincer S.A.
Tandil	Ceres Tolva S.A.
Tandil	Coop. Agrícola Ganadera de Tandil y Vela Ltda..
Tandil	Coop. de Producción, Industrialización y Consumo de Tandil
Tandil	Usandizaga, Perrone y Juliarena S.A.
Tandil - Gral. Alvarado	Rural Ceres S.A.
Tornquist	Los Vascos Cereales S.A.
Tornquist	Vittori Cereales S.R.L.
Trenque Lauquen	Cargill SA
Trenque Lauquen	Juan Carlos Latour SA
Trenque Lauquen	Lartirigoyen y Cía
Tres Arroyos	Agro El Carretero S.A.
Tres Arroyos	Agro Roca S.R.L.
Tres Arroyos	Agronomía Raúl Horacio Pérez S.A.
Tres Arroyos	Agrooriente S.A.
Tres Arroyos	Agroservicios Sudeste S.A.
Tres Arroyos	Barcellandi Agropecuaria, Enrique Javier
Tres Arroyos	Bellingeri e Hijos S.A.
Tres Arroyos	Bellingeri Horacio Atilio
Tres Arroyos	Cerealera Tres Arroyos S.A.
Tres Arroyos	Cooperativa Agraria Tres Arroyos Limitada
Tres Arroyos	Cooperativa Rural Limitada Alfa
Tres Arroyos	De La Garma Cereales S.R.L.
Tres Arroyos	El Labrador S.A.
Tres Arroyos	Goñi, Jesús Héctor Cereales y Semillas
Tres Arroyos	Guisasola Cereales S.R.L.
Tres Arroyos	Herrero Angel Rodolfo
Tres Arroyos	Menna Cereales José Angel.
Tres Arroyos	Molina, Lucas
Tres Arroyos	Morán, Rodolfo Christian
Tres Arroyos	Oostdijk, Fabián
Tres Arroyos	Pecker, Pedro Eduardo
Tres Arroyos	Rizzi Joel, Juan C. y Mauro Juan C.
Tres Arroyos	Taraborelli, Mario Jesús
Tres Arroyos	Sucesión Antonio Moreno S.A.C.A.I.F.I.
Tres Arroyos	Kraft Foods Argentina S.A.
Tres Lomas	Ganadera Salliquelo S.A.

LOCALITY	DENOMINATION
BUENOS AIRES PROVINCE	
Tres Lomas	Morero Semillas y Cereales S.A.
Vedia	Cargill S.A.C.I.
Vedia	Compañía Argentina de Granos S.A.
Veinticinco de Mayo	Cereales 25 de Mayo
Veinticinco de Mayo	La Bragadense SA
Veinticinco de Mayo	San Martín, Perez, Aranáz y Cia.
Villa Bordeu	C.D.C. Asociación de Cooperativas Ltda.
Villalonga	Cooperativa Agrícola Ganadera e Industrial de Patagones y Viedma Limitada
Villarino	Barraca Mitre S.R.L.
Villarino	Genovesi S.R.L. Roberto Raúl
Villarino	Molino Algarrobo S.R.L.
	Centro de Acopiadores de Cereales
	Centro de Acopiadores de Cereales de Tres Arroyos
	Centro de Acopiadores de Cereales Zona Puerto Quequén
	Centro de Acopiadores de Daireaux
	Centro de Acopiadores de la Zona Ooeste de la Pcia. de Bs. As.
	Centro de Acopiadores de Tres Arroyos
	Centro de Acopiadores del Noroeste Bonaerense
	Sociedad de Acopiadores de Cereales Zona Bahía Blanca
	Sociedad de Cerealistas del Norte de la Pcia. de Bs. As.
CÓRDOBA PROVINCE	
Alejo Ledesma	Compañía Argentina de Granos S.A.
Arias	Graneros y Elevadores Argentinos de Arias Coop. Agrop. Ltda.
Arroyito	Ctro. Desarrollo Coop. A.C.A. Arroyito
Arroyo Cabral	Cooperativa Agrícola Ganadera de Arroyo Cabral Ltda.
Bengolea	Cotagro Coop. Agropecuaria Ltda.
Buchardo	Integral Acopio S.A.
Bulnes	Hijos de Lino Fabroni SA
Colazo	Casa Siravegna S.R.L.
Colazo	Comercial Rossi S.A.
Corral de Bustos	Proagro S.R.L.
Cruz Alta	Coop. Agrícola Ganad. Cruz Alta Ltda.
Dto. San Justo	Agricultores Federados Argentinos - Dto. San Justo
El Tío	A.F.A. S.C.L.
Freyre	Coop. Agríc. Gan. y de Cons. de Freyre Ltda.
Gral. Cabrera	Cotagro Coop. Agropecuaria Ltda.
Gral Deheza	Gastaldi Hnos. S.A.
Gral. Levalle	Compañía Argentina de Granos S.A.
Gral. Levalle	Mario Alberto Berra
Guatimozín	Cereales Bycsa S.R.L.
Hernando	Aceitera Gral Deheza S.A.
Hernando	Cooperativa La Vencedora Ltda.
Huinca Renancó	Lartirigoyen y Cía.
Inriville	Cargill S.A. Inriville
Jesús María	Los Seis Hermanos S.R.L.
Jovita	Ambito Das S.A.
Jovita	Compañía Argentina de Granos S.A.

LOCALITY	DENOMINATION
CÓRDOBA PROVINCE	
Jovita	Picco y Cía.
Justiniano Posse	Cooperativa Agr. Gan. de Justiniano Posse
Justiniano Posse	Cooperativa Agropecuaria Unión de Justiniano Posse
La Laguna	Rostagno y Saretti S.R.L
Laboulaye	Compañía Argentina de Granos S.A.
Laboulaye	Laboratorio Cali-Gran
Laboulaye	Molino Marichelar
Laboulaye	Molinos Florencia S.A
Laboulaye	Talar S.R.L.
Las Acequias	Arcor S.A.I.C.
Las Higueras	Depetris Cereales S.A.
Las Junturas	Cereales Las Junturas S.R.L.
Las Junturas	Maglione Hnos.
Leones	Coop Agrícola Ganadera Leones Ltda.
Lozada	Luis Colautti e Hijos S.R.L
Lozada.	Repetí, Ferroni y Cia. S.R.L
Marcos Juárez	Agricultores Federados Argentinos S.C.L Marcos Juárez
Marcos Juárez	Coop Agropecuaria Gral Paz de Marcos Juárez Ltda.
Matorrales	Agromatorrales S.A
Monte Cristo	Miguel Gazzoni e Hijos S.R.L.
Morteros	Coop. Agric.Gan. de Morteros Ltda.
Nicolás Bruzone	
Del Campillo	Alfredo Mondino
Oliva	Cooperativa La Federación de Oliva Ltda.
Oncativo	Dottori Hnos S.A.
Oncativo	Tex Argentina S.A.
Porteña	Coop. Agríc. Gan. y de Cons. Porteña Ltda.
Rio IV	Arcor S.A.I.C.
Rio IV	Hijos de Lino Fabroni
Sinsacate	Julio C. Treachi e Hijos S.A.
Tránsito	Zanoy Agro y servicios S.R.L.
Ucacha	Cotagro Coop. Agropecuaria Ltda.
Villa del Rosario.	A.C.A Villa del Rosario.
Villa del Totoral	Pronor S.A.
Villa Eloísa	Agricultores Federados Argentinos S.C.L Villa Eloísa
Villa Huidobro	Repetto Hnos. S.R.L.
	Sociedad de Acopiadores de Granos de la Pcia. de Córdoba
CHACO PROVINCE	
Alte. Brown - 9 de Julio	Alfredo Brugnoli e Hijos
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Cte. Fernández - 2 de Abril	Martín Cereales S.C.C.
Chacabuco - 12 de Octubre	Buratovich Hnos. S.A.
Chacabuco - 12 de Octubre	Golob Semillas S.R.L.
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