

*Alimentos de España*

*Oils*

*Organic Farming*

*Rice and Legumes*

*Fresh Meat*

*Fruits*

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*Hams and Smoked Meats*

*Cheeses*

*Hazelnuts, Saffron,  
Tigernut, Honey,  
Raisins and Neugat*

*Wines, Cavas  
and Spirits*



# **Cheeses**

*With Denomination of Origin*

**MINISTERIO DE AGRICULTURA PESCA Y ALIMENTACIÓN**

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# DESIGNATION OF ORIGIN OF CHEESES

1. DO Cabrales
2. DO Idiazábal
3. DO Mahón
4. DO Picón Bejes-Tresviso
5. DO Queso de Cantabria
6. DO Queso de L'Alt Urgell y La Cerdanya
7. DO Queso de La Serena
8. DO Queso de Murcia y Queso de Murcia al Vino
9. DO Queso Majorero
10. DO Queso Manchego
11. DO Queso Palmero
12. DO Queso Tetilla
13. DO Queso Zamorano
14. DO Quesucos de Liébana
15. DO Roncal



**PRODUCTION  
AREAS**



# CHEESES

## DESCRIPTION OF THE PRODUCT

CHEESES COMING UNDER A DESIGNATION OF ORIGIN SCHEME HAVE TO BE MADE WITH MILK FROM SELECTED RACES OF LIVESTOCK ADAPTED TO THE ENVIRONMENT, FED AND HANDLED IN DUE ACCORDANCE WITH REGULATIONS ON THE MATTER. THE AIM OF THESE REGULATIONS IS TO OBTAIN HIGH-

QUALITY PRODUCTS TIED INTO THE GEOGRAPHIC SETTING THEY COME FROM. ALTHOUGH THESE REQUISITES ARE IN THEMSELVES SUFFICIENT TO GUARANTEE THEIR ORIGIN, THIS MUST BE FURTHER VOUCHERED FOR BY THE SUPERVISORY COUNCIL OF THE CORRESPONDING DESIGNATION OF ORIGIN.

## OBTAINING THE PRODUCT

The cheese-making milk will come from authorised species and races, according to the regulations, and will come only from farms registered with and controlled by the Supervisory Council, and located in the production area.

The milk handling and cheese making will be conducted under suitable conditions in the authorised dairy establishments. The final product will be subjected to the corresponding controls and analyses to guarantee its quality.

Once this quality has been certified, the Council will hand over the official numbered labels of the scheme to the dairy establishment concerned.

## CONTROL STRUCTURE

A Designation of Origin scheme is monitored by its Supervisory Council, a professional body formed by representatives of the production and processing sector. Its structure is the following:



## CHEESES

- One president
- One vice-president
- Members representing the production sector
- Members representing the processing sector
- Expert members with special knowledge of cultivation and processing aspects, designated by the competent administrations.

The council members are elected by universal suffrage every four years among all those registered in the corresponding censuses of the production and processing sectors.

### SCOPE OF POWERS

Territorial: the whole production area.

Products: Those protected by the Designation of Origin scheme in any of its phases.

Persons: Individuals or bodies corporate recorded in the various registers.

### DUTIES

- Draw up and keep the various registers.
- Guide, watch over and control and quality of the protected cheese. The services of control and surveillance are carried out by qualified inspectors trained by the corresponding administration, all of whom act with complete impartiality vis-à-vis the producers and processors.
- Classify the product.
- Promote and defend the Designation of Origin.
- Deal with any sanctions arising from a breach of regulations.
- Act with full legal responsibility and capacity to bind itself and appear in court, exercising such actions

as correspond to it by virtue of its remit to defend and represent the general interests of the Designation of Origin.

### LABELLING

The normal commercial labels used by each registered firm have to be approved by the Supervisory Council.

These labels must necessarily mention the appellation of origin.

Cheese for human consumption will bear official numbered labels issued by the Supervisory Council. These will be fitted in the registered dairy establishment in such a way that they may not be reused.





# CABRALES

## DESCRIPTION OF THE PRODUCT

Blue cheese made from raw cow's, sheep's or goat's milk or a mixture of two of these three types, always full fat in any case and without any preservatives whatsoever. It has a balanced fat-protein composition, varying according to the time of year in which it is made.

Cabrales is a full-fat cheese (45% minimum of fats/dry matter), with a maturing period of at least two months after the date of making the curd.

The average characteristics of the fully matured cheese are the following:

**Shape:** Cylindrical with large flat faces.

**Height:** 7 to 15 centimetres

**Weight and diameter:** variable.

**Rind:** Soft, thin, unctuous, grey with yellow-red areas.

**Flesh:** Unctuous consistency, its cohesion depending on the degree of fermentation. Compact without holes. Colour white stained with

areas and veins of blue-green. Flavour slightly tangy, more so when made with pure sheep's or goat's milk or a mixture of the two.

**Fat:** Not lower than 45% of dry matter.

**Humidity:** Minimum 30%.

Although regulations do allow its traditional presentation encased in sycamore leaves (*Acer pseudoplatanus*) the Supervisory Council has recently decided against it, laying down the use of special food-use paper with a pattern of sycamore leaves.

## GEOGRAPHIC AREA

The milk production area for making Cabrales cheese is made up by the towns of Arangas, Arenas, Asiego, Berodia, Bulnes, Camarmeña, Canales, Carreña, Escobar, Inganzo, La Molina, La Salce, Ortiguero, Pandiello, Puertas, Poo, Sotres and Tielve of the municipal district of Cabrales and



Oceño, Cáraves and Rozagás of the municipal district of Peñamellera Alta, all set in the area of the Picos de Europa in the province of Asturias. The cheese-making and maturing areas coincide with the milk-production areas.

### OBTAINING THE PRODUCT

Raw milk of goat, ewe and cow is used at certain times of the year (mainly spring and summer) or exclusively cow's milk throughout the year. The milk is coagulated with natural kid's rennet or powdered rennet, using little so that the coagulation will be slow, the milk being kept at a temperature between 22 and 23°C for a minimum time of 1 hour to obtain a mixed lactic-acid curd; the normal coagulation time is 2 to 3 hours.

The curd is cut smoothly to reduce it to lumps of 1 to 2 cm in diameter, round and as regular as possible. After the whey has been drained off the curd is introduced into the cylindrical moulds called «arnios», where it will remain for 2 to 4 days, being turned once or twice for self-pressing to take place. Then it is salted by sprinkling dry salt over the upper face and leaving it to stand for twelve hours, after which it is turned and salted on the other side, leaving it to stand for another twelve hours before removing it from the mould.

It is then dried for about fifteen days and taken to be matured in natural caves.

Most blue cheeses are inoculated with a *Penicillium* spore, but in the case of this cheese this process happens naturally and spontaneously in the maturing caves, which also have the humidity and temperature conditions to favour the spore's development. For suitable maturing the cheese needs to stay in the caves from 2 to 5 months, kept on wooden shelves («talameras»); periodically they are turned and the rind is cleaned.

### ENVIRONMENTAL FACTORS

#### HISTORICAL BACKGROUND

The Alpine pastures of this territory those lying at a height of more than 800 metres have

traditionally been used in summer by livestock coming mostly from the outlying towns of the Picos de Europa district, and usually from lower down, given the legal status of these pastures.

These circumstances, combined with the isolation of these areas from the main centres of consumption, have prompted the animal tenders themselves to transform the milk into cheese from time immemorial.

There are records of Cabrales cheese in the writings of Jovellanos (C18th), and González Solís indicates that the Madrid Agricultural Exhibition of 1857 included, among other products from Asturias, Cabrales cheeses.

### NATURAL FEATURES

**Lie of the Land.** The production area is a sort of upside-down triangle with its lower apex near Naranjo de Bulnes or Pico Urriellu, with a height of over 2,500 metres right in the middle of the central massif of the Picos de Europa; the latter mountains occupy the southern half of the production area. In the centre lies the Arenas-Poo-Carreña basin with a height of less than 200 m, this closed off to the north by the Sierra del Cuera, a mountain range rising to lower heights than the Picos de Europa, with a maximum of 1,315 metres in Turbina.

**Soil.** The geological substrate of the area is largely carboniferous, with limestone and layers of slate. The two fundamental types of soil are siliceous formed mainly over slated, quartzite and conglomerates, and limestone soil (limy lithosoil and rendzinas).

**Climate.** The lie of the land directly influences the climate, both in terms of rainfall and temperatures. The climate is classed as very wet, with rainfall of over 1,400 l/m<sup>2</sup> per year, which may even rise to 2,000 l/m<sup>2</sup> in the highest parts of the Picos de Europa and a minimum recorded on the slopes of the Sierra del Cuera with water surpluses all year round. The temperature varies greatly depending on the height; in the high mountain area the annual average does not rise above 0°C, while the temperature is much more temperate in the lower mountains and river valleys,





with an average of between 6 and 8 degrees and without the great temperature swings of the higher zones.

**Hydrology.** The production area is mainly made up by high upland zones with a plentiful river network. The biggest is the River Cares, which receives as tributaries the Casaño and the Duje besides other smaller ones, all this giving rise to a complex web of valleys with hillside pastures wedged in at different heights.

**Flora.** The most notable characteristics of the herbaceous or bushy species of the area of Cabrales are their hardiness and nutritional value. They are species perfectly adapted to the conditions of the limestone substrate, the extreme climate and grazing.

From a pasturage point of view the production area can be divided into two very differentiated areas:

- a) Low areas: high pasturage production with good forage grasses, hay meadows for the most part and also some combined hay-grazing meadows. The climate is benign.
- b) High areas: less prolific growth, better forage quality and direct grazing meadows although there may be some areas of mixed hay-grazing. Extreme climate typical of mountain areas.

The economy of the lower areas is based on milk, while the higher areas concentrate on cheese making.



**IDIAZÁBAL**®  
Con la garantía de la Denominación de Origen.



# IDIAZÁBAL

## DESCRIPTION OF THE PRODUCT

Pressed full-fat cheese, semicured or cured, made from ewe's milk of the races «Lacha» and «Carranzana», free of colostrum or medicated products that might impinge negatively on the cheese-making, maturing or conservation, or on its hygienic conditions. The milk will be full fat and clean, with no preservatives whatsoever and with a balanced, fat-protein composition so that the final product has a fat content of over 45% of the dry matter.

The cows will be milked with painstaking care and the milk will be conserved at a temperature lower than 10°C.

The characteristics of the matured cheese will be the following:

**Shape:** cylindrical, with large flat faces.

**Height:** 8 to 12 centimetres.

**Diameter:** 10 to 30 centimetres.

**Weight:** 1 to 3 kg.

**Rind:** hard, pale yellow if unsmoked or dark brown if smoked.

**Flesh:** compact, varying in colour from white to ivory yellow, possibly with a few unevenly distributed holes.

**Fat:** not less than 45% of dry matter.

**Dry matter:** minimum 55%.

**pH:** 5.1 to 5.8.

**Total protein:** minimum of 25% of dry matter.  
Maturing will last at least sixty days.

## GEOGRAPHIC AREA

The milk-production area for making «Idiazábal» cheese takes in the natural areas of the sheep races «Lacha» and «Carranzana» in Álava, Vizcaya, Guipúzcoa and Navarra, except for the municipal districts making up the Valle del Roncal.

The cheese-making and maturing areas coincide with the milk-production area.





**IDIAZÁBAL**  
Denominación de Origen

IDIAZÁBAL

## OBTAINING THE PRODUCT

The milk is coagulated with animal rennet, using just enough to produce coagulation within a minimum time of 20 minutes and a maximum of 45, maintaining the coagulation temperature between 28°C and 32°C.

The curd is successively cut until obtaining lumps of 5 to 10 mm in diameter (maize-rice size). Then the mass is stirred for about fifteen minutes and usually reheated to between 36 and 38°C for 25 minutes. After the whey has been drained off it is set in cylindrical moulds to give the cheese its characteristic shape.

It is pressed in mechanical presses, generally pneumatic, at a rising pressure from 1.5 to 4 atmospheres for 5 to 6 hours.

After the pressing the cheese is removed from the mould and either dry salted or salted in saturated brine at a temperature of 8 to 13°C. In the latter case the brine immersion time will vary from 24 hours (small cheeses) to 48 hours (large cheeses).

Drying time depends on each cheese maker, albeit never exceeding 30 days, at a temperature between 10 and 13°C and a relative humidity of 80%.

Maturing, to last a minimum of 60 days from the moulding date, is done at a temperature between 8 and 10°C and relative humidity between 85 and 90%. The cheeses are stacked on trays and periodically turned and cleaned during the maturing process as necessary for the cheese to acquire its particular characteristics. The cheese may be marketed smoked, which would be done with beech or alder wood some days before being sent out.

## ENVIROMENTAL FACTORS

### HISTORICAL BACKGROUND

Archaeological remains found in the caves of Husos (Alava) and Arenzana (Vizcaya) prove that sheep were kept in the area as long ago as about 2,200 BC.

Numerous Medieval documents exist that record the attempts to regulate use of the pasturing land and common use of upland pastures (parzonerías). The oldest ordinances regulating use of these parzonerías or facerías date from the Late Middle Ages, and they stem in turn from updated earlier legislation. Many of such customs have been passed down unchanged to our days.

Idiazábal is a small locality in Goierri, Guipúzcoa, where shepherds using the upland summer pastures of the Sierras of Urbía and Aralar were wont to sell their cheese production at the end of the summer upland grazing season, on the way back to winter pastures in the lower or coastal zones.

### NATURAL FEATURES

**Lie of the Land.** The production area is a mountainous area, though more in terms of a very up-and-down topography than great heights. The highest peaks of 1,500 reflect no systematic organisation, showing that, rather than from a linked cordillera, they have originated from a distended mountainous area of great ruggedness and orographic confusion. Two zones may be distinguished: the Basque uplands, a continuation of the Pyrenean system, and the Ebro basin to the south.

**Soil.** Geologically, most of the territory is Cretaceous, with Paleogene bands in Vizcaya, Álava and Navarra and a Carboniferous area on the border between Guipúzcoa and Navarra, to the north of the Sierra de Aralar.

The material making up the soil is a mixture of limestone, sandy limestone, marl, sandy marl and clay. These sedimentary rocks have evolved to the surface giving rise to soil classified as brown humic limestone earth.

The pH is usually 7 to 7.5. The soil is excellent for pasturing, and, though somewhat homogenous, it is claimed that cheeses made from the milk of ewes that have grazed in the Sierras de Urbasa and Andía are «sweeter» due to the more calcareous terrain, while those from the Sierra de Aralar are «tangier» due to the more acidic soil.





**Climate.** The topographical characteristics of the production area of Idiazabal cheese give rise to climatic variety ranging from the Atlantic to the Mediterranean.

The Atlantic climate is dominant in the provinces of Vizcaya and Guipúzcoa and in the northern valleys of Álava and northwest Navarra, where rainfall levels top 1,200 mm. The average annual temperature is 13 to 14°C, the average maximum ranging from 16 to 18°C and the average minimum from 9 to 10°C.

The inland Mediterranean climate obtains in La Rioja of Álava and the Ribera of Navarra, areas where very little sheep rearing goes on.

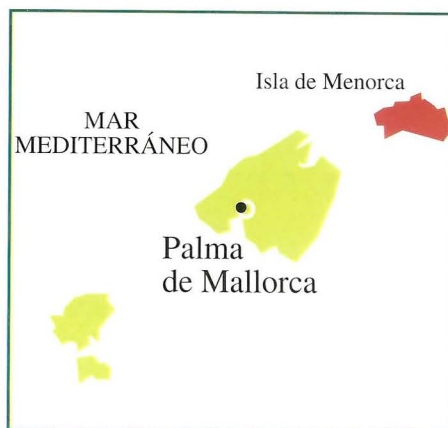
**Hydrography.** The river network is extensive and rich, due to the varied relief and the abundant rainfall. Two main watersheds can be distinguished: firstly, the Cantabrian side,

collecting the waters of Vizcaya, Guipúzcoa and valleys of north Álava and Navarra and, secondly, the Mediterranean side, taking in Álava and mid Navarra and the Ribera.

The rivers of the Cantabrian side are short and swift flowing, the most important being Bidasoa, Oria, Deba, Urola, Ibaizábal, Nervión, Cadagua and Urumea.

Those of the Mediterranean side include the tributaries of the Ebro, Zadorra and Bayas in Álava and Ega, Arga and Aragón in Navarra.

**Flora.** Natural meadows. The traditional pasturing/ mowing regime begins with grazing in November and lasts until April. In the second fortnight of July the first haymaking is done with a second cut in August, finishing off with a final grazing in the autumn. It is the province of Vizcaya that has the greatest area of pastureland.



# MAHÓN

## DESCRIPTION OF THE PRODUCT

Pressed cheese made from cow's milk of the races Friesian, mahonesa or menorquina and/or parda alpina, though it may at times include sheep's milk from the race menorquina up to a maximum percentage of 5%.

The milk will be full fat and clean, without any preservatives whatsoever, with a balanced fat-protein composition in due accordance with the characteristics of the aforementioned races and the milking time, so that the final product has a fat content of at least 38% of the dry matter.

Two types of cheeses are protected under this appellation: «Mahón Artesano» is made from raw milk and «Mahón» is made in industrial dairies from milk subjected to some sort of conservation process and/or method.

For both types the denomination «semicured» is established for a maturing period of less than 150 days and «cured» when the maturing process is

longer than this period, with the proviso that «Mahón Artesano» has to have a maturing period of at least 60 days.

The average characteristics of the matured cheese will be the following:

**Shape:** square-based parallelepiped with rounded edges and corners

**Height:** 5 to 9 cm.

**Weight:** 1 to 4 kg.

**Rind:** compact, greasy and variable in colour from yellow to yellowish brown, with marks of the cloth folds («fogasser») in the upper faces of the handcrafted «artesano» cheeses.

**Flesh:** firm texture, entire cut and yellowish ivory in colour. The flavour has some slight acidic overtones and lingering lactic reminiscence, with greater tanginess the longer the maturing period.

**Holes:** few, more or less round, distributed unevenly and variable in size though never bigger than a pea.



## MAHÓN



**Fat:** not less than 38% of dry matter.

**Total dry matter:** not less than 50%.

insects and gives it a characteristic external colour and aspect.

### GEOGRAPHIC AREA

The milk-production area and the cheese-making and maturing area coincide with the island of Menorca the second biggest and the most easterly and northerly island of the Balearics.

### OBTAINING THE PRODUCT

Handcrafted cheeses are made from raw milk, immediately after each milking, while industrially made ones can use milk that has been subjected to some form and/or method of conservation.

The milk is coagulated by using just the right amount of rennet to induce curdling in a minimum time of 30 to 40 minutes at a temperature of 30 to 34°C. This temperature is then maintained throughout the whole coagulation, cutting and whey-draining process.

The curd is cut to obtain chickpea-sized lumps and is then left to settle for 10 minutes before draining off the whey. Mahón Artesano is set manually using the «fogasser» a square cotton cloth; for Mahón cheese special moulds may be used to give the cheese its characteristic shape.

After the pressing, which lasts about 10 hours, the cheese is salted by immersion in saturated brine for a maximum time of 48 hours.

After the salting, the cheeses are dried in ventilated rooms for 3 or 4 days and then taken to the maturing rooms where they will stay until acquiring the particular characteristics of the cheese as marketed (semicured; less than 150 days; cured, more than 150 days).

During the maturing process the cheese is periodically turned and cleaned externally. Another special practice in making Mahón cheese is the surface treatment of the rind during maturing, smearing it with cow's lard, olive oil or a mixture of olive oil and paprika. This operation, repeated on various occasions during the maturing process, prevents the rind from drying too quickly, repels

### ENVIRONMENTAL FACTORS

#### HISTORICAL BACKGROUND

Due to the conditions of the land and the climate, and especially the influence of the wind, livestock farming has always been more important in Menorca than crop farming.

Ancient Greek navigators were aware of the livestock riches of the Island of Menorca, called by them «Meloussa» (land of livestock). There are historical records of cheese making dating back to the C5th, in the encyclic letter of Bishop Severo of 417, and also evidence of the brisk trade being done in this commodity with other parts of the Mediterranean since the Middle Ages. During the C8th the port of Mahón became an important link in trade with the East. The military authorities, when listing Menorcan cheese exports, added «Mahón» to indicate the port of origin, whereupon the product acquired the name «Queso Mahón» by which it is known today, even though it is in fact made all over the island of Menorca.

#### NATURAL FEATURES

**Lie of the Land.** The Island of Menorca has an approximate area of 689 square kilometres. Two zones may be distinguished: the Tramontane to the north, with an abrupt terrain, and the «migjorn» to the south, with a more rolling, even relief, albeit with some deeper gullies. The island's highest point is Monte Toro at 358 metres.

**Soil.** Two markedly different geological areas can be distinguished: the coastal fringe, running from the port of Mahón to Cape Favàritx made up by primary Carboniferous terrain; and the southern half, formed by a calcareous, stony soil made up by Miocene deposits cleaved by deep gullies.

**Climate.** The climate is benign, temperatures never topping 34°C in summer nor dropping below 5°C in winter; the summer average is 23°C and the winter average is 10. The average annual



## MAHÓN

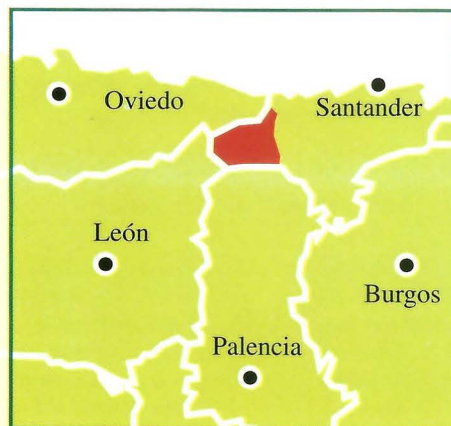
rainfall is somewhat over 600 mm. This, together with the copious dew, provides enough pasture for a large cattle-raising sector on the island.

**Hydrography.** The hydrographic network is made up by dry torrent watercourses and gullies that bear water only after heavy downpours.

**Flora and Natural Meadows.** Natural meadows generally occur on land where crop farming practices of olden times have now given way to animal farming. They are spontaneous formations of dense, high grass with a predominance of graminæ and legumes of great pasturage value.







# PICÓN BEJES-TRESVISO

## DESCRIPTION OF THE PRODUCT

Cheese made from milk of the following species and races:

- Cows: Tudanca, Pardo-Alpina and Friesian.
- Sheep: Lacha
- Goats: Pyrenean goat and goat of the Picos de Europa.

The milk will be full fat and clean, from cows, sheep or goats or a mixture of two of the three types of milk. The proportion will be determined by the time of year, although the Supervisory Council will recommend the ideal mixture for obtaining a balanced make up of fat and proteins.

The physical and organoleptical of the matured cheese are the following:

**Shape:** Cylindrical with large flat faces.

**Height:** 7 to 15 centimetres

**Weight and diameter:** variable.

**Rind:** Soft, thin, unctuous, grey with yellow-red areas.

**Flesh:** Unctuous consistency, its cohesion depending on the degree of fermentation. Compact without holes. Colour white stained with areas and veins of blue-green. Flavour slightly tangy, more so when made with pure sheep's or goat's milk or a mixture of the two.

The physical-chemical characteristics of the cheese are:

**Fat:** No lower than 45% of dry matter.

**Humidity:** Minimum 30%.

## GEOGRAPHIC AREA

The milk production area for making the cheese «Picón Bejes-Tresviso» takes in the municipal districts belonging to Liébana, namely: Potes, Pesaguero, Cabezón de Liébana, Camaleño,



## PICÓN BEJES-TRESVISO

Castro Cillorigo, Tresviso and Vega de Liébana and the Council of Peñarrubia in the southwest of the Autonomous Community of Cantabria. The Picón Bejes-Tresviso cheese-making and maturing area coincides with the milk-production area.

### OBTAINING THE PRODUCT

The curd will be lactic acid, using the right dose of rennet to produce coagulation in a minimum time of one hour at a temperature between 22 and 26°C. The curd is cut smoothly, first into hazelnut-sized pieces, after which it is allowed to settle for 15 minutes. The whey is then drained off until the curd is dry, after which it is pressed until round pieces between 1 and 2 cm are obtained.

It is set in round moulds with enough leeway for holes to form in which the *Penicillium* is to develop. After 2 or 3 hours it is turned and is then allowed to rest for 24 hours.

Salting is done with dried salt, in a ratio of 2 to 3% of the cheese weight. The first day one face is salted and the second day the other. On the third day the mould is removed, whereupon the sides are salted.

**Drying:** It is dried for 12 to 18 days at an ambient temperature of 15 to 18°C and with enough air currents to facilitate drying before it is sent on to the curing caves.

**Maturing:** maturing is done in natural limestone caves, common in the area, at a height of between 500 and 2,000 metres, a temperature of between 5 and 10°C and a humidity of 85 to 95%. The caves must have breather holes to facilitate the development of the *Penicillium* inside the cheese and the «*Brevibacterium linens*» on the outside.

Maturing will last at least two months, this time to run from the date of making the curd, during which time the cheese will be turned and cleaned as necessary for it to acquire its particular characteristics.

The following practices are banned in the cheese-making process for Picón Bejes-Tresviso:

- a) The adding of propionic or sorbic acid or any of their salts to the milk or curd, and

any class or type of colorant, aromatic substance or condiments.

- b) Any manipulation that might modify the natural characteristics of the rind and in particular covering same with wax, paraffin, plastic substances or colorants. The characteristic casing in sycamore (arce) leaves is permitted.
- c) It is forbidden in making Picón Bejes-Tresviso to add any type of caseinate, whether in milk or powder form, or to add any type of fat material, including butter.

### ENVIRONMENTAL LINKS

#### HISTORICAL BACKGROUND

The particular climatic and ethnographical peculiarities of the district of Liébana, the production area of the cheese Picón Bejes-Tresviso, have long since linked it to cheese making. Witness the mention of it made in the Cartulary of St. Tobino de Liébana, dated to 15 May 962, concerning the swapping of some vineyard land for other sundry goods, including seven cheeses.

A 1354 inventory of the goods of Santa María de Lebeña mentions the large amount of levies received in the form of cheese. The «Diccionario geográfico estadístico-histórico de España y sus posesiones», by Pascual Madoz (1845) gives an account of several Cantabrian cheeses, including that of Bejes.

#### NATURAL FEATURES

**Lie of the Land.** Liébana lies in the southwest part of the province of Cantabria, bordering to the west with the Principality of Asturias and to the south with the provinces of Palencia and León. Liébana's territory corresponds to a tectonic circular fossa with a diameter of about 40 kilometres. The bottom of this basin lies at a height of 300 to 400 metres above sea level; the landscape is fairly rugged with long-narrow valleys separated from each other by irregular tracts of land, all very altered by erosion. The edges of the basin rise to over 2,000 metres.





The mountainous relief is singularly steep in the western massifs with high vertical cliffs in parts. The southern and eastern borders are less abrupt, with more shelving hillsides.

**Soil.** The soil in the lowest parts of the basin is made up of Palaeozoic slate with surface evolution, giving rise to brown humic limy earth.

The soil is rich in nutritional bases and elements. On the borders of the basin the soil is Palaeozoic limestone; from Pico Peña Labra onwards there are conglomerates, sandstone, clay and limonites.

**Climate.** The climate in this area is mild, with an average annual temperature of 14.5°C, an average minimum of 10°C and an average maximum of 20°C. In July and August absolute maximums of about 36°C may be recorded.

Rainfall is very abundant, between 900 and 1,200 mm, and the annual number of days of rain varies from 90 to 120.

The most frequent winds in the area are cool, moist northerlies, while in the south the «terrales»

(breezes from the land to the sea) are usually dry and hot.

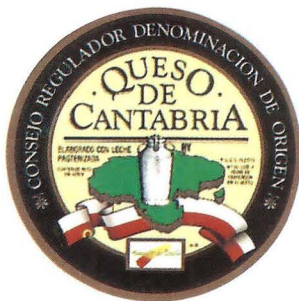
**Hydrography.** The main rivers in this area are the Deva and the Nansa.

The Deva is born in the Picos de Europa and serves as a natural border for Asturias in its final run. Its most important tributaries are the Quivisa and the Bayón. This river runs through the most rugged terrain of all the rivers on this side of the territory, and eventually flows into the sea as the Ria Tina Mayor.

The River Nansa is born on the border with Palencia. It has some very steep stretches and its only important tributary is the Lamasón which flows into the sea through the Ria Tina Mayor.

**Flora.** Many different plant species grow in the meadows. There are spontaneous species on the pastureland, generally annual herbaceous plants, and these may be exploited for grazing. The high-mountain pastureland is similar botanically to the meadows.





# QUESO DE CANTABRIA

## DESCRIPTION OF THE PRODUCT

Pressed cheese made with milk from Friesian cows. The milk will be full fat, clean and balanced in composition. «Queso de Cantabria» is a full-fat cheese containing at least 45% of fat as a proportion of dry matter. Its minimum maturing period is seven days. The physical characteristics of the matured cheese are the following:

**Shape:** Parallelepiped or cylinder.

**Weight:** between 400 and 2,800 grams per unit.

**Rind:** off-white and soft.

**Flesh:** off-white, normally without holes, solid, creamy texture.

**Characteristic aroma and flavour.**

## GEOGRAPHIC AREA

The milk-production area and the cheese-making area coincide, being made up by the whole

territory of the Autonomous Community of Cantabria, except the catchment areas of the Rivers Urdón and Cervera, which comprise, respectively, the Council of Tresviso and the Minor Local Body of Bejes (Council of Cillorigo).

## OBTAINING THE PRODUCT

The milk acidity at the start of the cheese-making process is 18-20° Dornic as a maximum. The milk is coagulated with animal rennet and other coagulating enzymes authorised by the Supervisory Council. This is carried out at a temperature of 30°C for 40 minutes.

It is worthy of note that the rennet used in the cheese-making process comes from suckling calves of the indigenous race «Pintas de Cantabria».

The curd is cut to obtain lumps of 5 mm in diameter and is then reheated to 34°C.

The cheese is set in moulds with dimensions to match those required of this type of cheese. It is



## QUESO DE CANTABRIA



pressed for a maximum of 24 hours. It is salted by brine immersion for a maximum of 24 hours. This cheese is matured for at least seven days, this period to run from the date of finishing the salting. During this time it is periodically turned and cleaned.

### ENVIRONMENTAL FACTORS

#### HISTORICAL BACKGROUND

As from 1647 there are written records of the professional activity of pioneering cheese merchants. At that time they were selling cheese in the markets of Burgos, Logroño, Vitoria and Bilbao, while supplying the Royal House in Madrid, more than 400 km away.

Also worthy of note is the setting up in 1980 of a cheese-making school in the Monastery of Cóbreces to improve local production practices.

#### NATURAL FEATURES

**Lie of the Land.** An area located in the north of Spain, made up by an upland area of mountain chains and massifs and wide valleys.

The highest mountain area of Cantabria is found in the centre of this region and mainly on the southern limits of the province, where the Cordillera Cantábrica joins the Castilian Tableland.

**Soil.** The soil of the production area is characterised by the great influence exerted down the ages by the vegetation and humidity. The area's relief has favoured erosion, giving rise to entisoles occupying extensive areas.

In the highest areas the soil is lime based with plant remains beginning to colonise the rock.

It can be used for pasturing only at certain limited times of the year.

**Climate.** The mild, moist Atlantic climate is shared with most of Cantabria and coincides with the river valleys on the Cantabrian side.

In the coastal area winter temperatures very rarely fall below zero degrees. The summer is also mild. Rain is frequent, especially in autumn and spring; the average annual rainfall is 900 mm. In the intermediate valleys the winters are somewhat colder and wetter and the summers drier. Further inland, to the south of the province, the terrain is higher and, being further from the sea, has a colder, continental climate with more extremes and very low temperatures, heavy winter snowfalls and drier summers.

**Hydrography.** The territory's river network is determined by the high rainfall figures and the complexity and ruggedness of its terrain. Almost all the rivers flow towards the Cantabrian side, forming long estuaries called rias; the biggest are the rivers Pas, Besaya, Asón and Saja.

**Flora.** The plantlife of Cantabria is varied and abundant, formed by plants suited to land with a wet climate, which makes the landscape always green and fairly uniform. The natural vegetation is found well inland or in the mountainous areas with woods of autochthonous species.





# QUESO DE L'ALT URGELL Y LA CERDANYA

## PRODUCT DESCRIPTION

Pressed paste cheese, fatty, cured, made from pasteurized cow's milk and coming from the regions of Alt Urgell and La Cerdanya.

Milk used for making L'Alt Urgell and La Cerdanya cheese is produced exclusively in territory embedded in the Southern aspect of the central Eastern Pyrenees. Cows are Frisians, basically maintained with abundant pasture and forage from said valleys. Milk is collected everyday, without exception, thus optimizing quality. Raw material is submitted immediately to strict control, ensuring that acidity does not exceed 16 degrees Dornic, the absolute absence of antibiotic residues or milk fermentation inhibitors, as well as a *Clostridium tirobutyricum* level of no more than 2000 spores/liter.

Raw materials for making this cheese consist of whole pasteurized milk, milk ferments and salt. As

optional additives, the following may be used: Calcium chloride and Pimaricine for surface treatment.

## ORGANOLEPTIC CHARACTERISTICS OF CHEESE

**Form:** cylindrical.

**Rind:** naturally slightly humid and light brown color, with odor proper to ferments sprinkled on surface.

**Paste:** cream- or marble-colored; abundant holes of mechanical origin, small, irregular shape and distributed throughout the whole paste.

**Texture:** semi-soft and creamy, tender consistence.

**Aroma:** sweet and penetrating.

**Flavor:** mild, distinct, agreeable, very characteristic of this cheese.

Cheese composition shall be:

– Dry extract: minimum 54%.

- Dry extract fatty material: minimum 50%.
- Sodium chloride: 1.5 to 2.5%.

### GEOGRAPHIC ZONE

Zones coming under this Denomination correspond to the municipal districts of regions l'Alt Urgell and La Cerdanya of provinces Lérida and Gerona set in the central-Eastern Catalan Pyrenees.

### MAKING OF PRODUCT

Cheese under Denomination of Protected origin "Queso de l'Alt Urgell y la Cerdanya" is made from milk produced on farms registered in corresponding Regulating Council Registries.

The making of this protected cheese begins with the homogenization and pasteurization of milk in order to eliminate microorganisms. It is then sent to curdling tanks to provoke clotting through addition of milk ferments and remains there for 30 minutes at temperatures ranging from 30 to 33°C. The curds are subsequently crumbled and separated from the milk whey.

The final cylindrical shape with slightly rounded edges, with diameters from 195 to 200 mm and weighing approximately 2.5 Kg, is immersed in brine at temperatures from 10 to 15°C until attaining proper saltiness. It is finally ripened in caves where, during the first few days, the rind is sprinkled with specific aromatic ferments.

Time spent by cheese in these caves is a minimum of 45 days.

### ENVIRONMENTAL FACTORS

#### HISTORICAL

The Alt Urgell and La Cerdanya regions form part of the rainy Spain going from Galicia to the Catalan Pyrenees. Abundant pastures in high mountain valleys have led to dairy cows being

predominant, as will be commented further on. Cheese-making tradition in this zone is very old.

Cheese was elaborated in country homes for family consumption and the little extra produced was sold in local and regional fairs.

The first attempt at intensive exploitation was in 1915 with the founding of the Cadí Cooperative, primarily for producing and marketing beef.

It was finally decided to import Swiss cattle as good milk and meat producers and these bulls were crossed with the best native milk-producers.

Currently, milk production in these regions comes to approximately 200,000 liters a day. This milk is mainly for industrial purposes, fundamentally for making cheese and butter.

The only producer, Cadí Cooperative, collects milk from more than 260 cattle farmers in these regions.

This was the first milk cooperative created in Spain which, considerably before the massive invasion of mountain tourism, was able to maintain the rural population at a level of respectable subsistence, thanks to added value of these highly appreciated and famed products, especially due to well-defined organoleptic qualities.

The great fame of l'Alt Urgell and La Cerdanya Cheese is directly related to the fact of having been the principal cheese sold in the large population nuclei, such as Barcelona.

#### NATURAL

**Lie of the Land.** L'Alt Urgell and La Cerdanya Cheese comes exclusively from cow's milk produced and elaborated in the geographic space consisting of two Catalan regions set on the Southern aspect of the central-Eastern Pyrenees: "l'Alt Urgell and La Cerdanya". Both territories make up a strip structured by a considerable number of high and middle mountain valleys in the Segre basin.

La Cerdanya is really a great depression of tectonic origin which was converted by surrounding glacial cirque water at the end of the Miocene era to a huge lake. Glacial and river





Rainfall is characterized by mean annual precipitation of around 700 mm. Maximum index is registered in autumn and spring.

Mean annual temperatures range between 12° in the Southernmost part and 5° at highest altitudes. Not infrequent during winter are minimum absolute temperatures of -15°C in l'Alt Urgell and -20° in La Cerdanya.

**Hydrology.** The whole hydrological chain of the valleys of l'Alt Urgell and La Cerdanya results from snow melting on the summits.

Abundant water from the extensive hydrological chain formed by numerous collateral valleys favors growth of rich pastures in the valleys of both districts.

**Flora.** Riversides and valley bottoms: Birches, aspen trees, alders, poplars, elms, hazelnut trees, chestnuts, oaks, willows and pine.

High zones: *Pinus silvestris*, *Abies alba* (spruce), *Pinus uncinata* (black pine).

Above 2000 meters is the domain of high mountain meadows, with predominant flora consisting of species *Festuca pratensis*, *Festuca alpina*, *Oapratensis*, *Datylis glomerata*, *Sisleria coerulea*, *Bromus erectus*, *Arrhenaterum elatius*. At lower levels meadows are cultivated for forage, such as clover, ray-grass, alfalfa, sanfoin and festuca.

erosion carved out surrounding valleys and filled this great lake with sedimentary material, giving rise to the current fertile valley of La Cerdanya.

The Southern end of the valley is closed by the spectacular calcareous Sierra del Cadí, culminating in the 2648 meter Puig de la Canal Baridana. The natural head is North of Alt Urgell and La Cerdanya, the 2760 meters peaks of Monturull and the Sierra de Cadí.

**Soil.** As in the remaining Pyrenean Cordillera, from the bottom of marine geosynclinal depths emerged great parcels of schist, silurian slices (magras?), carbons, conglomerates and (permiano?) sandstone. (permeable?)

Erosion, fundamentally glacial and fluvial throughout Paleozoic and Mesozoic eras, gave rise to erosion and sedimentation surfaces, ultimately producing the fertile valleys of l'Alt Urgell and La Cerdanya.

**Climate.** SubMediterranean climate predominates in this whole region, influenced by mountains and relatively cold, with clean, fog-free skies and abundant sunshine.

#### **LABELLING**

Product for consumption shall be provided with numbered labels issued by the Regulating Council.





# QUESO DE LA SERENA

## DESCRIPTION OF THE PRODUCT

Soft to semi-hard cheese made from ewe's milk of the Merina race. The milk will be the natural whole-fat product obtained from milking healthy ewes; it will be clean and free of any impurities, colostrum, medicated products or preservatives that might adversely affect the cheese-making, maturing or conservation process or the hygiene and health conditions thereof.

The analytical characteristics of the milk are:

**Proteins:** minimum of 5%.

**Fats:** minimum 7%.

**Total dry matter:** minimum 18%.

«Queso de la Serena» is a full-fat or extra full-fat cheese with a minimum curing period of 20 days. The physical characteristics of the matured cheese are the following:

**Shape:** discoid with flat faces and convex perimeter.

**Height:** 4 to 8 cm.

**Diameter:** 18 to 24 cm.

**Weight:** 750 grams to 2 kg.

**Rind:** Semi-hard, waxen yellow to ochre, face smooth and perimeter smooth or imprinted with the braided pattern of the mould.

**Flesh:** Soft to semi-hard, ivory white to waxen yellow, possibly with small, unevenly distributed holes.

**Characteristic flavour and aroma.**

The physical-chemical characteristics are:

**Fat:** minimum 50% of dry matter.

**Dry matter:** minimum 50%.

**pH** between 5.2 and 5.9.

**Total protein as a proportion of dry matter:** minimum 35%.



#### GEOGRAPHIC AREA

The processing, maturing and production area of the «la Serena» Cheese is made up by 21 municipal districts in the province of Badajoz.

#### OBTAINING THE PRODUCT

The milk is coagulated with a natural vegetable rennet from dried flowers of «*Cynara cardunculus*» (wild cardoon flower).

To curdle, the milk has to be kept at a temperature of 25 to 32 °C for a period of 50 to 75 minutes. The curd is then successively cut until arriving at lumps from 10 to 20 mm in diameter.

These two factors moderate temperature and the use of a low coagulation capacity rennet mean that coagulation times are long and the resultant curds fairly soft. This in turn means that there is

greater proteolytic activity in this cheese, so the texture is less consistent. To set, the curd is placed in special esparto braided hoops or cylindrical moulds made of metal or plastic, in all cases of the right size to give the matured cheese its characteristic shape, dimensions and weight. Salting may be wet or dry, using sodium chloride.

In the case of wet salting the maximum brine immersion time will be 24 hours, in a solution with a maximum concentration of 20%. Once a period of 20 days has elapsed after the moulding, the cheeses are usually subjected to the process known as «atortado», whereby the cheese becomes fluid, so it has to be handled with care to make sure the rind does not split and spill out the contents.

#### ENVIRONMENTAL FACTORS

##### HISTORICAL BACKGROUND

Mention can be made of several historical references to «Queso de la Serena».

The 1791 travel book on the district of La Serena «Viaje a La Serena» by Antonio Agundez Fernández, referring to documents of the Magistrado Cubeles, contains the following quote: «The cheese made from its ewe's milk, sold at a price of 60 reales per arroba, is famed for its flavour and workmanship».





In the C16th and C17th ordinances for Cabeza del Buey mention is made of the cheese tithe and the first-rights levy of the Parochial Church, whereby the livestock owner was bound to hand over to the local church the cheese resulting from the first milking of his flock.

### NATURAL FEATURES

**Lie of the Land.** The province of Badajoz is fairly flat without any great relief and corresponds generally to the concept of a peneplain. The area of La Serena lies in the extreme southeast of the province, with pastureland of excellent quality overlying thin slate and granite soils; the average height is 430 metres.

**Soil.** The geological structure of the province of Badajoz corresponds to a Palaeozoic peneplain

occasionally breaking through the subsequent covering soil. There are Cambrian, Silurian and granitic soils, fairly shallow and permeable, with frequent outcrops of the bedrock.

The gradient is slight, gently rolling towards the south. The soil is generally acidic with a pH of 5 to 5.5, with low phosphorous levels.

**Climate.** In this area the winters are generally benign although there is a period of frosts running from 1 November to 10 March. Summers are hot and dry, aridity being the keynote of the whole area. The average annual rainfall is about 498 mm.

**Hydrography.** The district of La Serena is crossed by the rivers Guadiana Menor and Zujar.

**Flora.** Pastures in this area, though few and far between, are high in quality, thus conferring particular characteristics on the milk produced.





# QUESO DE MURCIA Y QUESO DE MURCIA AL VINO

## PRODUCT DESCRIPTION

Milk used for making these protected cheeses shall be the natural, whole product from milking goats of the Murcian race, presenting the following characteristics:

- Clean and no impurities
- No colostrum, medicated products, preservatives, etc..
- Protein: 3.4% minimum.
- Fatty matter: 5.0% minimum.
- Total dry extract: 13.4% minimum.
- Maximum acidity (at moment of collecting): 15° Dornic
- pH: 6.5 minimum.

## FINISHED PRODUCT

### MURCIAN CHEESE

Two types of protected cheeses are established:

- «Fresh Murcian Cheese», not ripened and for immediate consumption.
- «Cured Murcian Cheese», minimum ripening period two months.

### «Fresh Murcian Cheese»

This is a fatty cheese, lightly pressed paste, uncooked and unripened.

It has the following physical-chemical characteristics:



#### *Physical*

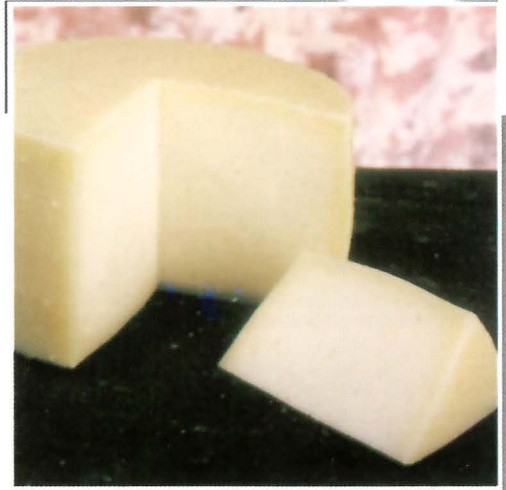
- Form: cylindrical.
- Height : between 5-8 cm for the small format and 8-12 cm for the 1-2 kg versions.
- Diameter: between 7-9 cm for small formats and 12-18 cm for 1-2 kg versions.
- Weight: 300 gr pieces, 1 kg and 2 kg, approximately.
- Rind: almost none.
- Paste: mass is compact to slice, soft texture, not too salty and gentle aroma. Intensely white color and almost without holes.

#### *Chemical*

- Fat: Minimum 45% of dry extract.
- Protein: Minimum 32% of dry extract.
- Dry extract: minimum 40%.
- pH: minimum 6.5%.

#### **«Cured Murcian Cheese»**

- This is a fatty cheese, with pressed uncooked paste and sold 65 days after processing.
- It has the following physical-chemical characteristics:



#### *Physical*

- Form: cylindrical, with straight borders but no ridges.
- Height: 7-9 cm.
- Diameter: 12-18 cm.
- Weight: Pieces of 1-2 kg., approximately.
- Rind: smooth (no text) waxy to ochre color.
- Paste: mass is compact to slicing, firm texture, gentle aroma. White color with few and small holes.

#### *Chemical*

- Fat: minimum 45% of dry extract.
- Protein: minimum 32% of dry extract.
- Dry Extract: minimum 55%.
- pH: minimum 5 when removed from brine.

#### **MURCIAN CHEESE CURED IN WINE**

This is a fatty cheese, with pressed paste, washed and uncooked, sold 45 days after processing. If pieces are small, cheese may be sold 30 days after processing.

It has the following physical-chemical characteristics:





### Physical

- Form: cylindrical, with straight borders but no ridges, the sides slightly rounded.
- Height: between 6-7 cm for small formats and 7-9 cm for 1-2 kg pieces.
- Diameter: between 7-9 cm for small formats and 12-18 cm for 1-2 kg pieces.
- Weight: 400 gr, 1 kg and 2 kg pieces, approximately.
- Rind: smooth (no text), washed in double red wine which gives it the characteristic garnet-reddish color.
- Paste: mass is compact to slicing, creamy and elastic texture, flavor is agreeably acid, not too salty and with gentle aroma. The reduced acidity diminishes with ripening time, unlike saltiness and aroma which increase. White color with few and small holes.

### Chemical

- Fat: minimum 45% of dry extract.
- Protein: minimum 32% of dry extract.
- Dry Extract: minimum 55%.
- pH: minimum 5 when taken out of brine.

### GEOGRAPHIC AREA

The zone for milk product, processing and ripening of «Murcian Cheese» and «Murcian Cheese Cured in Wine» coincide and consists of all municipal districts of the province of Murcia.

### OBTAINING OF PRODUCT

The Murciano-Granadina race goat has evolved in a different way in the Region of Murcia. The Murcian variety is characterized by being smaller, daintier, with smaller heads and ears more erect.

The racial pattern of the Murcian goat is considered rustic and very productive, and milk is characterized by high cheese yield due to its composition. It is medium in size with a subconcave profile. Its coat is a uniform black or mahogany in color, with short, fine hair. Only males are bearded. It is usually horned, with strong limbs and large, symmetrical, voluminous and baggy udders with somewhat diverging teats, swollen at the base and very well implanted.

They are only milked once a day.

They are characterized, moreover, by not having periods of sexual inactivity, this permitting better production planning.

Milk is kept at a temperature below 6°C to limit microbial development.

**Filtering.** Milk is filtered in the reception room of the cheese factory.

**Curdling.** Milk coagulation is provoked with animal rennet or other coagulating enzymes expressly authorized by the Control Entity of Denominations of Origin.

- Murcian Cheese
  - Fresh Murcian Cheese: curdling takes place between 32 and 35°C, from 30 to 45 minutes.
  - Cured Murcian Cheese: curdling takes place between 30 and 34°C, during a period of 40 to 60 minutes.
- Murcian Cheese Cured in Wine: curdling takes place between 30 and 34°C, during a period of 40 to 60 minutes.

**Cutting.** Once curdling has taken place, the curds are chopped repeatedly until crumbs have an adequate size.

- Murcian Cheese
  - Fresh Murcian Cheese: crumbs approximately 5 mm in diameter.



- Murcian Cheese Cured in Wine: crumbs approximately 6 to 8 mm in diameter.

**Washing curds.** This process is done only in «Murcian Cheese Cured in Wine» and consists of extracting 15% of whey and then adding water, with a +/- variation of 3%.

**Reheating.** This is done in all cheeses protected by Denominations of Origin coming under these Specifications and consists in raising the temperature from 3 to 5°C over curdling temperature.

Crumb working. Shaking is alternated with repose until crumbs acquire adequate consistency.

- Murcian Cheese
  - Fresh Murcian Cheese: crumbs are lightly worked, this giving them a soft consistency.
  - Cured Murcian Cheese: crumbs intensely worked, producing a hard consistency.
- Murcian Cheese Cured in Wine: Less intense crumb working than in «Cured Murcian Cheese» and, therefore, less consistency.

**Moulding.** After removing whey, moulding is done by putting the curds into smooth cylindrical moulds.

- Murcian Cheese
  - Fresh Murcian Cheese: moulds are engraved with braided esparto grass patterns.
  - Cured Murcian Cheese: moulds have no engraving on faces or sides.
- Murcian Cheese Cured in Wine: moulds have no engraving on faces or sides.

**Pressing.**

- Murcian Cheese
  - Fresh Murcian Cheese: pressing, if present, is short and not too intense.
  - Cured Murcian Cheese: pressing from 2 to 4 hours until reaching adequate pH.
- Murcian Cheese Cured in Wine: pressing from 2 to 4 hours until reaching adequate pH.

**Salting.** Cheese salting is done by immersion in fresh sodium chloride brine.

- Murcian Cheese
  - Fresh Murcian Cheese: maximum immersion time is 10 hours in a saline solution with a maximum concentration of 16°Bé.
  - Cured Murcian Cheese: maximum immersion time is 20 hours in a saline solution with a maximum concentration of 20°Bé.
- Murcian Cheese Cured in Wine: maximum immersion time of 20 hours, in a saline solution with a maximum concentration of 20°Bé.

**Ripening.** During the whole process there shall be a relative humidity of more than 80% and temperatures ranging between 9 and 13°C.

## ROLE IN GEOGRAPHIC SETTING

### HISTORICAL

The custom of making fresh goat cheese for family use or sale in nearby settlements has always existed all over the Region of Murcia. In fact, it is unusual not to be offered a slice of fresh cheese with your drink, generally fried with tomato sauce or chopped.

By the middle of the XIXth century, goat farming was an important source of profit and income for Murcian owners and peasants, mostly located in the mountains of Caravaca (for meat production) and in the valleys of Guadalentín and Alto Segura (for milk production). At the end of this century specialization in goat milk production began, the largest operations being around the principal cities of the region: in the orchards of Murcia and Lorca, the Campo de Cartagena and the wine-producing district of the Altiplano.

The first association of goat farmers in Spain was created at the end of 1979 in Murcia, today called ACRIMUR and has 54 Murcian members.

Relative to transformation of Murcian goat milk into cheese, A. Panés, in his book «La Cabra Murciana: su explotación, cuidados y mejora» (The Murcian Goat: exploitation, care and

improvement) (1922), asserted that cheese was being made in Jumilla and Yecla.

In this sense, Murcia has always been a pioneering region in goat production and for many years the goatherds themselves, especially in the mountains, have been making cheese, always fresh and without adding cultures as the milk was curdled with vinegar or lemon after boiling it. Given the difficult conservation of this cheese and also to avoid brucellosis, the tradition of frying cheese emerged.

#### NATURAL

The Murcian goat milk production and cheese-making zone is characterized by great variety of topography and landscapes. The existence of coastline (Mediterranean) and different mountain alignments leads to great differences in altitude in the places where herds are kept.

On the other hand, the Region of Murcia is located in the most arid zone of Europe with corresponding climatic characteristics, especially very reduced rainfall and high temperatures recorded which give rise to great scarcity of water and vegetation is which is markedly shrub-like and not too herbaceous, that is, Mediterranean type.

**Orography.** The region of Murcia has a surface of 11,320 km<sup>2</sup>. Almost a quarter corresponds to lowlands below 200 m altitude, 45% to medium

altitudes between 200-200 m and 32% 600 to 2000 m. Relief is complex with the Bética mountains standing out in the Northwest.

**Soils.** Postorogenic materials are prevalent in this region, with frequent deposits of loam, clay, evaporitic rock and conglomerates.

**Climate.** In general, climate is considered Subtropical Mediterranean, with Maritime characteristics in zones close to the coast.

**Hidrography.** 97% of the region is influenced by the Segura watershed.

In Campo de Cartagena and Valle del Guadalentín, irrigation water comes mostly from the Tajo-Segura diversion and existing aquifers which produce water of high saline content.

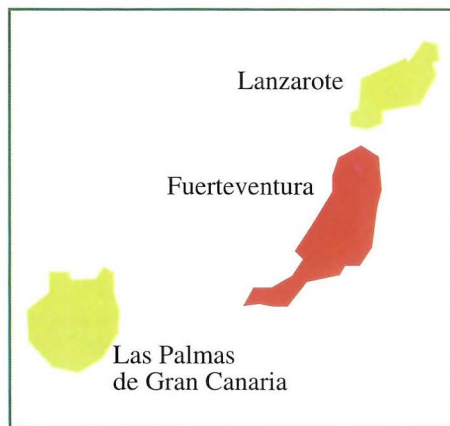
**Natural flora and cultivations.** Total surface under cultivation in 1996 is slightly more than 50% of the whole. The remainder mostly corresponds to matorral(bush) and pastureland, almost 30%, followed by wooded land (mostly pine forests) at around 15%.

Irrigated land comes to almost 200,000 hectares although a great deal depends on availability of water.

Dry crops occupy more than 400,000 hectares.

Matorral and pastureland covers large areas, with esparto fields at medium and low altitudes. From the livestock point of view, the matorral is often rich in labiates and cistaceous plants.





# QUESO MAJORERO

## DESCRIPTION OF THE PRODUCT

Pressed cheese made from goat's milk of the majorera race. When the cheese is to be matured there may be an addition of milk from Canary sheep, up to a maximum of 15%.

The cheese-making milk will come from healthy, registered flocks of goats and sheep presenting the following characteristics:

Clean and without impurities.

Free of colostrum or any medicated products or preservatives, etc, which might adversely affect cheese-making, maturing or conservation process or the hygiene and health conditions thereof.

The minimum composition parameters of the goat's milk will be:

- Proteins: 3.2% minimum.
- Fats: 3.8% minimum.

- Total dry matter: 12.1% minimum.

The parameters of the ewe's milk will be:

- Proteins: 5.3% minimum.
- Fats: 5.5% minimum.
- Total dry matter: 17.1% minimum.

The organoleptic criteria of the goat's milk will be:

**Colour:** matt white.

**Aroma:** recently milked it has a fairly neutral smell, albeit with a goatly smell sometimes at the end of lactation.

**Flavour:** very sweet, agreeable, particular to this milk.

**Aspect:** Clean and without lumps.

«Queso Majorero» is a full-fat cheese, with a maturing period ranging from 8 to 60 days. Depending on the length of the latter the cheese will be:





## QUESO MAJORERO

- Fresh: between 8 and 20 days.
- Semicured: between 20 and 60 days.
- Cured: over 60 days.

At the end of its maturing period it presents the following physical characteristics:

**Shape:** cylindrical.

**Height:** 6 to 9 centimetres

**Diameter:** between 15 and 35 centimetres.

**Weight:** Between 1 and 6 kilograms.

**Rind:** The side surface shows the marks of the moulds or plaited fibre, while the bases show the marks of the cheese dish. White and practically colourless in fresh cheeses and yellowish brown in matured ones. When the surface has been smeared with paprika, oil or toasted cornmeal, the rind then takes on the characteristic aspect.

**Flesh:** the cheese is compact when cut, creamy in texture with an acidic, slightly tangy taste. It is white, though cured cheeses take on a slight ivory tone. It is generally free of holes though a few small ones might appear. It will have the following chemical characteristics, with a tolerance margin of 10%:

<b>Fresh</b>	
Protein percentage: .....	17.4
Fat/dry matter percentage: .....	52.0
Dry matter percentage: .....	50.0
<b>Semicured</b>	
Protein percentage: .....	25.5
Fat/dry matter percentage: .....	54.0
Dry matter percentage: .....	57.0
<b>Cured</b>	
Protein percentage: .....	27.5
Fat/dry matter percentage: .....	55.5
Dry matter percentage: .....	63.0

### GEOGRAPHIC AREA

The production area is made up by the municipal districts of Antigua, Betancuria, La Oliva, Pájara, Puerto del Rosario and Tuineje,

which constitute the Island of Fuerteventura, province of Las Palmas (Canary Isles). The island of Fuerteventura is about 100 km long from north to south, with a total area of 1,659 km<sup>2</sup>. It is the closest island to Africa, less than 100 km away. The cheese-making and -maturing coincides with the milk-production area.

### OBTAINING THE PRODUCT

The cheese-making involves the following steps:

**Curd:** The milk, obtained manually or mechanically, under perfect hygiene conditions, is filtered and then coagulated with rennet from the dried stomachs, preferably, of «baifos» (Canary kids). The milk is left for about one hour at a temperature of 28 to 32°C to curdle.

**Cutting.** The resultant curd is progressively cut until obtaining lumps with a diameter of between 5 and 15 mm, depending on the type of cheese involved, matured or fresh, respectively. It is then pre-pressed to remove as much whey as possible, resulting in a semi-pressed cheese.

**Moulding and pressing.** The semi-pressed curd is then put in braided palm or plastic basket or in moulds made of plastic or stainless metal, which imitate the pattern of the traditional basket made from plaited palm leaves. These containers will be the right size to give the matured cheese its characteristic shape, dimensions and weight.

**Salting.** Salting may be wet or dry, using sea salt. In the case of wet salting the maximum time of immersion in the brine solution, with a maximum concentration of 20°B, will be 24 hours.

**Maturing.** One or two days after salting the cheese is turned and placed in the cheese safe, open to the breeze and well ventilated. On the third or fourth day it is washed, preferably with whey, to remove remaining salt and placed back in the cheese safe, on a wickerwork support called a «cañizo» or on tables, and always in a cool, well ventilated place with little light, making sure to turn it every so often.

It is cured by smearing with fats or oils (preferably olive oil) and even with cheese fat and

## QUESO MAJORERO



moulds, from previous curings. Lastly a product is added to close off the cheese's pores to make sure it gains in quality and loses no weight.

### ENVIRONMENTAL FACTORS

#### HISTORICAL BACKGROUND

There are already references to goat keeping dating from even before Fuerteventura was conquered by the Bretons and Normans.

In «Le Canarien», a book written by the friars Bontier and L'everiel, there were between 50,000 and 60,000 goats. This same book, referring to the inhabitants, says:

«They have supremely good cheese made only from goat's milk».

Villa de Betancuria, from its foundation until it ceased to be the capital of the island, was the urban cum handicraft cum administrative centre around which administration and handicrafts revolved. But there were supply shortfalls, as recorded in all known council minutes from 1605 to 1780, 30 of which mention cheese. Interesting written comments are made by foreign travellers such as George Clas, who, in 1764, spoke of the customs and the food and provisions supplied to him, including cheese, as well as the exporting thereof.

But the most complete account is given by doctor Rene Verneau from 1884 to 1888, who, like the fine anthropologist and naturalist he was, gives a perfect description of the livestock, the pasturage types, the shepherds and the cheese-making procedures.





## QUESO MAJORERO

### NATURAL FEATURES

**Lie of the Land.** One of the main geographical characteristics of Fuerteventura is the lack of any high mountains. The highest point, Pico de la Zarza, 807 m., lies in the south of the island on the Peninsula of Jandia. This corresponds to the remains of ancient volcanic build-up created by the subhorizontal piling up of the basaltic lava flows.

But it is the so-called Macizo de Betancuria that has the most mountain-like relief, reaching a moderate altitude, Pico de la Atalaya at 762 m. Also noteworthy is the covering of extensive areas by organic sandy windborne formations called «jables», which give rise to large dune areas.

This has also helped to give a great variety to the island's littoral region, with large, sweeping beaches.

**Soil.** Its origin is largely bound up with its location in a tectonically unstable area between the oceanic crust and the continental crust of the African plate.

The most recent material of volcanic activity lies in the northernmost part of the island. All material of volcanic origin is now covered by a more or less thick calcareous crust with an almost total absence of soil, except at the edges of river gorges, in alluvial terraces, covered by loose stones from which the fine fraction has disappeared.

**Climate.** The climate of this area is highly differentiated due to its low relief. The dominant feature is aridity, with short yearly periods of mainly torrential rain.

Most of the island records less than 100 mm a year, except for the higher areas, favoured on occasion by trade winds, where figures of 250 mm may be reached.

The average annual temperature ranges from 18.8°C to 19.6°C, which reflects the mildness of the climate.

**Hydrology.** The particular climatic conditions and its topographical and geological factors determine the hydrological characteristics of Fuerteventura.

Most of the island's rain falls in the form of torrential downpours, so the gorges usually bear water only occasionally as torrential run-off.

To avoid the loss of this run-off water several dams have been built with a capacity of about 4 Hm<sup>3</sup>. This water is used directly in agriculture and also filters into the underground aquifers.

**Flora.** The flora of this area has been strongly conditioned by geographical factors. The main vegetation is bushy in type, stunted in aspect and open in character, adapted to the island's xerophilous factors.

In the valleys, gullies and other areas with soil humidity there are some palm and French-tamarisk groves forming contrasting scenery of great beauty.

Lastly, in the highest parts of Jandia, with a higher environmental humidity, there are some areas of greater mountain greenery with laurisilva forests and a high number of endemic species that have taken refuge here.







# QUESO MANCHEGO

## DESCRIPTION OF THE PRODUCT

Pressed cheese made from ewe's milk of the Manchega race, free of colostrum and any medicated products that might adversely affect the cheese-making, maturing or conservation. The analytical characteristics of the milk are:

- Fat: 6.5% minimum
- Lactose: 4% minimum
- Proteins: 4.5% minimum.
- Useful dry matter: 11% minimum.
- Macroscopic impurities: Lower than grade 3 of the norm UNE 34,100.
- Acidity (Dornic) 25° maximum.
- Reductase test with methylene blue. 3 h. minimum.

- Ash: 0.8% maximum.

«Queso Manchego» is a full-fat cheese (minimum 45% fats/dry matter) with a minimum maturing period of 60 days. The physical characteristics of the matured cheese are the following:

**Shape:** cylindrical with large flat faces.

**Diameter:** 9 to 22 cm.

**Weight:** between 1 and 3.5 kg.

**Rind:** hard, yellow, showing the striations of the mould or braided fibre basket in the side surface and the characteristic flower in the flat faces.

**Flesh:** firm and compact, varying in colour from white to yellowish ivory; may have small, unevenly spaced out holes.

**Characteristic flavour and aroma.**



The physical-chemical characteristics of the cheese are:

**pH:** 4.5 to 5.8.

**Dry matter:** minimum 55%.

**Fat:** minimum 50% of dry matter.

**Refractive index at 40°C:** from 1.4530 to 1.4557.

**Total protein proportion of dry matter:** minimum 30%.

**Sodium chloride:** maximum 2.3%.

The presence of foreign milk will be detected in accordance with the rules laid down in the Royal Decree 1533/1991 of 18 October.

### GEOGRAPHIC AREA

The milk-production area is made up by the municipal districts of the provinces of Albacete, Ciudad Real, Cuenca and Toledo, making up the region known as «La Mancha». The cheese making and maturing area of Manchego cheese coincides with the milk production area.

### OBTAINING THE PRODUCT

The milk is coagulated by animal rennet and other coagulating enzymes authorised by the Supervisory Council. The milk is heated to 28-32°C for 45 to 60 minutes.

The resultant curd is progressively cut until obtaining lumps of 5 to 10 mm. The mass is then stirred and reheated to 40°C. During moulding the faces are imprinted with the characteristic flower, and the sides with the braid pattern or «pleita».

After moulding the cheeses are pressed in suitable presses for this purpose. Salting may be dry or wet, using sodium chloride, the maximum time being 48 hours in the case of brine immersion.

The cheese is matured for at least 60 days after the moulding date, being turned over and cleaned during this time as necessary to acquire its characteristic traits.

### ENVIRONMENTAL FACTORS

#### HISTORICAL BACKGROUND

The inhabitants of this district have long since been raising sheep and making cheese, as the primitive populations of the area did.

Manchego cheese is recorded in some historical and literary documents. «The Ingenious Gentleman Don Quixote de la Mancha» by Miguel de Cervantes clearly links cheese with La Mancha. In 1878, in the work by Balanguier and Primo entitled «Explotación y fabricación de las leches, mantecas y quesos de diferentes clases» the chapter on the «principales quesos españoles» (the main Spanish cheeses) gives pride of place to manchego cheese.

In 1892 the «Diccionario General de la cocina» a cooking dictionary by Ángel Muro, related Spanish sheep's cheeses to manchego cheese. The same author speaks of manchego cheese in «El Practicón» a complete cooking treatise published in 1898. In 1909, Buenventura Aragón's book called «Fabricación de quesos y mantecas de toda clase» cites manchego cheese on one of its pages, and it also makes an appearance in the good food guide by Dionisio Pérez called «Guía del buen comer español», published in 1929.

#### NATURAL FEATURES

**Lie of the Land.** The natural district of La Mancha is ensconced on the southern submeseta of Spain, characterised by a flat relief that slides down gently towards the Atlantic, this uniformity broken only by small hills on the western edge of the region, together with small knolls formed by outcrops of rock more resistant to erosion.

**Soil.** La Mancha is a raised plain set on the central tableland of the Iberian Peninsula, with clayey limestone soil of the Miocene. Pastureland is formed by lime- or marl-rich substrates.

**Climate.** The region's climate, as corresponds to the continental type, is extreme with very harsh winters and very hot summers, sometimes up to 40°C, with daytime variations up to 20°C and yearlong variations up to 50°C. Rainfall is scarce, so this region comes within the so-called arid Spain

## QUESO MANCHEGO



with an extremely dry atmosphere and a relative humidity of 65%.

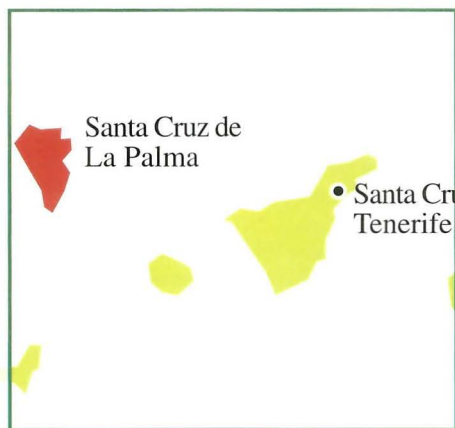
**Hydrography.** The regional territory is crossed by four main rivers: the Tagus and the Guadiana, which flow towards the Atlantic, and the Júcar and Segura, which flow into the Mediterranean.

There is also a large number of reservoirs and wells, the latter supplying water from the aquifers. The hydrological network is topped up by the tributaries of the main rivers, the Tagus and Guadiana, and the many reservoirs, used both for watering and hydroelectric power.

**Flora.** La Mancha is a vast area combining plains and uplands, and there is hardly any part of either that is not exploited for grazing manchego sheep. Cultivated land provides harvest leftovers; the sheep eat cereal stalks and spikes remaining in the ground after harvest. Of particular importance is legume stubble, with its high protein content, comprising vetch, chickpea and above all lentils. No less important is the autumnal exploitation of the vine shoots of the many vineyards in the area. The pastureland occupying the clearings in scrubland is also important for grazing livestock.







# QUESO PALMERO

## PRODUCT DESCRIPTION

These cheeses are made exclusively from milk of La Palma goats which basically feed on forage resources of the Island of La Palma (Canary Islands). They are preferably eaten fresh but may also be elaborated as soft, semicured and cured.

Palmero Cheese has the following characteristics:

**Paste:** color is bright white.

**Texture:** texture is firm, elastic and of medium solubility.

**Flavor and aroma:** flavor and aroma are clean, the taste of goat's milk dominating and a slight flavor of natural curd. In the smoked versions there are aromas of the torrefied type but these should not be too strong.

**External aspect:** these cheeses come in many different sizes and the smaller formats should never be less than 0.75 Kg.

The shape is always cylindrical. Height in every case is between 6 and 15 cm and diameter between 12 and 60 cm, but the diameter is always between 2 and 4 times the height.

## Physical-chemical characteristics

Minimum values: proteins: 17.50%.  
Fat/E.S.: 35.10%

## GEOGRAPHIC ZONE

The zone for elaborating and ripening Palmero Cheese, as well as for milk production apt for its raw material, is made up of municipal districts of the Island of San Miguel de la Palma, province of Santa Cruz de Tenerife (Canary Islands, Spain), listed as follows: Barlovento, Breña Alta, Breña

## QUESO PALMERO



Baja, Garafia, El Paso, Fuencaliente, Los Llanos de Aridane, Puntagorda, Puntallana, San Andrés y Sauces, Santa Cruz de la Palma, Tazacorte, Tijarafe and Villa de Mazo, with a total surface of 704 Km<sup>2</sup>.

### METHOD OF MANUFACTURE

The process begins by filtering recently obtained milk and immediately starting the coagulation process. Natural rennet from suckling kid is used for curdling. Mean coagulation time is 45 minutes.

Once obtained, curds are chopped repeatedly until the size of small crumbs this facilitating extraction of whey and then put into molds («rings», «baskets» or «skins»).

Once in the molds they are pressed and placed on small meshed plastic webbing in order to facilitate draining of whey. Traditionally, they are stamped with brands with numbers and letters identifying the livestock owner and the municipality, complying with an ancient ordinance of the islands.

The next step is salting. Salting may be dry, using sea-salt from island salt-beds.

Mean cheese yield is 5 to 6 liters per kilo of cheese.

After salting, it is frequent to smoke the cheeses, using smoke from different plant materials, the main ones being almond shells, prickly pear cactus and Canary pine.

Since Palmero Cheese is a seasonal product, in maximum production months when the market cannot handle all the fresh cheese or in isolated operations cheese is ripened in caves or in well-appointed chambers. For this process, the rind is usually protected with olive oil, corn meal or flour.

### ROLE IN GEOGRAPHIC SETTING

#### HISTORICAL

Palmero Cheese is goat milk cheese produced traditionally and exclusively in La Palma Island. The indigenous inhabitants of the island already had a livestock tradition which continued

after the island was conquered in the XVth century, as shown both in archeological studies and in XVIth century protocols where mention is made of the export of Palmero Cheese, as well as of its economic importance in island life.

The singular nature of this cheese is due to a group of factors coinciding in this island, such as:

#### NATURAL

The Island of La Palma, in spite of being relatively small (706 km<sup>2</sup>), has a great diversity of microclimates due to its irregular geography.

It is frequently called the highest island in the world.

The altitude is another important climatic factor. Air masses colliding with mountainous regions favor rainfall, this producing great humidity in large areas.

La Palma Island registers more rainfall than the others of the Canary archipelago, this being reflected in its vegetation and explains the appellation «Green Island». Mean annual rainfall is 738 mm, although this varies from zone to zone.

There are close to a thousand plant species on La Palma, growing wild or semi-wild. Among species growing wild, many are native forage types, such as *cytisus*, sorrel, «tedera» and «tagasate», and are used to feed dairy goats.

Goats have been present on the island since before the conquest by Spaniards in 1493.

Ever since the conquest, selection of La Palma goats has been aimed toward improving their adaptation to climatic and orographic conditions of the island. It is a very rustic animal which does not adapt easily to intensive operations.

The current Palmera goat is the result of crossing primitive goats with those brought by European settlers, mostly Portuguese. She is an excellent milk-producer, offering high yield both in quantity and quality of its components. Mean values of milk composition are: 4.07% fat, 4.21% protein, 4.66% lactose and 13.65 dry matter. To these figures must be added the extraordinary proportion of

Vs1-casein found in milk of this race, this indicating magnificent potentiality for cheese production.



## QUESO PALMERO

Livestock/cheese-making traditions are still present on the island in some 475 goat farms where hand-made cheese continues to be made according to traditional methods.

Cheese protected by Denomination of Origin shall display a numbered label or counterlabel, controlled, supplied and issued by the Regulating Council.

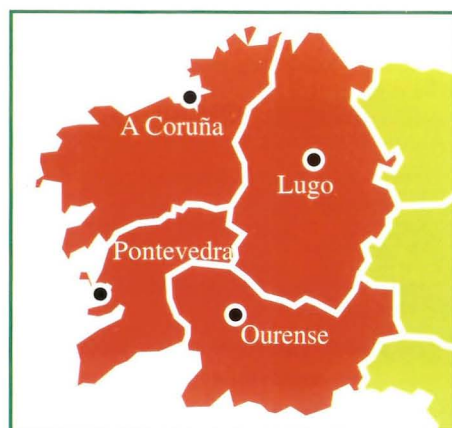
The labels used by each manufacturer for these cheeses shall display the name of Denomination of

Origin and date of manufacture. «Hand-made» and «Queso de Manada» (Herd Cheese) may be mentioned, as per that established in the Regulations for Denomination of Origin Palmero Cheese.

Moreover, the upper face of the cheeses shall have a central stamp of variable form, displaying a combination of numbers and letters as is traditionally done, approved and registered by the Regulating Council and serving for identification of each producer.







# QUESO TETILLA

## DESCRIPTION OF PRODUCT

Cheese with a degree of maturity from fresh to semicured, made from cow's milk of the races Friesian, Parda Alpina and Rubia Gallega, free of colostrum or medicated products and with the following composition:

- Proteins: 3.1% minimum.
- Fat: 3.5% minimum
- Dry matter: 8.4% minimum
- Acidity at the start of the cheese-making process: 18° Dornic minimum.

When matured Queso Tetilla has the following characteristics:

**Shape:** conical, convex-conical (pear-shaped).  
**Weight:** 0.5 to 1.5 kg.

**Dimensions:** the height will be more than the base radius and less than the diameter.

**Height:** maximum: 150 mm  
 minimum: 90 mm.

**Base diameter:** maximum 150 mm  
 minimum 90 mm.

**Rind:** fine and elastic, less than 3 mm thick, straw coloured or yellow without any mould.

**Flesh:** creamy soft and even, with regularly spaced-out holes, few in number, white or yellowish ivory in colour.

**Aroma:** slightly pungent and with overtones of the milk it is made from.

**Flavour:** buttermilk, slightly tangy and mildly salty.

**Fat:** minimum 45% of dry matter.

**Protein:** minimum 40% of dry matter.

**Dry matter:** 45 to 50%.

**pH:** 5 to 5.5 at the moment of dispatch.



### GEOGRAPHIC AREA

The milk producing zone for making Queso Tetilla takes in the territory of the Autonomous Community of Galicia, in the northwest tip of the Iberian Peninsula.

Cheese-making and maturing areas coincide with the milk-production area.

### OBTAINING THE PRODUCT

Coagulation is brought about exclusively with animal rennet; autochthonous strains of *Streptococcus lactis* and *S. Cremoris* may be used, as approved by the Supervisory Council.

The coagulation temperature will vary between 28 and 32°C, using the necessary dosage of rennet to bring the curdling time within the range of 20 to 40 minutes. The curd is then cut into chickpea-sized lumps and rinsed with natural water to lower its acidity to 4-6° Dornic.

Finally it is slightly reheated with water two degrees higher in temperature than the curd. It is set in moulds of suitable sizes and shapes to give the characteristic presentation and the sizes described under the section «Description of the Product».

It is pressed for a minimum of three hours at a variable pressure depending on the duration. It is then salted by immersion in brine with a concentration of between 17 and 18° Baumé, for a maximum time of 24 hours.

Cheese coming under this Designation will have a minimum maturing time of seven days, this period to run from the end of the salting process. During this time it will be turned over and cleaned as necessary to acquire its particular characteristics.

### ENVIRONMENTAL FACTORS

#### HISTORICAL BACKGROUND

Tetilla is a historic Galician cheese eaten throughout the whole of central Galicia. Originally, however, its production centred on the districts of the south of the province of A Coruña

and the north of Pontevedra, mainly in Curtis, Sobrado dos Monxes, Arzúa and Mélide. The parish of La Illana in the district of Curtis hosts the most traditional cheesefair, which, in its time, originally gave the cheese its name. Tettamancy, in 1990, mentioned that «On the fifth of each month there is a fair in Illana in the district of Curtis, with cattle, local fruit products, etc, but distinguished above all for its excellent cheeses». Dionisio Pérez, in his «Guía de buen comer español» (Guide to Good Eating in Spain), 1929, cites various Galician cheeses, including Tetilla. Although the name of the Designation is not a geographical one, it does fulfil the requisites laid down in section 2 of article 2 of the (EEC) Regulation 2081/92 of 14 July on the protection of the geographic indications and Designation of Origin of farming and food products, since it is a traditional denomination for an original Galician cheese with characteristics based on its geographic setting, made and processed in the area.

### NATURAL FEATURES

**Lie of the Land.** The Galician region, due to its location in the westernmost part of the European Atlantic Arc is a geographical crossroads between different ecological domains: a north-south component of a climatic and topographical nature and a west-east component opposing the maritime land to the inland terrain.

Topographically, the low-lying land - the wide Atlantic valleys with an average height below 200 metres - of the western provinces contrasts with the height of the terrain further inland (over 600 metres).

**Climate.** The difference between north and south already mentioned above is even more marked in the climate and consequently in the soil and vegetation. Despite its location in the wet Spain of the north it presents some differences from other Cantabrian regions, and due to its latitude it can be likened to subtropical Atlantic climates. In fact it is a transitional climate: from north to south it changes from oceanic to sub-oceanic. The former is rainy and temperate with maximum rainfall in the winter, a minimum in summer with a very short dry period. The sub-

## QUESO TETILLA



oceanic area (Ria de Vigo Baixo Miño and the land of Ourense) has a more marked summer drought with a minimum of two dry months (July and August), heavy rainfall in winter and higher average annual temperatures.

**Soil.** The combination of a rainy climate with rocks of a Palaeozoic origin has given rise to acidic, little developed soils with few farming uses. In general the soil of Galicia is poor with fertile areas concentrated in specific areas in valley bottoms and basins or littoral land.

Thanks to the high rainfall and mild temperatures, however, plant growth is prodigious, and the best stockraising areas coincide with the peneplain with brown humic soil laid over siliceous material.

**Hydrography.** The river network is governed by the lie of the land and the abundant rainfall, with differences on the Cantabrian and Atlantic sides.

The Cantabrian side contains the rivers Navia, Eo, Oro, Landove, Sor, Esteiro, Dola, Baleo, Mayor and Mera.

The Atlantic side has the longest and biggest rivers: Tambre, Ulla and Miño, apart from other smaller ones such as Eume, Mandeo, Allones, Mira, Umia, Lérez, etc, which flow into the sea through both the Rias Altas (upper) and Bajas (lower).

Worthy of mention is the only river of any size that does not belong to the catchment area of the north but to that of the Duero: the Támega in the southeast of the region, in Ourense.

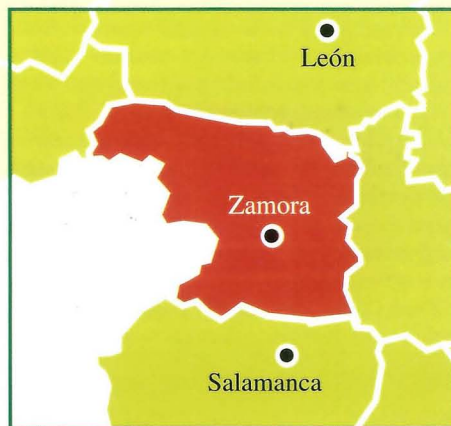
**Flora.** The dairy cattle raised in this area can exploit not only natural grassland but also sown grassland, pastures and even scrub. The species making up the grassland are fairly numerous.

The average yield is 25 to 30 tonnes of herbage per hectare and year.

The province of Lugo is also important for forage crops: maize, beets and forage turnips.







# QUESO ZAMORANO

## DESCRIPTION OF THE PRODUCT

Pressed cheese made from the milk of autochthonous sheep races, Churra and Castellana. The milk will be full fat and clean, free of any colostrum, contaminants, preservatives, antibiotics or any other product that might impinge negatively on the cheese-making, maturing or conservation.

The analytical characteristics of the milk are:

- Fats: minimum 7%.
- Lactose: minimum 4%.
- Proteins: minimum 5%.
- Acidity (Dornic): 23° maximum.
- Total dry matter: minimum 17.5%.

«Queso Zamorano» is a full-fat cheese with a minimum curing period of 100 days.

The physical characteristics of the matured cheese are the following:

**Shape:** cylindrical with large flat faces.

**Height:** Up to a maximum of 14 centimetres.

**Diameter:** Up to a maximum of 24 centimetres.

**Weight:** Up to a maximum of 4 kg.

**Rind:** Hard, pale yellow or dark grey and well defined.

**Flesh:** firm and compact, varying in colour from white to yellowish ivory, with some small holes.

**Characteristic aroma and flavour,** well developed and intense, lingering on the palate.

The physical-chemical characteristics are:

- Fat: Minimum 45% of dry matter.
- Dry matter: minimum 55%.
- Protein: minimum 25%.
- pH: 5.1 to 5.8.

## QUESO ZAMORANO



### GEOGRAPHIC AREA

Both the milk-production and cheese-making areas for «Queso Zamorano» lie in the municipal districts of the province of Zamora.

### OBTAINING THE PRODUCT

The milk is coagulated with just the right amount of rennet to produce curdling in a time of between 30 and 45 minutes at a temperature of between 28 and 32°C. The resultant curd is progressively cut into lumps of between 5 and 10 mm, then gently reheated to a temperature of 40°C.

It is moulded and pressed in moulds and presses to give it the characteristic shape of this cheese.

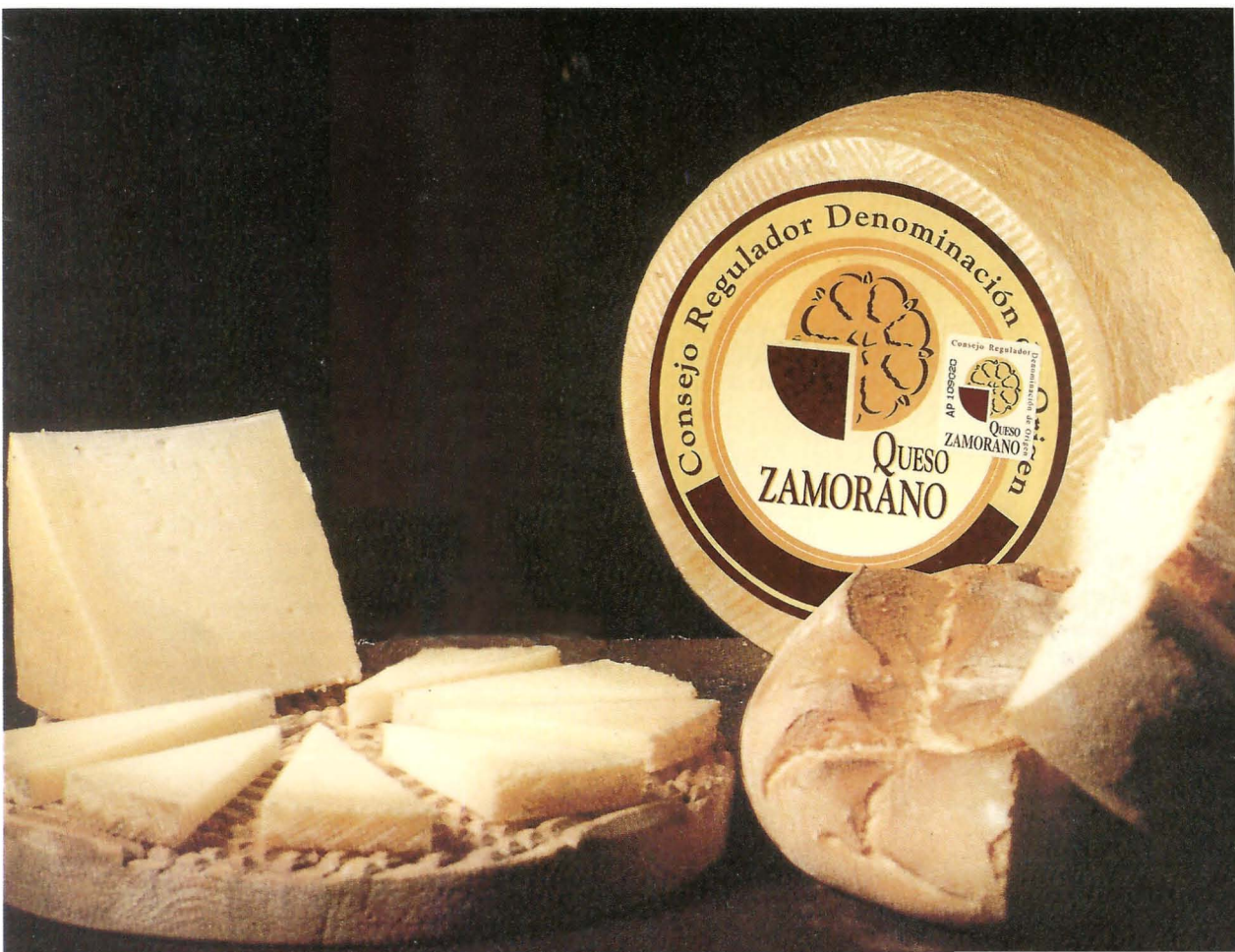
Salting may be wet or dry. In the case of brine immersion the maximum duration will be 36 hours.

The maturing of this cheese will last for at least 100 days, running from the moulding date, during which time it will be turned and cleaned as necessary until the cheese acquires the characteristics laid down in regulations.

### ENVIRONMENTAL FACTORS

#### HISTORICAL BACKGROUND

Documents of Zamora dating back to its repopulation in the mid C11th include numerous references to cheese production.





The Survey of the Marqués de la Ensenada carried out in 1752, reflects cheese production and livestock numbers.

The late C19th saw the start of the small family and craftsman-based businesses that then served as the basis for today's industry in this province for making «Queso Zamorano».

#### NATURAL FEATURES

**Lie of the Land.** It is a province of great contrasts. In the southeast there are rolling hills and wide valleys, fruit of the many streams flowing into the Duero. In the north there is a continuation

of valleys and upland plains. The southwest is characterised by steeper and higher hills without ever reaching the scale of fully fledged mountains.

**Soil.** There are three types of soil:

Brown limestone earth over unconsolidated material; this soil is characterised by free drainage and erosion proneness, with strong textures due to the presence of clay.

Brown earth laid down over allochthonous stony deposits, poor in organic matter but well-aired and drained and rich in calcium.

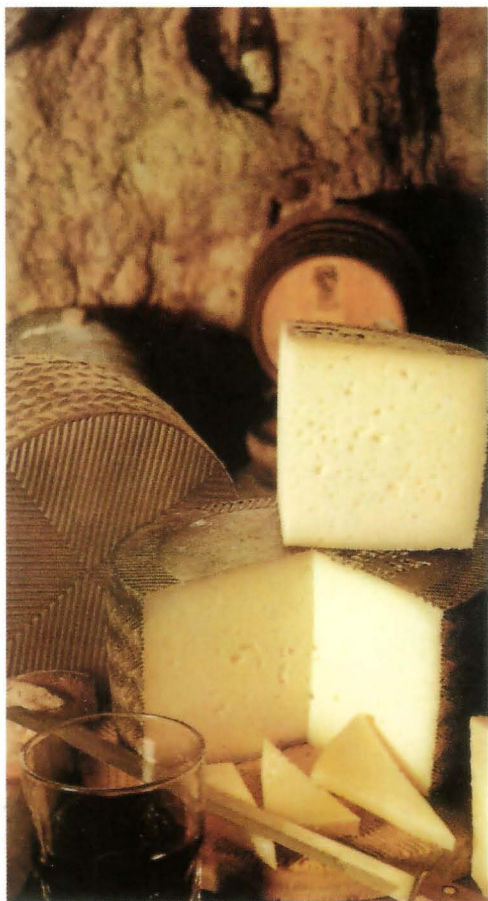
Southern acid brown earth evolved over igneous rocks, with textures ranging from coarse sandy loam to silty or sandy clay, rich in potassium.

**Climate.** Zamora lies on the northern submeseta, with a continental climate of extreme temperatures and a long period of frosts, throughout the whole winter and sometimes lingering on into spring. Summers are hot, dry and cloudless. Rainfall is low, with an average per year of 300 to 500 mm. Autumn is the rainiest season.

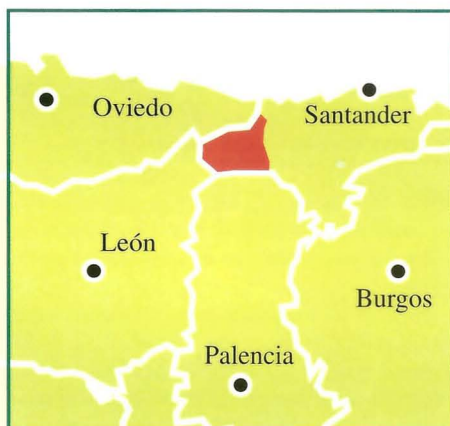
**Hydrography.** 98.5% of the river network of the province falls within the catchment area of the Duero, while the remaining 1.5% (163 km<sup>2</sup>) flows into the River Bibey and thence into the Miño.

**Flora.** Natural meadows occupy 20,116 hectares, representing 1.91% of the total province; 316 of these hectares are associated with woodland.

In pastureland the plantlife is predominantly graminæ. There are hardly any areas that cannot be grazed upon by sheep: the remains of harvests in cropland, cereal stalks, spikes left in the ground after harvesting and legume stubble with a high protein content.







# QUESUCOS DE LIÉBANA

## DESCRIPTION OF THE PRODUCT

Cheese made from milk of the following species and races:

- Cows: Tudanca, Pardo-Alpina and Friesian.
- Sheep: Lacha
- Goats: Pyrenean goat and goat of the Picos de Europa.

The milk will be full fat and clean, with a balanced composition of fat and proteins, varying in terms of the seasonal productive characteristics of the respective species.

The physical and organoleptical of the matured cheese are the following:

**Shape:** Cylindrical or discoid, small in size, ranging from 8 to 12 cm in diameter by 3 to 10 cm in height.

**Weight:** variable.

**Flesh:** Firm and compact, pale yellow in colour. Characteristic aroma and flavour. It has some holes distributed unevenly throughout the cheese. When smoked the cheese takes on the typical colour, smell and flavour of smoked food.

The physical-chemical characteristics of the cheese are:

**Fat:** No lower than 45% of dry matter.

**Humidity:** Minimum 30%.

## GEOGRAPHIC AREA

The milk-production area for making «Quesucos de Liébana» takes in the municipal districts belonging to Liébana, namely: Potes, Pesaguero, Cabezón de Liébana, Camaleño, Castro Cillorigo,



## QUESUCOS DE LIÉBANA

Tresviso and Vega de Liébana and the Council of Peñarrubia. The cheese-making and maturing area coincides with the milk-production area.

### OBTAINING THE PRODUCT

Milk for making «Quesucos de Liébana» comes from registered farms and has the characteristics described above under the section «Description of the Product».

The milk is coagulated with an animal rennet at a temperature of between 28° and 32°C for a minimum time of 45 minutes. The curd is cut to obtain pea-sized lumps. It is set in self-draining moulds that give the cheese its characteristic shape.

It is salted with dry salt in a ratio of 2 to 3 % of the cheese weight.

It is matured in rooms with a relative humidity between 85 and 95% and a temperature of below 15°C, being turned over and cleaned as necessary for the cheese to acquire its characteristic qualities.

Pasteurised milk will be used for cheeses matured for fewer than 60 days.

In the areas of Aliva, Brez and Lomeña this cheese is customarily smoked, to give it a longer life and new aromas.

This is done in specially fitted-out locales before marketing the cheese. Juniper is the wood most often used, and the cheese is smoked for a day or a day and a half, depending on the final density required.

### ENVIRONMENTAL FACTORS

#### HISTORICAL BACKGROUND

The conservation of smoked cheeses recommended by Columela for those sent to Rome was as practised in Cantabria. No end of details and accounts could be quoted confirming the presence of Cantabrian cheeses on expeditions to newly conquered land, such as that of Riba Herrera to Peru. Some of these accounts, given by Diego Hurtado de Mendoza in 1442, speak of the market prices of cheese in merchandise of Santander.

Legend has it that the custom of smoking stemmed from the need in the old days to prevent flies from entering the maturing caves by building a bonfire at the entrance. The serendipitous upshot was the smoking of the cheese, whereby it was proven to last longer.

### NATURAL FEATURES

**Lie of the Land.** Liébana lies in the southwest part of the province of Cantabria, bordering to the west with the Principality of Asturias and to the south with the provinces of Palencia and León. Liébana's territory corresponds to a tectonic circular fossa with a diameter of about 40 kilometres. The bottom of this basin lies at a height of 300 to 400 metres above sea level; the landscape is fairly rugged with long-narrow valleys separated from each other by irregular tracts of land, all very altered by erosion. The edges of the basin rise to over 2,000 metres.

The mountainous relief is singularly steep in the western massifs with high vertical cliffs in parts. The southern and eastern borders are less abrupt, with more shelving hillsides.

**Soil.** The soil in the lowest parts of the basin is made up of Palaeozoic slate with surface evolution, giving rise to brown humic limy earth.

The soil is rich in nutritional bases and elements. On the borders of the basin the soil is Palaeozoic limestone; from Pico Peña Labra onwards there are conglomerates, sandstone, clay and limonites.

**Climate.** The climate in this area is mild, with an average annual temperature of 14.5°C, an average minimum of 10°C and an average maximum of 20°C. In July and August absolute maximums of about 36°C may be recorded.

Rainfall is very abundant, between 900 and 1,200 mm, and the annual number of days of rain varies from 90 to 120.

The most frequent winds in the area are cool, moist northerlies, while in the south the «terrales» (breezes from the land to the sea) are usually dry and hot.

**Hydrography.** The main rivers in this area are the Deva and the Nansa.



## QUESUCOS DE LIÉBANA



The Deva is born in the Picos de Europa and serves as a natural border for Asturias in its final run. Its most important tributaries are the Quivisa and the Bayón. This river runs through the most rugged terrain of all the rivers on this side of the territory, and eventually flows into the sea as the Ria Tina Mayor.

The River Nansa is born on the border with Palencia. It has some very steep stretches and its

only important tributary is the Lamasón which flows into the sea through the Ria Tina Mayor.

**Flora.** Many different plant species grow in the meadows.

There are spontaneous species on the pastureland, generally annual herbaceous plants, and these may be exploited for grazing. The high-mountain pastureland are similar botanically to the meadows.







# RONCAL

## DESCRIPTION OF THE PRODUCT

Pressed cheese made from ewe's milk of the races «Rasa» and «Lacha», free of colostrum or medicated products that might impinge negatively on the cheese-making, maturing or conservation process.

The milk will be full fat and clean, without preservatives, with a balanced fat-protein composition in accordance with the characteristics of the above-mentioned races and the milking time, so that the final product has a fat content higher than 50% of the dry matter.

The milk will be conserved at a temperature lower than 10°C to avoid any microbial development.

The «Roncal» is a full-fat cheese with a minimum maturing period of 4 months, running from the salting date.

The physical characteristics of the matured cheese are the following:

**Shape:** cylindrical with large flat faces.

**Height:** 8 to 12 cm.

**Weight and diameter:** variable.

**Rind:** hard, thick, rough to the touch, greasy and brown or straw coloured.

**Flesh:** hard, porous, without holes. Characteristic aroma and flavour, slightly tangy and whitish yellow when cut.

The physical-chemical characteristics of the cheese are:

**Fat:** not less than 50% of dry matter.

**Humidity:** lower than 40%.

## GEOGRAPHIC AREA

The Roncal cheese-making and maturing area is made up by the municipal districts of Uztarroz, Isaba, Urzainqui, Roncal, Garde, Vidangoz and Burgui, which form the Valle del Roncal de Navarra.

## RONCAL



The milk production zone for making Roncal cheese takes in the natural areas where the sheep races Rasa and Lacha are grazed in Navarra.

### OBTAINING THE PRODUCT

The milk is coagulated with natural rennet, using enough to effect the process in a minimum time of 1 hour. The curd temperature varies from 32 to 37°C, which temperature is maintained throughout the whole process of curdling, cutting and draining of the whey.

The curd is cut slowly into homogenous rice-sized lumps.

The whey is drained off by beating the mass. The curd is then set in moulds and pressed by hand in the mould itself or in a press.

The cheese is salted by hand with dry salt or immersed in brine. In the latter case the immersion time will not exceed 48 hours.

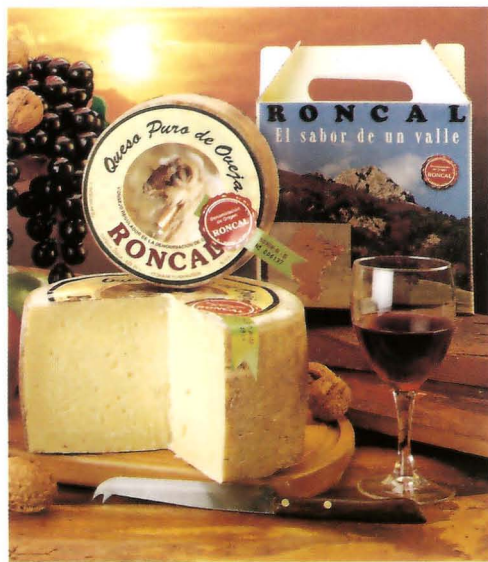
The cheese maturing time will be at least 4 months, this time to run from the end of the salting phase. During this period the cheese will be turned and cleaned as necessary to ensure it takes on its characteristic traits.

### ENVIRONMENTAL FACTORS

#### HISTORICAL BACKGROUND

Between the C10th and C13th the total Roncal flock settled down at 80,000 to 100,000 head of transhumant sheep, this figure holding steady until the C18th. When industrial forestry practices began, sheep raising fell away, as did the size of the flocks. Traditional shepherding practices were changing, planning methods being introduced for their feeding, health and hygiene.

The Ethnological Museums of the Fundación Mariscal Don Pedro of Navarra in Arteta (Valle de Olla) and the Museo Donostiarra of San Telmo include exhibits of the implements used by the cheese makers, pride of place going to the beechwood «kaiku» (vessel); the oakwood ash-handled salter; the beechwood mould or «zimitzak»



with engravings and holes for draining off the whey.

### NATURAL FEATURES

**Lie of the Land.** Roncal borders on the province of Huesca and Zaragoza to the east, Valle de Salazar to the west and the French frontier to the north. The territory is divided into Alto (upper) Roncal and Bajo (lower) Roncal. Alto Roncal is ensconced in the extreme west of the Inner Pyrenees, heights varying from 800 to 2,340 metres.

In Bajo Roncal heights do not surpass 1,300 m with a low of 600 m.

**Soil.** The soil of the Valle del Roncal is allochthonous; set over a folded Palaeozoic bedrock there are conglomerates and reddish siliceous sandstone of the Permian. In the Campanian era grey marl was deposited in the northern half of the area, overlain by sandstone of limy cement.

The Palaeocene is represented by dark marl in the southern half, covered by dolomite and limestone.

In the Eocene two different areas are clearly distinguished: the southern half with calcarenite





deposits and the northern half with tubidite flysch infills.

**Climate.** The Alto Roncal is dominated by a mountain Atlantic climate, with rainfall of more than 1,000 mm a year, without dry periods and with an estimated annual average temperature for Isaba of about 11°C. In the high mountains the climate is Pyrenean with an Atlantic influence, the winter lasts 5 to 7 months and the average annual temperature for Larra is estimated to be about 7°C.

In the Bajo Roncal the climate is submediterranean with less than 1,000 mm of rain a year, a greater proportion of sunny days and very few days of snow.

**Hydrography.** The valley of Roncal occupies the higher and mid catchment area of the River Esca, whose waters flow about 30 km north to south before entering the province of Zaragoza and flowing into the River Aragón.

#### **Flora.**

– Natural meadows: these are located in the north of the province, coinciding with the wet area. Their use varies according to custom. Traditional usage involved a first grazing in March to April; in mid June there is a first mowing for hay; in August there is a second mowing, weather permitting, also for hay and a final grazing in autumn.

– Mountain pastures: these are subalpine pastures. Due to their height they are limited to summer use (late June to early October). This involves:

- a) Iberoatlantic mountain pastures. These are grazed by all types of livestock (cows, sheep, horses), single or mixed, from May to late autumn.
- b) Mediterranean mountain pastures. These are set over a limestone substrate and are perfect for sheep.



# CHEESES

## WITH DESIGNATION OF ORIGIN

### CABRALES



N.º of livestock registered	7.819
Litres of milk produced	4.818.629
Litres of milk processed	4.818.629
N.º of cheese factories	60
Kg of cheese produced	493.633
Kg of cheese marketed with D. O.	493.633

#### Livestock and breeds:

Bovino, Ovino and Caprino

### IDIAZÁBAL



N.º of livestock registered	112.800
Litres of milk produced	6.150.000
Litres of milk processed	5.799.465
N.º of cheese factories	71
Kg of cheese produced	1.025.000
Kg of cheese marketed with D. O.	966.578

#### Livestock and breeds:

Ovino: Lacha and Carranzana

### MAHÓN



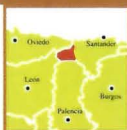
N.º of livestock registered	5.383
Litres of milk produced	42.429.743
Litres of milk processed	24.141.706
N.º of cheese factories	44
Kg of cheese produced	2.431.980
Kg of cheese marketed with D. O.	2.014.123

#### Livestock and breeds:

Bobino: Frisona, Menorquina and Parda Alpina.

Ovino: Menorquina < 5 %

### PICÓN BEJES-TRESVISO



N.º of livestock registered	275
Litres of milk produced	201.236
Litres of milk processed	201.236
N.º of cheese factories	13
Kg of cheese produced	20.282
Kg of cheese marketed with D. O.	20.282

#### Livestock and breeds:

Bovino: Tudanca, Parda Alpina and Frisona. Ovino: Lacha. Caprino: Pirenaica and Picos de Europa

### QUESO DE CANTABRIA

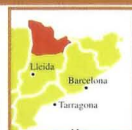


N.º of livestock registered	1.970
Litres of milk produced	2.972.310
Litres of milk processed	2.972.310
N.º of cheese factories	5
Kg of cheese produced	297.231
Kg of cheese marketed with D. O.	297.231

#### Livestock and breeds:

Bovino: Frisona

### QUESO DE L'ALT URGELL



N.º of livestock registered	13.000
Litres of milk produced	1.096.000
Litres of milk processed	1.096.000
N.º of cheese factories	1
Kg of cheese produced	128.222
Kg of cheese marketed with D. O.	119.222

#### Livestock and breeds:

Bovino: Frisona

### QUESO DE LA SERENA



N.º of livestock registered	101.325
Litres of milk produced	780.000
Litres of milk processed	780.000
N.º of cheese factories	14
Kg of cheese produced	188.992
Kg of cheese marketed with D. O.	181.939

#### Livestock and breeds:

Ovino: Merina

### QUESO DE MURCIA



N.º of livestock registered	*
Litres of milk produced	*
Litres of milk processed	*
N.º of cheese factories	*
Kg of cheese produced	*
Kg of cheese marketed with D. O.	*

#### Livestock and breeds:

Caprino of Murcian breed

\* No data available for first year of Designation

# CHEESES

## WITH DESIGNATION OF ORIGIN

### QUESO DE MURCIA AL VINO



N.º of livestock registered	*
Litres of milk produced	*
Litres of milk processed	*
N.º of cheese factories	*
Kg of cheese produced	*
Kg of cheese marketed with D. O.	*

#### Livestock and breeds:

Caprino of Murcian breed

\* No data available for first year of Designation

### QUESO MAJORERO



N.º of livestock registered	9.230
Litres of milk produced	2.295.999
Litres of milk processed	2.295.999
N.º of cheese factories	10
Kg of cheese produced	320.766
Kg of cheese marketed with D. O.	320.766

#### Livestock and breeds:

Caprino: Majorera. Ovino: Canaria < 15%

### QUESO MANCHEGO



N.º of livestock registered	640.800
Litres of milk produced	37.527.727
Litres of milk processed	29.358.500
N.º of cheese factories	37
Kg of cheese produced	5.871.700
Kg of cheese marketed with D. O.	5.606.107

#### Livestock and breeds:

Ovino: Manchega

### QUESO PALMERO



N.º of livestock registered	*
Litres of milk produced	*
Litres of milk processed	*
N.º of cheese factories	*
Kg of cheese produced	*
Kg of cheese marketed with D. O.	*

#### Livestock and breeds:

Caprino: Palmera

\* No data available for first year of Designation

### QUESO TETILLA



N.º of livestock registered	9.300
Litres of milk produced	16.481.700
Litres of milk processed	15.471.000
N.º of cheese factories	24
Kg of cheese produced	1.831.300
Kg of cheese marketed with D. O.	1.719.000

#### Livestock and breeds:

Bovino: Frisona, Parda Alpina y Rubia Gallega

### QUESO ZAMORANO



N.º of livestock registered	62.000
Litres of milk produced	2.159.531
Litres of milk processed	2.159.531
N.º of cheese factories	16
Kg of cheese produced	416.898
Kg of cheese marketed with D. O.	416.799

#### Livestock and breeds:

Ovino: Churra y Castellana

### QUESUCOS DE LIÉBANA



N.º of livestock registered	836
Litres of milk produced	932.508
Litres of milk processed	824.228
N.º of cheese factories	8
Kg of cheese produced	109.707
Kg of cheese marketed with D. O.	87.766

#### Livestock and breeds:

Bovino: Tudanca, Parda Alpina y Frisona. Ovino: Lacha. Caprino: Pirenaica y Picos de Europa

### RONCAL



N.º of livestock registered	60.645
Litres of milk produced	3.410.000
Litres of milk processed	2.914.566
N.º of cheese factories	5
Kg of cheese produced	466.330
Kg of cheese marketed with D. O.	451.840

#### Livestock and breeds:

Ovino: Rasa y Lacha



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