2006/2007 Crop

ARGENTINE WHEAT

Institutional Quality Report

http://www.trigoargentino.com.ar

Argentine Wheat

Institutional Quality Report

2006/2007 Crop

Argentine Wheat

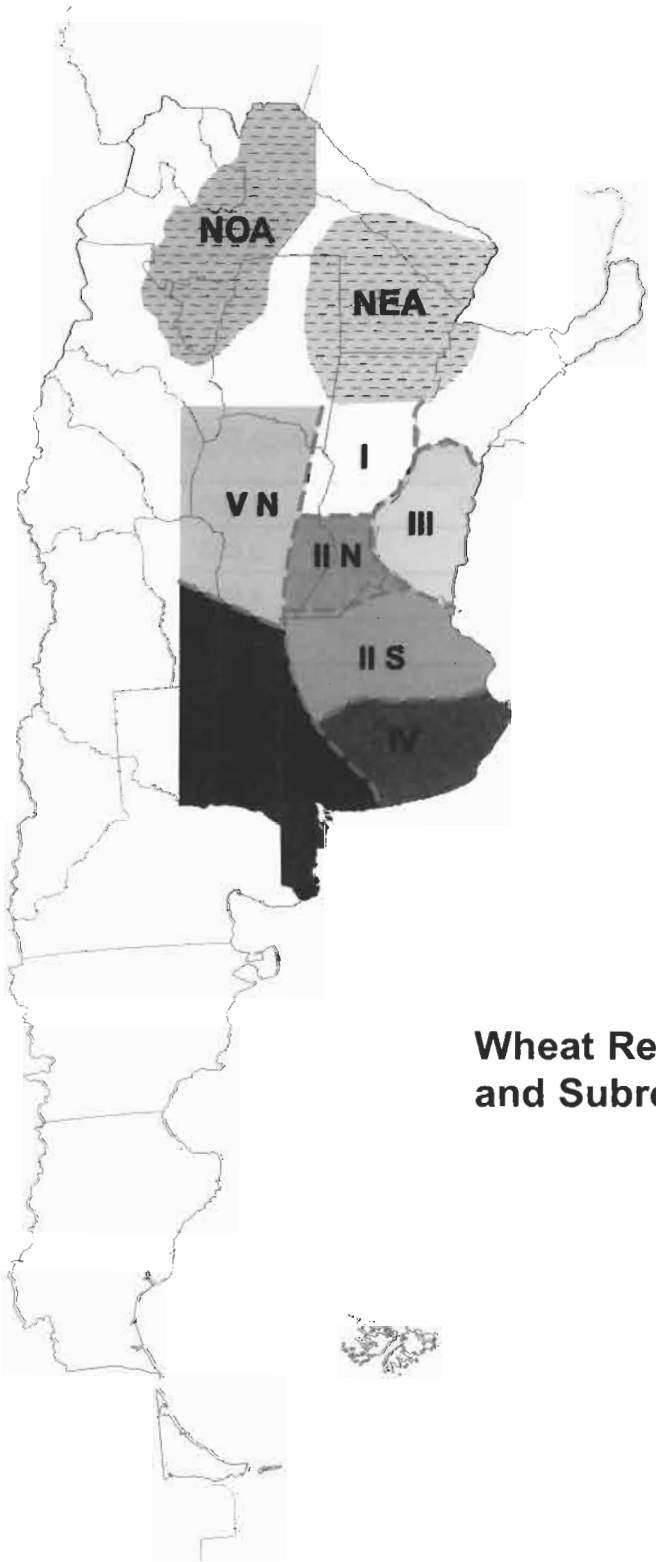
Institutional Quality Report
2006/2007 Crop

Elaborated by:

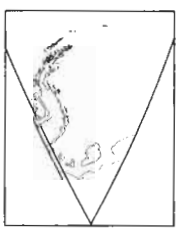
- **Agricultores Federados Argentinos S.C.L.**
  Argentine Federated Farmers S.C.L.
- **Asociación de Cooperativas Argentinas Cooperativa Limitada.**
  Argentine Cooperatives Association LTD Coop.
- **Bolsa de Cereales de Bahía Blanca.**
  Bahía Blanca Grain Exchange.
- **Bolsa de Cereales de Buenos Aires.**
  Buenos Aires Grain Exchange.
- **Bolsa de Comercio de Rosario.**
  Rosario Stock Exchange.
- **Cámara Arbitral de Cereales de Bahía Blanca.**
  Bahía Blanca Grain Arbitration Chamber.
- **Cámara Arbitral de Cereales de Entre Ríos.**
  Entre Ríos Grain Arbitration Chamber.
- **Cámara Arbitral de Cereales de la Bolsa de Comercio de Rosario.**
  Rosario Stock Exchange Grain Arbitration Chamber.
- **Cámara Arbitral de Cereales de la Bolsa de Comercio de Santa Fe.**
  Santa Fé Stock Exchange Grain Arbitration Chamber.
- **Cámara Arbitral de la Bolsa de Cereales de Buenos Aires.**
  Buenos Aires Grain Exchange Arbitration Chamber.
- **Bolsa de Cereales y Cámara de Cereales y Afines de Córdoba Tribunal Arbitral.**
  Córdoba Grain Exchange and Arbitration Chamber.
- **Centro de Exportadores de Cereales.**
  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).**
  National Agrifood Healt and Quality Service.
- **Chacra Experimental Integrada Barrow (Convenio INTA – MAA, Bs. As.)**
  Barrow Experimental Station.

Argentine Wheat
Institutional Quality Report
2006/2007 Crop



Wheat Region and Subregions



BREAD WHEAT

Triticum aestivum

Introduction

Argentine production of wheat during the current cycle was 14,276,995 million tons, according to the preliminary report of Secretariat of Agriculture, Livestock, Fisheries and Food (SAGPyA), 13.2% more than the previous cycle, with an average yield of 26.0 qq/ha for an area sown of 5.5 million hectares. The decrease in production in the centre, southeast and southwest of the Province of Buenos Aires was compensated by greater production in the Province of Entre Ríos, north of the Province of Buenos Aires and south of the Province of Santa Fe.

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

Subregion	Sowed Area (ha)	Harvested area (ha)	Yield (Kg/ha)	Production (tn)
I	413,100	393,600	1,920	753,850
II North	890,850	797,000	3,050	2,433,970
II South	591,100	589,840	4,070	2,398,930
III	290,050	283,970	3,190	906,230
IV	1,116,730	1,109,570	3,560	3,946,495
V North	512,250	474,550	1,490	708,760
V South	1,331,040	1,315,740	1,770	2,330,180
Northeast	163,100	160,000	1,640	262,360
Northwest	392,750	372,360	1,440	536220
National	**5,700,970**	**5,496,630**	**2,600**	**14,276,995**

Based on data from the Secretariat of Agriculture, Liverstock, Fishery and Food. 2007

There were frosts of different magnitude in different areas, these caused partial damage and a drop in yield in some lots.

The percentage of severity of leaf and ear disease was low, since environmental conditions were not favorable to the development of pathogens and fungicides had been used on very susceptible wheat varieties.

A large part of the wheat-growing-area had been affected by drought during the grain filling stage, a key period for yield and quality. In general, the grain filling out period was shortened; therefore grain was smaller and had a lower weight per hectoliter, especially in Subregion IV. This situation of stress caused a decrease in yield, especially in lots with good natural or chemical fertilization.

Therefore, for the above mentioned reasons, the yields during this cycle were extremely variable according to area and date of sowing, ranging from some lots that were not worth harvesting to others that had very good yields.

Organization and Methodology:

Sampling structure

It was agreed to obtain samples which represent about 4,000 tons each, reaching a total of 266 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.

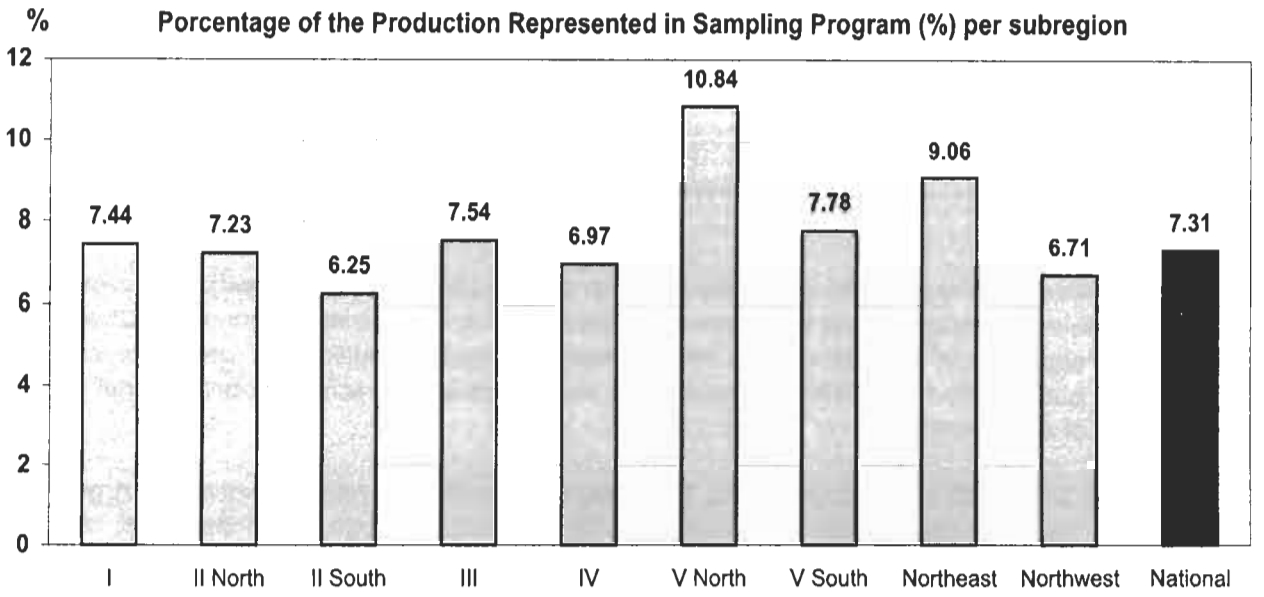
The Argentine Cooperatives Association, the Federation of Country Elevators Association, Argentine Federated Farmers and the Argentine Federation of Milling Industry, through the cooperatives, country elevators and mills selected for each locality, submitted the primary operations samples (trade samples 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	14	56,111	753,850	7.44
II North	44	176,000	2,433,970	7.23
II South	39	150,000	2,398,930	6.25
III	17	68,340	906,230	7.54
IV	70	275,188	3,946,495	6.97
V North	20	76,861	708,760	10.84
V South	47	181,373	2,330,180	7.78
Northeast	6	23,780	262,360	9.06
Northwest	9	36,000	536,220	6.71
TOTALS	**266**	**1,043,653**	**14,276,995**	**7.31**

Based on data from the Secretariat of Agriculture, Liverstock, Fishery and Food. 2007

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 4,479 samples used for this sampling program, in such a way a sampled tonnage of 7.31 % of the national wheat production, which amounted to 14,276,995 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 .

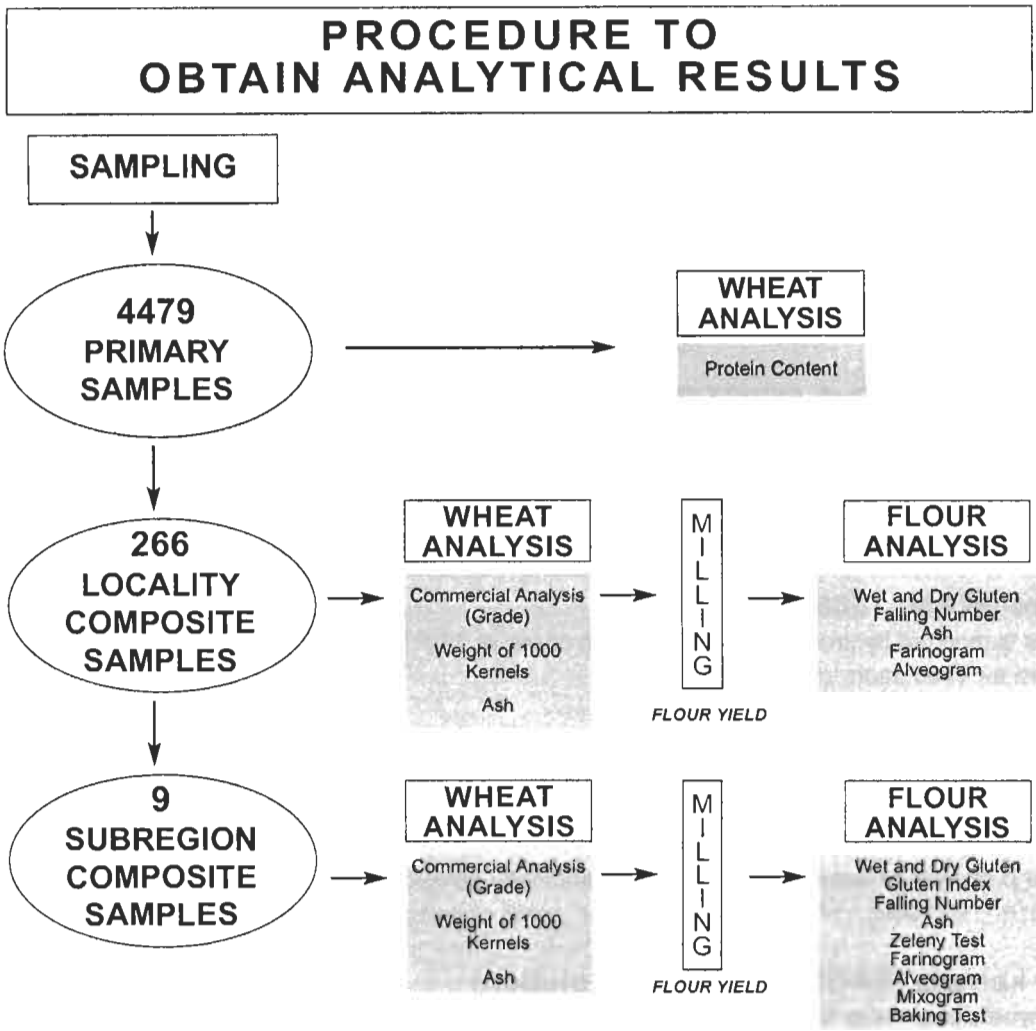
The composite samples were sent to the SENASA Laboratory to carry out the Bühler grinding, reserving a part in order to prepare the Subregion Composite Samples. It was decided to use only one mill for all the composite samples by locality, so as to minimize differences in the flour features due to the 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 N° 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 Nº 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 (ICC N° 137 - IRAM* 15864)

Gluten is a plastic - elastic substance with a white - yellowish colour which is obtained from the washing of a dough with a current of water to eliminate 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 Nº 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 Nº 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 Nº 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).

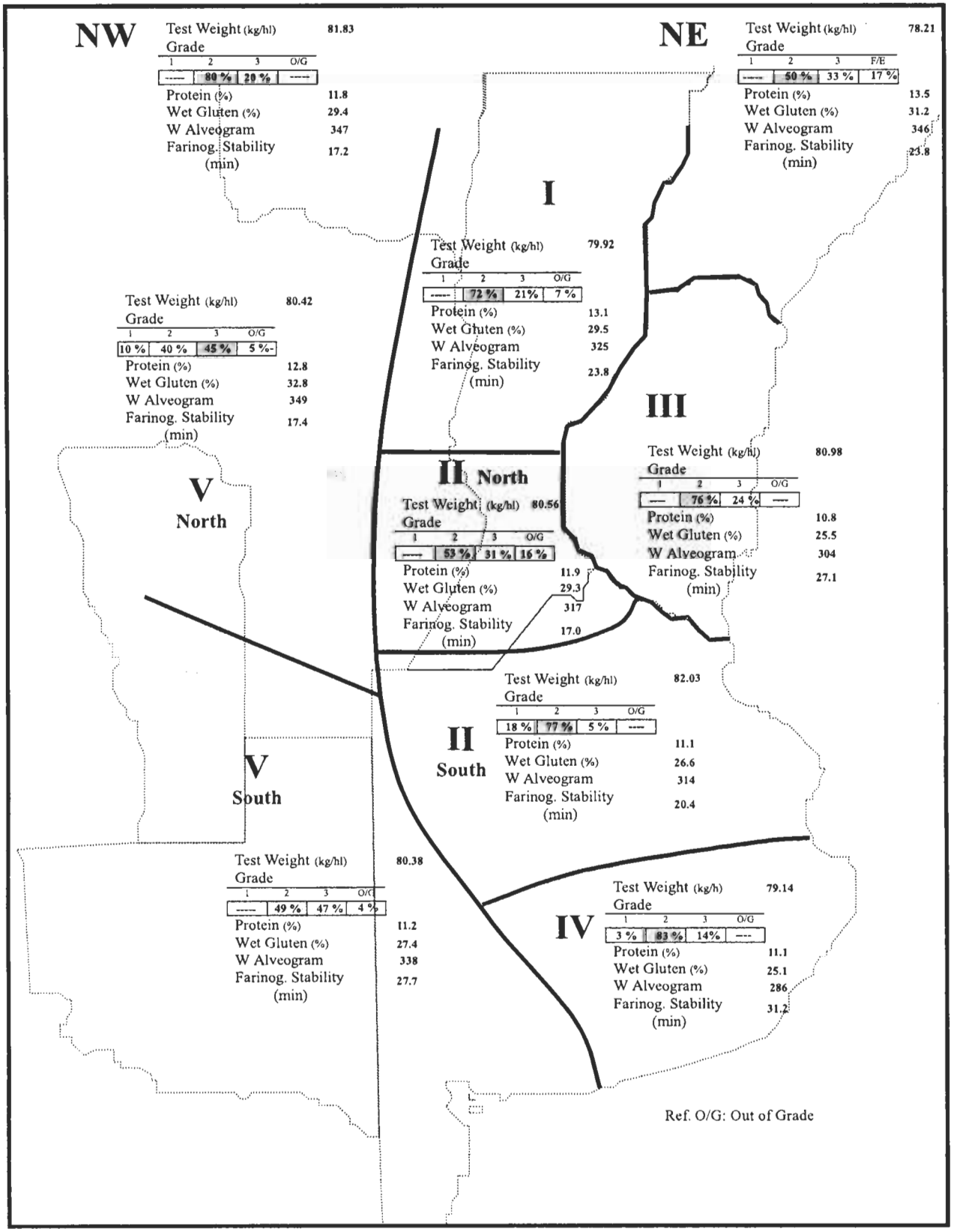
SAGPyA N° 1262 / 04
ARGENTINE STANDARD FOR WHEAT

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 performed with very good humidity (115 to 150mm of useful water up to 1m deep in soil) with temperatures slightly higher than the historical average (some peaks of 16-20 ° C), hence, the coming up of plants was quick with some aphid attacks.

Temperatures were ideal for good tillering and humidity was almost optimum, with few rains and some days with drizzle. This resulted in a small development of diseases in wheat cultivation, and water stored at sowing allowed a good development.

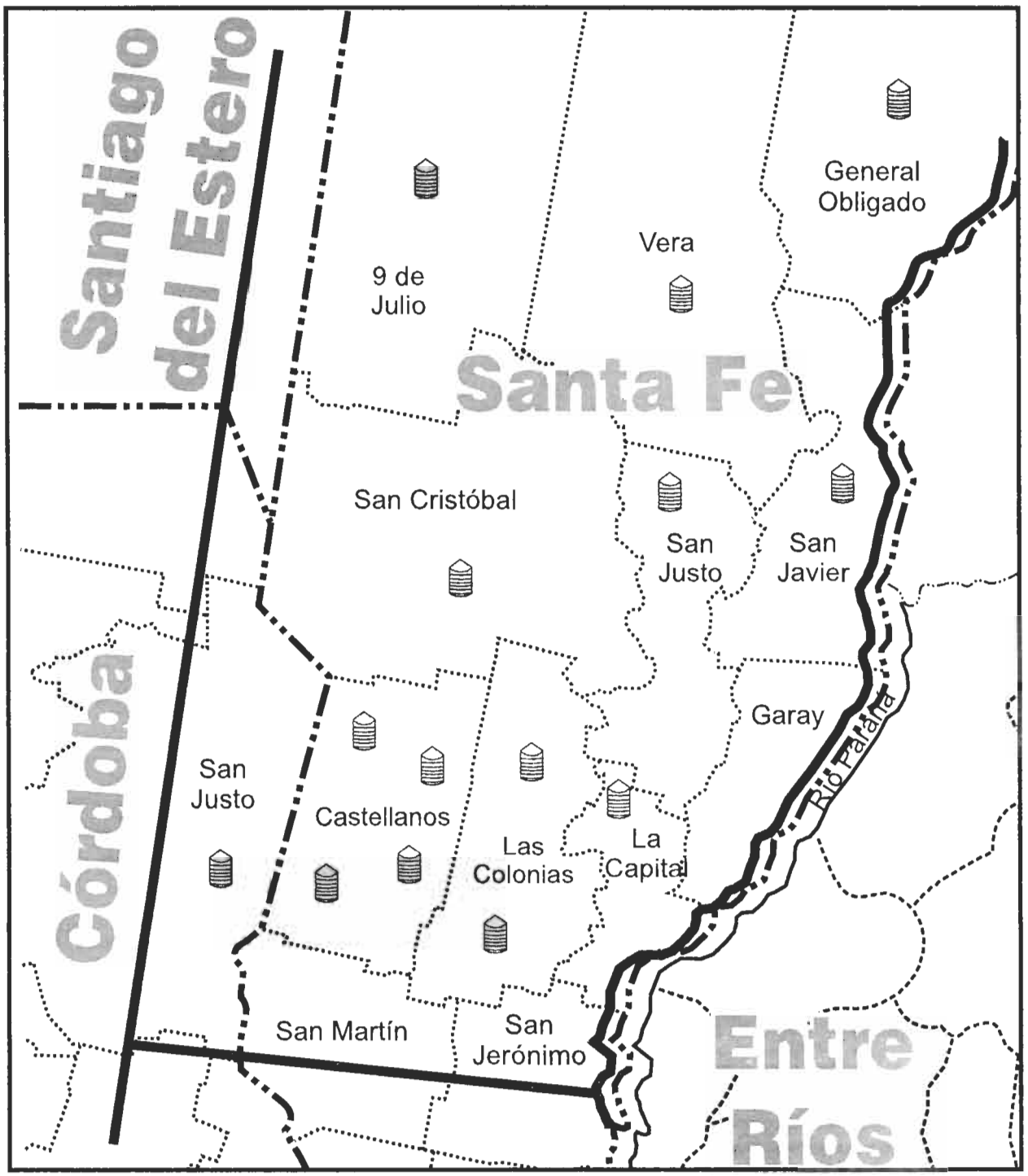
During heading stage important rains were not recorded (15 to 40mm) and temperatures were fresh. Due to a slight hydric stress, it was delayed compared to other years. There was little presence of diseases and control pulverizations were scarce.

During grain filling the occurrence of rains (40-90mm) reduced the effect of hydric stress and allowed a good filling. In all lots high acceptable productions were recorded.

Harvest was normal and without rains causing quality problems. Average yield was around 2,300 kg/ha, with extreme values of 4,000 and 1,300 kg/ha.

Fertilized surface was around 80 %, with urea dosage varying from 100 and 140 kg/ha, diamonic phosphate of up to 80 kg/ha and simple superphosphate of around 50 kg/ha, as well as sulphur compounds. The application time was 90 % in pre-sowing or with sower and 10 % between start and end of tillering stage.

With respect to diseases, leaf rust was detected in few lots and with low intensity. Yellow spot with low intensity in most of the lots.



Each reference represents near 4,000 tns sampled.

Subregion
I
Wheat

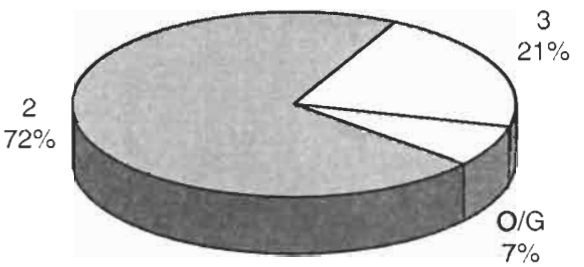
Results of the Analyses

Composite Samples by Locality. Averages were weighted by Tonnage.

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	76.80	81.30	79.92	1.04	1.31
Total Damaged Kernels (%)	0.00	0.90	0.40	0.21	53.64
Foreign Material (%)	0.08	0.56	0.26	0.13	49.66
Shrunken and Broken Kernels (%)	0.70	2.18	1.18	0.34	29.00
Yellow Berry Kernels (%)	1.20	9.90	5.26	3.02	57.38
Protein (13,5% Moisture) (%)	12.4	14.2	13.1	0.6	4.31
Weight of 1000 Kernels (gr.)	28.82	31.95	29.96	0.93	3.09
Ash (% dry basis)	1.840	2.440	2.014	0.163	8.10

Total damaged kernels includes 0.10% green kernels, 0.13% sprouted kernels and 0.17% insect chewed kernels

Grade Distribution



O/G: Out of Grade

Flour Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Wet Gluten (%)	27.5	33.2	29.5	1.7	5.59
	Dry Gluten (%)	9.6	11.7	10.5	0.6	5.33
	Falling Number (sec.)	380	501	433	30	6.98
	Flour Yield (%)	54.9	72.2	68.0	4.1	6.01
	Ash (dry basis) (%)	0.529	0.700	0.636	0.044	6.90
FARINOGRAM	Water Absorption (14 % H°) (%)	55.4	59.6	58.0	1.1	1.85
	Development Time (min.)	7.5	16.5	11.8	2.8	24.17
	Stability (min.)	13.5	47.8	23.8	9.9	41.75
	Degree of Softening (12 min.)	8	65	27	14	51.74
ALVEOGRAM	P (mm)	79	100	91	6	6.69
	L (mm)	83	117	97	10	10.51
	W Joules x 10^{-4}	272	363	325	27	8.30
	P / L	0.68	1.13	0.93	0.14	14.55

These results were elaborated with 14 composite samples prepared proportionally from 44 primary samples (farmer deliveries)

Subregion Data

In this subregion the wheat production was 753,850 tons., the 5.3% of the national total. Were sampled 56,111 tons., the 7.44% 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	4099	3	80.76	0.30	0.24	1.40	5.80	12.9	30.0	2.100
2	Castellanos	4000	O/G	80.70	0.34	0.20	2.18	1.80	12.8	29.5	2.020
3	Castellanos	4001	2	79.83	0.32	0.32	0.80	1.20	14.1	29.7	2.440
4	Castellanos	4010	3	80.10	0.50	0.40	1.36	2.80	13.7	29.6	2.140
5	La Capital	4000	2	79.20	0.50	0.30	1.10	4.20	12.4	32.0	2.110
6	Las Colonias	4000	3	81.00	0.62	0.10	1.40	6.30	12.8	30.7	1.970
7	Las Colonias	4000	2	80.10	0.32	0.36	1.20	1.60	13.2	28.8	1.860
8	San Cristobal	4000	2	79.60	0.24	0.24	1.06	9.90	13.1	29.1	2.170
9	San Justo (Santa Fe)	4000	2	79.70	0.38	0.14	0.70	7.20	12.5	31.7	1.850
10	Gral. Obligado	4000	2	79.40	0.32	0.26	1.00	6.30	13.6	30.0	1.860
11	Vera	4000	2	80.30	0.66	0.30	1.20	6.80	13.1	30.0	1.870
12	San Javier	4000	2	76.80	0.90	0.56	0.88	1.20	14.2	29.0	1.930
13	9 de Julio	4000	2	80.00	0.20	0.08	1.10	9.24	12.8	29.0	2.040
15	San Justo (Córdoba)	4001	2	81.30	0.00	0.10	1.20	9.30	12.4	30.5	1.840

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	28.3	11.0	429	72.0	58.0	11.6	20.6	26	94	86	300	1.09	0.630
2	Castellanos	28.1	9.6	441	68.7	55.4	12.5	24.8	23	80	93	284	0.86	0.586
3	Castellanos	31.1	10.7	487	72.2	58.1	15.2	39.0	10	93	102	351	0.91	0.602
4	Castellanos	30.8	10.6	438	65.1	56.9	10.3	19.8	25	83	112	330	0.74	0.638
5	La Capital	28.4	9.8	423	68.9	58.4	7.5	16.9	24	91	104	328	0.88	0.589
6	Las Colonias	29.7	10.3	442	68.1	57.7	9.5	18.7	25	89	83	272	1.07	0.529
7	Las Colonias	27.5	9.8	443	71.7	58.8	9.3	13.5	42	96	85	295	1.13	0.678
8	San Cristobal	29.8	10.5	437	68.3	58.3	10.3	20.5	23	89	101	325	0.88	0.666
9	San Justo (Santa Fe)	27.8	10.5	403	67.7	57.5	14.4	47.8	8	93	98	352	0.95	0.670
10	Gral. Obligado	33.2	11.7	380	54.9	59.3	9.7	14.4	65	91	109	363	0.83	0.700
11	Vera	30.3	10.7	409	69.2	58.9	8.4	14.7	37	79	117	318	0.68	0.665
12	San Javier	31.7	11.1	410	69.3	58.9	16.5	26.3	21	100	90	353	1.11	0.648
13	9 de Julio	28.2	10.0	424	68.5	59.6	13.5	19.7	34	98	96	345	1.02	0.663
15	San Justo (Córdoba)	28.3	10.1	501	66.8	56.9	16.2	36.7	14	94	88	331	1.07	0.634

Subregion II North
Background for the crop

Total rains recorded for May-November 2006 term was of 325.9mm, 18.7% more compared to the previous campaign and 25.4% less than the historical series (1951 – 2006).

Sowing at start of June (long cycle) and start of July (short cycle) started with good edaphic humidity in the profile. Water consumption for long and short cycle cultivation sites was 372 and 356 mm, respectively.

Temperatures were higher than 2005 campaign and than historical media on average. This produced a notorious shortening of the emergence-heading stage, on average between 10 to 15 days according to cycle and cultivation site compared to previous campaign.

Maximum and minimum temperatures during the grain filling term were similar to those recorded in 2005, observing that the grain filling term length was similar in both campaigns.

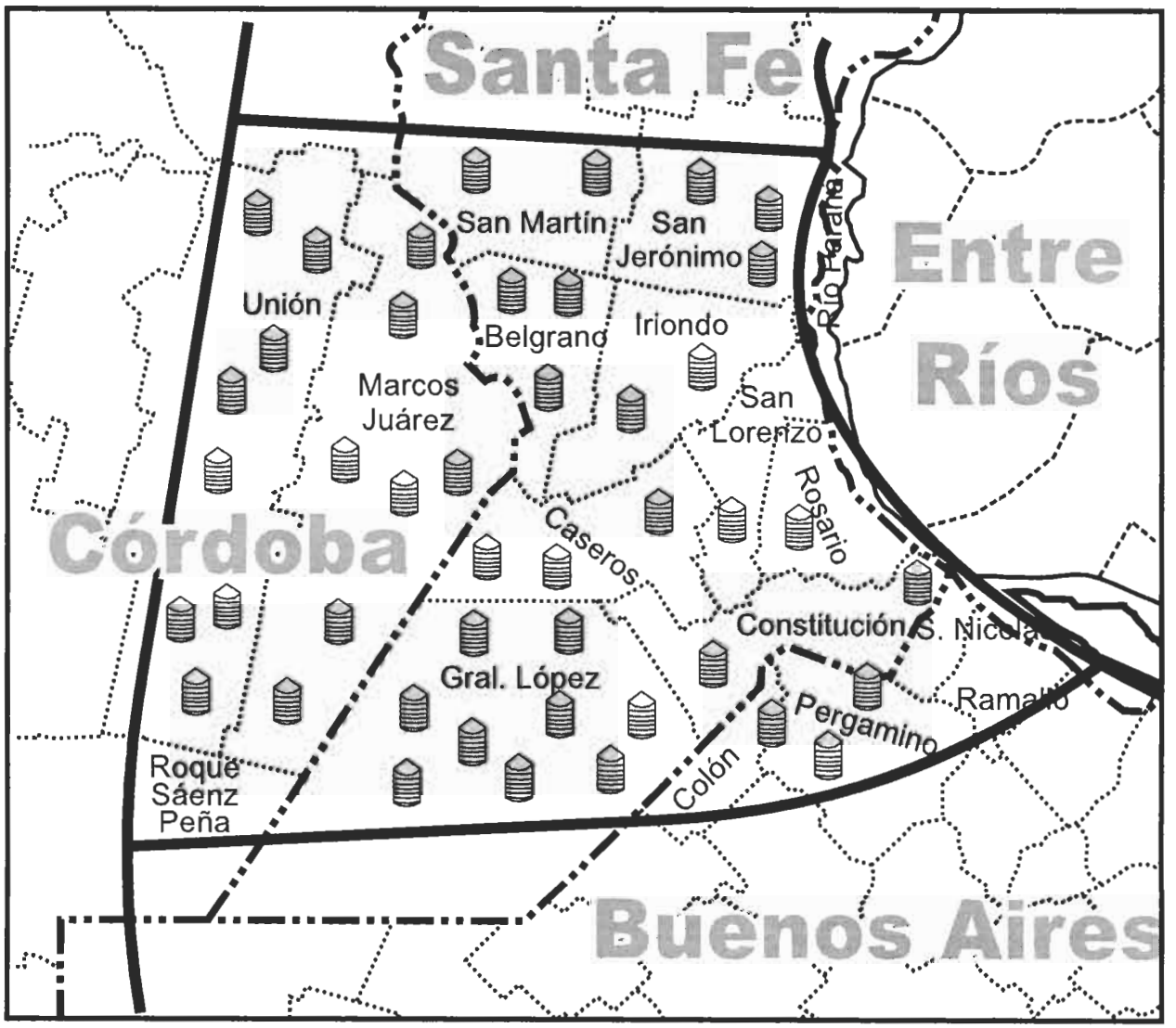
Foliar disease seriousness percentage, during heading stage, for most of the cultivations was low, 2% on average.

Heading and flowering for both precocity groups was during the first ten days of October with scarce rains (34.2mm) and average relative humidity of 64.5%, which determined absence of spike fusariosis.

In humid areas, grain yield was not affected by hydric deficit; the range of grain number per spike was 32 to 24 according to the variety.

A wide area of wheat cultivation was affected by drought when grain was in formation, key to define yield and quality. In the East of Cordoba, losses for this reason would be 20%, being the average yield in 24.7qq/ha, with minimum of 9 qq/ha and maximum of 45-50 qq/ha in more humid areas. There were also losses due to hail in some areas.

Subregion II North Wheat



Each reference represents near 4,000 tns sampled.

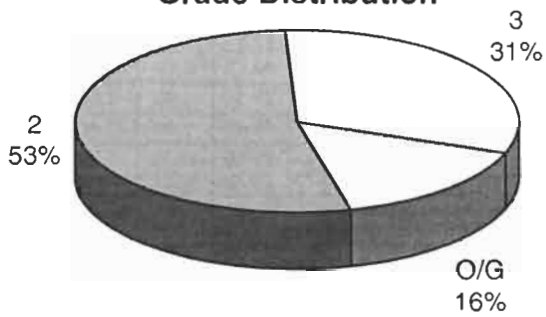
Results of the Analyses

Composite Samples by Locality. Averages were weighted by Tonnage.

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	78.10	83.10	80.56	1.12	1.39
Total Damaged Kernels (%)	0.00	5.60	0.86	0.92	107.50
Foreign Material (%)	0.10	0.70	0.25	0.15	57.09
Shrunken and Broken Kernels (%)	0.30	1.90	0.99	0.39	39.02
Yellow Berry Kernels (%)	0.00	2.00	0.35	0.61	173.99
Protein (13,5% Moisture) (%)	11.1	13.7	11.9	0.6	4.98
Weight of 1000 Kernels (gr.)	29.41	38.24	32.60	1.57	4.81
Ash (% dry basis)	1.687	2.086	1.878	0.093	4.96

Total damaged kernels includes 0.01% green kernels, 0,55% sprouted kernels, 0.27% insect chewed kernels and 0,02% calcinated kernels.

Grade Distribution



O/G: Out of grade

Flour Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Wet Gluten (%)	25.6	36.6	29.3	2.0	6.83
	Dry Gluten (%)	9	12.5	10.2	0.6	6.23
	Falling Number (sec.)	305	498	419	31	7.31
	Flour Yield (%)	62.3	72.1	69.6	1.7	2.49
	Ash (dry basis) (%)	0.493	0.727	0.591	0.052	8.80
FARINOGRAM	Water Absorption (14 % H°) (%)	56.2	62.2	59.4	1.5	2.51
	Development Time (min.)	7.5	13.6	10.0	1.6	16.09
	Stability (min.)	9.8	31	17.0	4.7	27.87
	Degree of Softening (12 min.)	17	54	36	9	25.93
ALVEOGRAM	P (mm)	71	139	102	15	14.81
	L (mm)	50	138	90	17	19.55
	W Joules x 10^{-4}	200	408	317	36	11.36
	P / L	0.53	2.78	1.14	0.41	33.48

These results were elaborated with 44 composite samples prepared proportionally from 861 primary samples (farmer deliveries)

Subregion Data

In this subregion the wheat production was 2,433,970 tons., the 17.0% of the national total. Were sampled 176,000 tons., the 7.23% 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) (%)
101	San Martín	4000	3	81.90	0.30	0.10	1.70	1.40	11.2	32.45	1.925
102	San Martín	4000	3	82.40	0.40	0.10	1.70	0.00	11.2	32.00	1.983
103	San Jerónimo	4000	2	81.30	0.40	0.20	1.20	0.00	12.3	29.65	1.997
104	San Jerónimo	4000	3	81.70	0.50	0.30	1.60	0.00	12.1	31.57	1.867
105	San Jerónimo	4000	3	81.90	0.50	0.10	1.50	0.00	11.7	31.71	1.984
106	Caseros	4000	2	80.70	0.70	0.30	0.60	0.00	11.8	32.73	1.965
107	Caseros	4000	3	79.10	0.40	0.60	1.40	0.00	12.2	30.97	2.030
108	Caseros	4000	3	78.40	1.30	0.40	1.90	0.00	12.8	29.41	1.941
109	Belgrano	4000	3	81.60	0.10	0.20	1.60	0.00	11.9	31.06	1.948
110	Belgrano	4000	2	81.00	0.10	0.20	1.20	0.00	12.0	31.89	1.924
111	Belgrano	4000	3	81.30	0.30	0.10	1.40	0.00	12.4	32.42	2.086
112	Iriondo	4000	2	81.80	0.00	0.10	0.90	0.00	11.2	33.64	1.774
113	Iriondo	4000	2	81.20	0.20	0.40	0.50	0.70	11.3	33.41	1.807
114	San Lorenzo	4000	2	81.00	0.10	0.10	1.00	0.00	11.7	31.90	1.848
115	Rosario	4000	2	80.80	0.30	0.30	1.10	0.80	11.5	33.05	1.945
116	Constitución	4000	2	80.60	0.20	0.20	0.80	1.80	11.1	34.74	1.963
117	Constitución	4000	2	80.20	0.30	0.20	0.90	1.00	11.1	34.86	1.931
118	General López	4000	2	81.00	0.30	0.20	1.00	1.00	11.4	34.29	1.865
119	General López	4000	2	79.70	0.80	0.20	0.70	0.00	11.1	35.54	1.718
120	General López	4000	2	78.60	0.30	0.20	0.50	0.00	11.7	32.71	1.714
121	General López	4000	2	79.20	0.50	0.20	0.30	0.00	11.5	34.38	1.716
122	General López	4000	2	79.90	0.40	0.30	0.90	0.00	11.8	32.24	1.870
123	General López	4000	2	80.30	1.30	0.20	0.70	0.00	12.2	33.52	1.812
124	General López	4000	2	80.00	1.20	0.30	0.80	0.00	11.7	33.06	1.774
125	General López	4000	2	79.40	1.30	0.40	0.80	0.00	11.9	32.98	1.772
126	General López	4000	3	80.00	1.80	0.10	0.60	1.10	11.8	33.50	1.796
127	Marcos Juárez	4000	3	78.10	1.80	0.20	1.00	0.00	13.2	31.68	1.965
128	Marcos Juárez	4000	2	80.50	0.60	0.10	0.60	0.00	12.5	32.75	1.921
129	Marcos Juárez	4000	2	79.00	0.40	0.10	0.70	0.00	12.1	30.76	1.687
130	Marcos Juárez	4000	2	79.10	0.60	0.10	1.10	0.00	12.8	31.67	1.957

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	Marcos Juárez	4000	2	80.00	1.40	0.30	1.10	0.00	12.6	34.24	1.957
132	Marcos Juárez	4000	O/G	79.30	5.60	0.30	0.90	0.00	13.7	32.39	1.791
133	Marcos Juárez	4000	2	80.80	1.20	0.30	0.70	0.00	13.0	30.88	2.019
134	Unión	4000	2	80.20	0.50	0.20	0.60	1.80	11.7	33.21	1.879
135	Unión	4000	2	80.60	0.70	0.50	0.80	1.00	11.5	34.45	1.818
136	Unión	4000	3	81.30	2.30	0.60	0.50	0.00	12.2	38.24	1.827
137	Unión	4000	2	83.10	0.90	0.20	0.70	0.00	12.3	31.23	1.844
138	Unión	4000	3	82.00	1.90	0.20	1.50	0.00	12.3	31.91	1.869
139	Unión	4000	3	81.20	1.90	0.30	1.00	0.00	12.2	31.57	1.853
140	Unión	4000	3	81.20	0.90	0.70	1.70	0.00	12.2	31.67	1.909
141	Unión	4000	3	82.10	1.60	0.40	1.10	2.00	12.0	32.12	1.861
142	Buenos Aires	4000	3	79.90	0.60	0.20	0.70	1.40	11.3	31.88	1.863
143	Buenos Aires	4000	2	80.20	0.40	0.40	0.90	1.50	11.4	32.39	1.909
144	Buenos Aires	4000	2	81.20	0.50	0.10	0.80	0.00	11.3	31.48	1.743

Subregion II 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) (%)
101	San Martín	25.6	9.7	421	69.9	56.9	12.4	31.0	19	102	86	339	1.19	0.598
102	San Martín	27.1	9.9	456	68.8	56.2	13.3	29.9	17	96	88	330	1.09	0.513
103	San Jerónimo	29.8	10.6	447	68.5	59.8	8.2	15.3	41	108	96	364	1.13	0.727
104	San Jerónimo	29.2	10.5	465	68.7	58.3	9.6	22.4	28	92	101	333	0.91	0.626
105	San Jerónimo	28.6	10.1	498	69.1	61.3	13.6	21.8	29	139	50	291	2.78	0.676
106	Caseros	28.4	9.9	431	68.7	58.4	11.5	21.8	30	94	84	299	1.12	0.577
107	Caseros	29.1	10.1	442	70.2	61.2	9.9	14.6	43	109	82	322	1.33	0.700
108	Caseros	29.8	10.8	398	69.4	60.7	8.7	13.2	40	98	95	326	1.03	0.578
109	Belgrano	29.5	10.3	434	70.0	58.6	8.9	16.9	42	83	112	331	0.74	0.606
110	Belgrano	29.3	10.2	407	69.5	56.9	9.7	20.9	33	116	96	390	1.21	0.611
111	Belgrano	29.1	10.6	413	72.0	58.1	12.8	24.9	27	108	84	345	1.29	0.613
112	Iriondo	27.0	9.5	437	69.9	58.8	10.4	15.7	41	102	75	282	1.36	0.539
113	Iriondo	29.7	10.3	420	69.8	58.9	11.9	19.7	35	107	82	298	1.30	0.610
114	San Lorenzo	28.6	10.1	437	70.9	58.6	10.4	17.0	28	98	80	289	1.23	0.620
115	Rosario	28.3	10.2	408	71.3	58.4	11.2	26.4	17	139	81	408	1.72	0.679
116	Constitución	26.3	9.5	411	68.5	59.5	8.1	14.5	48	98	97	334	1.01	0.544
117	Constitución	27.1	9.9	441	70.5	60.3	8.0	12.5	46	98	86	288	1.14	0.601
118	General López	28.6	10.3	405	68.5	59.7	10.9	18.1	39	105	77	200	1.36	0.658
119	General López	26.1	9.0	435	71.7	61.4	7.5	11.3	51	118	64	284	1.84	0.601
120	General López	27.3	9.3	396	70.0	59.6	7.7	11.9	47	95	93	300	1.02	0.502
121	General López	27.8	9.7	393	71.6	57.4	10.0	14.1	36	110	69	270	1.59	0.665
122	General López	28.4	9.9	378	71.5	59.3	10.5	16.7	37	102	70	272	1.46	0.558
123	General López	29.8	10.0	409	71.7	59.7	10.3	15.6	37	91	96	310	0.95	0.511
124	General López	27.7	10.2	391	70.3	59.8	9.1	13.9	41	101	77	286	1.31	0.626
125	General López	28.4	9.8	424	69.4	61.4	9.3	15.6	34	130	72	341	1.81	0.493
126	General López	30.4	10.7	395	70.2	59.6	9.3	14.1	39	103	86	317	1.20	0.585
127	Marcos Juárez	31.3	10.8	386	71.4	58.8	9.5	14.6	46	73	138	309	0.53	0.602
128	Marcos Juárez	31.4	10.8	408	69.4	61.8	9.0	14.3	35	93	96	323	0.97	0.578
129	Marcos Juárez	32.5	11.1	399	70.8	56.4	9.2	14.7	39	71	120	254	0.59	0.583
130	Marcos Juárez	31.3	10.0	441	72.1	60.6	12.7	17.3	22	112	84	341	1.33	0.602

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	Marcos Juárez	31.9	10.9	377	68.6	60.8	9.5	10.7	54	75	129	319	0.58	0.508
132	Marcos Juárez	36.6	12.5	305	69.4	59.7	8.0	9.8	54	94	108	324	0.87	0.619
133	Marcos Juárez	33.6	11.9	442	67.1	57.9	11.7	20.4	28	94	104	357	0.90	0.603
134	Unión	29.9	10.3	394	69.2	58.0	8.9	14.1	45	82	121	336	0.68	0.546
135	Unión	28.5	9.8	402	70.4	60.1	9.7	14.6	33	104	82	302	1.27	0.643
136	Unión	29.8	10.3	432	66.8	59.9	10.4	15.6	34	101	87	317	1.16	0.525
137	Unión	30.5	10.4	426	62.3	58.6	13.2	23.6	19	93	97	328	0.96	0.537
138	Unión	30.4	10.5	433	70.3	61.2	9.9	18.2	28	124	79	364	1.57	0.581
139	Unión	29.5	10.3	438	66.1	58.0	10.9	17.6	30	91	102	331	0.89	0.563
140	Unión	30.3	10.4	415	69.9	62.2	10.2	15.5	36	117	89	379	1.31	0.581
141	Unión	29.5	10.0	408	69.2	58.7	10.5	16.7	29	82	110	312	0.75	0.578
142	Buenos Aires	27.4	9.6	466	69.1	62.1	7.8	12.5	35	115	75	303	1.53	0.568
143	Buenos Aires	28.2	9.0	460	68.4	59.8	7.5	12.9	37	109	75	291	1.45	0.573
144	Buenos Aires	28.2	10.0	426	70.7	60.3	9.2	13.9	48	119	63	292	1.89	0.593

Subregion II South
Background for the crop

The area sowed with wheat at national level was reduced compared to 2005/06 campaign. Instead, production increased 12%. In ecologic sub-region II an increase was recorded in sowed area, as well as in production of approximately 15%. Yields per hectare in general were good, where lots were harvested with more than 6000 Kg/ha.

Climate conditions were with good edaphic humidity at sowing, enough to make wheat germinate normally. At tillering and stalking stage, during August and September, there were no rains, which reduced the plant's height and produced less number of tillers. This hydric stress ambient prevented diseases from developing. As of start of flowering, enough rain helped recover the deficit during winter and start of spring.

With respect to extreme temperatures, minimum ones were benign during tillering and stalking, where damages due to frost were not observed. In maximum temperatures, peaks of 32 and 35° C were observed for mid November, which jointly with North North-East winds made the wheat speed up maturity.

It can be considered that most wheat cultivation was done by means of direct sowing and fertilized with nitrogen and phosphorous. An increase in the number of producers using sulphur was detected. More common doses used were 75-80 Kg/ha. of diamonic or monoamonic phosphate and 100-150 Kg/ha. of urea. There were cases in which these doses were more than doubled.

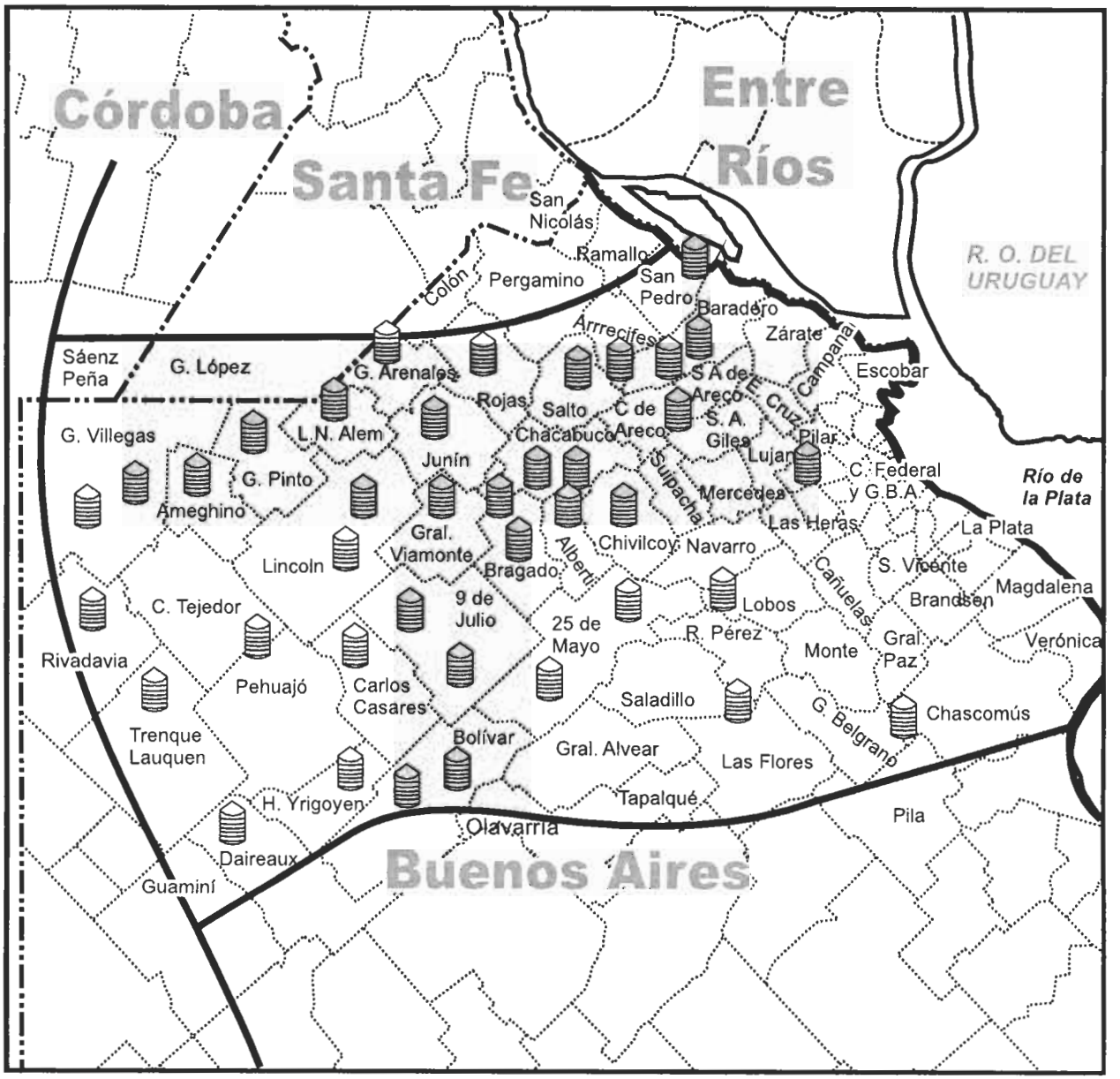
Diseases appeared after rains when the grain was already shaped. In those materials more sensitive, there was a very serious outbreak. Many producers performed treatments with fungicides, but the incidence thereof was low in the yields due to the already advanced reproductive stage of the cultivation.

The harvest was carried out 3 to 4 days in advance and was done under good climate conditions. Yield, as mentioned before, was very good.

Commercial and industrial quality was considered very good for this Sub-region. There was a very good grain weight with excellent hectoliter weights. It was common to see lots exceeding 80 of hectoliter weight and protein values averaged 10.5 to 12 %. Thanks to this, lots were marketed between degrees 2 and 1. Some lots had high numbers of mottled grains "yellow berry" as previous years. This was associated with the lot's history, the quantity of fertilizer applied and the cultivation site used

As a conclusion, we can say that 2006/07 wheat campaign for South Sub-region II was very good, from the productive viewpoint, as well as from the industrial and commercial quality one.

Subregion II South Wheat



Each reference represents near 4,000 tns sampled.

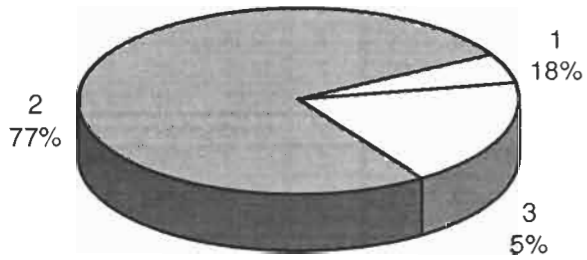
Results of the Analyses

Composite Samples by Locality. Averages were weighted by Tonnage.

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	78.6	84.40	82.03	1.45	1.77
Total Damaged Kernels (%)	0.05	0.98	0.36	0.23	64.18
Foreign Material (%)	0.08	1.29	0.29	0.22	75.26
Shrunken and Broken Kernels (%)	0.14	0.95	0.54	0.20	37.38
Yellow Berry Kernels (%)	0.00	4.80	1.63	1.14	69.78
Protein (13,5% Moisture) (%)	10.4	12.5	11.1	0.5	4.90
Weight of 1000 Kernels (gr.)	32.72	37.86	35.15	1.36	3.87
Ash (% dry basis)	1.527	1.879	1.734	0.089	5.11

Total damaged kernels includes 0,04 green kernels, 0,02% frosty kernels, 0,06% sprouted kernels, 0,08% calcinated kernels, 0,15% insect chewed kernels and 0,01% heat damaged kernels.

Grade Distribution



Flour Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Wet Gluten (%)	22.0	31.9	26.6	2.2	8.38
	Dry Gluten (%)	8.1	11.8	9.8	0.8	8.39
	Falling Number (sec.)	382	500	421	21	5.03
	Flour Yield (%)	65.8	72.9	69.7	1.8	2.62
	Ash (dry basis) (%)	0.432	0.614	0.517	0.047	9.10
FARINOGRAM	Water Absorption (14 % H°) (%)	56.5	63.5	59.5	1.6	2.62
	Development Time (min.)	6.1	18.8	11.4	3.1	27.44
	Stability (min.)	8.3	29.6	20.4	4.7	22.89
	Degree of Softening (12 min.)	15	66	28	9	32.85
ALVEOGRAM	P (mm)	87	161	122	15	12.41
	L (mm)	45	105	74	16	21.02
	W Joules x 10^{-4}	236	413	314	43	13.56
	P / L	0.94	3.58	1.65	0.59	33.36

These results were elaborated with 39 composite samples prepared proportionally from 702 primary samples (farmer deliveries)

Subregion Data

In this subregion the wheat production was 2,398,930 tons., the 16.8% of the national total. Were sampled 150,000 tons., the 6.25% of the subregion production.

Subregion II 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) (%)
200	General Pinto	4000	1	81.95	0.24	0.20	0.32	0.40	11.5	34.08	1.796
201	General Villegas	4000	2	79.70	0.48	0.26	0.42	0.00	12.5	34.62	1.527
202	Rivadavia	2000	2	79.70	0.40	0.28	0.88	0.00	11.3	35.02	1.774
203	Bragado	4000	1	83.25	0.24	0.11	0.40	2.00	10.7	35.26	1.734
204	25 de Mayo	4000	2	83.25	0.31	0.18	0.52	1.37	10.5	35.16	1.680
205	Chacabuco	4000	2	83.95	0.36	0.26	0.42	1.52	10.9	33.78	1.757
206	9 de Julio	4000	2	82.15	0.64	0.42	0.62	0.86	10.9	35.88	1.740
207	Rojas	4000	2	79.90	0.36	0.14	0.64	0.98	11.1	34.54	1.852
208	General Viamonte	4000	2	82.85	0.48	0.26	0.40	0.80	11.7	34.46	1.772
209	Alberti	4000	2	82.60	0.52	0.32	0.34	0.96	10.9	34.60	1.789
210	Ameghino	2000	2	80.15	0.38	0.42	0.32	0.20	12.2	32.72	1.854
211	General Arenales	4000	2	80.80	0.42	0.19	0.77	0.58	10.6	33.46	1.802
212	Lincoln	4000	1	84.15	0.74	0.16	0.14	0.80	11.7	35.62	1.717
213	Chivilcoy	4000	2	83.95	0.05	0.20	0.60	1.40	10.7	37.86	1.776
214	Baradero	4000	1	82.15	0.12	0.18	0.40	0.46	11.4	33.52	1.778
215	San Pedro	4000	2	82.40	0.06	0.24	0.46	0.00	10.4	36.72	1.871
216	Arrecifes	2000	2	82.60	0.26	0.08	0.54	3.54	10.6	35.85	1.831
217	Navarro-Monte-Lobos-R. Perez	4000	2	82.15	0.28	0.48	0.54	2.12	11.1	35.20	1.695
218	C. de Areco - S. A. de Giles	4000	2	81.50	0.19	0.22	0.56	3.00	11.0	34.62	1.702
219	G. Belgrano - Chascomús	4000	1	82.85	0.08	0.20	0.46	1.58	10.9	36.44	1.659
220	Junín	6000	2	83.50	0.09	0.20	0.84	2.90	11.1	35.40	1.879
221	Las Flores - Saladillo	4000	2	83.95	0.13	0.40	0.24	3.13	11.1	37.30	1.701
222	San Antonio de Areco	4000	2	83.50	0.24	0.28	0.94	1.18	11.2	32.96	1.746
223	Salto	4000	2	82.15	0.14	0.22	0.46	0.00	S/D	36.42	S/D
224	Trenque Lauquen	4000	2	78.60	0.14	0.42	0.60	0.62	12.3	36.02	1.796
225	Pehuajó - Carlos Tejedor	4000	2	82.15	0.55	0.12	0.54	1.74	11.5	34.80	1.716
226	Bolivar	4000	2	80.80	0.98	0.22	0.30	2.19	10.7	37.54	1.642
227	Daireaux	4000	2	79.80	0.32	0.08	0.58	4.80	10.9	34.30	1.552
228	Hipólito Yrigoyen	4000	3	82.40	0.28	0.82	0.46	2.84	11.3	35.72	1.648
229	L. N. Alem	4000	2	79.25	0.24	0.50	0.52	1.08	11.8	32.80	1.817
230	Ramallo - San Nicolás	4000	2	81.70	0.52	0.28	0.66	3.68	11.1	35.46	1.765
231	25 de Mayo	4000	2	83.05	0.40	0.36	0.88	1.14	10.6	37.48	1.661
232	Chacabuco	4000	2	84.40	0.90	0.18	0.95	2.90	10.4	33.40	1.650
233	9 de Julio	4000	2	82.15	0.26	0.16	0.88	1.64	10.6	35.12	1.708
234	Bragado	4000	1	82.40	0.36	0.12	0.46	1.50	S/D	34.40	S/D
235	Bolivar	4000	2	81.05	0.30	0.28	0.26	2.18	10.5	36.90	1.547
236	General Villegas	4000	1	80.35	0.85	0.18	0.36	2.50	12.2	33.30	1.853
237	Lincoln	4000	3	81.50	0.50	1.29	0.70	1.20	11.8	34.50	1.746
238	Carlos Casares	2000	2	81.70	0.25	0.28	0.66	3.54	11.1	37.70	1.629

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	General Pinto	28.7	10.6	404	71.9	59.8	6.2	13.3	38	103	86	296	1.20	0.551
201	General Villegas	31.8	11.8	409	69.7	61.6	11.3	15.4	35	119	85	343	1.40	0.548
202	Rivadavia	27.0	10.0	410	71.1	58.7	8.6	17.4	28	113	64	265	1.77	0.572
203	Bragado	25.6	9.5	430	68.7	59.8	7.8	17.1	27	116	71	291	1.63	0.576
204	25 de Mayo	24.6	9.1	400	71.3	59.8	6.1	15.2	28	122	49	236	2.49	0.528
205	Chacabuco	26.9	10.0	420	69.4	59.6	8.4	19.1	20	122	61	270	2.00	0.462
206	9 de Julio	25.8	9.6	426	70.8	59.7	12.7	18.3	30	120	72	305	1.67	0.525
207	Rojas	25.8	9.6	450	70.9	58.4	13.8	23.2	26	105	89	317	1.18	0.532
208	General Viamonte	29.3	10.8	459	70.7	60.6	8.6	15.7	42	103	100	323	1.03	0.564
209	Alberti	26.4	9.8	400	69.1	58.4	11.0	19.1	30	102	78	270	1.31	0.549
210	Ameghino	30.7	11.4	500	72.9	60.4	10.4	16.8	37	99	105	338	0.94	0.614
211	General Arenales	25.8	9.5	397	70.4	57.2	13.4	26.9	18	87	84	255	1.04	0.494
212	Lincoln	31.9	11.8	425	68.2	63.5	6.8	8.3	66	114	85	308	1.34	0.546
213	Chivilcoy	26.0	9.6	418	70.6	61.0	13.1	22.1	24	130	63	311	2.06	0.536
214	Baradero	27.3	10.1	446	70.8	60.7	13.3	22.4	24	135	79	366	1.71	0.607
215	San Pedro	24.6	9.1	423	65.8	60.2	13.9	25.7	15	154	45	278	3.42	0.535
216	Arrecifes	24.3	9.0	444	71.5	61.0	7.4	17.5	25	161	45	287	3.58	0.517
217	Navarro-Monte-Lobos-R. Perez	25.1	9.3	420	72.0	58.6	13.5	21.9	30	129	59	299	2.19	0.467
218	C. de Areco - S. A. de Giles	25.9	9.6	430	70.5	58.0	10.9	21.7	21	117	89	348	1.31	0.528
219	G. Belgrano - Chascomús	25.9	9.6	382	69.4	58.9	11.8	19.2	34	133	61	302	2.18	0.516
220	Junín	27.7	10.2	435	69.3	61.8	10.9	15.9	35	129	65	306	1.98	0.600
221	Las Flores - Saladillo	25.9	9.6	390	72.8	59.1	16.0	25.1	26	131	57	292	2.30	0.449
222	San Antonio de Areco	28.0	10.4	400	71.5	59.4	14.7	26.1	20	131	73	347	1.79	0.577
224	Trenque Lauquen	30.0	11.1	415	70.7	61.6	12.0	21.1	22	140	77	393	1.82	0.523
225	Pehuajó - Carlos Tejedor	28.3	10.5	420	69.6	59.8	8.8	16.8	29	113	103	377	1.10	0.559
226	Bolivar	24.3	9.0	430	67.5	59.3	13.0	21.7	25	141	61	317	2.31	0.464
227	Daireaux	24.8	9.2	420	66.2	56.5	8.7	20.3	20	95	82	266	1.16	0.483
228	Hipólito Yrigoyen	26.1	9.7	390	66.0	60.6	8.8	15.1	35	101	93	295	1.09	0.513
229	L. N. Alem	27.2	10.1	430	67.0	59.2	16.7	26.9	24	121	101	413	1.20	0.488
230	Ramallo - San Nicolás	24.5	9.1	437	71.2	59.2	15.0	21.1	34	121	65	299	1.86	0.468
231	25 de Mayo	25.7	9.5	400	69.3	58.1	9.0	16.1	34	138	45	253	3.07	0.485
232	Chacabuco	22.0	8.1	435	66.9	56.9	6.3	26.2	15	121	64	304	1.89	0.481
233	9 de Julio	24.0	8.9	440	69.0	57.2	11.3	20.3	27	126	77	357	1.64	0.457
235	Bolivar	23.0	8.5	400	67.5	57.0	14.1	25.7	23	118	68	281	1.74	0.432
236	General Villegas	28.6	10.6	400	70.4	58.8	18.8	29.6	20	138	77	405	1.79	0.461
237	Lincoln	28.2	10.4	450	71.2	61.4	12.0	25.8	21	132	83	358	1.59	0.485
238	Carlos Casares	24.4	9.0	410	71.5	59.4	15.7	26.1	26	129	66	316	1.95	0.446

Subregion III
Background for the crop

General temperature conditions during 2006 in Subregion III are milder than the historical average.

Autumn rains did not overfill thoroughly the profile of soils and only June rains made possible such refill. However, as of said month, rains were scarce, thus observing an important hydric deficit which affected the cultivation yield.

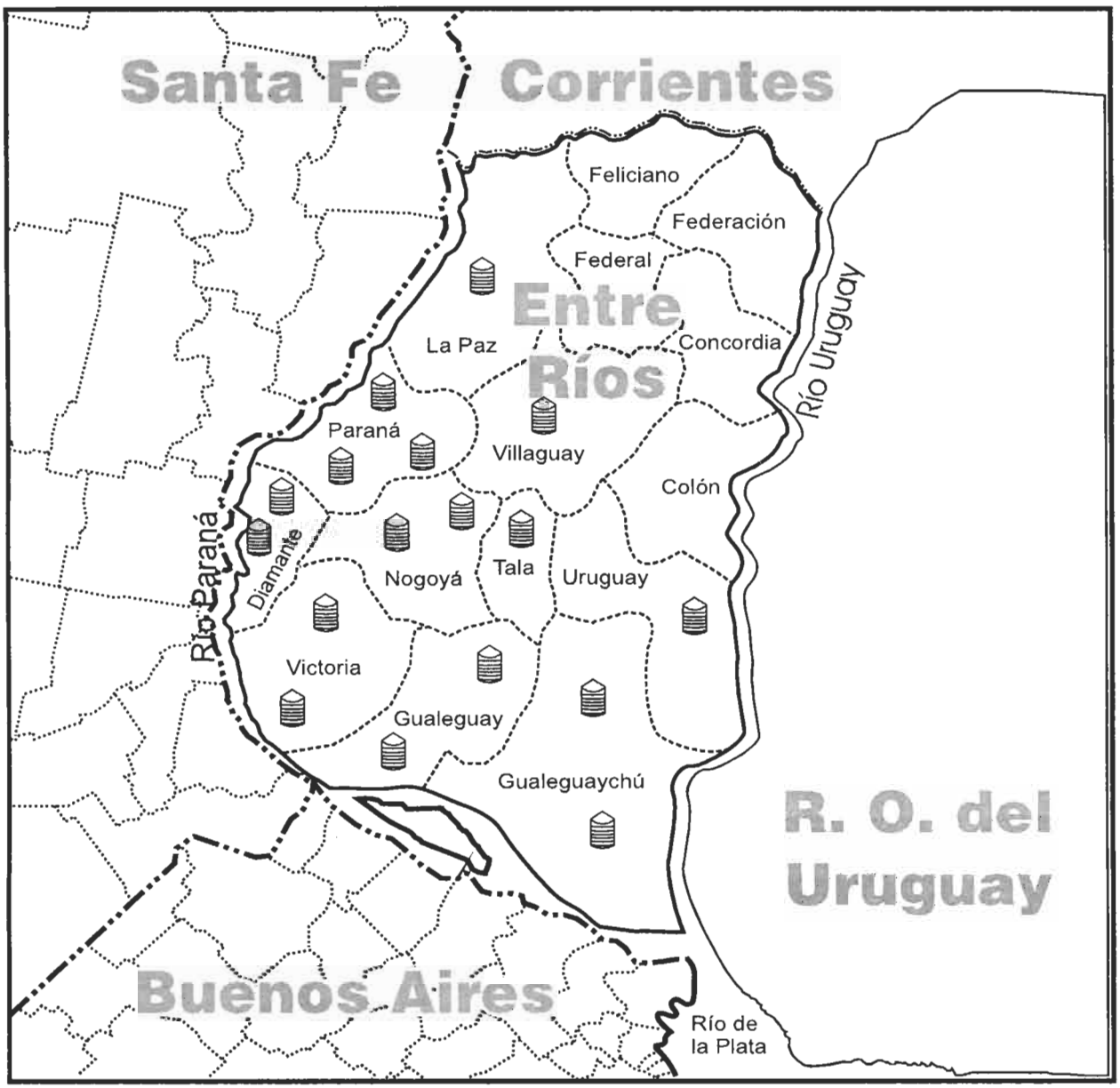
Sun hours and global radiation recorded during the year were higher than the historical average values.

With respect to common diseases of cultivation, scarce humidity conditions at the start of spring prevented pathogens from spreading, especially leaf rust, whose presence was notoriously observed only in cultivations very sensitive to it. Anyway, the incidence of diseases was not notorious due to the habitual practice of fungicide usage in very sensitive materials.

The sowing system widely used continues to be direct sowing with approximately 80% of implanted surface.

Fertilization is performed practically in all implanted surface. An increase of dosage used was observed compared to previous campaigns. Fertilizers more used in sowing are: diamonic phosphate, monoamonic phosphate and in fewer quantities a mix of fertilizers. During tillering stage, the one mostly used is urea-ammonium nitrate (UAN), followed by urea.

Average yield of wheat cultivation in the province was 2838 kg/ha, approximately 7% less than the previous campaign. This decrease occurred as a consequence of the above mentioned drought, during part of winter and the first month of spring.



Each reference represents near 4,000 tns sampled.

Subregion III Wheat

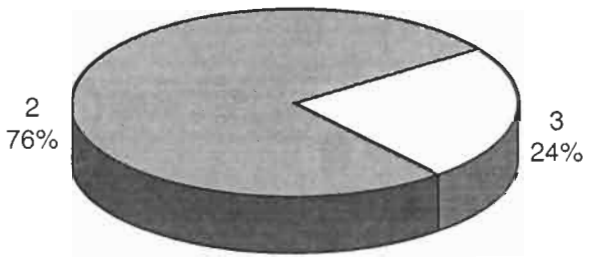
Results of the Analyses

Composite Samples by Locality. Averages were weighted by Tonnage.

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	79.40	82.80	80.98	0.94	1.16
Total Damaged Kernels (%)	0.09	1.02	0.38	0.27	69.67
Foreign Material (%)	0.10	1.03	0.45	0.27	60.06
Shrunken and Broken Kernels (%)	0.60	1.53	1.02	0.23	22.66
Yellow Berry Kernels (%)	0.66	8.00	3.05	2.13	69.90
Protein (13,5% Moisture) (%)	10.0	12.1	10.8	0.5	4.97
Weight of 1000 Kernels (gr.)	31.40	35.60	33.73	1.15	3.40
Ash (% dry basis)	1.390	1.870	1.659	0.115	6.91

Total damaged kernels includes 0.15% green kernels, 0.15% sprouted kernels and 0.08% insect chewed kernels.

Grade Distribution



Flour Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Wet Gluten (%)	23.5	28.1	25.5	1.4	5.60
	Dry Gluten (%)	8.3	9.8	8.9	0.5	5.56
	Falling Number (sec.)	413	484	449	22	4.86
	Flour Yield (%)	70.1	75.8	72.4	1.5	2.03
	Ash (dry basis) (%)	0.479	0.642	0.550	0.037	6.78
FARINOGRAM	Water Absorption (14 % H°) (%)	56.7	60.4	58.4	1.1	1.92
	Development Time (min.)	9.8	17.9	14.0	2.2	15.75
	Stability (min.)	17.8	42.4	27.1	6.9	25.28
	Degree of Softening (12 min.)	9	34	19	8	43.54
ALVEOGRAM	P (mm)	95	130	106	11	10.57
	L (mm)	48	99	77	12	15.89
	W Joules x 10^{-4}	263	353	304	26	8.56
	P / L	1.01	2.71	1.38	0.42	29.51

These results were elaborated with 17 composite samples prepared proportionally from 399 primary samples (farmer deliveries)

Subregion Data

In this subregion the wheat production was 906,230 tons., the 6.3% of the national total. Were sampled 68,340 tons., the 7.54% 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	3940	2	82.00	0.09	0.68	1.06	6.80	10.8	34.20	1.870
301	Paraná	4020	3	80.80	0.20	0.66	1.36	4.00	11.3	35.00	1.870
302	Paraná	4030	3	80.50	0.69	0.90	1.26	1.00	11.5	33.80	1.640
303	Villaguay	3930	2	80.60	0.42	0.45	1.00	1.33	11.6	31.40	1.560
304	Diamante	3870	3	81.80	0.26	0.23	1.53	8.00	10.3	32.60	1.670
305	Diamante	3940	2	82.80	0.32	0.26	1.16	1.66	10.8	33.80	1.600
306	R. del Tala	4100	2	79.60	0.18	0.10	1.06	0.66	10.5	33.80	1.550
307	La Paz	4050	2	79.60	0.72	0.22	0.73	0.66	12.1	32.40	1.740
308	Gualeguay	4250	2	81.90	0.13	0.16	0.93	5.90	10.2	35.60	1.390
309	Gualeguay	4210	2	82.30	0.33	0.33	0.86	3.00	10.5	35.40	1.610
310	Gualeuaychú	3930	2	81.10	0.53	0.60	1.03	2.50	10.5	35.40	1.680
311	Gualeguaychú	3990	2	79.40	0.09	0.30	1.16	2.50	10.0	33.00	1.580
312	Nogoyá	4040	2	81.30	0.30	0.20	0.76	2.33	10.7	33.40	1.700
313	Nogoyá	4010	2	80.90	1.02	0.73	0.90	4.20	10.4	32.80	1.750
314	C. del Uruguay	3950	2	81.00	0.80	0.30	0.60	2.00	10.5	32.80	1.640
315	Victoria	3940	2	80.30	0.36	0.43	1.13	4.50	10.9	33.40	1.740
316	Victoria	4140	3	80.80	0.12	1.03	0.80	1.00	10.7	34.40	1.630

Subregion III 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) (%)
300	Paraná	24.6	8.6	423	75.8	57.4	12.4	20.3	33	97	82	298	1.18	0.523
301	Paraná	25.8	9.0	413	71.0	57.3	11.9	19.1	34	97	73	271	1.33	0.523
302	Paraná	27.4	9.8	449	72.1	59.9	9.8	17.8	30	101	99	353	1.02	0.563
303	Villaguay	25.7	9.0	466	71.2	58.3	17.7	42.4	9	102	84	327	1.21	0.522
304	Diamante	27.3	9.6	471	72.3	59.3	14.3	24.3	22	112	74	326	1.51	0.577
305	Diamante	27.8	9.6	442	72.3	59.9	12.8	20.6	25	97	96	333	1.01	0.571
306	R. del Tala	23.6	8.3	451	74.2	58.9	16.8	33.9	9	130	48	263	2.71	0.592
307	La Paz	25.0	8.4	467	73.2	59.5	12.2	27.2	13	124	67	319	1.85	0.557
308	Gualeguay	24.2	8.6	448	70.1	59.3	11.6	28.3	13	118	61	274	1.93	0.520
309	Gualeguay	23.9	8.3	416	71.6	57.0	15.7	28.6	16	96	80	279	1.20	0.499
310	Gualeuaychú	25.6	9.0	461	73.5	58.3	17.9	35.0	12	119	65	312	1.83	0.568
311	Gualeguaychú	23.5	8.3	414	71.7	57.1	15.0	24.6	24	95	74	278	1.28	0.569
312	Nogoyá	28.1	9.7	471	72.1	58.3	14.7	28.3	15	107	84	326	1.27	0.559
313	Nogoyá	24.9	8.6	484	70.1	58.0	14.4	28.0	15	99	81	286	1.22	0.564
314	C. del Uruguay	24.4	8.6	437	71.8	56.7	15.5	38.7	10	97	80	282	1.21	0.479
315	Victoria	26.5	9.0	474	74.3	60.4	11.9	18.5	30	118	75	324	1.57	0.642
316	Victoria	25.3	8.9	442	73.2	57.4	13.9	25.8	16	96	89	318	1.08	0.530

Subregion IV
Background for the crop

As last year during this cycle, ambient conditions were variable among regions within the area of reference. Hence, only general situations will be referred.

April-June quarter rains reached only 40% of historical average (65.1mm vs 166.5mm in CEI INTA Barrow) hence there wasn't a good reserve of humidity in soil for early sowing.

Consequently, the sowing of long cycle varieties in the more advisable period was often not done – end of May to end of June – and in many cases delayed until mid to end of July.

However, in most lots emergence was satisfactory due to scarce but relatively frequent rains during June and start of July, which granted some humidity to the surface. In the second fortnight of July there were rains of a higher magnitude which allowed an adequate stand of plant/m^2.

Precocious varieties sowing underwent similar situations to the ones above, because during August there were many rains, and in many cases they were delayed until start of September.

Vegetative phase also underwent scarce edaphic humidity, for early and late sowings, because August rains were scarce and in September were inferior or similar to the historical average, according to zones. Consequently, during this stage, cultivations had a limited growth, not achieving a good coverage in many cases.

An outstanding aspect was June temperatures, which were higher than normal advancing in lots sowed early the heading to October 20th – 25th. Whereas for cultivations sowed from end of June to end of July their heading stage occurred in a more advisable time – end of October to start of November. Lots sowed during August onwards, showed a delay of one week, together with the delays in sowing.

During October there was an excess of rains which made crop situation change completely (between 150 and 200mm according to areas). Together with other favorable climate conditions a surprising growth of plants occurred in height as well as biomass, thus obtaining spikes of a very good fertility, which compensated the decrease of spike/m2 in some cases, promising an excellent harvest.

These expectations were finally erased by climate evolution during November. Besides the total lack of rains in some areas, there were many days with high temperatures and strong winds that caused a high evapotranspiration and an abrupt lack of humidity during grain filling, caused by these conditions and by cultivations that demand a lot given the biomass achieved.

Due to these conditions, on mid November in most cases leaves dried violently, as well there was a shortening of grain filling stage, which caused a decrease in the grain size in all cases as well as a decrease in the hectoliter weight. On the contrary, it caused an increase in protein content, but with a small grain of low yield.

This stress and yield decrease was in many cases even higher in lots having a higher natural or added nitrogenated fertility, which caused an exuberant growth of plants during October and suffered much more November's negative conditions.

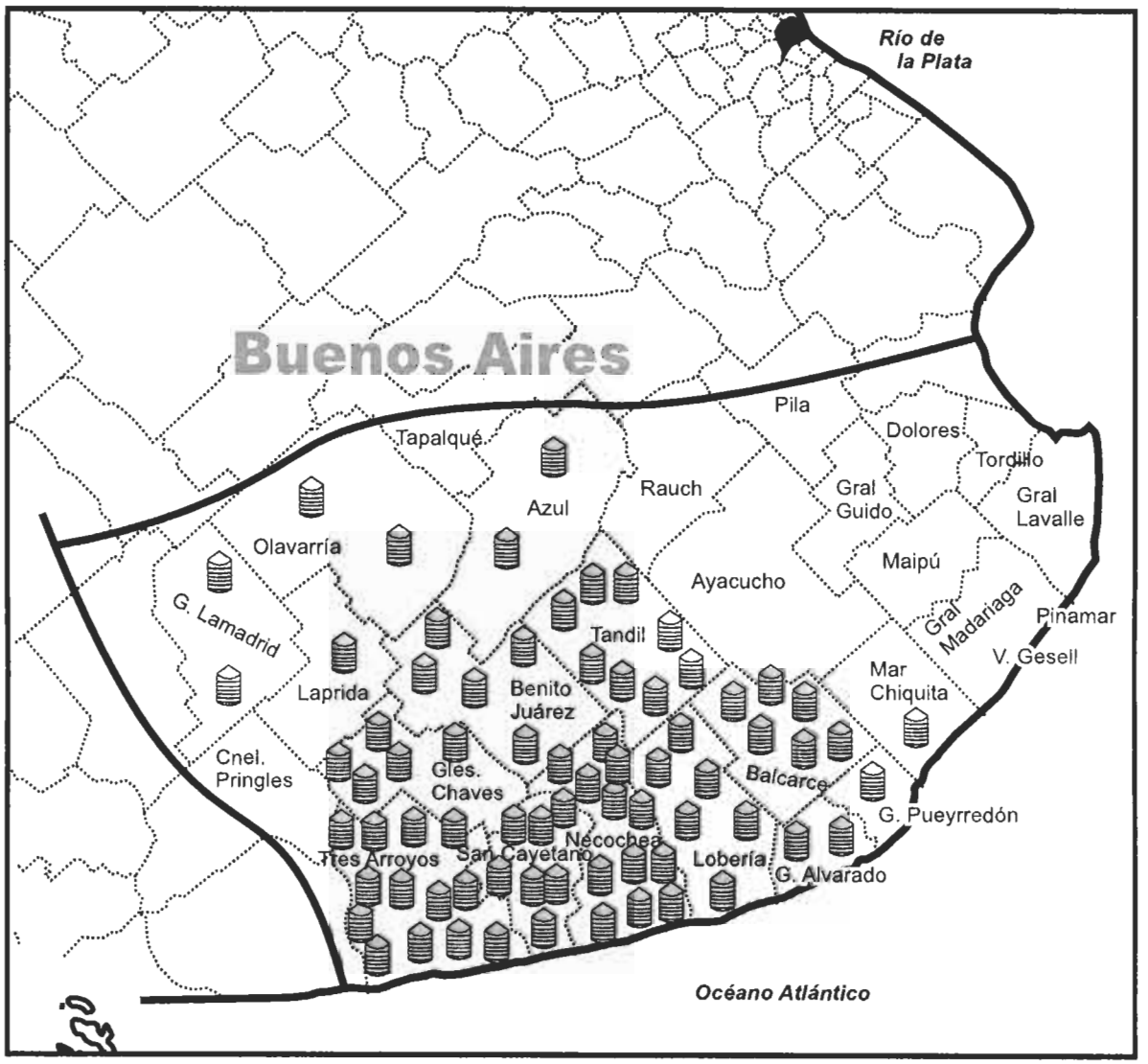
Also impacted on yield decrease two late frosts at the end of October and mid November, which although were not generalized, were quite intense in some areas.

Foliar diseases towards the end of October were intense in the region, but afterwards stopped when leaves dried given November's climate conditions.

Cultivation maturity occurred 10 to 15 days earlier in the area starting the harvest in the first lots on mid December, something atypical in the region.

With respect to nitrogenated fertilization, in general, although performed in almost all lots, usually aims at yield, per application time and per dose applied. However, protein contents obtained in this campaign will be near 11%, considering that there was a yield fall of 25 to 30% as a result of the shortening of the grain filling term due to hydric stress and high temperatures. This situation caused grains to be smaller and often deformed, which also decreased hectoliter weight

Subregion IV Wheat



Each reference represents near 4,000 tns sampled

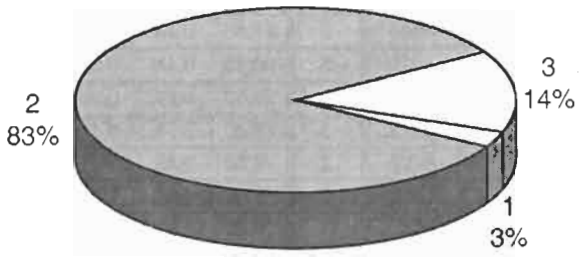
Results of the Analyses

Composite Samples by Locality. Averages were weighted by Tonnage.

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	76.10	82.15	79.14	1.35	1.70
Total Damaged Kernels (%)	0.00	0.60	0.20	0.12	61.17
Foreign Material (%)	0.08	0.62	0.21	0.11	49.23
Shrunken and Broken Kernels (%)	0.33	1.74	0.90	0.33	36.94
Yellow Berry Kernels (%)	0.42	11.70	2.84	2.09	73.42
Protein (13,5% Moisture) (%)	10.3	12.0	11.1	0.4	3.97
Weight of 1000 Kernels (gr.)	22.6	39.26	34.30	2.04	5.94
Ash (% dry basis)	1.599	1.863	1.721	0.056	3.25

Total damaged kernels includes 0.01% frosty kernels, 0.06% sprouted kernels, 0.01% calcinated kernels, 0.12% insect chewed kernels.

Grade Distribution



Flour Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Wet Gluten (%)	19.5	30	25.1	1.6	6.43
	Dry Gluten (%)	7.2	11.1	8.8	0.8	8.70
	Falling Number (sec.)	280	463	397	32	8.10
	Flour Yield (%)	66.3	78.3	70.1	1.7	2.49
	Ash (dry basis) (%)	0.414	0.639	0.535	0.040	7.52
FARINOGRAM	Water Absorption (14 % H°) (%)	54.7	60.3	56.9	1.1	1.98
	Development Time (min.)	1.7	56.0	13.2	7.4	55.98
	Stability (min.)	2.0	58.8	31.2	10.1	32.52
	Degree of Softening (12 min.)	0	73	16	11	68.58
ALVEOGRAM	P (mm)	89	161	109	12	10.99
	L (mm)	40	95	69	10	15.18
	W Joules x 10^{-4}	204	427	286	40	14.02
	P / L	1.07	4.03	1.59	0.42	25.79

These results were elaborated with 70 composite samples prepared proportionally from 1,308 primary samples (farmer deliveries)

Subregion Data

In this subregion the wheat production was 3,946,495 tons., the 27,6% of the national total. Were sampled 275,188 tons., the 6.97% 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	Lobería	4008	2	78.15	0.13	0.10	0.91	2.69	11.1	33.01	1.650
401	Tandil	4000	2	78.60	0.12	0.25	0.33	2.86	11.1	35.65	1.678
402	Necochea	4000	2	77.90	0.03	0.30	0.63	3.68	11.0	33.92	1.692
403	Tandil	4000	2	81.05	0.27	0.10	0.56	0.77	11.6	35.06	1.682
404	Tandil	4000	2	82.15	0.23	0.10	0.54	2.04	10.9	34.43	1.689
405	Lobería	4003	2	77.45	0.13	0.09	1.15	2.10	11.8	32.95	1.648
406	Lobería	4020	2	80.15	0.18	0.23	0.75	1.14	11.0	34.91	1.665
407	Lobería	4012	2	79.00	0.27	0.20	1.02	0.88	11.9	31.83	1.671
408	Lobería	4073	3	78.80	0.18	0.11	1.25	1.05	11.7	32.98	1.659
409	Lobería	4006	2	79.00	0.35	0.21	0.98	1.45	11.7	33.28	1.670
410	Balcarce	4009	2	79.90	0.00	0.12	0.58	0.94	12.0	35.86	1.712
411	Balcarce	4000	2	78.60	0.60	0.20	0.58	3.04	10.3	39.26	1.704
412	Balcarce	4000	2	79.25	0.02	0.22	0.62	9.66	10.4	36.68	1.722
413	Balcarce	4000	1	79.70	0.26	0.12	0.50	1.18	11.6	36.29	1.661
414	Benito Juárez	4017	2	79.90	0.36	0.32	0.88	0.80	11.5	34.15	1.698
415	Benito Juárez	4000	2	81.05	0.18	0.42	0.54	0.42	11.7	35.50	1.695
416	Benito Juárez	4000	2	79.90	0.18	0.30	0.48	2.00	11.1	37.08	1.687
417	Balcarce	4000	2	79.25	0.56	0.32	0.40	2.94	11.6	34.27	1.701
418	Gral. Alvarado	4000	2	80.60	0.18	0.30	0.64	2.80	11.1	36.21	1.602
419	Gral.Pueyrredon	4000	1	81.25	0.28	0.14	0.48	3.64	11.3	36.09	1.665
420	Necochea	4000	2	79.70	0.12	0.16	0.78	2.36	10.8	34.21	1.693
421	Necochea	4000	2	81.50	0.02	0.12	0.62	2.52	11.3	36.01	1.697
422	Balcarce	4000	2	77.00	0.06	0.36	0.96	0.74	11.8	34.24	1.715
423	Azul	4000	3	79.45	0.04	0.18	1.54	2.08	10.3	35.72	1.748
424	Azul	4000	3	79.45	0.26	0.16	1.58	2.42	10.8	33.88	1.741
425	Necochea	4000	2	79.00	0.02	0.12	0.88	3.94	10.7	34.89	1.700
426	Necochea	4000	2	79.45	0.10	0.16	0.78	1.52	10.9	34.41	1.688
427	Necochea	4000	2	80.60	0.06	0.08	0.64	4.78	10.7	35.60	1.695
428	Gral.Alvarado	4000	2	80.60	0.12	0.12	0.56	1.22	11.2	37.10	1.599
500	General Lamadrid	3596	2	78.35	0.10	0.16	1.16	7.80	10.4	34.50	1.645
501	General Lamadrid	4000	2	79.25	0.24	0.16	1.18	11.70	10.4	33.80	1.744
502	Gonzales Chaves	2628	3	77.00	0.38	0.46	1.64	1.40	10.6	33.30	1.684
503	Gonzales Chaves	3996	3	79.45	0.32	0.18	1.72	3.20	10.8	33.50	1.645
504	Gonzales Chaves	4000	2	80.60	0.22	0.10	1.16	3.80	11.2	33.00	1.723
505	Gonzales Chaves	4000	2	79.00	0.24	0.46	1.04	1.80	10.9	33.80	1.707

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	4000	2	80.15	0.24	0.14	0.98	4.60	10.9	33.20	1.786
507	Laprida	3670	2	78.15	0.18	0.30	1.06	0.60	11.5	33.40	1.766
508	San Cayetano	4012	2	76.35	0.26	0.18	1.18	5.30	10.4	32.00	1.749
509	San Cayetano	4000	2	76.10	0.30	0.16	1.10	4.90	10.7	32.00	1.756
510	San Cayetano	4000	2	77.00	0.22	0.46	1.06	3.90	11.1	32.10	1.757
511	San Cayetano	2840	2	76.10	0.10	0.24	0.90	3.20	10.7	32.00	1.861
512	San Cayetano	3200	2	78.15	0.26	0.16	1.08	1.80	10.9	33.00	1.764
513	San Cayetano	4000	2	78.35	0.28	0.16	1.14	0.60	10.6	34.20	1.758
514	San Cayetano	4000	2	81.95	0.36	0.24	0.94	3.20	10.9	36.10	1.775
515	Tres Arroyos	3750	2	79.90	0.16	0.22	0.94	2.30	11.1	33.30	1.844
516	Tres Arroyos	4000	2	79.25	0.08	0.12	1.02	6.20	10.5	35.50	1.712
517	Tres Arroyos	3856	3	79.25	0.28	0.26	1.22	1.80	10.6	34.00	1.791
518	Tres Arroyos	4001	2	79.25	0.22	0.16	0.78	1.90	12.0	32.00	1.794
519	Tres Arroyos	4000	2	80.35	0.42	0.22	0.86	5.90	11.0	35.90	1.785
520	Tres Arroyos	4000	2	77.45	0.30	0.28	1.16	3.40	11.1	32.90	1.753
521	Tres Arroyos	4000	3	79.45	0.30	0.12	1.74	0.90	11.1	35.30	1.745
522	Tres Arroyos	4000	3	79.25	0.42	0.62	1.34	1.40	11.4	33.70	1.843
523	Tres Arroyos	4008	2	80.15	0.08	0.10	0.74	4.30	11.4	34.90	1.828
524	Tres Arroyos	4000	3	79.25	0.14	0.18	1.32	4.90	11.3	33.00	1.768
525	Tres Arroyos	4003	2	79.45	0.10	0.28	1.12	3.80	11.2	32.00	1.777
526	Tres Arroyos	4000	2	81.25	0.22	0.34	0.86	0.80	11.3	33.90	1.863
527	Tres Arroyos	4000	2	81.05	0.28	0.38	1.10	1.30	11.4	34.50	1.792
528	Necochea	4000	2	79.00	0.00	0.16	0.68	1.20	11.0	34.60	1.674
529	Necochea	4002	2	77.25	0.00	0.32	0.58	1.80	10.4	35.70	1.689
530	Necochea	4000	2	79.00	0.14	0.26	0.98	2.00	10.7	35.80	1.700
531	Necochea	4001	2	76.80	0.30	0.18	0.74	3.60	10.5	34.90	1.663
532	Necochea	4000	2	77.70	0.34	0.16	0.54	1.60	11.6	22.60	1.744
533	Necochea	4000	2	77.90	0.30	0.28	0.62	1.00	10.8	33.40	1.705
534	Tandil	4007	2	79.45	0.12	0.14	0.78	1.90	11.3	34.40	1.710
535	Tandil	4002	2	78.15	0.28	0.16	0.62	3.60	11.4	36.10	1.793
536	Tandil	4000	2	78.15	0.14	0.30	0.42	3.90	10.8	36.60	1.685
537	Tandil	4002	2	77.70	0.10	0.14	0.64	1.40	11.1	35.30	1.726
538	Tandil	3966	2	79.00	0.18	0.12	0.60	5.30	10.8	34.20	1.712
539	Benito Juárez	3500	3	78.15	0.20	0.18	1.56	5.90	10.5	34.90	1.716
540	Benito Juárez	4000	2	79.90	0.16	0.28	0.62	1.60	11.5	34.60	1.744

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	Loberia	26.3	9.7	397	69.8	56.2	11.0	18.8	31	105	68	261	1.54	0.535
401	Tandil	27.2	10.1	385	71.1	56.7	14.6	24.7	23	109	52	225	2.10	0.546
402	Necochea	26.4	9.8	390	70.5	55.2	12.5	23.4	22	107	52	221	2.06	0.544
403	Tandil	26.2	9.7	400	69.8	57.3	20.0	30.5	26	125	66	333	1.89	0.511
404	Tandil	25.5	9.4	450	72.5	57.4	18.1	29.6	19	128	76	357	1.68	0.548
405	Lobería	28.8	10.7	410	70.3	57.3	17.6	26.8	26	128	80	363	1.60	0.639
406	Lobería	26.0	9.6	440	69.1	57.4	19.9	32.4	18	115	73	308	1.58	0.587
407	Lobería	27.6	10.2	360	68.5	60.2	14.5	27.8	16	136	66	341	2.06	0.578
408	Lobería	26.5	9.8	390	68.1	56.8	19.9	31.0	17	110	73	306	1.51	0.554
409	Lobería	26.4	9.8	418	68.9	59.5	20.0	30.8	18	161	40	284	4.03	0.513
410	Balcarce	27.0	10.0	380	68.5	56.8	20.0	31.4	19	119	63	296	1.89	0.493
411	Balcarce	19.5	7.2	280	74.1	58.0	1.7	2.0	73	118	41	211	2.88	0.582
412	Balcarce	23.1	8.5	390	73.0	55.2	7.8	23.8	12	104	59	230	1.76	0.488
413	Balcarce	25.7	9.5	340	73.0	56.9	20.0	31.4	20	123	70	338	1.76	0.548
414	Benito Juárez	26.0	9.6	360	67.4	56.1	20.0	35.5	9	103	84	322	1.23	0.535
415	Benito Juárez	25.7	9.5	420	71.2	57.7	20.0	37.0	5	116	65	302	1.78	0.513
416	Benito Juárez	24.6	9.1	426	71.6	55.6	20.0	29.2	22	99	57	222	1.74	0.550
417	Balcarce	30.0	11.1	414	70.9	60.3	10.4	20.3	23	126	65	305	1.94	0.537
418	Gral. Alvarado	25.6	9.5	416	70.3	57.1	11.4	34.9	3	114	65	281	1.75	0.522
419	Gral.Pueyrredon	24.0	8.9	400	71.3	57.4	7.9	26.5	12	115	75	321	1.53	0.559
420	Necochea	23.7	8.9	440	72.7	55.9	20.0	33.7	18	110	68	282	1.62	0.557
421	Necochea	26.8	9.9	435	70.9	58.1	16.7	35.1	10	121	77	338	1.57	0.515
422	Balcarce	25.6	9.5	380	70.6	56.6	17.1	29.8	20	109	82	324	1.33	0.492
423	Azul	22.9	8.5	420	67.9	58.5	4.5	20.9	20	131	57	283	2.30	0.543
424	Azul	23.6	8.7	380	68.2	56.2	20.0	37.3	11	102	71	280	1.44	0.531
425	Necochea	23.7	8.8	414	69.7	56.4	7.5	23.1	14	128	64	305	2.00	0.516
426	Necochea	25.6	9.5	390	70.1	55.1	7.3	26.4	11	101	67	263	1.51	0.525
427	Necochea	23.8	8.8	350	70.5	55.7	17.3	32.4	12	97	84	296	1.15	0.567
428	Gral.Alvarado	25.2	9.3	400	69.2	56.4	17.3	26.0	27	102	95	340	1.07	0.562
500	General Lamadrid	22.6	7.7	414	70.8	55.9	10.7	29.6	16	91	72	245	1.26	0.542
501	General Lamadrid	22.0	7.6	448	70.5	56.4	7.4	45.9	6	108	61	270	1.77	0.598
502	Gonzales Chaves	23.4	7.9	430	69.8	54,7	18,1	44,7	2	96	66	249	1.45	0.513
503	Gonzales Chaves	24.9	8.4	451	69.8	57,3	8,3	48,1	0	109	66	285	1.65	0.539
504	Gonzales Chaves	25.2	8.6	405	66.3	57,9	11,8	36,7	5	117	76	343	1.54	0.576
505	Gonzales Chaves	24.8	8.3	384	68.6	55,6	11,4	24,8	16	89	80	266	1.11	0.530

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	24.1	8.3	396	68.9	58,0	6,9	21,2	11	111	66	287	1.68	0.612
507	Laprida	26.6	8.9	392	67.9	57,7	10,3	37,1	5	103	80	308	1.29	0.555
508	San Cayetano	24.1	8.0	438	71.1	55,6	10,8	32,7	10	103	62	245	1.66	0.547
509	San Cayetano	24.3	8.3	443	70.3	56,6	56,0	58,8	0	97	75	288	1.29	0.524
510	San Cayetano	24.4	8.1	404	68.9	57,1	5,9	18,4	20	109	64	260	1.70	0.546
511	San Cayetano	24.7	8.5	463	69.8	57,2	13,1	57,1	0	113	75	320	1.51	0.526
512	San Cayetano	25.0	8.4	420	70.7	56,8	10,3	28,2	13	103	68	269	1.51	0.538
513	San Cayetano	24.5	8.1	400	71.5	56,8	9,7	36,8	16	113	62	266	1.82	0.561
514	San Cayetano	23.7	8.0	377	69.2	57,2	10,5	23,6	23	108	70	297	1.54	0.614
515	Tres Arroyos	25.1	8.4	396	68.8	57,1	8,9	16,9	34	95	69	254	1.38	0.577
516	Tres Arroyos	23.3	7.9	394	69.3	55,9	8,7	43,5	6	109	72	303	1.51	0.575
517	Tres Arroyos	23.6	8.0	400	71.0	56,6	10,1	22,7	13	109	57	244	1.91	0.539
518	Tres Arroyos	27.7	9.4	350	68.9	58,9	9,4	37,5	19	130	86	427	1.51	0.612
519	Tres Arroyos	24.5	8.2	362	70.4	57,1	9,5	28,0	11	105	73	294	1.44	0.487
520	Tres Arroyos	25.5	8.5	377	69.0	56,8	7,6	19,4	16	103	63	256	1.63	0.560
521	Tres Arroyos	24.5	8.3	421	70.4	56,6	17,0	51,1	3	112	69	307	1.62	0.525
522	Tres Arroyos	24.8	8.4	415	68.5	57,4	14,2	49,8	0	112	69	308	1.62	0.508
523	Tres Arroyos	25.0	8.6	453	70.1	57,4	11,8	40,1	11	101	72	278	1.40	0.532
524	Tres Arroyos	25.7	8.7	400	68.5	55,7	11,4	43,9	9	101	84	318	1.20	0.498
525	Tres Arroyos	25.4	8.6	420	69.2	57,9	6,9	20,0	16	110	71	290	1.55	0.574
526	Tres Arroyos	25.6	8.5	406	67.7	57,7	10,8	43,0	5	114	70	322	1.63	0.559
527	Tres Arroyos	25.5	8.5	407	68.6	58,4	11,7	39,2	11	112	72	311	1.56	0.531
528	Necochea	25.7	8.6	404	70.0	55,6	9,5	34,0	11	98	80	292	1.23	0.511
529	Necochea	22.9	7.8	373	70.2	55,9	7,3	17,7	21	108	50	213	2.16	0.513
530	Necochea	25.6	8.4	388	70.2	54,9	11,3	31,3	7	92	86	285	1.07	0.500
531	Necochea	24.0	8.0	366	71.7	55,8	9,6	18,9	26	97	54	204	1.80	0.529
532	Necochea	28.5	9.5	392	70.2	56,8	10,2	20,5	28	93	85	291	1.09	0.543
533	Necochea	24.8	8.3	403	69.9	58,1	8,5	16,9	29	102	70	256	1.46	0.497
534	Tandil	25.8	8.7	358	68.5	57,1	9,8	45,2	18	100	78	290	1.28	0.468
535	Tandil	25.9	8.7	319	70.2	57,3	7,9	33,0	13	106	62	265	1.71	0.475
536	Tandil	25.3	8.5	390	72.4	56,5	9,1	22,8	20	108	52	231	2.08	0.414
537	Tandil	25.8	8.7	367	71.1	55.4	9.2	34.9	16	94	73	262	1.29	0.456
538	Tandil	24.6	8.2	340	78.3	56.0	9.7	26.7	14	101	63	249	1.60	0.482
539	Benito Juárez	23.1	7.8	401	69.5	57.4	34.0	37.0	34	107	72	291	1.49	0.469
540	Benito Juárez	26.1	8.9	399	70.9	57,6	16,5	43,0	1	104	58	250	1.79	0.461

Climatology 2006/2007

Climate and Wheat crop 2006 – 2007 in Argentina

Juan A. Forte Lay – José L. Aiello.

We are going to describe the climate behavior during the 2006-2007 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 2006

The wheat cycle began with a general lack of humidity in the soil in comparison with usual values for this time of the year. Only the center of the Province of Córdoba and the west of the Province of Santa Fe had greater than usual soil humidity. This was of fundamental importance in the western area for farmers to start sowing the first lots. The most intense degree of unusual dryness was seen in the northeast of the Province of Entre Ríos, but in a not essentially wheat-producing area; in the southwest of this province the situation was better, and allowed sowing to start. However, the low soil humidity values in the south of the region, especially the southwest, were of great concern due to little probability that the climate would improve over the next few months.

JUNE 2006

The northern part of the wheat-producing-area had good humidity, although there were positive anomalies that reflected the large excess of rain in the north of the Province of Entre Ríos that delayed sowing. Whereas the farmers concern became greater in the southwest region where drought continued and did not allow sowing of long-cycle-wheat, especially in the Province of La Pampa and the southwest of the Province of Buenos Aires. In the southeast conditions were not so severe and there was time for superficial humidity to recover. The situation was relatively normal in the rest of the wheat-growing-area.

JULY 2006

Conditions of humidity improved slightly, especially in areas around Bahía Blanca and Tres Arroyos, but even more so in the far south of the Province of Buenos Aires. This allowed sowing to take place. There were good conditions of humidity in the east and center of the wheat-growing-area, but an intense drought continued in the center and southwest of the Province of Buenos Aires and the Province of La Pampa, which was slightly less in the south and extreme north of the Province of Córdoba with equally dry soil. However, temperatures were abnormally benign, except for the last days of the month.

AUGUST 2006

In spite of the fact that some rain fell on the last day of the month and first day of the next month and slightly alleviated the situation, conditions continued to be those of a serious drought in the Province of La Pampa and in the southwest of the Province of Buenos Aires, as also in the south of the Province of Córdoba; in the north of this province conditions were also dryer than usual. Conditions were better in the southwest of the Province of Buenos Aires and the marginal area in the far south of this province. The rest

of the wheat-growing-area, although generally drier than normal, had sufficient soil humidity for initial wheat cultivation procedures to go ahead.

SEPTEMBER 2006

Considering the region as a whole, September was unfavorable to wheat cultivation; conditions were much drier than normal. There was an intense drought in the western strip of the region, further accentuated in the northwest due to drying winds normal to the season, with late frosts in the southeast of the province of Córdoba where the wheat cycle was further advanced than normal for this time of year due to a benign winter. However, all the center and southwest of the Province of Buenos Aires had the benefit of humidity which meant that the soil was in normal conditions and wheat development was optimal in these areas.

OCTOBER 2006

There was plentiful rainfall in large areas of the Provinces of Buenos Aires, Entre Ríos, southeast of Santa Fé and La Pampa, especially near the capital. Areas in the east and south of the Province of Córdoba also benefited from rains, but the soil profile did not achieve normal conditions. Rainfall was late and irregular in other regions of the Provinces of Córdoba and Santa Fe. This rainfall was of fundamental importance in many areas at the precise moment when wheat requires most humidity. The improvement in soil humidity in areas in the southwest where there had been an intense drought was important, although much damage was irreversible. Conditions continued to be excellent in the wheat-growing-area of the southeast of the Province of Buenos Aires, although it was not yet the time in this area at which wheat has a maximum demand of humidity.

NOVEMBER 2006

There were quite intense rains in the north of the Province of San Luis and the center and south of the Province of Entre Ríos, but in spite of this the soil did not achieve normal conditions in most of the Province of Córdoba, and in some areas the rain was accompanied by hail which damaged the already affected crops before harvest. The rains in the northern strip were unable to favorably influence wheat that was already mature. However humidity continued to be lacking in the Province of La Pampa. The lack of rain extended to the southeast of the Province of Buenos Aires preventing the wheat to end its cycle in accordance with general expectations; however soil humidity was sufficient to allow satisfactory wheat development.

DECEMBER 2006

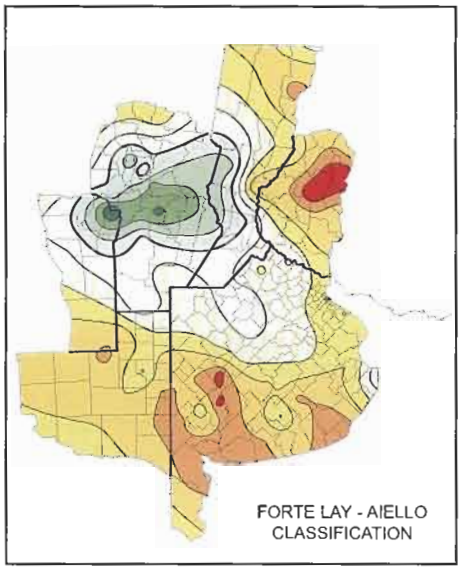
The relative lack of rain seen in November persisted in the southeast of the Province of Buenos Aires: This prevented the wheat in that region, which had been in an excellent condition at the end of October, from expressing its full potential at the end of its cycle. The southwest part of the region also had a lack of humidity that did not affect wheat at harvest-time. Strong positive anomalies indicated an excess of humidity in the west of the Province of Entre Ríos, center of the Province of Santa Fe and areas in the southeast of the Province of Córdoba which were not favorable during harvest-time.

JANUARY 2007

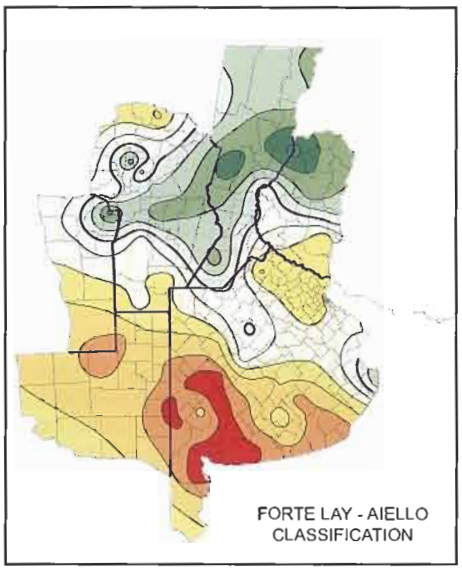
We are adding the map of the average situation of humidity during this month since it was still harvest-time in the far southeast of the wheat-growing-area. Conditions there were slightly drier than usual, and therefore the harvest of the last lots of wheat went ahead without problems in this area.

SOIL HUMIDITY CLASSIFICATION

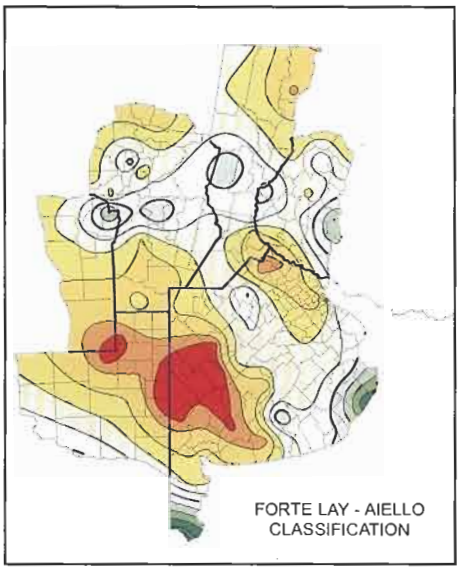
MAY 2006



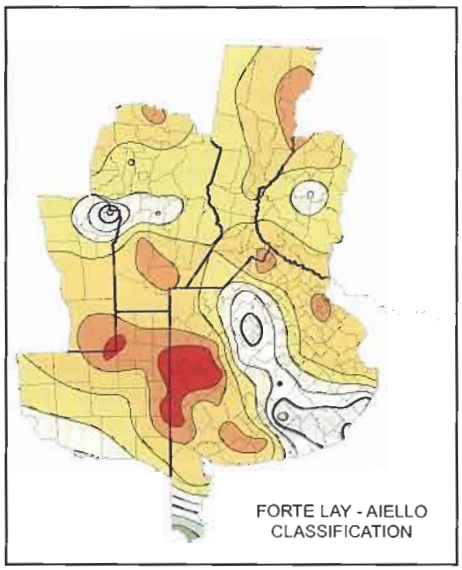
JUNE 2006



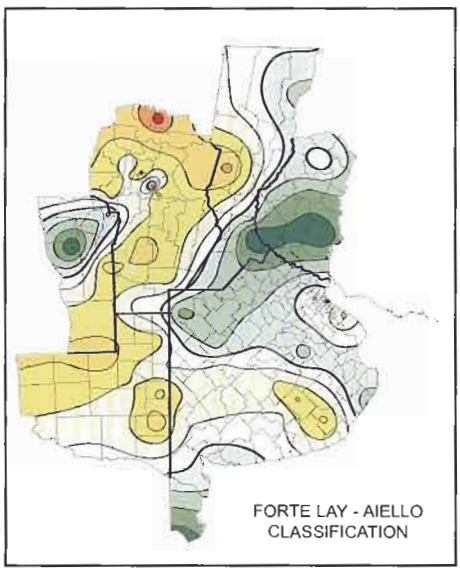
AUGUST 2006



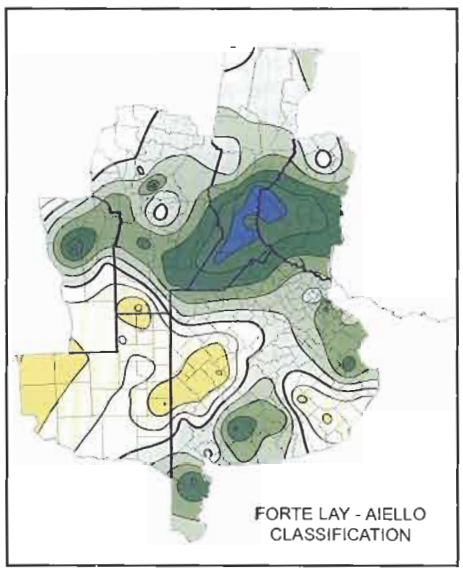
SEPTEMBER 2006



NOVEMBER 2006

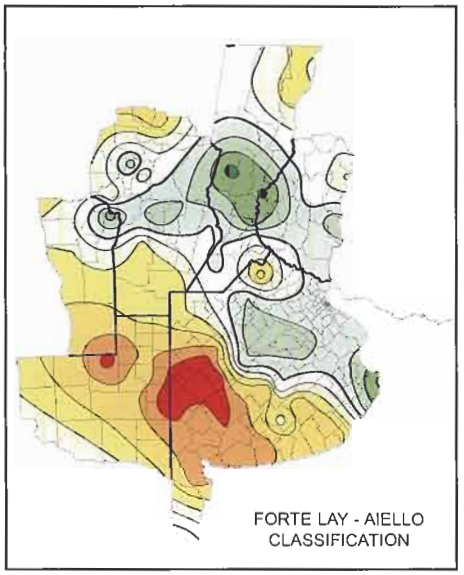


DECEMBER 2006

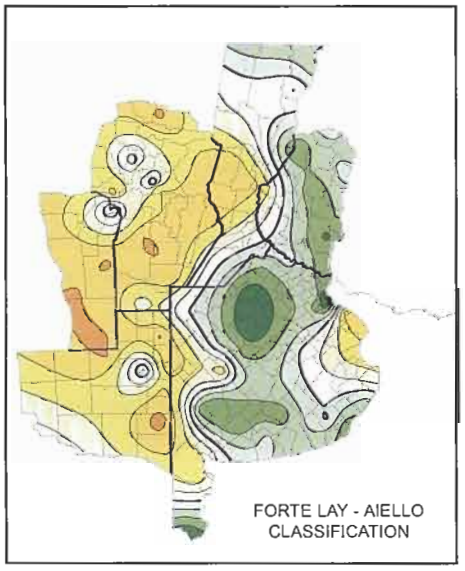


2006/2007 WHEAT CROP

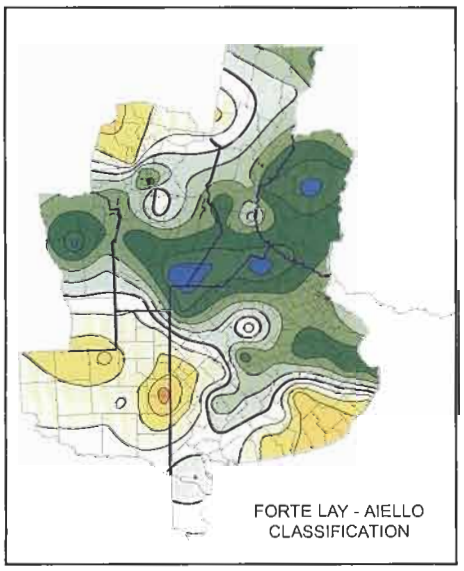
JULY 2006



OCTOBER 2006



JANUARY 2007



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

In general, in the entire region (center and North) sowing conditions were performed on soils having low humidity content. This situation was due to scarce rain during autumn and an almost complete lack thereof during most of the cycle.

The campaign was also characterized by high temperatures which reduced the cycle notoriously, especially during heading and grain filling. As well, higher temperatures produced a reduction in water efficient usage. Therefore, there were low yields, between 7 to 12 qq/ha.

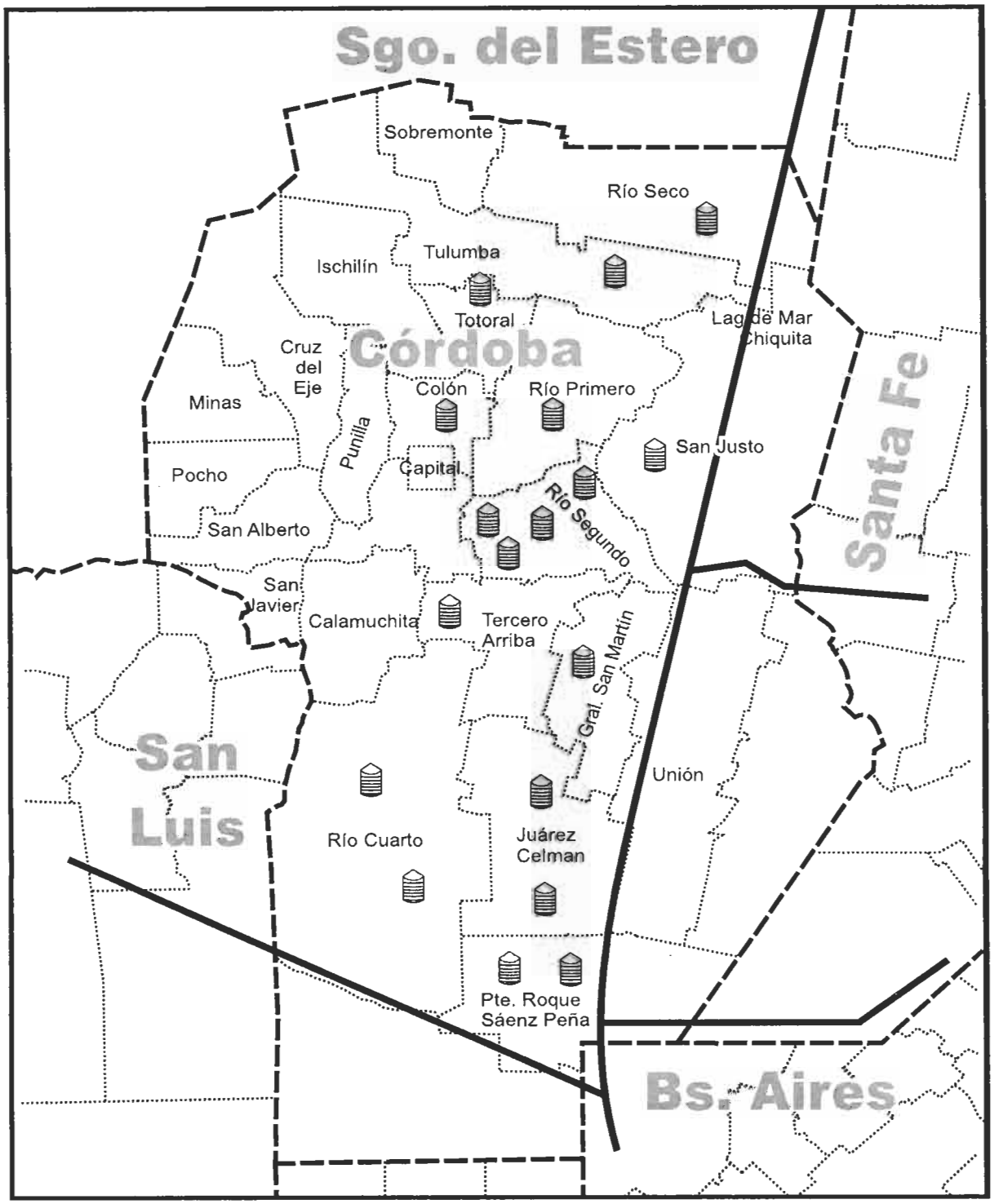
In those areas with aquifer, cultivation yield exceeded 25 qq/ha. In cultivations with supplementary irrigation, good fertilization and adequate selection of variety, yields between 35 and 55 qq/ha were obtained, but irrigation volume was higher than other campaigns (200mm).

Sowing was mostly done during March, however to the North of the region there were some sowings in April (long cycles).

With respect to health aspects, there were early attacks of green aphid, thus, many producers had to treat lots with insecticides or direct treatment on foliage. As well, the pressure of foliar diseases (leaf rust and yellow stain) was null and in general fungicide controls were not performed, except for high production lots (with irrigation) or lots where sensitive varieties were used.

As a conclusion, the scarce availability of water at sowing and high temperatures recorded conditioned yields, which were below historical media in the region.

Subregion V North Wheat



Each reference represents near 4,000 tns sampled

Subregion V North Wheat

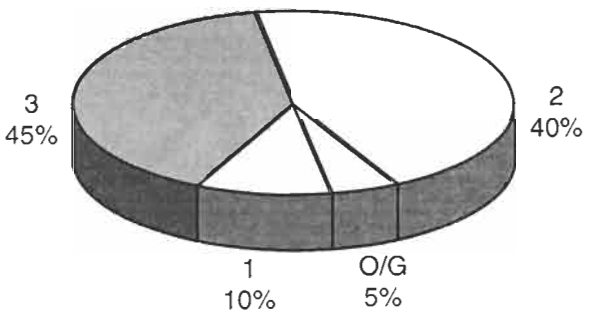
Results of the Analyses

Composite Samples by Locality. Averages were weighted by Tonnage.

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	77.90	84.85	80.42	1.72	2.14
Total Damaged Kernels (%)	0.03	2.90	0.93	0.76	81.45
Foreign Material (%)	0.02	1.10	0.26	0.22	87.52
Shrunken and Broken Kernels (%)	0.24	2.79	1.30	0.58	44.81
Yellow Berry Kernels (%)	0.00	0.50	0.10	0.14	139.35
Protein (13,5% Moisture) (%)	12.2	13.5	12.8	0.4	2.86
Weight of 1000 Kernels (gr.)	27.63	34.56	31.19	1.63	5.24
Ash (% dry basis)	1.582	2.070	1.787	0.124	6.93

Total damaged kernels includes 0.16% green kernels, 0.03% frosty kernels, 0.43% sprouted kernels, 0.01% calcinated kernels and 0.3% insect chewed kernels.

Grade Distribution



C/G: Out of Grade

Flour Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Wet Gluten (%)	28.0	36.3	32.8	2.3	7.07
	Dry Gluten (%)	9.8	13.4	11.4	0.9	8.07
	Falling Number (sec.)	288	487	404	49	12.04
	Flour Yield (%)	63.7	72.0	68.9	1.7	2.47
	Ash (dry basis) (%)	0.524	0.699	0.631	0.049	7.83
FARINOGRAM	Water Absorption (14 % H°) (%)	58.9	62.8	60.4	1.0	1.72
	Development Time (min.)	2.8	15.8	10.2	2.7	26.36
	Stability (min.)	9.4	42.4	17.4	6.9	39.75
	Degree of Softening (12 min.)	16	55	35	9	26.72
ALVEOGRAM	P (mm)	71	113	91	9	10.15
	L (mm)	82	160	113	14	12.41
	W Joules x 10^{-4}	308	398	349	23	6.52
	P / L	0.44	1.38	0.80	0.19	22.74

These results were elaborated with 20 composite samples prepared proportionally from 32 primary samples (farmer deliveries)

Subregion Data

In this subregion the wheat production was 708,760 tn tons., the 5.0% of the national total. Were sampled 76,861 tons., the 10.84% 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	4000	3	82.40	0.23	0.06	1.53	0.00	12.7	27.63	2.070
601	Gral. San Martín	4000	O/G	77.90	1.57	1.10	2.79	0.00	13.1	27.65	1.946
602	Tercero Arriba	4500	3	79.70	0.50	0.24	1.36	0.30	12.4	30.98	1.823
603	Gral. San Martín	4000	3	83.05	0.76	0.35	1.85	0.00	13.1	31.79	1.759
604	Tercero Arriba	4000	3	81.70	0.52	0.17	1.28	0.20	12.8	30.87	1.932
605	Río II	5100	3	79.25	0.49	0.33	1.72	0.00	13.0	31.02	S/D
606	Río II	3700	3	78.80	0.52	0.38	1.54	0.50	12.2	31.00	1.582
607	Río II	4500	3	79.70	0.59	0.30	1.95	0.20	12.4	33.06	1.679
608	Río II	3100	2	81.70	0.46	0.45	0.79	0.00	12.6	31.52	1.752
609	Totoral	4034	2	81.95	1.24	0.12	0.76	0.00	12.7	31.81	1.603
610	Río IV	1869	2	79.45	1.02	0.02	0.43	0.00	12.6	32.07	1.845
611	Colon	1218	2	81.50	0.22	0.24	0.67	0.20	12.3	32.57	1.688
612	Río Seco	1200	1	83.70	0.08	0.14	0.40	0.00	12.8	30.78	1.752
613	Tulumba	3900	1	84.85	0.03	0.11	0.24	0.00	12.2	32.52	S/D
614	Río I	4240	2	79.45	0.22	0.24	0.92	0.00	12.5	30.32	1.898
615	Juárez Celman	3700	2	79.45	0.89	0.19	1.07	0.00	13.2	30.86	1.869
616	Juárez Celman	5300	2	79.70	0.96	0.18	1.05	0.20	12.9	31.36	1.727
617	Roque Sáenz Peña	4000	3	79.25	1.59	0.09	1.25	0.10	13.5	34.56	1.666
618	Roque Sáenz Peña	4000	2	79.25	1.59	0.16	0.72	0.30	13.2	33.20	1.752
619	Río IV	6500	3	79.70	2.90	0.14	1.73	0.00	13.2	30.05	1.779

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	33.9	11.6	473	69.1	59.8	12.8	19.8	28	94	122	398	0.77	0.693
601	Gral. San Martín	32.8	11.4	411	72.0	60.5	8.8	15.2	41	95	118	371	0.81	0.680
602	Tercero Arriba	28.0	9.8	418	69.5	58.9	11.8	20.1	29	92	108	340	0.85	0.624
603	Gral. San Martín	34.1	11.6	422	70.1	62.0	9.0	9.4	55	84	113	319	0.74	0.654
604	Tercero Arriba	30.9	11.0	441	69.1	60.1	14.5	22.8	30	86	109	349	0.79	0.699
605	Río II	31.5	10.9	414	69.8	59.2	10.2	14.9	38	94	115	367	0.82	0.693
606	Río II	29.4	10.0	425	69.3	59.3	11.8	29.4	21	82	107	308	0.77	0.609
607	Río II	30.7	10.4	463	70.2	60.9	11.3	17.4	30	113	82	345	1.38	0.695
608	Río II	31.5	11.0	473	70.0	59.5	13.3	42.4	16	100	104	373	0.96	0.671
609	Totoral	30.3	10.7	288	67.0	62.4	2.8	12.5	31	91	113	331	0.81	0.644
610	Río IV	33.6	12.0	377	68.8	59.3	9.5	14.9	38	71	160	359	0.44	0.524
611	Colon	29.5	10.0	403	67.7	62.8	9.2	12.3	48	111	88	342	1.26	0.640
612	Río Seco	32.3	11.6	487	65.5	60.0	15.8	25.3	26	101	94	362	1.07	0.630
613	Tulumba	33.0	11.2	442	63.7	61.6	11.5	16.8	27	97	97	346	1.00	0.605
614	Río I	34.7	12.2	421	70.2	60.1	12.7	16.0	31	84	107	336	0.79	0.644
615	Juárez Celman	36.3	12.3	322	67.2	60.7	11.4	20.0	30	91	115	380	0.79	0.587
616	Juárez Celman	35.0	13.4	355	69.5	59.5	10.0	13.3	45	74	132	321	0.56	0.550
617	Roque Sáenz Peña	36.1	12.5	384	68.7	61.6	8.8	12.8	48	88	115	344	0.77	0.608
618	Roque Sáenz Peña	35.6	12.0	371	69.2	61.3	7.4	10.2	46	93	110	332	0.85	0.579
619	Río IV	33.7	11.8	369	68.0	60.3	7.4	13.7	36	88	127	371	0.69	0.580

Subregion V South
Background for the crop

This campaign has not been favorable for this Sub-region, considering the second consecutive and the third in the last four years.

In most of the area, soil profile did not recover an adequate humidity level, and March-June term was characterized by absence of rain in the right time for work, herbicide treatment and sowing.

The sowing area was reduced compared to expectations and early sowings had implantation problems.

Some areas favored by scarce rains developed more promising cultivations, especially due to herbicides and direct sowing.

In other areas, pasturage of wheat lots was performed early. In drier areas, aphid focuses were observed.

Technology applied to cultivations was reduced at minimum with scarce use of fertilizers or none at all, impossibility to control weeds, etc.

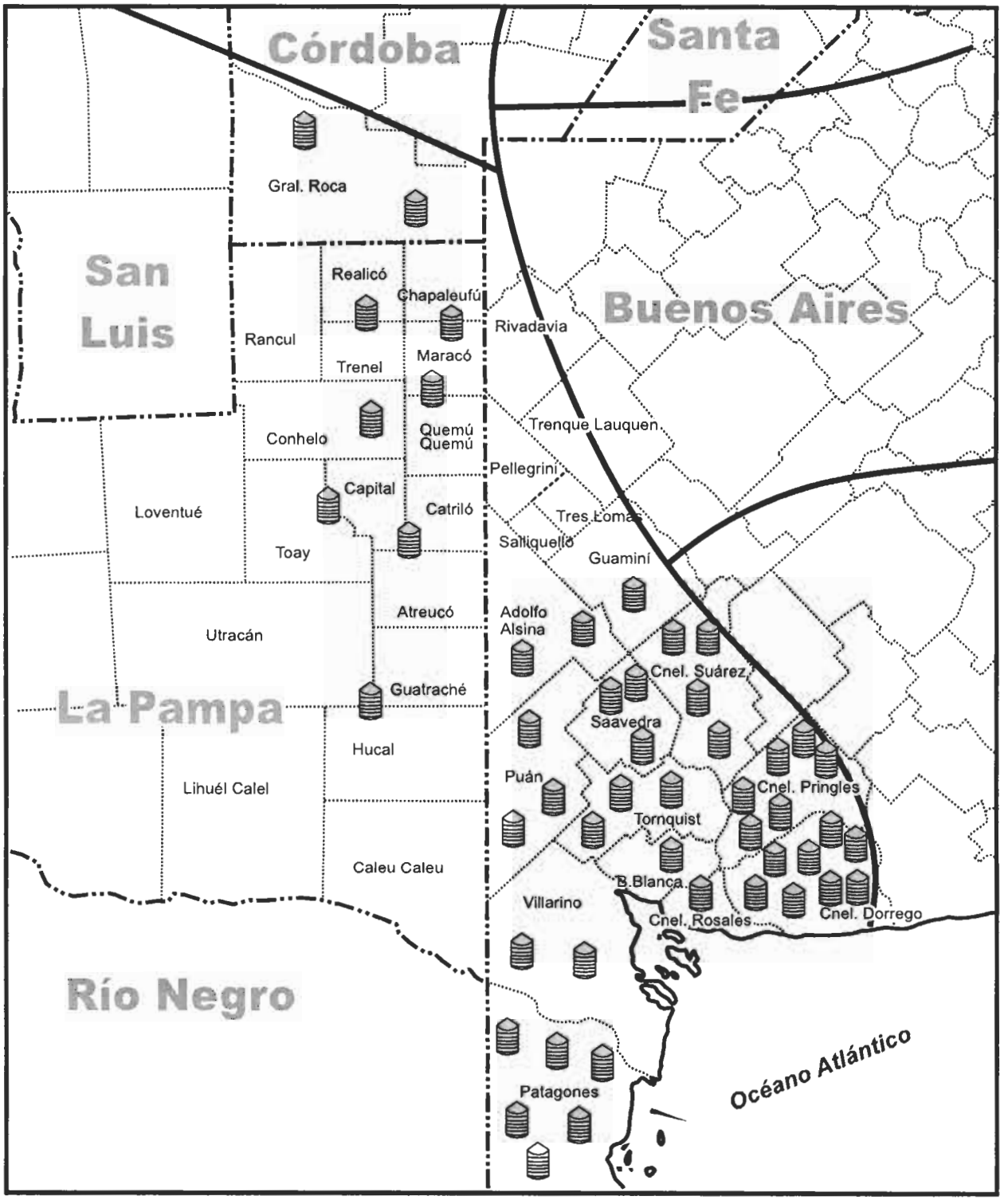
In some places of VS damages due to frost were observed due to cold temperatures recorded during the first fortnight of November.

Notorious differences in productivity were recorded even in areas close to each other, such as Patagones district, the maritime cost area, yielding almost normally compared to more continental areas with poor yields; some districts such as La Pampa Province, where there was little sowing or none at all (Doblas-Macachin), there was no harvest (South of Jacinto Aráuz and San Martín), and Anguil area, averaging 1400-1450 kg/ha.

The area historically more humid: Pigué-Carhué-Espartillar-Cnel. Suárez, reduced importantly the area sowed, obtaining low yields compared to the previous campaign, averaging approximately 1100 kg/ha and lots exceeding 2500 kg/ha.

Due to climate conditions, there were not serious health problems during all the cycle. Commercial quality and protein content of harvest in the area have been good, except for drier areas with shrunken grains.

Subregion V South Wheat



Each reference represents near 4,000 tns sampled.

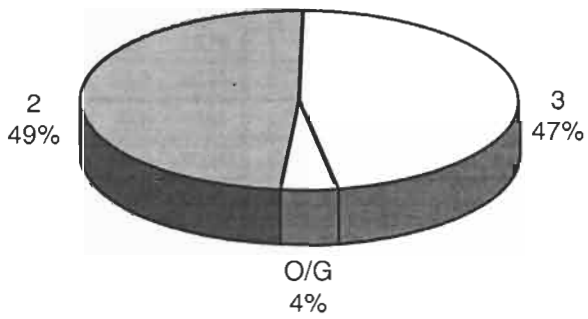
Results of the Analyses

Composite Samples by Locality. Averages were weighted by Tonnage.

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	77.70	82.85	80.38	1.26	1.57
Total Damaged Kernels (%)	0.00	0.58	0.23	0.11	47.47
Foreign Material (%)	0.14	1.38	0.49	0.28	55.66
Shrunken and Broken Kernels (%)	0.56	2.16	1.16	0.36	31.09
Yellow Berry Kernels (%)	0.00	14.70	3.61	4.19	116.12
Protein (13,5% Moisture) (%)	9.9	13.5	11.2	1.0	8.79
Weight of 1000 Kernels (gr.)	29.00	36.40	32.75	2.16	6.59
Ash (% dry basis)	1.650	2.022	1.845	0.086	4.68

Total damaged kernels includes 0.08% sprouted kernels and 0.15% insect chewed kernels.

Grade Distribution



O/G: Out of Grade

Flour Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Wet Gluten (%)	22.0	35.8	27.4	3.3	11.89
	Dry Gluten (%)	7.6	12.1	9.4	1.1	11.98
	Falling Number (sec.)	392	497	444	25	5.65
	Flour Yield (%)	64.7	72.2	68.2	1.8	2.61
	Ash (dry basis) (%)	0.457	0.685	0.578	0.050	8.66
FARINOGRAM	Water Absorption (14 % H°) (%)	54.7	64.1	59.2	1.7	2.88
	Development Time (min.)	6.3	38.9	15.2	10.5	69.48
	Stability (min.)	7.6	47.2	27.7	11.9	42.89
	Degree of Softening (12 min.)	3	52	26	12	45.08
ALVEOGRAM	P (mm)	84	127	107	10	9.40
	L (mm)	57	118	85	13	15.29
	W Joules x 10^{-4}	219	438	338	54	16.02
	P / L	0.76	1.93	1.27	0.24	18.20

These results were elaborated with 47 composite samples prepared proportionally from 907 primary samples (farmer deliveries)

Subregion Data

In this subregion the wheat production was 2,330,180 tons., the 16.3% of the national total. Were sampled 181,373 tons., the 7.78% 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-Capital(Sta.Rosa)-Catriló-Toay	4000	3	79.25	0.18	0.14	1.26	4.40	11.1	33.00	1.692
701	Conhelo	1576	3	82.15	0.28	0.58	1.70	0.90	12.3	31.80	1.992
703	Chapaleufu-Maraco-Quemu-Quemu	4001	2	79.70	0.26	0.28	0.80	0.00	12.0	33.50	1.906
704	Guatrache-Hucal-Utracán	2240	3	79.00	0.30	0.70	1.54	5.30	10.9	32.40	1.811
705	Realicó-Trenel	3850	2	79.45	0.28	0.38	0.92	2.00	13.5	32.70	1.923
707	Adolfo Alsina	4002	3	81.25	0.24	0.23	1.22	5.30	10.7	34.60	1.846
708	Adolfo Alsina	4000	3	79.00	0.22	0.62	1.26	0.00	12.5	29.10	1.896
709	Bahía Blanca	4002	3	79.00	0.14	0.81	1.26	1.00	11.2	29.60	1.828
710	Coronel Dorrego	4000	2	80.60	0.24	0.50	0.90	0.70	11.7	30.80	1.817
711	Coronel Dorrego	4002	3	79.00	0.36	0.64	1.72	0.00	11.7	29.00	1.830
712	Coronel Dorrego	4000	3	80.60	0.14	0.40	1.32	1.00	10.6	30.80	1.724
713	Coronel Dorrego	4008	2	81.50	0.00	0.61	1.12	1.60	10.8	33.70	1.745
714	Coronel Dorrego	3260	3	79.90	0.36	0.70	1.38	0.80	12.1	29.90	1.885
715	Coronel Dorrego	4000	2	79.25	0.20	0.28	0.70	4.80	10.7	32.30	1.852
716	Coronel Dorrego	3520	2	79.90	0.22	0.62	0.92	0.60	11.7	31.90	1.776
717	Coronel Dorrego	2860	2	79.90	0.18	0.54	0.66	2.60	10.9	31.80	1.810
718	Coronel Pringles	4004	2	80.80	0.44	0.46	0.68	0.80	11.1	34.20	1.874
719	Coronel Pringles	4000	3	80.35	0.16	0.40	1.32	0.40	11.9	31.70	1.908
720	Coronel Pringles	4009	3	81.25	0.22	0.30	1.32	0.60	10.8	34.30	1.821
721	Coronel Pringles	4000	2	80.80	0.26	0.32	0.74	1.60	10.7	33.80	1.843
722	Coronel Pringles	4002	2	80.80	0.18	0.28	1.12	1.20	11.2	33.80	1.829
723	Coronel Pringles	4000	3	80.80	0.28	0.28	1.36	2.80	11.2	33.30	1.935
724	Coronel Rosales	4000	2	78.35	0.36	0.46	0.94	2.00	11.5	31.20	1.880
725	Coronel Suárez	4000	2	81.25	0.18	0.18	0.82	0.00	10.6	34.50	1.850

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) (%)
726	Coronel Suárez	4004	2	81.50	0.00	0.16	0.78	1.40	10.6	33.00	1.859
727	Coronel Suárez	4002	3	80.60	0.14	0.36	1.32	2.90	10.6	34.90	1.864
728	Coronel Suárez	4000	2	80.60	0.32	0.28	0.96	1.60	10.3	35.30	1.867
729	Guaminí	4004	2	80.80	0.16	0.18	0.78	11.20	10.2	35.50	1.742
730	Patagones	3973	O/G	81.70	0.22	0.98	2.16	12.60	10.0	30.30	1.877
731	Patagones	4001	3	80.80	0.20	1.06	1.36	9.30	10.8	32.70	1.858
732	Patagones	4008	3	82.85	0.00	0.54	1.26	14.70	9.9	34.30	1.695
733	Patagones	4012	2	82.85	0.26	0.72	0.78	8.20	10.0	36.40	1.763
734	Patagones	4000	3	82.85	0.12	0.62	1.48	13.90	9.9	32.40	1.714
735	Patagones	4000	3	82.60	0.18	0.32	1.66	13.90	10.0	32.90	1.865
736	Puán	4001	3	77.70	0.28	0.96	1.32	0.00	13.0	29.00	1.989
737	Puán	4008	3	79.25	0.24	0.66	1.62	0.80	12.2	31.70	1.975
738	Puán	4000	2	79.45	0.36	0.30	0.96	7.20	9.9	36.40	1.650
739	Saavedra	4012	2	81.70	0.16	0.28	0.88	3.20	10.3	36.00	1.756
740	Saavedra	4009	2	79.45	0.32	0.24	0.94	2.90	10.1	35.20	1.722
741	Saavedra	4000	2	80.60	0.20	0.28	0.76	5.10	10.1	34.60	1.773
742	Tornquist	4000	O/G	78.35	0.14	1.38	2.02	0.40	12.7	29.00	1.933
743	Tornquist	4000	3	79.45	0.32	0.86	1.46	2.60	11.9	29.50	2.022
744	Tornquist	4000	3	78.35	0.14	0.48	1.46	0.60	12.5	29.00	2.016
745	Villarino	4003	3	79.90	0.38	1.02	1.58	5.90	12.0	32.60	1.940
746	Villarino	4000	2	81.95	0.28	0.34	0.94	8.70	10.4	35.90	1.892
747	General Roca (Córdoba)	4000	2	79.90	0.18	0.42	0.56	0.00	13.1	33.90	1.891
748	General Roca (Córdoba)	4000	2	80.80	0.58	0.30	1.06	0.00	13.0	33.30	1.854

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-Capital(Sta.Rosa)-Catriló-Toay	29.0	9.9	451	70.7	58.1	9.4	17.5	31	104	83	339	1.25	0.553
701	Conhelo	31.1	10.5	457	68.7	59.9	8.0	13.1	48	91	97	322	0.94	0.621
703	Chapaleufu-Maraco-Quemu-Quemu	31.0	10.5	454	68.1	61.7	7.5	9.0	51	109	98	369	1.11	0.627
704	Guatrache-Hucal-Utracán	26.2	8.9	461	65.6	57.2	11.3	19.6	33	100	84	320	1.19	0.609
705	Realicó-Trenel	35.8	12.0	437	67.3	64.1	8.4	9.1	50	104	105	371	0.99	0.685
707	Adolfo Alsina	27.0	9.0	395	68.6	58.5	7.9	14.6	39	107	79	313	1.35	0.588
708	Adolfo Alsina	30.9	10.6	452	67.8	59.6	13.0	39.8	17	106	93	388	1.14	0.604
709	Bahía Blanca	27.8	9.4	433	67.6	57.4	13.5	35.5	17	101	76	300	1.33	0.533
710	Coronel Dorrego	30.1	10.5	419	68.4	61.0	33.2	36.1	37	114	98	429	1.16	0.577
711	Coronel Dorrego	29.1	10.0	419	65.6	58.9	36.8	39.4	37	110	80	355	1.38	0.558
712	Coronel Dorrego	25.7	8.8	416	67.9	58.2	13.5	47.2	3	112	77	342	1.45	0.565
713	Coronel Dorrego	25.7	8.9	418	68.8	59.7	36.0	38.4	34	123	81	383	1.52	0.518
714	Coronel Dorrego	28.9	9.9	426	68.0	60.3	38.0	42.3	32	127	83	428	1.53	0.570
715	Coronel Dorrego	25.5	8.7	436	70.5	56.0	13.7	44.1	12	89	88	286	1.01	0.483
716	Coronel Dorrego	29.7	10.0	450	70.8	59.9	15.5	35.3	18	112	92	392	1.22	0.520
717	Coronel Dorrego	27.3	9.3	470	69.6	57.7	34.2	43.8	12	107	85	359	1.26	0.471
718	Coronel Pringles	26.7	9.1	420	68.3	60.3	15.7	36.1	4	125	90	427	1.39	0.538
719	Coronel Pringles	29.8	10.4	422	66.3	60.4	38.9	36.9	34	113	105	438	1.08	0.457
720	Coronel Pringles	26.5	9.0	423	67.5	60.2	11.0	41.0	13	120	93	415	1.29	0.547
721	Coronel Pringles	25.4	8.7	420	68.0	59.2	37.8	41.0	25	117	76	342	1.54	0.525
722	Coronel Pringles	27.7	9.5	392	70.1	59.5	12.8	34.9	20	118	81	360	1.46	0.595
723	Coronel Pringles	27.0	9.1	430	68.3	59.9	37.5	41.2	23	113	88	369	1.28	0.561
724	Coronel Rosales	28.4	9.6	406	69.5	59.6	13.2	36.0	19	127	76	378	1.67	0.623
725	Coronel Suárez	26.5	9.0	484	64.7	59.5	11.1	37.7	4	113	78	323	1.45	0.614

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) (%)
726	Coronel Suárez	25.7	8.7	465	64.8	57.2	11.7	38.0	17	93	73	271	1.27	0.567
727	Coronel Suárez	25.9	8.8	476	68.9	59.9	9.1	36.7	11	117	72	315	1.63	0.650
728	Coronel Suárez	24.1	8.5	455	69.3	57.5	10.6	36.5	21	106	77	307	1.38	0.579
729	Guaminí	23.5	7.9	425	71.0	58.4	8.0	16.7	26	110	57	241	1.93	0.578
730	Patagones	22.9	7.8	449	65.1	58.1	10.5	21.6	27	112	72	301	1.56	0.603
731	Patagones	25.9	8.7	475	68.7	59.2	8.2	19.9	26	108	76	296	1.42	0.634
732	Patagones	22.0	7.6	436	64.8	57.4	7.2	14.1	36	102	80	291	1.28	0.605
733	Patagones	24.5	8.3	458	67.4	60.6	8.6	18.5	26	115	74	304	1.55	0.632
734	Patagones	22.1	7.6	434	65.8	58.7	6.3	11.9	37	115	68	284	1.69	0.604
735	Patagones	23.4	7.9	462	67.5	59.2	7.0	20.3	24	109	75	297	1.45	0.637
736	Puán	32.2	10.9	497	67.1	59.7	8.5	17.3	27	98	109	379	0.90	0.684
737	Puán	30.5	10.3	477	69.7	60.7	9.0	24.6	21	103	98	351	1.05	0.669
738	Puán	23.5	7.9	445	72.2	54.7	8.0	17.9	29	84	70	219	1.20	0.586
739	Saavedra	25.1	8.4	462	70.4	58.0	7.2	13.9	40	96	75	260	1.28	0.611
740	Saavedra	24.9	8.5	442	70.6	56.6	8.4	14.4	34	92	74	252	1.24	0.533
741	Saavedra	24.0	8.1	422	69.4	58.4	7.1	16.1	33	102	70	263	1.46	0.616
742	Tornquist	30.8	10.6	487	70.8	57.9	13.9	27.9	16	93	98	342	0.95	0.571
743	Tornquist	28.9	10.0	427	67.9	59.2	14.1	37.7	13	109	105	421	1.04	0.559
744	Tornquist	30.9	10.8	492	68.4	60.3	34.8	40.9	30	114	92	416	1.24	0.544
745	Villarino	29.5	10.1	431	67.5	59.8	12.3	19.8	28	111	89	353	1.25	0.561
746	Villarino	24.7	8.7	463	67.6	58.0	11.7	20.9	20	105	77	308	1.36	0.531
747	General Roca (Córdoba)	34.9	12.1	467	66.7	63.7	7.5	7.6	52	94	110	328	0.85	0.554
748	General Roca (Córdoba)	33.8	11.4	438	68.0	60.2	8.2	12.3	36	90	118	360	0.76	0.538

Nortwest of the Country (NOA)
Background for the crop

The 2006 wheat cycle in the Province of Tucumán was markedly different from the 3 previous ones. In the first place the area sown to wheat increased in 2006 to 220,010 hectares. On the other hand, environmental conditions during the wheat cycle were very different to those of previous cycles, and negatively affected the results obtained.

Sowing was carried out during normal dates for each cycle, beginning in the first week in May for long-cycle-wheat and continuing for intermediate and short cycle varieties up to the first week in June. However, some plots were sown to short-cycle varieties early, with the consequent risk of damage due to frost, because of the low availability of humidity in the soil.

Wheat implantation was generally good; there were some atypical attacks by Spodoptera sp. that decreased initial plant density and made it necessary to re-sow in many cases.

It is important to highlight that this year during vegetative growth (booting) temperatures were above normal, this affected the plants negatively, specially short-cycle very boot-prone varieties, and there was a low number of booting shoots per plant. These high temperatures were accompanied by lack of rainfall throughout the cycle with rapid profile drying and implantation problems for the few booting shoots achieved.

The high temperatures shortened all wheat growth stages, the cycle was shortened, even although sowing had been carried out at normal dates. Frosts were another environmental factor that affected wheat during this cycle. They were of different magnitude according to the area, and occurred at the time of maximum sensitivity, causing partial and total losses.

As to sanitary considerations, there were abnormal pest attacks, green aphids during the vegetative period and ear aphids, during the reproductive period, these were controlled opportunely, with a few exceptions. As to diseases, it must be pointed out that there was a high incidence of stem rusts and leaf blotch and tan spot affecting sensitive varieties in some areas.

To summarize, the yields achieved during this cycle were highly variable between regions and according to sowing dates, ranging from plots that were not worth harvesting to plots with a yield of 2000 kg/ha that were not damaged by frosts.

In conclusion, this last wheat-cycle in the Province of Tucumán was very demanding and most unfavorable to the cultivation of wheat.

Northeast of the Country (NEA)
Background for the crop

Wheat crops was favored by June rains, which improved crop conditions.

Sowing extended until early July with cycle variations ranging from intermediate to short.

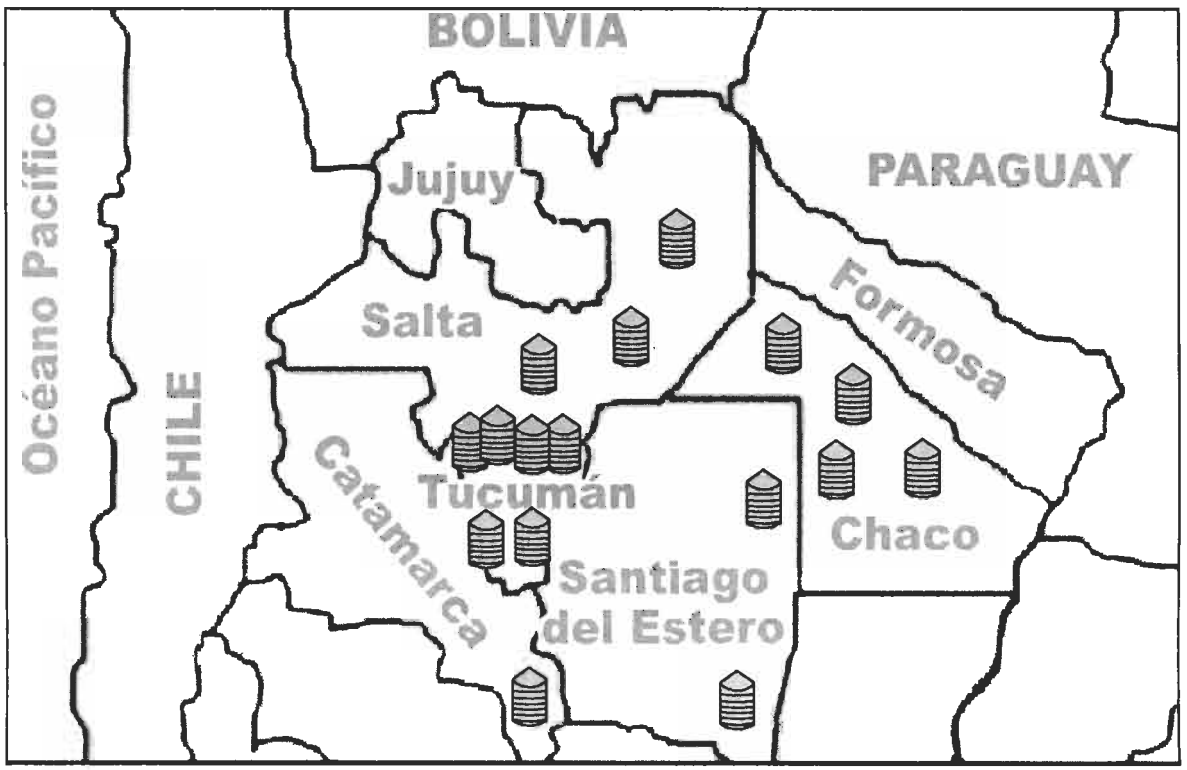
Frost in early September affected yield and quality of some lots.

Yields ranged between 500 and 1.500 kilograms. Some lots were not harvested due to extremely low yield.

As it happened in most previous year, the most significant pest was grain aphid.

Regarding nitrogen fertilization, this technology was applied only in a few lots.

North of the Country



Each reference represents near 4,000 tns sampled.

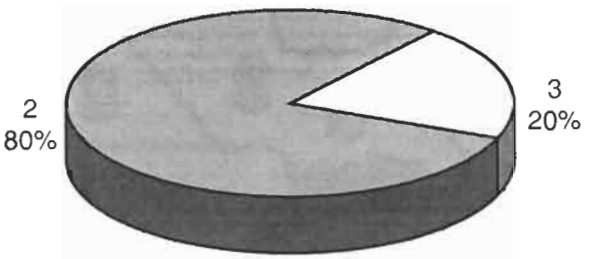
Results of the Analyses

Composite Samples by Locality. Averages were weighted by Tonnage.

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	79.25	83.70	81.83	1.37	1.67
Total Damaged Kernels (%)	0.00	0.90	0.29	0.29	98.96
Foreign Material (%)	0.12	0.92	0.41	0.22	52.86
Shrunken and Broken Kernels (%)	0.42	0.82	0.61	0.13	21.31
Yellow Berry Kernels (%)	0.00	4.50	2.06	1.39	67.27
Protein (13,5% Moisture) (%)	10.9	13.0	11.8	0.6	5.32
Weight of 1000 Kernels (gr.)	30.48	34.96	32.58	1.33	4.10
Ash (% dry basis)	1.678	1.926	1.811	0.091	5.04

Total damaged kernels includes 0.08% green kernels, 0.04% frosty kernels, 0.03% sprouted kernels and 0.14% insect chewed kernels.

Grade Distribution



Flour Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Wet Gluten (%)	25.6	33.7	29.4	2.9	9.94
	Dry Gluten (%)	9.5	12.5	10.9	1.1	9.93
	Falling Number (sec.)	318	466	414	38	9.26
	Flour Yield (%)	57.2	71.6	66.8	3.9	5.78
	Ash (dry basis) (%)	0.538	0.681	0.603	0.038	6.33
FARINOGRAM	Water Absorption (14 % H°) (%)	59.0	64.8	61.5	1.8	2.95
	Development Time (min.)	8.7	15.0	11.0	2.0	17.99
	Stability (min.)	12.2	21.9	17.2	3.3	19.23
	Degree of Softening (12 min.)	24	57	42	11	25.63
ALVEOGRAM	P (mm)	108	135	125	8	6.39
	L (mm)	59	113	83	20	24.31
	W Joules x 10^{-4}	294	423	347	43	12.42
	P / L	1.04	2.27	1.52	0.43	26.40

These results were elaborated with 9 composite samples prepared proportionally from 116 primary samples (farmer deliveries)

Subregion Data

In this subregion the wheat production was 536,220 tons., the 3.8% of the national total. Were sampled 36,000 tons., the 6.71% of the subregion production.

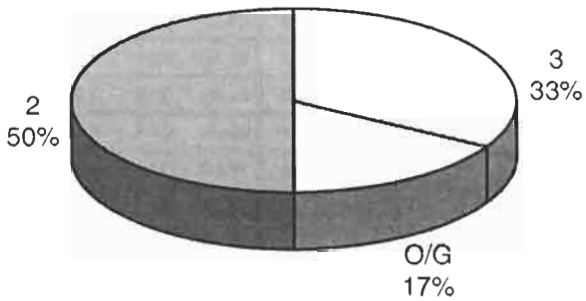
Results of the Analyses

Composite Samples by Locality. Averages were weighted by Tonnage.

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	77.50	79.00	78.21	0.58	0.74
Total Damaged Kernels (%)	0.30	0.90	0.66	0.22	33.25
Foreign Material (%)	0.14	0.80	0.53	0.21	40.31
Shrunken and Broken Kernels (%)	1.20	2.10	1.46	0.32	21.86
Yellow Berry Kernels (%)	0.00	6.80	1.62	2.27	140.37
Protein (13,5% Moisture) (%)	12.4	14.1	13.5	0.6	4.23
Weight of 1000 Kernels (gr.)	26.74	29.11	27.88	1.01	3.62
Ash (% dry basis)	1.87	2.192	2.094	0.103	4.91

Total damaged kernels includes 0.07% green kernels, 0.02% frosty kernels, 0.44% sprouted kernels and 0.13% insect chewed kernels.

Grade Distribution



O/G: Out of Grade

Flour Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Wet Gluten (%)	29.1	33.6	31.2	1.5	4.84
	Dry Gluten (%)	10.7	12.4	11.3	0.5	4.84
	Falling Number (sec.)	444	480	461	14	3.06
	Flour Yield (%)	65.1	70.4	67.3	1.7	2.52
	Ash (dry basis) (%)	0.648	0.773	0.701	0.040	5.67
FARINOGRAM	Water Absorption (14 % H°) (%)	57.2	60.4	59.3	1.1	1.85
	Development Time (min.)	11.7	16.7	15.2	1.7	10.99
	Stability (min.)	18.6	28.2	23.8	2.9	12.15
	Degree of Softening (12 min.)	19	37	28	6	19.99
ALVEOGRAM	P (mm)	94	113	102	6	5.99
	L (mm)	70	99	87	10	11.90
	W Joules x 10^{-4}	320	369	346	18	5.14
	P / L	0.95	1.61	1.17	0.23	19.15

These results were elaborated with 6 composite samples prepared proportionally from 110 primary samples (farmer deliveries)

Subregion Data

In this subregion the wheat production was 262,360 tons., the 1.8% of the national total. Were sampled 23,780 tons., the 9.06% 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 (Salta)	4000	2	79.90	0.22	0.40	0.62	2.20	11.7	31.5	1.694
2	Metan / Rosario de la Frontera (Salta)	4000	3	79.25	0.12	0.92	0.66	2.44	11.5	31.9	1.807
3	Burruyacu (Tucumán)	4000	2	82.40	0.08	0.16	0.68	0.00	12.0	32.2	1.916
4	Burruyacu (Tucumán)	4000	2	81.70	0.00	0.52	0.46	0.80	12.1	33.2	1.837
5	La Cocha (Tucumán)	4000	2	82.60	0.90	0.34	0.44	4.50	10.9	34.3	1.678
6	Graneros (Tucumán)	4000	2	83.25	0.59	0.44	0.42	2.80	11.1	35.0	1.708
7	Cruz Alta (Tucumán)	4000	2	81.70	0.50	0.46	0.64	0.80	12.5	31.8	1.837
8	Leales (Tucumán)	4000	2	81.95	0.12	0.36	0.82	1.32	13.0	30.5	1.897
9	Catamarca	4000	2	83.70	0.08	0.12	0.71	3.70	11.5	32.9	1.926
10	Sgo del Estero	4000	3	78.00	0.30	0.70	1.30	0.70	12.4	26.7	2.120
11	Sgo del Estero	4000	O/G	79.00	0.70	0.40	2.10	0.70	13.3	27.1	2.097
12	Chaco	4000	3	77.80	0.90	0.60	1.60	0.00	13.7	26.8	2.192
13	Chaco	4000	2	78.00	0.80	0.80	1.20	0.90	14.1	29.0	2.165
14	Chaco	4000	2	77.50	0.80	0.50	1.20	0.90	14.0	29.1	2.108
15	Chaco	3780	2	79.00	0.42	0.14	1.34	6.80	13.3	28.5	1.870

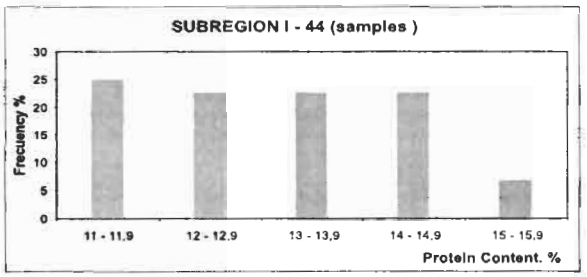
Appendix of Locality Composite Samples.

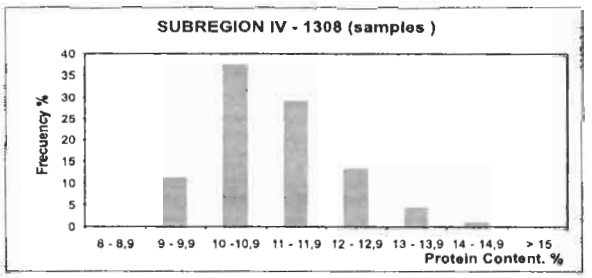
SAMPLE IDENTIFICATION		FLOUR ANALYSIS												
						FARINOGRAM				ALVEOGRAM				
Sample Number	Locality, district or department	Wet Gluten (%)	Dry Gluten (%)	Falling Number (sec.)	Flour Yield (%)	% WA (14 % H°)	D. T. (min.)	Stability (min.)	Degree Softening (12 min.)	P	L	W	P/L	Ash (dry basis) (%)
1	Anta (Salta)	28.2	10.4	420	69.9	59.0	11.4	21.9	24	120	82	359	1.46	0.622
2	Metan / Rosario de la Frontera (Salta)	25.8	9.6	318	71.6	59.7	15.0	20.7	37	126	69	332	1.83	0.598
3	Burruyacu (Tucumán)	31.1	11.5	426	65.3	63.6	8.7	18.0	57	132	110	423	1.20	0.626
4	Burruyacu (Tucumán)	32.0	11.8	416	69.1	64.8	9.7	12.2	57	135	82	371	1.65	0.606
5	La Cocha (Tucumán)	26.6	9.8	466	57.2	60.6	11.7	17.7	42	128	62	299	2.06	0.568
6	Graneros (Tucumán)	25.6	9.5	423	68.0	60.2	13.4	19.2	40	134	59	294	2.27	0.538
7	Cruz Alta (Tucumán)	32.9	12.2	419	67.0	62.2	9.2	12.7	51	120	113	399	1.06	0.610
8	Leales (Tucumán)	33.7	12.5	439	66.2	62.5	9.5	13.7	43	108	104	348	1.04	0.578
9	Catamarca	29.1	10.8	395	67.1	60.6	10.4	18.3	29	126	64	300	1.97	0.681
10	Sgo del Estero	29.1	10.7	475	68	57.2	15.2	28.2	19	94	99	337	0.95	0.677
11	Sgo del Estero	31.9	11.3	466	67.2	59.6	11.7	18.6	33	100	92	334	1.09	0.679
12	Chaco	30.7	11.0	480	65.1	58.6	15.4	22.6	37	103	91	369	1.13	0.711
13	Chaco	32.1	11.5	444	67.6	60.4	16.3	23.9	27	98	95	368	1.03	0.724
14	Chaco	33.6	12.4	444	65.7	59.7	16.7	24.4	28	107	76	348	1.41	0.648
15	Chaco	29.8	11.0	456	70.4	60.2	16.2	25.0	26	113	70	320	1.61	0.773

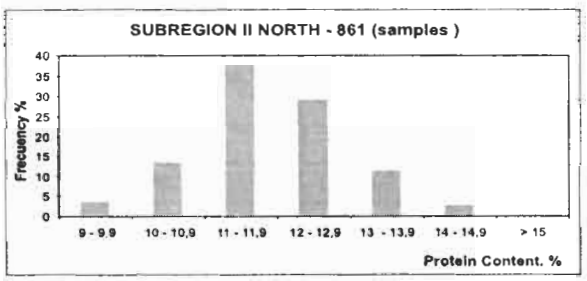
Protein Content Wheat

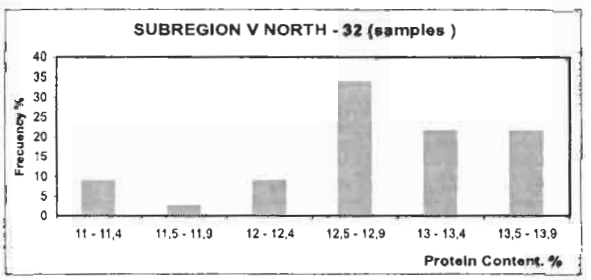
Protein Content

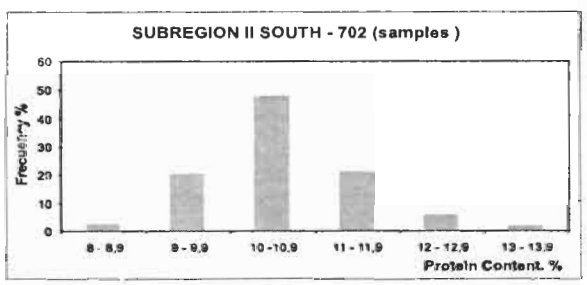
Distribution by ranges
Results obtained on 4,479 Primary Samples

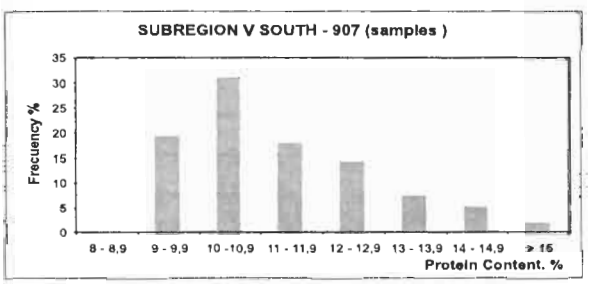


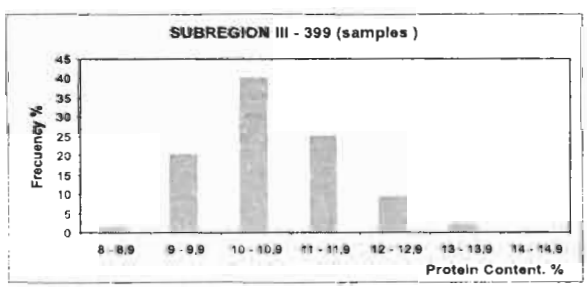


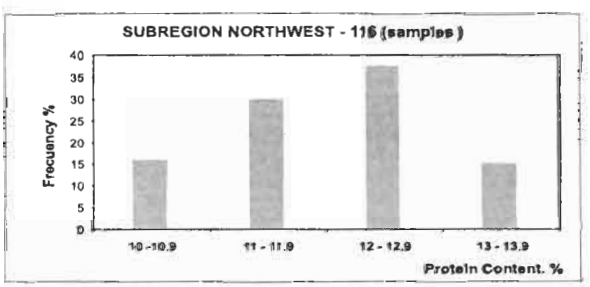


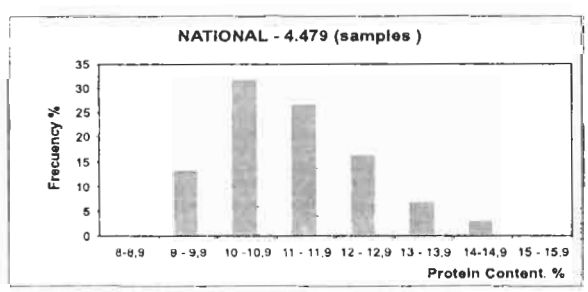


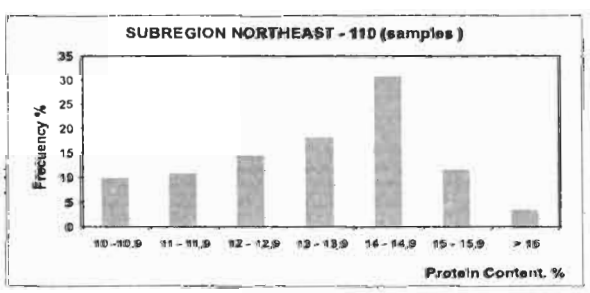












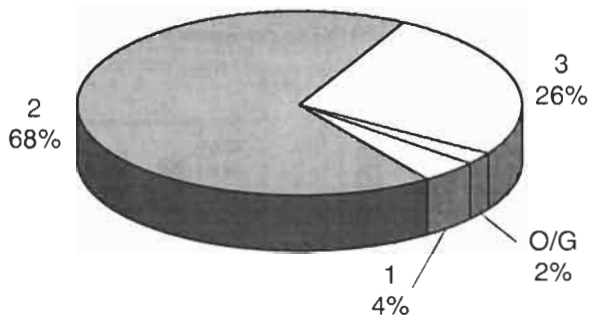
Wheat National Averages

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)	76.10	84.85	80.34	1.64	2.04
Total Damaged Kernels (%)	0.00	5.60	0.43	0.53	123.81
Foreign Material (%)	0.02	1.38	0.31	0.22	71.15
Shrunken and Broken Kernels (%)	0.14	2.79	0.96	0.42	43.54
Yellow Berry Kernels (%)	0.00	14.70	2.27	2.72	119.72
Protein (13,5% Moisture) (%)	9.9	14.2	11.6	0.9	8.19
Weight of 1000 Kernels (gr.)	22.60	39.26	33.16	2.34	7.07
Ash (% dry basis)	1.390	2.440	1.800	0.135	7.49

Grade Distribution



O/G: Out of Grade

Flour Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Wet Gluten (%)	19.5	36.6	27.6	3.2	11.53
	Dry Gluten (%)	7.2	13.4	9.7	1.2	12.01
	Falling Number (sec.)	280	501	420	36	8.51
	Flour Yield (%)	54.9	78.3	69.4	2.4	3.41
	Ash (dry basis) (%)	0.414	0.773	0.569	0.062	10.92
FARINOGRAM	Water Absorption (14 % H°) (%)	54.7	64.8	58.7	1.9	3.19
	Development Time (min.)	1.7	56.0	12.5	6.4	51.03
	Stability (min.)	2.0	58.8	24.3	10.1	41.70
	Degree of Softening (12 min.)	0	73	26	13	50.12
ALVEOGRAM	P (mm)	71	161	107	15	14.08
	L (mm)	40	160	82	19	22.57
	W Joules x 10-4	200	438	316	46	14.56
	P / L	0.44	4.03	1.31	0.49	34.66

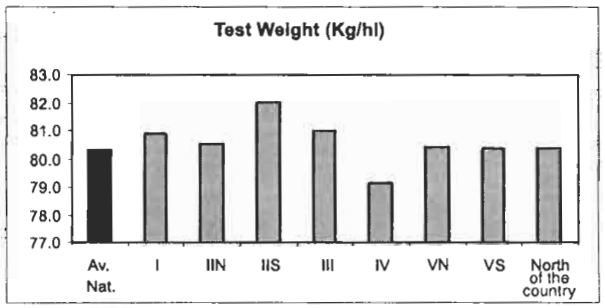
Weighting basis: Tonnage of the production sampled by Subregion, according to chart data, on page 7.

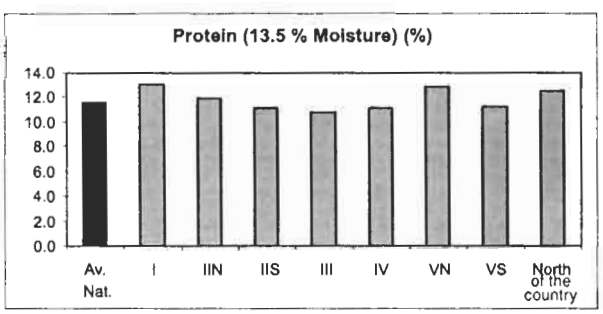
National Averages Wheat

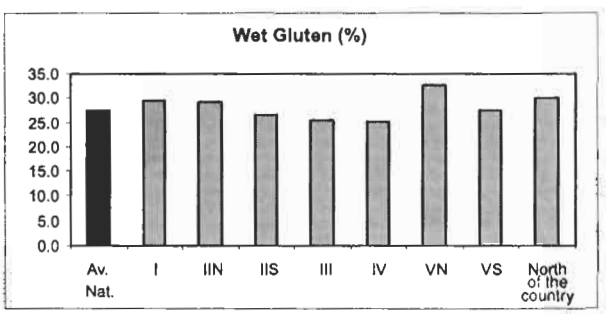
Wheat National and Subregions Averages

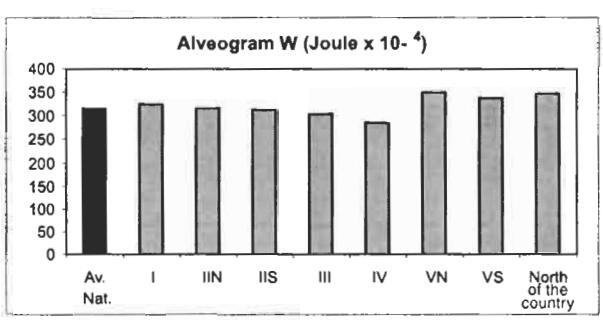
Comparative Graphics

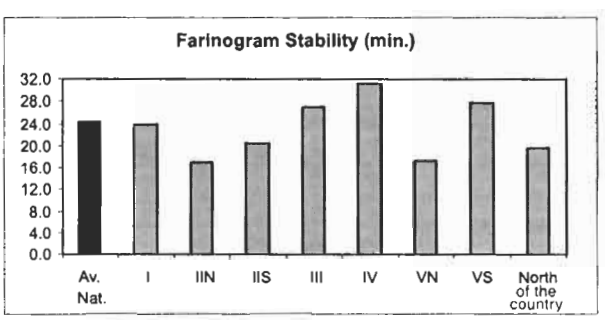
Composite Samples by Locality. Averages were weighted by Tonnage.











Statistical Analysis. 2006/2007 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	
II South	39	81.94	a	IV	0.20	a	IV	0.22	a	II South	0.54	a
III	17	80.98	ab	V South	0.23	a	V North	0.25	a	IV	0.90	b
V North	20	80.62	b	II South	0.36	a	II North	0.25	a	North C.	0.95	b
II North	44	80.56	b	III	0.39	a	I	0.26	a	II North	0.99	b
North C.	15	80.38	b	I	0.40	a	II South	0.29	ab	III	1.02	b
V South	47	80.38	b	North C.	0.44	ab	III	0.45	bc	V South	1.17	b
I	14	79.91	bc	V North	0.82	bc	North C.	0.46	bc	I	1.18	b
IV	70	79.11	bc	II North	0.86	c	V South	0.50	c	V North	1.20	b

Subreg.	Yellow Berry Kernels		Subreg.	Protein		Subreg.	Weight 1000 Kernels		Subreg.	Ash	
V North	0.10	a	I	13.1	ab	II South	35.15	a	III	1.660	a
II North	0.35	a	V North	12.8	bc	IV	34.28	ab	IV	1.721	ab
II South	1.62	ab	North C.	12.5	cd	III	33.72	abc	II South	1.734	ab
North C.	1.90	ab	II North	11.9	d	V South	32.71	bcd	V North	1.785	bc
IV	2.85	b	V South	11.2	e	II North	32.60	cd	V South	1.847	cd
III	3.06	b	II South	11.2	e	V North	31.28	de	II North	1.878	d
V South	3.56	bc	IV	11.1	e	North C.	30.70	e	North C.	1.923	de
I	5.26	c	III	10.8	e	I	29.96	e	I	2.014	e

Subreg.	Wet Gluten		Subreg.	Dry Gluten		Subreg.	Falling Number		Subreg.	Flour Yield	
V North	32.6	a	V North	11.4	a	IV	398	a	III	72.38	a
North C.	30.1	b	North C.	11.1	ab	V North	408	ab	IV	70.10	b
I	29.5	bc	I	10.5	bc	II North	419	abc	II South	69.82	bc
II North	29.3	bc	II North	10.2	c	II South	421	abcd	II North	69.59	bc
V South	27.5	cd	II South	9.8	cd	North C.	432	bcd	V North	68.73	bcd
II South	26.5	de	V South	9.4	de	I	433	bcd	V South	68.22	cd
III	25.5	de	III	8.9	e	V South	444	cd	I	67.96	cd
IV	25.1	e	IV	8.8	e	III	449	d	North C.	67.03	d

Statistical Analysis Wheat

Subreg.	Water Absorption (%)		Subreg.	D.T. (min.)		Subreg.	Stability (min.)		Subreg.	Degree Softening	
IV	56.9	a	II North	10.0	a	IV	31.3	a	North C.	37	a
I	58.1	ab	V North	10.5	a	V South	27.6	ab	II North	36	ab
III	58.4	bc	II South	11.4	a	III	27.1	ab	V North	35	ab
V South	59.2	bc	I	11.8	a	I	23.8	abc	II South	28	abc
II North	59.4	cd	North C.	12.7	a	II South	20.4	bc	I	27	abc
II South	59.5	cd	IV	13.2	a	North C.	19.8	bc	V South	26	bc
V North	60.5	d	III	14.0	a	V North	18.0	c	III	19	cd
North C.	60.6	d	V South	15.2	a	II North	17.0	c	IV	16	d

Subreg.	P		Subreg.	L		Subreg.	W		Subreg.	P/L	
I	91	a	V North	112	a	V North	350	a	V North	0.85	a
V North	91	a	I	97	b	North C.	347	a	I	0.94	ab
II North	102	ab	II North	90	bc	V South	338	ab	II North	1.21	abc
III	106	bc	V South	85	bcd	I	325	ab	V South	1.29	bcd
V South	107	bc	North C.	85	bcd	II North	317	abc	III	1.44	cde
IV	109	bc	III	77	cde	II South	313	abc	North .	1.45	cde
North C.	116	cd	II South	74	de	III	304	bc	IV	1.64	de
II South	122	d	IV	69	e	IV	286	c	II South	1.78	e

Subreg.	Flour Ash	
II South	0.517	a
IV	0.534	a
III	0.550	ab
V South	0.578	b
II North	0.591	bc
V North	0.630	cd
I	0.636	d
North C.	0.643	d

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	22.5 265 14.6	1.14
10 - 10.9	24.7 288 27.4	30.68
11.0 --11.9	**27.0** **312** **25.8**	**36.74**
12.0 - 12.9	30.3 346 21.6	21.21
13.0 - 14.0	32.8 346 17.2	10.23

WET GLUTEN RANGE	Average Protein W Stability	% Country
21 - 24.9	10.6 277 27.4	22.35
25 - 27.9	**11.0** **309** **28.0**	**35.61**
28 - 31.9	12.2 340 21.6	32.58
32 - 34.9	12.9 355 16.0	7.20
> 35.0	13.3 345 12.5	2.27

Alveograph W RANGE	Average Gluten Protein Stability	% Country
190 - 249	24.2 10.6 22.8	6.44
250 - 299	25.6 11.0 24.5	31.06
300 - 349	**28.2** **11.8** **23.7**	**41.29**
350 - 400	30.4 12.3 24.1	16.67
> 400	28.7 11.8 34.1	4.55

Farinograph STABILITY RANGE	Average Gluten Protein W	% Country
1 - 9.9	32.0 12.5 319	2.65
10.0 - 19.9	**28.7** **11.7** **310**	**39.02**
20 - 29.9	26.9 11.5 315	32.20
30 - 39.9	26.4 11.3 325	17.05
40 - 49.9	26.1 11.3 328	7.95
50 - 59.9	24.5 10.8 305	1.14

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.

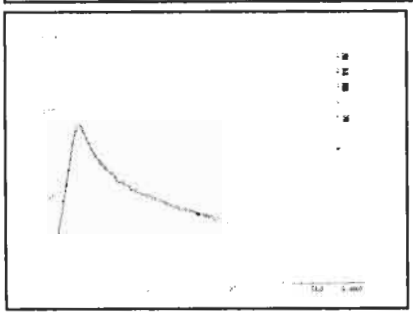
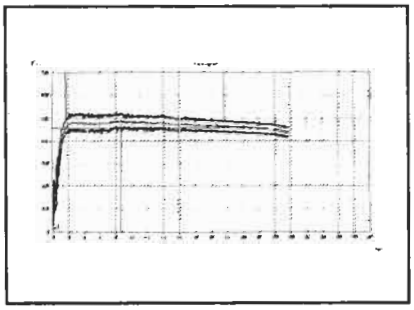
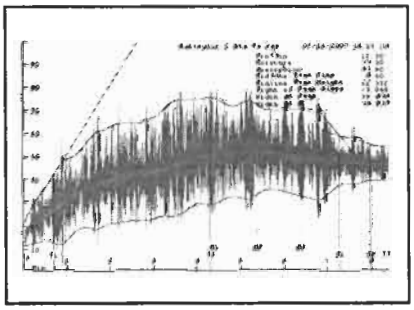
		Subregions									Pondered Average	Average last Quinquenio
		I	II N	II S	III	IV	V N	V S	NEA	NOA		
WHEAT	Test Weight (kg/hl)	80.10	79.70	82.15	80.10	79.70	80.15	80.38	79.00	81.70	80.30	80.33
	Weight of 1000 Kernels (gr.)	29.77	31.76	35.96	34.00	35.01	31.29	32.71	28.02	32.20	33.30	34.03
	Ash (dry basis) (%)	1.960	1.824	1.720	1.630	1.686	1.895	1.847	2.124	1.971	1.790	1.806
	Protein (13.5% Moisture) (%)	12.9	11.9	11.0	10.7	11.2	12.7	11.2	12.9	12.0	11.5	11.1
MILLING	Flour Yield (%)	70.0	69.1	68.2	71.8	71.1	66.4	67.9	66.4	67.3	69.2	69.1
	Ash (dry basis) (%)	0.692	0.667	0.562	0.544	0.536	0.629	0.517	0.579	0.573	0.577	0.573
FLOUR	Moisture (%)	13.3	13.0	14.6	13.6	14.1	14.2	13.1	13.7	13.2	13.7	13.7
	Wet Gluten (%)	29.6	29.4	26.1	24.2	24.5	34.0	27.2	29.6	27.2	27.2	25.3
	Dry Gluten (%)	10.7	10.4	9.3	8.8	8.9	12.0	9.7	10.3	9.7	9.7	9.2
	Index Gluten (%)	98	97	98	99	99	91	99	96	97	98	98*
	Falling Number (sec.)	429	375	383	441	381	319	395	379	366	384	365
	Zeleny Test (cc)	41	41	36	33	40	45	41	36	36	39	36
	FARINOGRAM											
	Water Absorption (%)	59.8	59.1	59.1	59.9	58.1	59.5	60.0	59.6	60.0	59.2	58.8
	Development Time (min.)	8.7	7.2	7.8	7.9	12.3	11.0	9.9	8.4	9.0	9.6	8.5
	Stability (min.)	20.0	15.3	16.0	21.5	26.9	16.9	29.2	17.3	18.7	21.8	15.9
	Degree of Softening	21	28	32	20	20	33	16	25	26	24	38
	Quality Number	246	205	194	255	280	216	325	226	227	251	211**
	MIXOGRAM											
	Development Time (min.)	5.4	4.2	4.1	5.3	4.2	4.7	4.8	5.0	5.3	4.5	4.7
	ALVEOGRAM											
	P (mm)	100	101	105	103	111	85	103	98	98	103	100
	L (mm)	98	92	82	80	71	140	97	94	109	90	81
	G	22	21	20	20	19	26	22	22	23	21	20*
	W (Joules x 10^{-4})	346	326	305	281	298	384	355	318	359	324	293
	P/L	1.02	1.10	1.28	1.29	1.56	0.61	1.06	1.04	0.90	1.20	1.28
	Ie %	62.00	60.9	58.6	54.5	60.2	61.9	61.6	59.3	61.1	60.2	60.8
	BAKING											
	Absoprtion (%)	62.5	62.5	62.5	62.0	62.0	63.0	63.0	62.5	63.0	62.5	62.3
	Development Time (min.)	3' 00	4' 00	3' 00	3' 00	3' 00	3' 00	3' 00	4' 00	3' 00	3' 02	3' 02
	Fermentation Time (min.)	160	160	160	160	160	160	160	160	160	160	160
	Loaf Volume (cc)	680	685	705	650	645	875	665	700	730	687	698
	Specific Volume	5.0	4.9	5.3	4.9	4.7	6.8	4.9	5.3	5.4	5.1	5.2

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

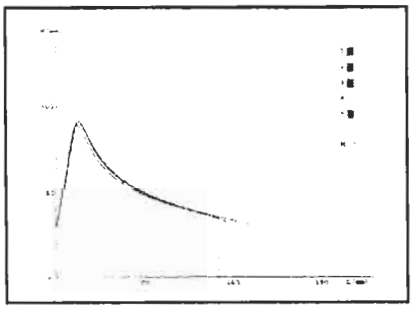
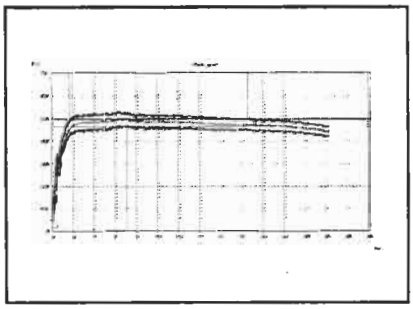
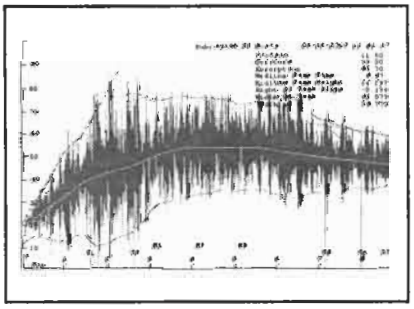
*Weighting basis: Tonnage of the production sampled by Subregion, according to chart data, on page 7.

Results of the Analyses

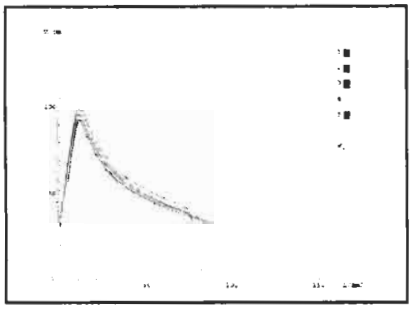
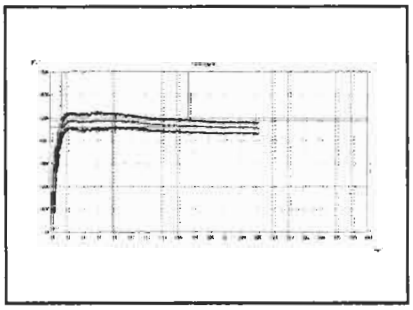
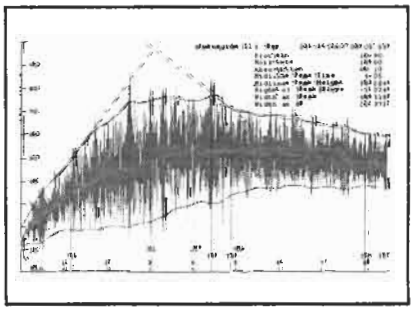
Subregion I

Alveogram	Farinogram	Mixogram
		

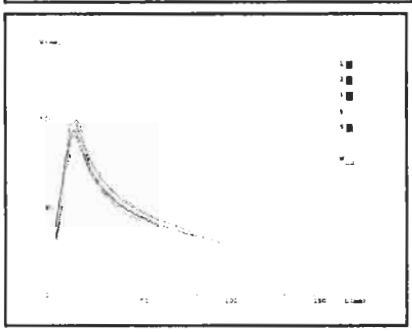
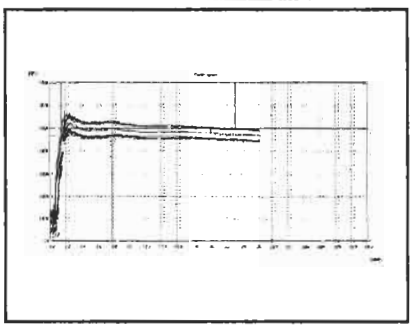
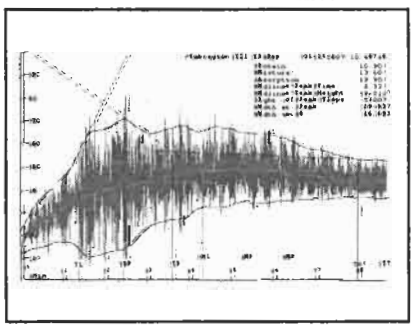
Subregion II North

Alveogram	Farinogram	Mixogram
		

Subregion II South

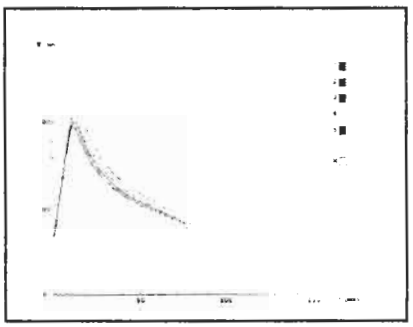
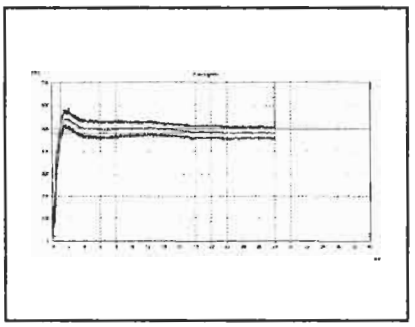
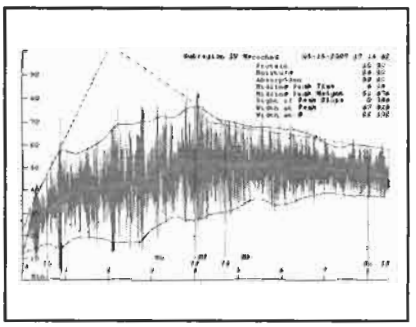
Alveogram	Farinogram	Mixogram
		

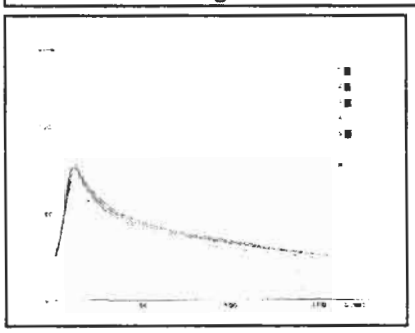
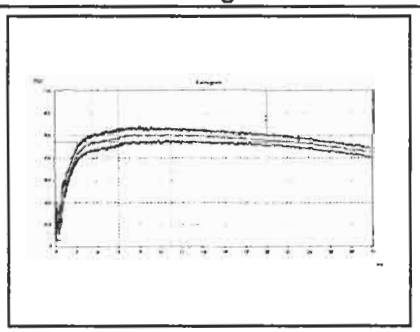
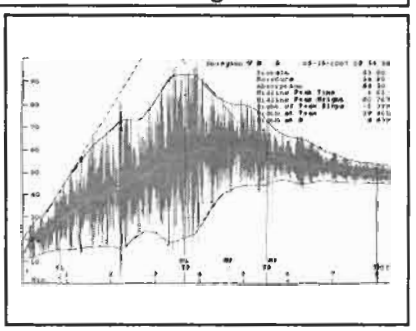
Subregion III

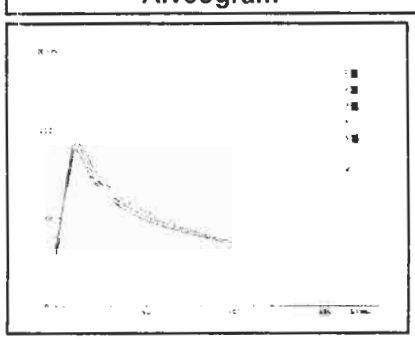
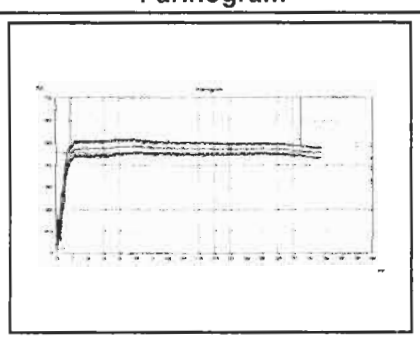
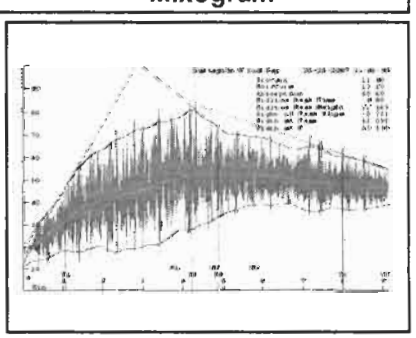
Alveogram	Farinogram	Mixogram
		

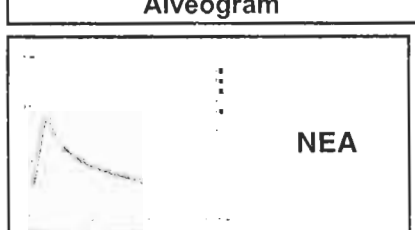
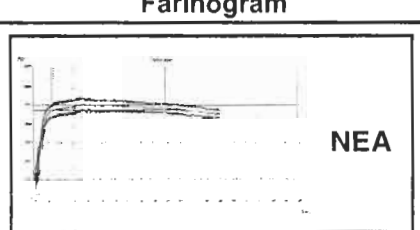
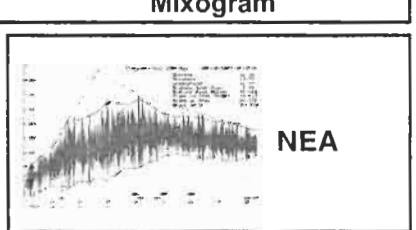
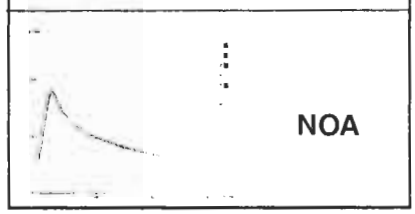
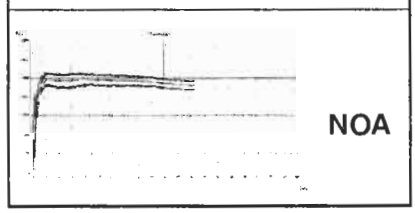
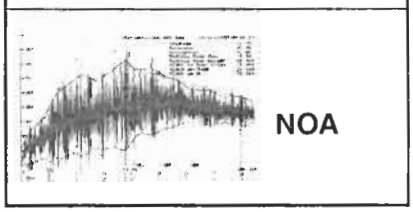
Subregion Composite Samples Wheat

Results of the Analyses

Alveogram	Subregion IV Farinogram	Mixogram
		

Alveogram	Subregion V North Farinogram	Mixogram
		

Alveogram	Subregion V South Farinogram	Mixogram
		

Alveogram	North of Country 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.

06/07 Crop

Sown Area (ha)	49,060
Harvested Area (ha)	48,930
Average Yield (Kg/ha)	2,355
Production (tn)	115,250

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 25 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 N°1075/94 - Standard XXI. Ex Secretariat of Agriculture, Livestock and Fishery)

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	0.50	8	14.0	3.00	40
2	76	1.50	1.00	2.00	3.00	0.20					
3	72	3.00	1.50	3.00	5.00	0,30					

VITREOUS KERNELS

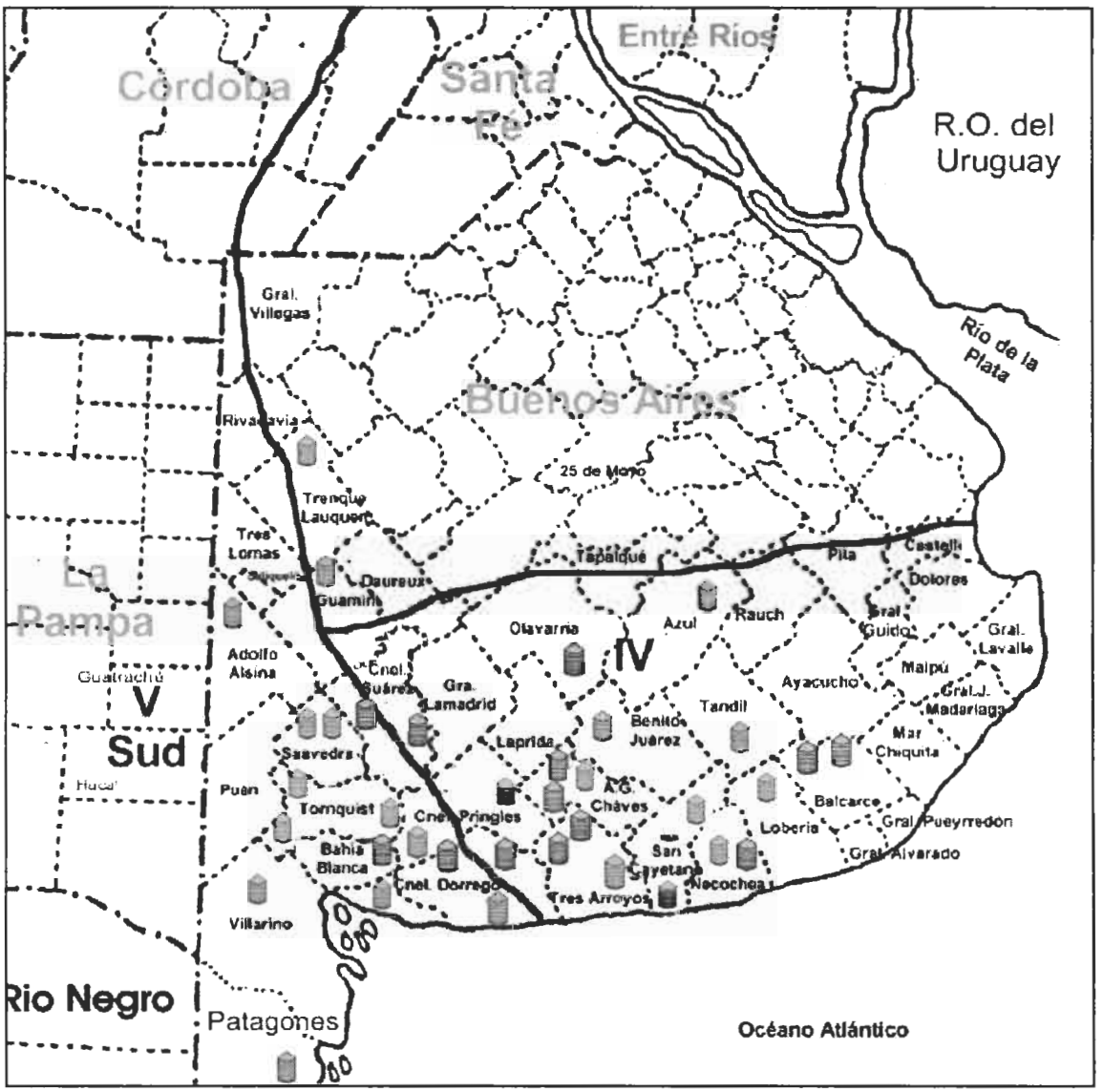
Bonifications		Discounts	
51 a 55%	0,5 %	46 a 49%	1,0%
56 a 60%	1,0%	41 a 45%	3,0%
61 a 65%	1,5%	36 a 40%	5,0%
66 a 70%	2,0%	31 a 35%	7,0%
71 a 75%	3,0%	26 a 30%	9,0%
76 a 80%	4,0%	21 a 25%	11,0%
81 a 85%	5,0%	16 a 20%	13,0%
86 a 90%	6,0%	11 a 15%	15,0%
91 a 95%	7,0%	6 a 10%	17,0%
96 a 100%	8,0%	0 a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

PROTEIN

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

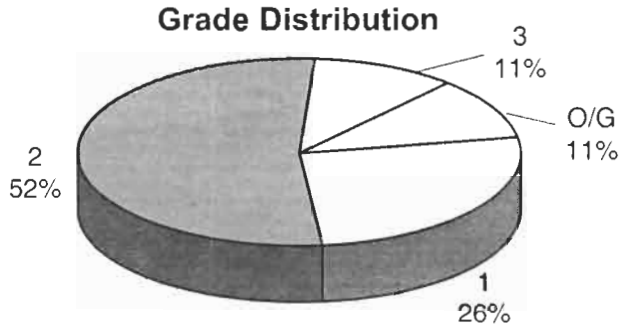

Entre Ríos
Córdoba
Santa Fe
R.O. del Uruguay
Río de la Plata
Gral. Villegas
Buenos Aires
Rivadavia
25 de Mayo
Trenque Lauquen
Tres Lomas
Daireaux
Guaminí
Tapalqué
Pila
Castelli
Dolores
La Pampa
Adolfo Alsina
Olavarría
Azul
Rauch
Gral. Guido
Gral. Lavalle
Guatraché
V
Cnel. Suárez
Gra. Lamadrid
IV
Ayacucho
Malpú
Gral. J. Madariaga
Sud
Saavedra
Laprida
Benito Juarez
Tandil
Mar Chiquita
Huca
Puan
Tornquist
Cnel. Pringles
A.G. Chaves
Balcarce
Loberia
Gral. Pueyrredon
Bahía Blanca
San Cayetano
Necochea
Gral. Alvarado
Cnel. Dorrego
Tres Arroyos
Villarino
Río 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)	75.00	83.05	78.99	2.33	2.95
Total Damaged Kernels (%)	0.00	0.68	0.24	0.20	82.97
Foreign Material (%)	0.12	1.40	0.54	0.38	69.48
Shrunken and Broken Kernels (%)	0.46	3.00	1.51	0.67	44.24
Vitreous Kernels (%)	27	92	68	15	21.77
Wheat (Triticum aestivum) (%)	0.50	3.20	1.59	0.73	45.98
Proteins (13,5% Moisture) (%)	11.6	13.3	12.4	0.4	3.62
Weight of 1000 Kernels (gr.)	35.50	51.00	42.61	3.46	8.13
Ash (% dry basis)	1.685	1.940	1.806	0.064	3.55

Total damaged kernels includes 0.10% sprouted kerneles and 0.15% insect chewed kernels.



O/G: Out of Grade

Semolin Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Falling Number (sec.)	449	539	490	27	5.59
	Color (b)	20.7	24.8	22.6	1.2	5.17
	Wet Gluten (%)	29.5	35.3	32.2	1.7	5.33
	Gluten Index (%)	38	84	61	14	22.47
FARINOGRAM	Energy Level	31.9	49.6	39.8	3.8	9.66
	Degree Softening (%)	26	37	33	3	9.05

These results were elaborated with 19 composite sample.

Subregion V South Durum Wheat

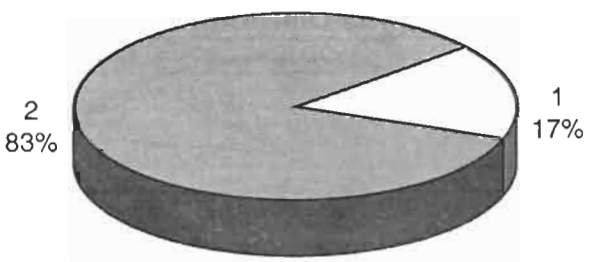
Results of the Analyses

Composite Samples by Locality

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	76.10	82.15	80.09	2.14	2.67
Total Damaged Kernels (%)	0.10	0.42	0.25	0.14	55.83
Foreign Material (%)	0.12	1.48	0.64	0.47	73.23
Shrunken and Broken Kernels (%)	0.46	2.86	1.84	0.92	49.92
Vitreous Kernels (%)	58	88	75	10	13.31
Wheat (Triticum aestivum) (%)	0.70	2.84	1.56	0.85	54.76
Proteins (13,5% Moisture) (%)	10.9	13.5	12.0	0.9	7.75
Weight of 1000 Kernels (gr.)	36.30	49.70	42.20	5.87	13.90
Ash (% dry basis)	1.762	1.947	1.825	0.068	3.74

Total damaged kernels includes 0.13% sprouted kernels and 0,11% insect chewed kernels.

Grade Distribution



Semolin Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Falling Number (sec.)	434	566	497	44	8.84
	Color (b)	21.6	23.4	22.8	0.7	2.97
	Wet Gluten (%)	27.4	33.9	31.1	2.2	7.14
	Gluten Index (%)	8	78	57	25	44.31
FARINOGRAM	Energy Level	32.7	41.5	38.1	3.3	8.71
	Degree Softening (%)	30	36	34	2	7.25

These results were elaborated with 6 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	Olavarría	2	77.25	0.00	0.68	1.04	66	0.92	12.9	40.40	1.731
2	IV	San Cayetano	3	75.45	0.28	0.20	0.46	83	1.22	12.3	41.30	1.917
3	IV	Coronel Suárez	2	79.70	0.68	0.62	1.84	54	2.76	12.7	42.00	1.857
5	IV	Tandil	1	79.00	0.00	0.56	1.14	92	0.76	13.3	51.00	1.821
7	IV	Benito Juárez	2	77.25	0.58	0.18	1.70	48	2.24	12.8	42.20	1.771
8	IV	Necochea	1	78.15	0.10	0.12	1.42	81	1.46	12.9	41.50	1.817
9	IV	Gonzales Chaves	1	79.25	0.36	0.34	0.78	79	1.38	11.6	42.40	1.743
10	IV	Coronel Pringles	2	78.80	0.36	0.68	1.72	72	2.06	12.7	40.70	1.847
11	IV	Lobería	2	79.25	0.08	0.86	0.82	80	1.16	12.4	44.60	1.837
12	IV	Balcarce	1	78.60	0.00	0.14	0.72	71	1.42	12.8	44.50	1.763
14	IV	Tres A., Necochea, A.G.Chaves	1	82.40	0.24	0.38	1.16	71	1.22	11.8	44.00	1.810
17	IV	Saavedra, Cnel. Suarez, Cnel. Pringles	O/G	80.35	0.52	0.46	1.64	70	3.20	12.5	38.70	1.779
18	IV	Trenque Lauquen, Azul, Guaminí	2	81.50	0.16	0.16	2.18	71	1.06	12.5	35.50	1.857
19	IV	Tres Arroyos	2	79.25	0.24	0.72	1.66	58	1.00	12.0	44.90	1.847
20	IV	Balcarce	2	81.95	0.42	1.06	3.00	77	1.92	12.4	48.60	1.755
21	IV	Tres Arroyos - La Costa	3	75.00	0.10	1.20	1.32	57	1.52	12.5	40.10	1.940
22	IV	Gonzales Chaves	2	79.70	0.24	0.40	2.54	62	1.60	12.4	42.20	1.760
24	IV	Coronel Suárez	O/G	75.00	0.16	1.40	1.20	27	0.50	12.0	40.20	1.774
27	IV	San Cayetano	2	83.05	0.08	0.18	2.36	76	2.76	11.7	44.80	1.685
6	VS	Saavedra	1	79.45	0.14	0.12	0.46	88	0.70	11.5	49.20	1.810
13	VS	Coronel Rosales	2	80.80	0.18	0.48	2.82	75	2.84	12.6	37.20	1.802
15	VS	Tornquist	2	80.80	0.42	1.48	2.86	81	1.38	12.0	40.90	1.772
16	VS	Villarino, Patagones	2	81.25	0.42	0.38	1.76	75	2.32	11.5	49.70	1.762
23	VS	Coronel Dorrego	2	76.10	0.24	0.80	1.30	58	0.80	13.5	39.90	1.947
26	VS	Coronel Dorrego	2	82.15	0.10	0.58	1.82	73	1.30	10.9	36.30	1.854

Appendix of Locality Composite Samples.

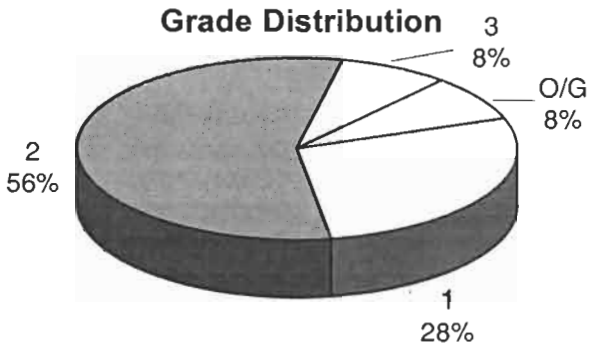
SAMPLE IDENTIFICATION			SEMOLIN ANALYSIS					
Sample Number	Suregion	Locality, district or department	Falling Number (sec.)	Color (b)	Wet Gluten (%)	Gluten Index (%)	Farinogram Energy Level	Farinogram Degree of Softening (12 min.)
1	IV	Olavarría	449	20.8	35.3	47	40.1	36
2	IV	San Cayetano	504	21.9	31.7	41	36.4	35
3	IV	Coronel Suárez	458	22.4	34.4	49	36.4	37
5	IV	Tandil	489	21.4	33.0	79	49.6	30
7	IV	Benito Juárez	476	22.1	34.6	50	38.1	34
8	IV	Necochea	514	23.4	34.0	54	43.7	33
9	IV	Gonzales Chaves	460	24.8	29.5	69	39.5	31
10	IV	Coronel Pringles	460	24.4	33.2	57	41.4	35
11	IV	Lobería	512	23.7	33.0	55	40.5	35
12	IV	Balcarce	492	22.1	33.4	72	42.7	32
14	IV	Tres A., Necochea, A.G.Chaves	528	22.0	30.5	55	37.7	35
17	IV	Saavedra, Cnel. Suarez, Cnel. Pringles	538	22.9	31.5	70	38.3	36
18	IV	Trenque Lauquen, Azul, Guaminí	539	23.8	29.7	84	44.4	30
19	IV	Tres Arroyos	482	22.4	30.5	59	39.5	34
20	IV	Balcarce	469	21.2	32.4	49	35.4	37
21	IV	Tres Arroyos - La Costa	502	23.6	31.7	72	41.4	26
22	IV	Gonzales Chaves	486	23.2	32.2	74	40.6	29
24	IV	Coronel Suárez	494	23.0	30.5	77	37.9	31
27	IV	San Cayetano	463	20.7	30.6	38	31.9	32
6	VS	Saavedra	434	21.6	32.1	8	32.7	35
13	VS	Coronel Rosales	514	23.0	32.1	55	41.5	35
15	VS	Tornquist	505	23.4	30.6	68	40.3	34
16	VS	Villarino, Patagones	486	22.5	27.4	72	37.7	36
23	VS	Coronel Dorrego	566	23.4	33.9	78	40.3	30
26	VS	Coronel Dorrego	476	22.7	30.2	63	36.0	31

Durum Wheat Averages

Results of the Analysis

Wheat Analysis	Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
Test Weight (kg/hl)	75.00	83.05	79.26	2.29	2.89
Total Damaged Kernels (%)	0.00	0.68	0.24	0.19	75.94
Foreign Material (%)	0.12	1.48	0.57	0.39	69.35
Shrunken and Broken Kernels (%)	0.46	3.00	1.59	0.73	45.83
Vitreous Kernels (%)	27	92	70	14	20.00
Wheat (Triticum aestivum) (%)	0.50	3.20	1.58	0.74	46.99
Proteins (13,5% Moisture) (%)	10.9	13.5	12.3	0.6	4.91
Weight of 1000 Kernels (gr.)	35.50	51.00	42.51	4.02	9.47
Ash (% dry basis)	1.685	1.947	1.810	0.064	3.54

Total damaged kernels includes 0.12% sprouted kernels and 0.12% insect chewed kernels.



O/G: Out of Grade

Semolin Analysis		Minimum	Maximum	Average	Standard Deviation	Variation Coefficient
MILLING	Falling Number (sec.)	434	566	492	31.2	6.34
	Color (b)	20.7	24.8	22.7	1.1	4.69
	Wet Gluten (%)	27.4	35.3	31.9	1.9	5.84
	Gluten Index (%)	8	84	60	17	27.76
FARINOGRAM	Energy Level	31.9	49.6	39.4	3.7	9.47
	Degree Softening (%)	26	37	33	3	8.52

Country elevators, Cooperatives and Mills that contributed in the sampling

LOCALITY	DENOMINATION
BUENOS AIRES PROVINCE	
Alberti	Rivara S.A.
Arrecifes	Francisco Sellart S.A.
Ascensión	Coop. Agrícola Ganadera Ltda. de Ascención Ltda.
Ayacucho	Ayagranos S.A.
Azul	Cerealera Azul S.A.
Azul	Granel Sur S.A.
Azul	H. J. Navas y Cía S.A.
Bajo Hondo	Cooperativa Agrícola de Bajo Hondo Ltda.
Balcarce	Acopio Balcarce S.A.
Balcarce	Scorziello y Galella S.C.
Balcarce	Siagro S.R.L.
Balcarce - Otamendi	Cooperativa Agrícola General Necochea Ltda.
Balcarce - Tandil	Tolvas S.A.
Baradero	Julio Docampo
Benito Juárez	Campoamor S. A.
Benito Juárez	Cooperativa Agrop. de Tandil Ltda.
Benito Juárez	Alejandro Sergio Erazun
Bolívar	Coop. Agropecuaria de Bolívar Ltda.
Bonifacio	Cereales Pasman S.A.
Bragado	La Bragadense S.A.
Bragado	Asociación de Cooperativas Argentinas Ltda.
Cabildo	Coop. Agríc. Ganad. e Industrial Sombra de Toro Ltda.
Carabelas	Coop. Agropecuaria Ltda. de Carabelas
Carlos Casares	Tomas Hnos. y Cía. S.A.
Carhué	Cooperativa Agr. Ganad. Ltda. Adolfo Alsina
Caruhé	Unigran S.A.
Carlos María Naón	Asociación de Cooperativas Argentinas Ltda.
Carmen de Areco	Cooperativa Agropecuaria Ltda.
C. de Patagones-Stroeder	Cooperativa Agric. Ganad. e Ind. de Patagones y Viedma Ltda.
Casbas	Compañía Argentina de Granos S.A.
Colón	Graneros y Elevadores Argentinos de Colón S.C.L.
Coronel Dorrego	Raúl H. Perez S.R.L.
Coronel Dorrego	Casa Balda S.A.
Coronel Dorrego	Castell Hnos. S.A.
Coronel Pringles	López y Ramos S.C.
Coronel Pringles	Pucará S. A.
Coronel Suárez	Agro Coronel Suárez S.A.C.I.F.I.
Coronel Suárez	Agro El Renacer S.A

LOCALITY	DENOMINATION
BUENOS AIRES PROVINCE	
Coronel Suárez	Agronomía Alvarez
Coronel Vidal	Camposur S.A.
Cte. Nicanor Otamendi	Rural Ceres S.A.
Chacabuco	Coop. Defensa de Agricultores Ltda. .
Chacabuco	Molino Chacabuco S.A.
Chacabuco	Cooperativa Agrop. de Granjeros Unidos Ltda.
Chivilcoy	Coop. Agrícola Ganadera Ltda. de Chivilcoy
Daireaux	Aripar Cereales S.A.
Daireaux	Camafer S.A.
Dudignac	Cooperativa Agrícola Ganadera Ltda. de Dudignac
General Pinto - Ameghino	Rucamalen S.A.
General Viamonte	Coop. Rural de Gral. Viamonte Ltda.
General Villegas	Bandagro S.A.
General Villegas	Cereales Giménez S.R.L.
General Villegas	Cerealoeste S.A.
General Villegas	Semillera Fuertes S.A.
General Villegas	Sigra Villegas S.A.
General Villegas	Asociación de Cooperativas Argentinas Ltda.
Gonzáles Cháves	Agro Chaves S.A.
Gonzáles Cháves	Barcellandi, Enrique Javier
Gonzáles Cháves	De la Garma Cereales S.R.L.
Gonzáles Cháves	Flori, H. N. S.A.
Gonzáles Cháves	Molina, Lucas
Gral. Lamadrid	Productores Gral. Lamadrid S.A.
Guaminí	Coop. Agr. Ganad. de Guaminí Ltda.
Henderson	Coop. Agropecuaria "El Progreso" de Henderson
Junín	Liga Agricola Ganadera Coop. Ltda.
La Dulce	Cooperativa Agrop. La Segunda Ltda. de La Dulce
Laprida	Héctor Vagnini Cereales.
Lartigau	Cooperativa Agrícola Ganadera de Lartigau Ltda.
Las Flores	Asociación de Cooperativas Argentinas Ltda.
Licenciado Matienzo	Cantabria S. A.
Lincoln	Juan Rosa e Hijos S.A.
Lincoln - L. N. Alem - Vedia	Cargill S.A.
Lobería	Barón y Cía.
Lobería	Cantabria S.A.
Lobería	Forner Hnos.
Lobería	Marzu S.A.
Lobería	Pro-Agro
Lobería	Pedro Ramón Cabeza S.A.

LOCALITY	DENOMINATION
BUENOS AIRES PROVINCE	
Mar del Plata	Héctor Villar
Mar del Plata	Adolfo A. Quaglia
M.H. Alfonzo	Cooperativa Agr. Ltda. La Unión de Alfonso
Micaela Cascallares	Cooperativa Agrícola Ltda. De Micaela Cascallares
Miramar	Granel Sur S.A.
Navarro	Omar Echeverry S.R.L.
Necochea	Alea y Cía.
Necochea	Cooperativa Agrop. General Necochea Ltda.
Necochea	Fernández, Candia, Caraffo, Premrou S.A.
Necochea	Alea y Cía.
Necochea - Laprida	Evasio Marmetto S.A.
Necochea	Juan Leoncio Iriberri S.A.
Necochea	Dorrego, López y Noves S.A.
Necochea - Tandil	Rural Ceres S.A.
Nueve de Julio	La Bragadense S.A.
Olavarría	Asociación de Cooperativas Argentinas Ltda.
Patagones	Agropecuaria Villalonga S.R.L.
Patagones	Benito Fibiger S.R.L.
Patagones	Novick y Cía.
Patagones	Casa Campetella S.A.
Pergamino	Agricultores Federados Argentinos S.C.L.
Pergamino	Cooperativa Agríc. Ganad. de Pergamino
Pigüé	Molino Cañuelas S.A.C.I.F.I.A.
Pirovano	Oscar A. Gallo y Cía. S.R.L.
Puan	Torre Hnos.
Quequén	Promotora Agropecuaria Necochea S.A.
Ramallo - Cap. Sarmiento	Cooperativa Agrícola de Ramallo Ltda.
Rauch	Cooperativa Agríc. Ganad. de Rauch Ltda.
Rivadavia	El Indio S.A.
Rivadavia	Prunder S.A.
Saavedra	Agar Cross S.A
Saavedra	Los Grobo Agropecuaria S.A
Saladillo	Agroganadera Saladillo S.A.
Saladillo - Roque Pérez	Coop. Agrícola Ganadera Ltda. de Saladillo
Salliquelló-Casbas-Rivera	Ganadera Salliquelló S.A.
Salto	Ferias del Norte S.A.
San Antonio de Areco	Coop. Agropecuaria de San Antonio de Areco Ltda.
San Cayetano	Agroservicios Sudeste.S.A.
San Cayetano	Oostdijk, Oscar Fabián
San Cayetano	Ranalle, Mario
San Cayetano	Rizzi, Joel Juan y Mauro.
San Cayetano - Tres Arroyos - G. Chaves | Agro El Carretero S.A.	
San Miguel Arcángel	Coop. Agr. Ganad. Ltda. San Miguel

LOCALITY	DENOMINATION
BUENOS AIRES PROVINCE	
San Nicolás	Coop. Agrícola Ltda. San Nicolás
San Pedro	Ramón Rosa y Cía. Ltda.
San Pedro	Coop. Agropecuaria Ltda. de San Pedro
Tandil	Usandizaga, Perrone y Juliarena S.A.
Tandil	Cooperativa Agropecuaria de Tandil Ltda.
Tandil	Cooperativa Agríc. Ganad. de Tandil y Vela Ltda.
Tandil	Coop. de Producción, Industrial y Consumo de Tandil Ltda.
Tornquist	Vittori Cereales S.R.L.
Tornquist	Los Vascos Cereales S.A.
Tres Arroyos	Agro Roca S.R.L
Tres Arroyos	Agronomía Raúl H. Pérez S.A.
Tres Arroyos	Agrooriente S.A
Tres Arroyos	Agroservicios Sudeste S.A.
Tres Arroyos	Barcellandi, Javier Enrique
Tres Arroyos	Barraca Santa Teresita S.A
Tres Arroyos	Bellingeri e Hijos, Francisco
Tres Arroyos	Bellingeri Horacio Atilio
Tres Arroyos	Cerealera Tres Arroyos S.A
Tres Arroyos	De La Garma Cereales S.R.L
Tres Arroyos	El Labrador S.A
Tres Arroyos	Goñi, Jesús Héctor
Tres Arroyos	Guisasola Cereales S.R.L
Tres Arroyos	H.N Flor S.A
Tres Arroyos	Herrero Angel Rodolfo
Tres Arroyos	Menna Cereales José Angel.
Tres Arroyos	Molina, Lucas
Tres Arroyos	Morán, Rodolfo Cristian
Tres Arroyos	Oostdijk, Oscar Fabián
Tres Arroyos	Pecker, Pedro Eduardo
Tres Arroyos	Porfiri Cereales S.A
Tres Arroyos	Ranalle, Mario A.
Tres Arroyos	Taraborelli, Mario Jesús
Tres Arroyos	Suc. Antonio Moreno S. A.
Villa Bordeu	Asociación de Cooperativas Argentinas Ltda.
Villarino	Cereales Genovesi S.R.L.
Villarino	Barraca Mitre S.A.
Villarino	Molino Algarrobo S.R.L.
	Centro de Acopiadores de Cereales
	Centro de Acopiadores de Bahía Blanca
	Centro de Acopiadores de Daireaux
	Centro de Acopiadores de la zona Oeste de la Pcia. de Bs. As.
	Centro de Acopiadores de la zona Puerto Quequén
	Centro de Acopiadores de Necochea
	Centro de Acopiadores de Tres Arroyos

LOCALITY	DENOMINATION
BUENOS AIRES PROVINCE	
	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.
CATAMARCA PROVINCE	
El Alto	La Nueva Esperanza
CÓRDOBA PROVINCE	
Arias	Cargill S.A.
Arroyito	Ctro. Desarrollo Coop. A.C.A. Arroyito
Arroyo Cabral	Coop. Agrícola Ganadera Arroyo Cabral Ltda.
Ballesteros	Paredes Cereales S.A.
Bell Ville	El Carmen Cereales S.R.L.
Canals	Acopio Canals
Canals	Aceitera General Deheza S.A.
Colazo	Comercial Rossi S.A.
Colazo	Casa Siravegna S.R.L.
Del Campillo - Gral. Levalle	Cía. Argentina de Granos
Freyre	Coop. Agr. Gan. y de Cons. de Freyre Ltda.
General Cabrera	Cotagro Coop. Ltda.
General Deheza	Aceitera Gral. Deheza S.A.
General Deheza	Gastaldi Hnos. S.A.
Hernando	Coop. La Vencedora
Idiazábal	Ortega Hnos.S.A.
Inriville	Cargill S.A.
Jesús María	Los Seis Hermanos S.R.L.
Jovita	Ambito Das S.A.
Justiniano Posse	Cooperativa Agr. Gan. de Justiniano Posse Ltda.
Justiniano Posse	Coop. Agrop. Unión de Justiniano Posse Ltda.
La Carlota	Cotagro Coop. Agropecuaria Ltda.
La Cesira	Cía. Agroindustrial La Oriental S.A.
La Laguna	Rostagno y Saretti S.R.L.
La Playosa	Coop. Unión Popular Ltda. Silvio Pellico
Laboulaye	Molinos Florencia S.A.
Laboulaye	Cargill S.A.
Las Isletillas	Coop. La Vencedora Ltda.
Las Junturas	Cuassolo Iglesias y Cía. S.R.L.
Leones	Coop. Unión Agrícola Ltda. de Leones
Los Surgentes	Mujica y CIA SA
Marcos Juarez	Agricultores Federados Argentinos S.C.L.
Marcos Juárez	Cooperativa Agrícola General Paz de Marcos Juárez Ltda.

LOCALITY	DENOMINATION
CÓRDOBA PROVINCE	
Matorrales	Garino Fabián y Javier
Monte Cristo	Miguel Gazzoni e Hijos S.R.L.
Monte Maíz	Coop. Agrícola de Monte Maíz Ltda.
Morteros	Coop. Agric. Gan. de Morteros Ltda.
Noetinger	Coop. Agrop. General Belgrano Ltda.
Oliva	Asociación de Cooperativas Argentinas Ltda.
Porteña	Coop. Ganadera, Agrícola y de Consumo Porteña
Sinsacate	Julio C. Treachi e Hijos S.A.
Tránsito	Zanoy Agro y Servicios S.R.L.
Villa del Rosario	Teumaco Cereales S.R.L.
Villa del Rosario	Asociación de Cooperativas Argentinas Ltda.
Villa del Totoral	Pronor S.A.
	Sociedad de Acopiadores de Granos de la Pcia. de Córdoba
CHACO PROVINCE	
Alte. Brown - 9 de Julio	Alfredo Brugnoli e Hijos.
Barranqueras	Puerto - LDC Argentina S.A.
Cte. Fernández - 2 de Abril	Martín Cereales S.C.C.
Chacabuco - 12 de Octubre	Golob Semillas S.R.L.
Chacabuco - 12 de Octubre	Buratovich Hnos. S.A.
Chacabuco - Gral. Belgrano	Suc. Atilio Carinelli
Charata	Cereales Langellotti
Charata	Felipe Garlisi e Hijos S.A.F.I.A.C.I.F.
Independencia-G.Belgrano	Don Lisandro S.R.L.
Resistencia	Molino Cargill S.A.
	Centro de Acopiadores de Cereales y Oleaginosos del Chaco
ENTRE RÍOS PROVINCE	
General Galarza	Coop. La Protectora Ltda.
Gualeguay	Dowery S.A.
Gualeguay	Maribey S.A.
Gualeguaychú	Unión Cerealera S.R.L.
Larroque	Tierra Greda S.A.
Lucas González	Coop. El Progreso Ltda.
Rincón de Nogoyá	Agrosur S.A.
Urdinarrain	Coop. Fed. Agr. Ganad. de Urdinarrain Ltda.
Victoria	Granero S.R.L.
Villaguay	Semillas y Cereales S.R.L.
	Centro de Acopiadores de Granos de Entre Ríos

LOCALITY	DENOMINATION
LA PAMPA PROVINCE	
Alta Italia	Cooperativa Agr. Ganad. Esteban Piacenza de Alta Italia Ltda.
Ataliva Roca - Unanue	Hernández
Atreucó	Casa Alarcia S.A.C.I.F.I.A.G
Catriló	Juan Alberto Segura S.R.L.
Colonia Barón	Lartirigoyen y Cía. S. R. L.
Colonia Barón	Marta Edith Miguel de Pelayo
Colonia Barón	Cerealoeste S.A.
Chapaleufú	Tomas Hnos. y Cia. S.A.
Doblas	Coop. Agrop. de Doblas Ltda.
Dto. Atreuco	Casa Alarcia S.A.C.I.F.I.A.G.
Dto. Capital	Trabajadores Unidos Coop. Mixta Ltda.
Dto. Hucal	Soc. Coop. Agric. Ganad. Ltda. Gral. San Martin
Eduardo Castex	Asociación de Cooperativas Argentinas Coop. Ltda.
Eduardo Castex	Brandemann y Cía. Sc.
Eduardo Castex	Cereales Calandri S.A.
Embajador Martini	Coop. Agrop. Embajador Martini Ltda.
General Pico	Acopagro S. A.
General Pico	Asociación de Cooperativas Argentinas Coop. Ltda.
General Pico	Cereales del Centro S.R.L
Ingeniero Luiggi	Fernández Angel Tomas
Intendente Alvear	Grainco Pampa S.A
Jacinto Arauz	Molisud S.A.
Macachín	Atreu-co Coop. Agrop. Ltda. De Macachín
Maracó	Allende María Aurelia
Miguel Cané	Cereales Quemú S.A
Miguel Riglos	Trimag S.A.
Miguel Riglos	Juan Alberto Segura S.R.L.
Quehué	Trimag S.A.
Quemú Quemú	Cereales Quemú S.A
Quemú Quemú	García Rouco y Bouza S.R.L.
Santa Rosa	Branda Alfredo
Santa Rosa	Pelayo Agronomia S.A.
Trenel	Garduño, Mario Daniel y Victor Hugo
Uriburu	Agro Ganadera Don Enrique S. A.
Uriburu	Cereales del Centro S.R.L
Winifreda	Asociación de Cooperativas Argentinas Coop. Ltda.
	Centro de Acopiadores de La Pampa y Limítrofes
SALTA PROVINCE	
Depto. Capital	Molino Cañuelas S.A.C.A.F.I.A.
San José de Metán	Molino Panamericano S.A.

LOCALITY	DENOMINATION
SANTA FE PROVINCE	
Álvarez	Moscoloni Hnos. SRL
Alvear	Careaga Hnos. y Teglia. S.R.L.
Angélica	Naciente Cereales SRL
Arminda	Zampa Cereales S.R.L.
Armstrong	Cooperativa Agropecuaria de Armstrong Ltda.
Arroyo Ceibal	Quatrin S.A.
Avellaneda	Unión Agric. de Avellaneda Coop. Ltda.
Barrancas	Cooperativa Agrícola Ganadera La Unión de Barrancas Ltda.
Bouquet	Cooperativa Agr. Gan.de Bouquet Ltda.
Calchaqui	Coop. Agric. Mixta de Margarita Ltda.
Cañada de Gómez	Asociación de Cooperativas Argentinas Ltda.
Capitán Bermúdez	Roca Cereales SRL
Carlos Pellegrini	Cooperativa Agrícola Ganadera de Carlos Pellegrini Ltda.
Correa	Sociedad Agropecuaria de Correa Coop. Ltda.
El Trébol	Cooperativa Agrícola Ganadera de El Trébol Ltda.
Emilia	Coop. Agrop. Santa Lucia Ltda.
Eusebia	Comercial Eusebia SRL
Fighiera	José Costantini S.R.L.
Gobernador Crespo	Coop. Agr.Gan. de Gob. Crespo Ltda.
Hughes	Cerealista Hughes SRL
Hughes	Cooperativa Agr. Gan. de Hughes
Humberto 1°	Humberto Primo Cereales SRL
Humboldt	Coop. A.F.A. Agencia Humboldt
Irigoyen	Cooperativa Agropecuaria Mixta de Irigoyen Ltda.
López	Cooperativa Agropecuaria de López Ltda.
Llambi Campbell	Lainatti Hnos SA
Llambi Campbell	Coop. Ag. Gan. La Unión Ltda.
Malabrigo	Coop. Malabrigo Ltda.
Margarita	Coop. Agrícola Mixta de Margarita Ltda.
María Juana	Bocchio y Zimermann SRL
María Juana	Coop. A.F.A. Agencia María Juana
María Susana	Cooperativa Federada Agrícola Ganadera de María Susana Ltda.
Máximo Paz	Cooperativa Agrop. Ltda. de Máximo Paz
Monje	Cooperativa Agrícola Ganadera Tambera de Monje Ltda.
Pilar	Coop. Agr .Gan. Ltda. Guillermo Lehmann
Pueblo Muñoz	J. A. Agrícola S.R.L.
Pujato	Rogelio Rogani SRL
Rafaela	Domingo Sapino Ltda S.A.
Rafaela	Cereales Payé SA
Rafaela	Copras SRL

LOCALITY	DENOMINATION
SANTA FE PROVINCE	
Ramona	Cereales Ramona SRL
Reconquista	Industrias Molineras y Afines de Norte S.A.
Recreo	Cia de Cereales SA
Recreo	Semillería Denis Stamatti SRL
Roldán	Roberto Amsler SAC
Romang	Suc. Cooperativa Agrícola Mixta de Malabrigo Ltda.
Rosario	Rocca Cereales. S.R.L.
San Genaro	Asociación de Cooperativas Argentinas Ltda.
San Guillermo	Coop. Agr.Gan. Ltda Santa Rosa
San José de la Esquina	Cooperativa de San José de la Esquina
San Justo	Coop. Federal Agr. Gan. Ltda de San Justo
San Lorenzo	Fuentes Agrícola SRL
San Vicente	Coop. Agrop. Colonias Unidas Ltda.
Santa Clara de Buena Vista	Coop. Agr. Gan. La Unión Ltda.
Santa Clara de Saguier	Bartolo J. Pons y Cia SCC
Santa Isabel	Cooperativa Agrícola Unión y Fuerza de Santa Isabel
Suardi	Coop. Agr.Gan. y de Consumo de Suardi
Sunchales	Coop. Ltda. Agr. Gan. de Sunchales
Timbúes	Asociación de Cooperativas Argentinas Ltda.
Tortugas	Boni Hnos. SA
Tostado	Suc. Unión Agric. de Avellaneda Coop. Ltda.
Unión	Cooperativa la Unión
Videla	Coop. Agr.Gan. de Videla Ltda.
Villa Cañas	Cereales Centenario S.A.
Villa Minetti	Suc. Cooperativa Agrícola Mixta de Malabrigo
Villa Trinidad	Coop. Agr.Gan. La Trinidad Ltda
Zavalla	Asociación de Cooperativas Argentinas Ltda.
Zenón Pereyra	Gaviglio Comercial S.A.
	Centro de Acopiadores de Cereales y Oleaginosas de Santa Fe
	Sociedad Gremial de Acopiadores de Granos (Rosario)
SANTIAGO DEL ESTERO PROVINCE	
Selva	Asociación de Cooperativas Argentinas
TUCUMÁN PROVINCE	
San Miguel de Tucumán	Molinos Emilio Luque S.A.
San Miguel de Tucumán	Servicios y Negocios S.A.
San Miguel de Tucumán	Sociedad Rural de Tucumán
La Ramada	Cooperativa Unión y Progreso de la Ramada de Abajo Ltda.
	Centro de Acopiadores de Granos del NOA

OTHER ENTITIES THAT CONTRIBUTE IN THE SAMPLING

Direction of Coordination of Delegations S.A.G.P. y A. and his Delegations of: Bahía Blanca, Bolívar, Bragado, Junín, Lincoln, Pehuajó, Pergamino, Pigüé, Salliquelló, Tres Arroyos, Tandil, 25 de Mayo, Laboulaye, Marcos Juárez, Río Cuarto, San Francisco, Villa María, Paraná, Rosario del Tala, General Pico, Santa Rosa, Avellaneda, Cañada de Gómez, Casilda, Rafaela, Venado Tuerto, Chaco, Salta, Santiago del Estero, Catamarca-La Rioja y Tucumán.

WHEAT DURUM

Manera S.A.
Molinos Rio de la Plata S.A.
Kraft Foods Argentina S.A.

Acknowledgments

We thanks the information provided by the following technicians, for the elaboration of the commentaries about crop development and environmental conditions of each subregion.

Subregion I
Ings. Agrs. HUGO FONTANETTO; JULIO ALBRECHT y RICARDO ALBRECHT
Estación Experimental Agropecuaria Rafaela. Instituto Nacional de Tecnología Agropecuaria.

Subregion II North
Ings. Agrs. JULIO CASTELLARÍN; H. PEDROL y J. ANDRIANI
Estación Experimental Agropecuaria Oliveros. Instituto Nacional de Tecnología Agropecuaria.

Ing. Agr. MARTHA CUNIBERTI
Estación Experimental Agropecuaria Marcos Juárez. Instituto Nacional de Tecnología Agropecuaria.

Subregion II South
Ing. Agr. OMAR O. POLIDORO
Estación Experimental Agropecuaria Pergamino. Instituto Nacional de Tecnología Agropecuaria.

Subregion III
Ing. Agr. HECTOR MILISICH
Estación Experimental Agropecuaria Paraná. Instituto Nacional de Tecnología Agropecuaria.

Subregion IV
Ing. Agr. GILBERTO KRAAN
Chacra Experimental Integrada Barrow. Instituto Nacional de Tecnología Agropecuaria – Ministerio de Asuntos Agrarios de la Provincia de Buenos Aires.

Subregion V North
Ing. Agr. MARCELO CANTARERO
Facultad de Ciencias Agropecuarias. Universidad Nacional de Córdoba.

Subregion V South
Ing. Agr. RUBÉN MIRANDA
Departamento de Agronomía. Universidad Nacional del Sur.

Northeast of the Country
Ing. Agr. JORGE PINTO
Felipe Garlisi e Hijos S.A.

Northwest of the Country
Ing. Agr. DANIEL GAMBOA
Estación Experimental Agroindustrial "Obispo Colombres". Provincia de Tucumán.

Useful Information

AGRICULTORES FEDERADOS ARGENTINOS S.C.L.
Mitre 1132 Rosario – Pcia. de Santa Fe. Tel.: 0341 – 420-0900 Fax: 0341 – 420-0925
E-mail: afascl@afascl.com.ar Web Site: www.afascl.com

ASOCIACIÓN DE COOPERATIVAS ARGENTINAS COOPERATIVA LIMITADA
Av. Madero 942, Pisos 4, 5 y 6. (1106) Buenos Aires. Tel.: 011 – 4310-1300 Fax: 011 – 4310 -1330
Fax server: 011 – 4310-1390
E-mail: ferrari@acacoop.com.ar Web Site: www.acacoop.com.ar

BOLSA DE CEREALES DE BAHÍA BLANCA
Saavedra 636, Piso 1 (B8000DDN) Bahía Blanca - Pcia. de Buenos Aires
Tel.: 0291 – 455-9520 - Fax: 0291 – 451-9062
Web Site: www.bcp.org.ar

CÁMARA ARBITRAL DE CEREALES DE BAHÍA BLANCA
Saavedra 636, Piso 3 (B8000DDN) Bahía Blanca - Pcia. de Buenos Aires
Tel.: 0291 – 456-0140 Fax: 0291 – 456-0218
E-mails: camarabb@cacbb.com.ar y secretaria@cacbb.com.ar
Web Site: www.cacbb.com.ar

CÁMARA ARBITRAL DE CEREALES DE ENTRE RIOS
Urquiza 645 (3100) Paraná – Pcia. Entre Rios Tel.: 0343 – 431-2784 / 431-4361 Fax: 0343 – 431-0301
E-mail: cacer@cacerer.com.ar

CÁMARA ARBITRAL DE CEREALES DE LA BOLSA DE COMERCIO DE ROSARIO
Córdoba 1402 (S2000AWX) Rosario - Pcia. de Santa Fe. Tel.: 0341 – 4211-000 Fax: Int. 2211
E-mail: camara@bcr.com.ar Web Site: www.bcr.com.ar

BOLSA DE COMERCIO DE ROSARIO
Córdoba 1402 (S2000AWX) Rosario - Pcia. de Santa Fe. Tel.: 0341 – 421-3477/78
Sitio web: www.bcr.com

CÁMARA ARBITRAL DE CEREALES DE LA BOLSA DE COMERCIO DE SANTA FE
San Martín 2231 (3000) Santa Fe. TE: 0342 – 455-4734 Fax: 0342 – 455-2026
E-mail: bolcomsf@arnet.com.ar Web Site: www.bolcomsf.com.ar

CÁMARA ARBITRAL DE LA BOLSA DE CEREALES DE BUENOS AIRES
Bouchard 454, Piso 8 (1106) Buenos Aires. Tel.: 011 – 4311-6020 Fax: 011 – 4311-2552
E-mail: mdirosso@cabcbue.com.ar Web Site: www.cabcbue.com.ar

BOLSA DE CEREALES DE BUENOS AIRES
Av. Corrientes119/123, (1043) Buenos Aires
Tel.: 011 – 4312-2000 / 9 Web Site: www.bolcereales.com

BOLSA DE CEREALES DE CÓRDOBA Y CÁMARA DE CEREALES Y AFINES DE CÓRDOBA TRIBUNAL ARBITRAL
Bvard. Ocampo 317. Bo. Gral. Paz (5000) - Córdoba. Tel.: 0351 – 422-9637 / 424-7256 / 425-3716
Fax: 0351 – 423-3772 E-mail: camaracerealcba@camcercor.com.ar - laboratorio@camcercor.com.ar
Web Site: www.bccba.com.ar

CENTRO DE EXPORTADORES DE CEREALES
Bouchard 454, Piso 7 (1106) Buenos Aires. Tel.: 011 – 4331-0074 Fax: 011 – 4311-3899.
E-mail: ciaracec@ciaracec.com.ar

FEDERACIÓN ARGENTINA DE LA INDUSTRIA MOLINERA
Bouchard 454, Piso 6° (1106) Buenos Aires. Tel.: 011 - 4312-8717
E-mail: faim@faim.org.ar Web Site: www.faim.org.ar

FEDERACIÓN DE CENTROS Y ENTIDADES GREMIALES DE ACOPIADORES DE CEREALES
Av. Corrientes 119 PB (1043) Buenos Aires. Tel.: 011 – 4312-0155 Fax. 011 – 4313-2290.
E-mail: acopiadores@acopiadores.com Web Site: www.acopiadores.com

INSTITUTO NACIONAL DE TECNOLOGÍA AGROPECUARIA

- **CHACRA EXPERIMENTAL INTEGRADA BARROW (INTA-MAA, Pcia. Bs. As.)**
  Ruta Nac. Nº 3 - Km. 488. Casilla de Correo 216 (7500) Tres Arroyos – Pcia. de Buenos Aires.
  Tel./ Fax: 02983 - 431081 / 431083.
  E-mail: cebarro@chacrabarrow.gov.ar Web Site: www.inta.gov.ar/crbsass/barrow

- **ESTACIÓN EXPERIMENTAL AGROPECUARIA MARCOS JUÁREZ**
  Ruta Prov. Nº 12 - Km. 5. Casilla de Correo 21 (2580) Marcos Juárez – Pcia. de Córdoba.
  Tel./ Fax: 03472 - 425001 / 427171
  E-mail: mcuniberti@mjuarez.inta.gov.ar Web Site: www.inta.gov.ar/mjuarez

SERVICIO NACIONAL DE SANIDAD Y CALIDAD AGROALIMENTARIA

- **DIRECCIÓN DE CALIDAD AGROALIMENTARIA**
  COORDINACIÓN DE PRODUCTOS GRANARIOS
  Av. Paseo Colón 367, Piso 3 (C1063ACD) Buenos Aires.
  Tel.: 011 – 4331-6041 / 9 int. 1208 / 1229 / 1501 Fax: int. 1508
  E-mail: progran@senasa.gov.ar Sitio web: www.senasa.gov.ar

- **DIRECCIÓN DE LABORATORIOS Y CONTROL TÉCNICO**
  COORDINACIÓN GENERAL DEL LABORATORIO VEGETAL
  Av. Ing. Huergo 1001 (1107) Buenos Aires.
  Tel.: 011 – 4362-1177 / 1199 / 4514 Fax: int. 215
  E-mail: coordglv@senasa.gov.ar Web Site: www.senasa.gov.ar

SECRETARÍA DE AGRICULTURA, GANADERÍA, PESCA Y ALIMENTOS DE LA NACIÓN

- **DIRECCIÓN DE COORDINACIÓN DE DELEGACIONES**
  ESTIMACIONES AGRÍCOLAS
  Av. Paseo Colón 982, Piso 3, of. 47 (C1063ACW) Buenos Aires
  Tel.: 011 – 4349-2738 Fax: 011 – 4349-2786
  E-mail: prosiiap@mecon.gov.ar - dcd@mecon.gov.ar
  Web Site: www.sagypa.mecon.gov.ar
  Estimaciones Agrícolas

Contents:

Ministerio de Agricultura, Ganadería y Pesca
Presidencia de la Nación

SENASA

Ministerio de Asuntos Agrarios y Producción
Buenos Aires LA PROVINCIA
Subsecretaría de Asuntos Agrarios

INTA
Instituto Nacional de Tecnología Agropecuaria

Federación de Centros y Entidades Gremiales de Acopiadores de Cereales
Buenos Aires

BC
Bolsa de Cereales, Oleaginosos, Frutos y Productos de Bahía Blanca

AFA S.C.L.
Agricultores Federados Argentinos
Sociedad Cooperativa Limitada

Bolsa de Comercio de Rosario
Cámara Arbitral de Cereales

Cámara Arbitral de la Bolsa de Cereales de Buenos Aires

Cámara Arbitral de Cereales
Bahía Blanca Argentina

Cámara Arbitral de Cereales de Entre Ríos

faim
federación argentina de la industria molinera

Cámara Arbitral de Cereales
Bolsa de Comercio de Santa Fe

Asociación de Cooperativas Argentinas

Centro de Exportadores de Cereales

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