



Hispanic Cheese

Reference Guide

TABLE OF CONTENTS

Introduction	4
Common (and Sometimes Confusing) Names	
Queso Blanco	6
Queso Fresco	7
Hispanic Cheeses at a Glance	8
The Caribbean	
Cuba	
Patagras	10
Dominican Republic	
Queso de Freir	10
Puerto Rico	
Queso de Crema	10
Queso de Hoja	11
Queso del Pais	11
Quesa de Prensa	12
Queso de Puna	12
Central America	
Criollo Cheese	13
Criollo Cheese Made on the Farm	13
Queso Crema, Criollo	14
Queso Blanco, Criollo Corriente	14
Queso Santa Barbara	14
Costa Rica	
Maduro	15
Palmito	15
Suero	15
El Salvador	
Coyotlio	16
Duro Blando	16
Majado	16
Petacones	16
Prunera	16

Honduras

Quesillo de Honduras	17
----------------------	----

Mexico

Añejo	17
Asadero (Oaxaca)	17
Cotija	18
Panela	19
Queso de Bola	19
Queso Chihuahua	19
Queso Manchego	20
Ranchero	20
Sierra	21

South America

Argentina

Crema	22
Gaucho	22
Goya	22
Quartirollo	22
Reggianito	25
Sardo	29
Tafi	29

Bolivia

Altiplano	29
Quesillo	29
Queso Benianco	30

Brazil

Catupiri	31
Coalhada	31
Quartirollo	32
Queijo de Coalho	32
Queijo de Manteiga	32
Queijo Minas	32
Queijo Prato	33
Reino	35
Requeijao	35

Chile	
Chanco	35
Chanco Produced in Factories	36
Mantecoso	37
Quesillo	37
Queso Andino	38
Colombia	
Bernian	38
Pera	38
Ecuador	
Quesillo	39
Queso Andino	39
Paraguay	
Campeño	39
Paraguay Cheese	39
Quesillo	39
Peru	
Mantecoso	40
Queso Andino	40
Requeson	40
Uruguay	
Colonia	40
Yamandu	41
Venezuela	
Cauajada	41
Guayanes	41
Llanero	41
Queso de Cavallo	42
Queso de Cincho	42
Queso de Mano	43
Other	
Filled Cheese	43
About the Original Author: Jim Path	44
References	44



INTRODUCTION

In restaurants across the United States, dishes featuring Hispanic or Latin American cheeses have become staples.

These versatile cheeses come in a variety of flavors and textures suitable for many uses.

Yet there are types of Hispanic cheeses available today in the United States that many Americans have never heard of, and they represent a new product opportunity for U.S. cheesemakers and food manufacturers. With their wide variety of functionality and flavors, they have the potential to add new appeal to cheese-based entrees, snacks, appetizers, side dishes and salads.

The major difference between Hispanic cheeses and American and European varieties is that Hispanic cheeses are either fresh or “dried.” European and American cheeses may be fresh or “aged.” Hispanic “dried” cheeses get their texture from being salted, pressed and dried rather than aged over time.

Some Hispanic and Latin American cheeses are made in factories, but for the most part they are made on farms. The cheese is made from whole, partly skimmed or skim milk, or from whole milk with cream or skim milk added. Much of the cheese is eaten fresh, within a day or two after it is made, either as is or after being pressed. Some of the pressed cheese is held for periods ranging from two weeks to two months or more.

The names of these cheeses can be confusing, since varieties that are virtually identical can have different names in different countries. For example, cottage-type cheese made with fresh, skim milk is called Queso de Puna in Puerto Rico and Queso Fresco (fresh cheese) in El Salvador and Venezuela. In Venezuela it is also known as Queso de Llanero, Queso de Maracay, Queso de Perija and other names to denote the place of manufacture. Fresh cheese made from whole or partly skimmed milk in Mexico is called Panela. Cheese made from whole or partly skimmed milk and pressed is called Queso de Prensa (pressed cheese) in El Salvador, Mexico, Venezuela and Puerto Rico.

In Puerto Rico, these cheeses are called Queso del Pais or Queso de la Tierra, and in Colombia the variety is called Queso Estera.

In Costa Rica, cheese made from skim milk and pressed but not cured is called Queso Descremado (skim milk cheese) or Queso Huloso (rubber cheese). Cheese made from whole milk, heavily salted, pressed, cured for one or two months and used as a grating cheese is called Queso de Bagaces. And cheese made from whole milk, salted and pressed lightly, and then cured for two weeks to two months is called Queso de Crema (cream cheese).

The cheeses differ in size. For example, in Panama, Queso Blanco is pressed in 1-pound molds; in Colombia, Queso Estera ranges in weight from 5 to 50 pounds; in Costa Rica, Queso Descremado and Queso de Bagaces are pressed in 100-pound square blocks, while Queso de Crema is pressed in 1- to 1.5-pound molds. And in making Panela in Mexico, the curd is placed in square molds to make cheese weighing 0.5 pound.

What follows is a primer on some of the more common types of Hispanic and Latin American cheeses and where they are made. This guide is adapted from one originally prepared by Jim Path, a now-retired cheese outreach specialist with the Wisconsin Center for Dairy Research at the University of Wisconsin-Madison.

COMMON (AND SOMETIMES CONFUSING) NAMES

Queso Blanco

Background/Description: Queso Blanco is a fresh white Latin American cheese that is popular in Puerto Rico and Venezuela. In Mexico, Venezuela and El Salvador, the same cheese is called Queso de Prensa, or pressed cheese.

Queso Blanco is a rindless, crumbly cheese that is salty and slightly acidic in flavor. Its body and texture resemble that of a young, high-moisture Cheddar, and it has good slicing properties, but does not melt well under high heat. It is usually consumed fresh, but can be dried. The high salt content, usually 5% or more, retards or prevents curing; however, when the cheese is held, it develops a strong flavor and odor as it dries and may be used as a grating cheese. Some of the cheese is smoked for two to three days, which darkens the surface of the cheese and dries it somewhat, in addition to giving it a smoked flavor. This cheese may also be ripened for two to three months in cool conditions. Queso Blanco is available in many sizes, but is most commonly found at retail in 8-, 12- and 16-ounce packages.

Production: Queso Blanco is produced by adding food-grade acid (acetic, citric, vinegar or citrus juice) to hot milk, or by coagulation with rennet. The method varies in different countries and on different farms in the same country because this product lacks a standard of identity.

Specific make procedures may vary among manufacturers, but in general the formula is as follows: Fresh, whole milk is preheated to about 176°F (80°C) and curdled by adding a food-grade acid. After 30 minutes, the curd forms, and subsequent stirring prevents excess matting and removes excess whey. Salt is then added until it is uniformly incorporated. The curd is pressed in forms overnight at room temperature. The forms, or cheese boxes, are various sizes, usually square or round, in steel hoops or cloth-lined wooden frames with perforated bottoms.

Queso Fresco

Background/Description: “Fresh cheese” is another common Hispanic/Latin American variety. In Puerto Rico, it is called Queso Fresco. In El Salvador, Mexico and Venezuela, this cheese is called Queso de Puna, or regionally, Queso de Maracy. It is made in the United States under the name Queso Fresco, or even “Spanish cheese.” Like Queso Blanco, it does not have a standard of identity and can therefore be made differently by manufacturers.

Queso Fresco is a soft, fine-grained, fresh cheese. It is most often crumbled on salads and tortillas. It is available in many sizes, but most commonly found at retail in 8-, 12- and 16-ounce packages.

Production: In general, whole milk is pasteurized and then cooled to 90°F (32°C). Instead of acid, lactic acid starter and rennet are added to the milk to form the curd. After 35 to 40 minutes, the curd forms and it is cut into cubes. The whey is then allowed to drain from the cut cubes for 20 to 25 minutes. The cubes are then moved back and forth to separate the whey and dry up the curds. The curds are salted and put into appropriate forms. After pressing, this cheese may be called Quesa de Prensa. The cheese is ready to eat the following day or can be placed in a warm area for two to three months of ripening.

HISPANIC CHEESES AT A GLANCE

NAME	COUNTRY OF ORIGIN	TYPE
Altiplano	Bolivia	Soft, fresh
Añejo	Mexico	Aged
Asadero (Oaxaca)	Mexico	White
Bernian	Colombia	Piquant
Campesino	Paraguay	Fresh
Catupiri	Brazil	Dessert
Chanco	Chile	Semi-hard
Coalhada	Brazil	Creamy
Colonia	Uruguay	Semi-hard
Cotija	Mexico	Moist/hard
Coyotlio	El Salvador	Pressed
Crema	Argentina	Soft, fresh
Criollo	Central America	Hard
Criollo Corriente	Central America	Firm but moist
Cuajada	Venezuela	Creamy
Gaúcho	Argentina	Semi-hard
Goya	Argentina, Uruguay	Hard, like Asiago
Guayanes	Venezuela	Semi-hard
Llanero	Venezuela	White, crumbly
Maduro	Costa Rica	Semi-hard
Majado	El Salvador	Hard, pressed
Mantecoso	Chile, Peru	Semi-hard, like Port-Salut
Palmito	Costa Rica	"Pasta filata" type
Panela	Mexico	Fresh, unripened
Paraguay cheese	Paraguay	Fresh, unripened
Patagras	Cuba	Hard, like Gouda
Pera	Colombia	Hard, spun-curd
Petacones	El Salvador	Hard, pressed
Quartirolo	Argentina	Soft, sweet
Queijo de Coalho	Brazil	Semi-hard
Queijo de Manteiga	Brazil	Processed
Queijo Minas	Brazil	Semi-hard
Queijo Prato	Brazil	Semi-hard, Gouda-like
Quesillo	Various	Fresh, sweet

NAME	COUNTRY OF ORIGIN	TYPE
Quesillo de Honduras	Honduras	Pasta filata
Queso Andino	Ecuador, Peru	Soft, ripened
Queso Benianco	Bolivia	Semi-hard, ripened
Queso Blanco	Various	White, crumbly
Queso Chihuahua	Mexico	Semi-hard, ripened
Queso Crema	Various	Soft, unripened
Queso de Bola	Mexico	Whole milk, like Edam
Queso de Cavallo	Venezuela	Pear-shaped
Queso de Cincho	Venezuela	Sour milk
Queso de Crema	Puerto Rico	Semi-soft, like Brick cheese
Queso de Freir	Dominican Republic	White cheese, fried
Queso Fresco	Various	Soft, fresh, fine-grained
Queso de Hoja	Puerto Rico	Pressed (leaf cheese)
Queso de Mano	Venezuela	Semi-hard, "pasta filata"
Queso de Prensa	Puerto Rico	Hard, pressed
Queso de Puna	Puerto Rico	Like cottage, but molded
Queso del Pais	Puerto Rico	White, semi-soft, pressed
Queso Manchego	Mexico	Lightly ripened, pressed
Queso Santa Barbara	Central America	Grating cheese
Ranchero	Mexico	Fresh
Reggianito	Argentina	Hard, like Italian Grana
Reino	Brazil	Hard, like Portugese Serra
Requeijao	Brazil	Whey type
Requeson	Peru	Whey type, like Ricotta
Sardo	Argentina	Hard, like Romano
Sierra	Mexico	Pressed, firm
Suero	Costa Rica	Soft, from buttermilk
Tafi	Argentina	Semi-hard
Yamandu	Uruguay	Semi-hard



Cheeses of **THE CARIBBEAN**

CHEESES OF THE CARIBBEAN

CUBA

Patagras

Background/Description: Patagras is a hard cheese made in Cuba from pasteurized whole or slightly skimmed cow's milk. Gouda and Patagras are almost identical and are made by a similar process. Patagras is shaped like Gouda, weighs from 7 to 9 pounds, is coated with red wax and usually is wrapped in a cellophane-type wrapper. It is considered one of the best Cuban cheeses.

Production: Mesophilic lactic starters (1%), calcium chloride and potassium nitrate are added and coagulation is completed with commercial rennet in about 30 minutes at 86° to 89°F (30° to 32°C). The curd is pressed in molds for about 20 hours and then salted in brine. Patagras is waxed and ripened at a controlled temperature, 52° to 55°F (11° to 13°C). The finished product has a moisture content of 40.3%; fat, 26.0%; and salt, 3.0%.

DOMINICAN REPUBLIC

Queso de Freir

Background/Description: Queso de Freir is a type of Queso Blanco that is always fried before it is consumed.

PUERTO RICO

Queso de Crema

Background/Description: Queso de Crema is a rich, unripened, perishable cheese that resembles soft Brick cheese. It is made from cow's milk that is heavily enriched with cream and is one of the principal cheeses made in Costa Rica. It frequently is used as a substitute for butter.

Production: Whole milk is coagulated with rennet and the curd is broken up, put into forms and pressed into blocks that weigh from 1 to 1.5 pounds. It is salted with dry salt for about three days and is cured for two weeks to two months. The yield is about 11 pounds per 100 pounds of rich, whole milk.

Queso de Crema is also made in Cuba, El Salvador, Venezuela and other Latin American countries. It is especially popular in Cuba.

Queso de Hoja

Background/Description: Queso de Hoja is a cow's milk cheese made in Puerto Rico. The finished cheese is about 6 inches in diameter, 1 or 2 inches thick and has a slightly rounded top and bottom surface. When cut, the thin layers of curd are distinct and look like leaves resting on one another—hence the name Queso de Hoja (leaf cheese).

Production: Fresh milk is coagulated, the curd is cut into blocks about 6 inches square and 2 inches thick, and part of the whey is drained off, which can take several hours. Then the blocks of curd are immersed in water or whey at a temperature of 150°F (65.5°C), which forms a tough layer of curd on the outside of the blocks. The blocks are placed on a table and pressed (flattened) with a broad wooden paddle. Salt is sprinkled on the surface, and each piece of curd is folded in layers, wrapped in cloth and squeezed to force out the whey.

Queso del Pais

Background/Description: Queso del Pais (cheese of the country, native cheese), also known as Queso de la Tierra, is a white, pressed, semi-soft, perishable cheese made in Puerto Rico for local consumption. It is made on farms from surplus milk and also in several factories. It is a cylindrical, flat cheese and is made in three general sizes:

1. Small, which is usually made in farm homes and is 3 or 4 inches in diameter and 2 to 3.5 inches thick and weighs 1 to 2 pounds.
2. Medium, which is 5 to 6 inches in diameter and 4 to 5 inches thick and weighs 3 to 5 pounds.
3. Large, which usually is made in factories and is 7 to 10 inches in diameter and 6 to 8 inches thick and weighs more than 5 pounds.

Queso del Pais usually is eaten fresh, in which case it is soft, like cottage cheese. But sometimes it is cured, in which case it is hard and somewhat bitter.

Production: The method of making Queso del Pais differs in different localities. In one method, which is like that used in making Queso de Prensa, neither starter nor rennet is used, and the curd is coagulated with heat and acid and is neutralized with sodium bicarbonate. (See *Queso de Prensa*.)

In another method, which is used in many farm homes where there is a surplus of milk, fresh, warm milk is put into a vat and coagulated either with rennet extract or with a homemade extract prepared by adding calf stomach to warm whey. The coagulated curd is worked by hand and salted and then is put into metal hoops to drain and acquire the desired shape. About a pound of cheese is obtained per gallon of milk.

Queso de Prensa

Background/Description: Queso de Prensa is a hard cheese made in Puerto Rico from whole milk.

Production: The method of making it differs in different localities. In one method, whole milk is put into a vat to ripen at room temperature for about six hours, and rennet is added to coagulate the milk. The curd is broken by hand or with a curd breaker. Part of the whey is removed and the curd is transferred to a drain table and cut into small pieces. Then it is put into wooden forms and salt is added, either by mixing it with the curd or by sprinkling it on top. The curd is then covered and pressed lightly. The pressed cheese is removed from the forms and placed on a rack. It is eaten either while fresh or after curing for two or three months. The cheese blocks are about 11 inches long, 5.5 inches wide and 3 inches thick, and they weigh about 5 pounds.

In another method, whole or slightly skimmed milk is put into a vat, heated to 180°F (82°C) and acetic acid (diluted with water) is added. The mixture is stirred until the curd is coagulated and then sodium bicarbonate is stirred in to neutralize the acid. The curd is transferred to another container, cut into small pieces and salted. Then it is placed in a circular, tinned metal form, covered with a circular board that fits over the form and pressed for a day. It is turned a few times during the day. The cheese pieces, which may be eaten either while fresh or after ripening, weigh from 2.5 to 10 pounds.

Queso de Puna

Background/Description: Queso de Puna, which is made in Puerto Rico, is like cottage cheese except that it is molded in forms.

Production: The milk is coagulated with rennet, the whey is drained off and salt is mixed with the curd as it is worked thoroughly or kneaded by hand. Then the curd is put into hoops about 5 inches in diameter, and it is held in the hoops without pressure for two or three days until it is about 1.5 inches thick and firm enough to retain its shape. It is eaten fresh.



Cheeses of **CENTRAL AMERICA**

CHEESES OF CENTRAL AMERICA

Criollo Cheese

Background/Description: In Central America, the most common dairy products are: fresh white cheese (Queso Blanco), hard cheese, cream cheese, fresh cream, sour cream, churned butter (mantequilla amarilla) and sour cream sack-drained butter (mantequilla escurrida).

Production: For farms to make products that keep better under “homemade” conditions and in a tropical environment, local producers have had to modify the classic methods of production. This entails salting the curd with large amounts of salt (5% to 6%) and at the same time reducing the moisture content of the cheese. With the exception of Queso Crema, which has a soft, plastic texture, the other fresh and hard varieties generally have a grainy texture. These varieties of cheese are common in the countries of South America, and with slight variation of texture they are known by various local names.

Criollo Cheese Made on the Farm

Background/Description: Usually the fresh and dry Criollo cheeses are consumed grated or simply in fine crumbs, with beans, rice and tortillas. The cheese has a very mild flavor and is very salty when fresh. Old cheese sometimes has a stronger flavor and odor. Old cheese is extremely hard.

These cheeses are made with pasteurized milk in some dairy plants, and the salt content cannot be lowered appreciably because the cheese has to be marketed under tropical temperatures (79°F/26°C and more) and local preference makes it necessary to manufacture a strongly salted cheese.

Production: For this product, fresh, warm, raw milk is put into a wooden vat known as a “canoa” and curdled with commercial rennet in about 45 minutes. The coagulum is then either cut with a long knife crossways or broken by hand and stirred for 20 to 30 minutes. After letting the curd settle for 20 to 40 minutes, 5% of salt (in relation to the milk) is added and the curd is left in this briny whey until the next morning. The whey is then drawn off and the curd is pressed in the bottom of the vat and afterwards ground. More salt is added to bring the salt content of the curd up to 6% or 7%.

After this second salting, the milled curd is packed tightly into molds (normally about 12 inches square, or 30x30 cm, and about 8 inches/20 cm thick) and pressed. The fresh cheese has 40% to 44% moisture and is sold within a week. The drier cheese has 29% to 35% moisture and is left to mature; sometimes it is stored in dry salt. The very hard cheese has 27% to 32% moisture.

On some farms, before the second salting, the pressed curd is cut in slabs of about a half-inch thickness and smoked for one or two days. Alternatively, the cheese is smoked after it is taken out of the press. There is no standard method of production and in some areas the curd is put into molds without grinding; the cheese then has a more compact texture.

Queso Crema, Criollo

Background/Description: Queso Crema is an unripened, soft, high-fat cheese.

Production: The method used for this product starts with heating milk with 4% fat to 88° to 89°F (31° to 32°C). Then up to 2% starter, one tablet of color per 100 liters of milk, 2 to 4 grams of potassium chlorate and 2.5 grams of rennet are added. The milk should coagulate in 45 minutes. The coagulum is then cut into 2 cm pieces. After adding 10% salt, the mixture is stirred for a half hour and then left to sit for another half hour.

When the pieces of curd sink to the bottom, heat is applied slowly to raise the temperature by 3° to 6°F (2° to 3°C) and the mixture is stirred gently. The proper consistency is reached when the pieces of curd do not break when dropped 1 meter. One-third of the whey is then extracted, and the curd is poured into heated molds. The cheese is not pressed; instead, it is refrigerated and turned after an hour. The time from cutting to pouring into molds is usually about two hours. The moisture should then be about 62%, the fat content 50% to 55% and the salt content 4%.

Queso Blanco, Criollo Corriente

Production: To milk with 0.8% fat content, add 0.5% starter, calcium chloride (where necessary), half a tablet of color per 100 liters and the normal amount of rennet to coagulate the milk in 45 minutes at 89.6°F (32°C). The coagulum is then cut into 0.5 cm pieces and the mixture is stirred for 20 to 30 minutes. The curd is left to settle for 30 minutes. The whey is completely removed, the curd is milled and salt is mixed in. The next day the curd is milled again, put into molds and pressed. The cheese contains 40% to 43% moisture and 5% to 6% salt.

Queso Santa Barbara

Background/Description: This is similar to a grating cheese but is made without high-temperature scalding.

Production: Milk of 1.9% fat is adjusted to 88°F (31°C) and 1% starter, and 10 grams of calcium chloride and one tablet of color per 100 liters are added. The normal amount of rennet is used to coagulate the milk in 45 minutes. The coagulum is cut into 5 mm pieces and stirred for 10 minutes. It is then stirred for another 20 minutes, with the temperature being increased to 93°F (34°C). The whey is drained off completely and the vat is left to sit for 30 minutes.

The mass of curd is then cut into blocks, left for one to two hours and then ground. Salt is incorporated at a rate of 2.5% to 3% of the curd. This is left in the vat until the next day, then ground finely, put into molds and pressed for 24 hours. After ripening for three or four months at ambient temperature, the cheese will have a moisture content of 22% to 27%. It is then grated and packed in plastics bags.

COSTA RICA

Maduro

Background/Description: This is a typical Costa Rican semi-hard cheese.

Production: After whole milk is pasteurized, starter is added along with enough rennet to produce a coagulum ready for cutting in 45 minutes. After stirring for a short time, some of the whey is removed and replaced by water. When the curd is sufficiently firm, more whey is removed and brine is added. After a few hours, the mixture is ladled out and the curd is poured into molds, pressed and ripened for about 30 days at 50°F (10°C). The cheese then will contain 42% to 45% moisture and 27% to 30% fat. The yield is 13%.

Palmito

Background/Description: Palmito is a “pasta filata”-type cheese made from raw whole milk.

Production: Whey from the previous day is added to the milk before commercial rennet is added to produce coagulation, which takes about one hour at ambient temperature. Most of the whey is removed from the vat without pressing the curd. While stirring, hot water is added on top of the curd and it is heated until the temperature of the curd reaches 158° to 180°F (70° to 82°C), when threads begin to form. Stirring and heating are then stopped and the mass of curd is stretched and kneaded into long plaits/strips and rolled into spherical or oval cheese balls, which are salted in brine for six to eight hours.

Suero

Background/Description: This soft variety is made from buttermilk.

Production: Starter, and sometimes rennet, is added to give an acidity of about 0.60% in 17 hours. The curd is then poured into bags and held at 50°F (10°C) until sufficiently dried out. Salt and flavoring are added, and the cheese is packed into small boxes. The average analysis is: moisture, 78% to 83%; fat, 0.5% to 1%; protein, 9.5% to 12%; ash, 1.8% to 2.1%; and salt, 1.2% to 2%.

EL SALVADOR

Background/Description: Many soft cheeses—cream cheese and “fresh cheese”—are made in El Salvador. Sometimes these are given special names. They may be made from whole milk, skimmed milk or milk to which cream has been added. The latter contains 35% fat and resembles Petit Suisse.

The cheese industry here uses simple methods of manufacture, and there are five main varieties, all made by similar methods.

Coyotlio

This is a coarse, piquant, pressed cheese that is washed with brine and coconut milk during a three-week ripening period.

Duro Blando

This is the same type of cheese as Majado (*see below*) made with whole milk

Majado

The production method is similar to that for Petacones (*see below*), but 2% fat milk is used. The curd is salted at 7%, and the cheese is pressed, with pressure increasing for six days.

Petacones

Background/Description: This is a hard cheese made from whole milk colored with an extract of the berries of a local shrub like annatto.

Production: Raw milk is coagulated using rennet tablets without starter in a wooden vat at about 82°F (28°C). The coagulum is cut and the whey is removed by hand. The broken-up curd is salted at a level of 8% and packed into wooden molds. The cheese is then put to press and the pressure increased for up to 12 days, when it is ready for sale.

Prunera

Background/Description: Prunera is a hard cheese made from a colored whole milk by a process similar to that for Petacones.

Production: The cheese is pressed with increasing pressure for two days and ripened for three months at 68° to 90°F (20° to 32°C), according to the time of the year. A high humidity is maintained by the use of bowls of water. Two weeks after manufacture, the cheese is paraffin-waxed.

HONDURAS

Quesillo de Honduras

Background/Description: Made from standardized cow's milk, Quesillo de Honduras is a cheese of the "pasta filata" type that is made mainly by small-scale cheese producers.

Production: Milk is standardized according to the fat content desired in the end product. Cheese whey is used as starter and coagulation with commercial rennet takes place when heated at 86° to 89°F (30° to 32°C) for 10 to 15 minutes. Whey is drained off and the curd is pressed and then broken up and crumbled. Salt is added and the curds are heated directly until they are soft enough to withstand stretching in a uniform manner when they are made into the final shape.

MEXICO

Background/Description: There are several varieties of Mexican cheese, including Queso Chihuahua, which is similar to Cheddar; Manchego; and fresh cheeses such as Queso Crema, Queso Doble Crema, Queso Sierra and Queso Asadero (Oaxaca). Originally these cheeses had been made on farms, but they are now made in plants.

Mexican cheese plants today pasteurize and have some equipment with new technology. And cheesemakers are becoming more involved and are looking for better ways of making cheese instead of relying on old techniques. Oaxaca and Asadero are as popular in Mexico as Mozzarella is in the United States. The main difference is they are braided or rolled up in very long strings.

Añejo

Background/Description: Queso Añejo translates as "aged" or "old cheese." This is probably the most popular cheese in Mexico and may be modified or decorated in various ways. For example, it may be used in enchiladas with red chili powder and sold as Queso Enchilada. A considerable amount of cheese of this type is marketed in Mexico City. It is served with enchiladas and other native dishes.

Production: Añejo is made from skim milk and is ripened for as long as eight months. The matured cheese is rather white in color and crumbly, or short-textured. The cheese is round in shape and weighs 5 to 10 kg. It is sometimes packed in jute bags, each of which holds six or eight cheeses, for shipment.

Asadero (Oaxaca)

Background/Description: This may be regarded as a "toasting cheese," and the name Asadero means literally "suitable for roasting." It melts easily when heated. Asadero is also called

Oaxaca, which comes from the the fact that it was first produced in the state of Oaxaca. It is now made in most of Mexico. The white cheese is made from whole milk.

Production: Milk is pasteurized at 140° to 149°F (60° to 65°C) for 30 minutes. Then rennet is added to coagulate the milk in about 40 minutes at 95°F (35°C). The coagulum is cut into 2 cm cubes and the whey is drained without pressing. The curd is worked in hot water, close to melting temperature, then kneaded and stretched before being braided. The hot curd is cut and braided into various sizes, ranging from 8 ounces to 11 pounds in weight. It is salted in brine or directly by applying dry salt.

Cotija

Background/Description: Cotija is also known as Queso Anejado, or “aged cheese,” and can be either moist, like Feta, or hard, like Parmesan.

Production—Moist Version: To produce the moist version, milk with a fat content of 29.9% is poured into standardization tanks and agitated. Calcium chloride is added (2.2 pounds per 26.42 gallons) and the milk is heated to a temperature of 95° to 97°F (35° to 36°C). Previously, Cotija was made from raw milk, but now it is pasteurized, either via the batch or HTST (high temperature short time) method. The milk is then homogenized at a pressure of 120 kg/cm² at 158°F (70°C). Then it is backed off to the balance tank. To set, mesophilic and some thermophilic cultures are added. Next, the milk is transferred from the balance tank to vats where rennet is added. It is then heated to 98.6°F (37°C) and held for 90 minutes until the curd has been formed and pH reaches 5.

Cutting then begins with 3/8-inch knives. After almost all of the whey is eliminated from the vat, salt is added at 2.89 pounds per 264 gallons by hand or mixer and mixed well. Molding is completed in 24 hours. It is ripened for four days at 59° to 68°F (15° to 20°C), then three days at 41° to 45°F (6° to 8°C). Then the cheese is stored at 41° to 46°F (6° to 8°C) and is ready to sell.

Production—Hard Version: In the hard version of Cotija, milk is heated close to boiling temperature (above 190°F/90°C) or between 149° and 158°F (65° to 70°C) for 30 minutes. Lactic starter (2%), calcium chloride and a natural coloring substance of vegetable origin called archiote are added. Coagulation is obtained with rennet in about 40 minutes at 90° to 95°F (32° to 35°C). The curd is cut until it is the size of wheat/rice grains and it is allowed to settle. Whey is drawn off and salt is added to the curd before molding and mechanical pressing. The cheese is ripened for a minimum of 100 days under controlled temperature and may be kept for up to a year in dry, cool premises.

Panela (also “Queso Panela” or “Queso Canasta”)

Background/Description: Panela is a fresh, unripened cheese made from whole or partly skimmed cow's milk. A mixture of sheep's and goat's milk may also be used.

Production: Milk is pasteurized and can be added to rennet as whole milk or as partially skimmed, standardizing to 2.6% fat. Acidity should be around 0.13% to 0.18%. Calcium chloride is then added at 1 to 1.5 oz. per 26.42 gallons.

To set the curd, it is heated to 86° to 104°F (30° to 40°C). For a soft cheese with high moisture content and good cut characteristics, lower temperatures are used. The curd is then cut in big grains (1 square inch) and agitated very slowly for 10 to 15 minutes. About half of the whey is then drained while agitation continues. Salt can then be added directly or diluted in water first, about 2.2 pounds per 26.42 gallons, then agitated for five to eight minutes. Typically, baskets are used for molding—hence the name “queso canasta” or “basket cheese.”

Queso de Bola

Background/Description: Queso de Bola, which is a whole-milk cheese similar to Edam, is made on a small scale in Mexico for local consumption. It is spherical and is cured for about three months.

Queso Chihuahua

Background/Description: Chihuahua, whose name is trademarked in the U.S., is a semi-hard, ripened cheese that is made from whole cow's milk.

Production: After pasteurization at 140° to 149°F (60° to 65°C) for up to 30 minutes, lactic starter (2%), calcium chloride and vegetable coloring substance are added. Coagulation with rennet requires 30 to 45 minutes at 95°F (35°C). The coagulum is cut into 5 cm cubes and salted before it is transferred to molds. Mechanical pressing is applied and the curd is then packed in plastic bags and ripened under controlled temperature (41°F/5°C) for about 30 days.

Queso Manchego

Background/Description: Queso Manchego is a lightly ripened cheese made exclusively from cow's milk. Its main characteristic lies in its cooked curd, which gives peculiar melting properties to the cheese when it's exposed to mild heat. The product undergoes a slow ripening process, even after it has been packaged, and it can be sold when the product reaches a 40% water content. Normally the fat content varies from 30% to 45%, and some fat may come from vegetable sources.

Production: The most common method used by small industries to produce Manchego involves a preliminary step of fat standardization to 1% to 1.5% through the addition of powdered milk and vegetable fat. This step is followed by normal pasteurization. The milk is then cooled for the subsequent inoculation with 0.5% of lactic acid culture (*Streptococcus lactis* and *S. cremoris*).

At this point, some manufacturers add calcium chloride and a coloring agent to satisfy regional preferences for color and texture. Acidity is allowed to reach 0.25% before adding enough rennet to fully coagulate the milk in about 30 minutes. The curd is then cut into small pieces, allowed to drain as much as possible and finally is cooked at 100° to 104°F (38° to 40°C) for 15 minutes with gentle agitation.

A light pressing is carried out after the draining and salt is added up to a 1% to 2% level to attain the final desirable flavor. The cooked curd is then cut into small cubes and transferred into traditional wooden molds, where it undergoes a final moisture reduction before being packaged for the market.

Rancharo

Background/Description: Also known as Queso Fresco, Rancharo is a soft, mild, white cheese that can be easily crumbled by hand. The name "Rancharo" is trademarked in the United States.

Production: Standardization must be adjusted to 3.9% of fat. Milk is pasteurized using the HTST method. A starter of 0.25% to 0.5% mesophilic cultures is added to the milk and it is kept at 95°F (35°C). Rennet and calcium chloride are then added in the same amounts as Panela (see above).

After 20 to 30 minutes, the milk coagulates and the curd is cut. After cutting, the curd is stirred slowly for five minutes to avoid breaking curd cubes. It is then heated to 102.2°F (39°C) for 30 minutes. After the whey is drawn off, the curd is placed in cloth bags and hung at refrigeration temperature overnight to improve syneresis and enable it to reach desired acidity.

When the whey has been totally removed, the curd is put through a mill similar to ones used for hamburger meat. Following milling, salt is added to the mass and mixed at a rate of 2.2 pounds per 26.42 gallons. The molding is an important stage for this cheese. The mass is formed by hand into a metal ring. The cheese is then stored for 24 to 48 hours at refrigeration temperatures.

Sierra

Background/Description: Sierra cheeses are different kinds of products made by traditional techniques. Their relative importance, however, is rather small when compared with fresh cheeses.

Production: Sierra cheeses can be made by precipitating the curd with the aid of an acidifying agent, normally diluted acetic acid, at concentrations from 0.5% to 1.0%, depending upon the original strength of the acid.

Normally, no renin extracts or commercial preparations are employed as coagulants in curd formation. The addition of calcium chloride at levels of up to 0.2% is common practice in some commercial and semi-commercial operations and promotes clotting. Afterward, the curd is allowed to stand for a short period before being cooked at 136° to 140°F (58° to 60°C) very quickly. It is then allowed to stand for a short time before the whey is removed. Salting (4%) follows whey removal and the curd is then transferred to the presses, where it is pressed under mild heat for 10 hours or more. The pressed curd blocks are allowed to stand in cold stores for one or two days before being packaged. Sierra cheeses produced in this manner have a characteristic firm texture and a mild flavor.



Cheeses of **SOUTH AMERICA**

CHEESES OF SOUTH AMERICA

ARGENTINA

Crema

Background/Description: Crema is a fresh, soft cheese that is ripened for about a week. It is made with cow's milk and contains 55% moisture.

Gaúcho

Background/Description: Gaúcho is a semi-hard cow's milk cheese made from skimmed milk.

Goya

Background/Description: Goya is made both in Argentina and Uruguay. It is a hard, ripened cheese that resembles medium-cured Asiago. It is made from whole cow's milk.

Production: Milk is pasteurized at 158° to 161°F (70° to 72°C) for 15 seconds and cooled to renneting temperature, about 89°F (32°C). About 3% of fermented whey is added as starter. Calcium chloride is added before coagulation, which is achieved in 15 to 20 minutes with powdered rennet.

The coagulum is then cut in small grains of 0.5 cm. At the same time, the temperature is raised to 120°F (49°C) in about 20 minutes and this temperature is maintained for 30 minutes, the curd being stirred continuously. The curd is pre-pressed and subsequently molded in cylindrical molds. It is pressed for five hours and turned over every hour; each time, the pressure is increased. The cheese is salted in brine at 53°F (11.6°C) for six days and cured for 90 days at 57° to 59°F (14° to 15°C).

Quartirolo

Background/Description: This is a soft, sweet and fast-ripening cheese that originated in Lombardy, Italy. The cheese is consumed mainly as a dessert, alone or combined with sweet jellies. It is also used as an appetizer and in pizzas and sandwiches to a lesser degree. It is classified within a group together with Taleggio and Crescenza. The word "Quartirolo" comes from the Lombard dialect and literally refers to the short period of the fourth cutting of the grass and its conversion into hay or direct consumption by the animals. Despite its name, production of Quartirolo is now carried out year-round in Italy and Argentina, thanks to advances in technology.

The Argentina Food Code defines Quartirolo (Cuartirolo) cheese as follows: "A fresh product, fatty, made with whole or standardized milk, acidified by lactic bacteria cultures and coagulated by rennet and/or specific enzymes."

The following characteristics are also established for Quartirolo cheese:

- Moisture: Between 45% and 55%
- Mass: Uncooked, molded, pressed, salted and ripened
- Paste or body: Solid, somewhat elastic, soft, slightly acid-paste, mild flavor, pleasant; uniformly yellowish, rind slightly consistent, whole, smooth or rough
- Form: Cylindrical or square, flat
- Ripening time and weight: 20 days minimum for cheese weighing less than 2.5 kg (5.5 pounds) and 30 days minimum for cheese weighing between 2.5 kg and 5 kg (5.5 and 11 pounds)

When the fat content in dry matter reaches a minimum of 50%, the cheese can be called Cremoso (creamy). Generally the finished cheese has a square form 22 to 24 cm (8.7 to 9.5 inches) long and 6 to 7 cm (2.4 to 2.8 inches) high, weighing between 3 and 4 kg (6.6 and 8.8 pounds), and moisture is 50% to 55%.

Production: Traditionally Quartirolo has been produced with raw, unpasteurized whole milk containing a spontaneous microflora. In this procedure, milk temperature is taken up to 68° to 86°F (20° to 30°C) and is elaborated with or without natural lactic starters. When it is elaborated without starters, it is kept between 71.6° and 86°F (22° and 30°C) for a relatively long period to allow lactic microbial multiplication.

If a natural lactic starter is used, this is added to the milk in a proportion of 1% with an acidity of 0.55% to 0.60%, at a temperature of 93° to 96.8°F (34° to 36°C), which favors the development of *Streptococcus* and some *Lactobacillus*. Ideally the milk should not exceed 0.01% to 0.015% of its initial acidity, which is achieved in a short time with normal milk. Rennet is added afterwards to coagulate the milk in about 10 to 15 minutes at 93° to 96.8°F (34° to 36°C).

Once coagulation has taken place, the curd is cut in criss-cross form with a distance between each cut of 5 cm (2 inches). Soon a clear whey appears, and it is allowed to settle for a few minutes. Cutting then resumes with a standard manual or mechanical harp. The curd is allowed to settle for 10 minutes while being stirred slowly with a paddle to avoid breakage. At this point the curd tends to join and the whey drains away from curd. This can take 15 to 20 minutes.

When the whey has been extracted, the curd is salted at a rate of 6 kg (13.2 pounds) of sodium chloride per 1,000 liters of original milk, stirring slowly for a few minutes. The curd is then put into molds, wrapped in muslin and pressed softly for two or three hours. Afterward, the cheese is turned upside down, the muslin is changed and it is stored at 53.6° to 59°F (12° to 15°C) until the following day.

The cloths and the molds are then taken off and the cheese is left on shelves at that temperature. It is turned every 12 hours during

the first days until the rind of the cheese starts to take on a yellow cream color and softens. After 15 days the cheese is ready for consumption and it is wrapped in waterproof paper. Its yield is about 12%.

A similar procedure to the one above is used with pasteurized milk in many cheese factories, especially small ones. A typical procedure is as follows: A good quality, pasteurized milk is hygienized, regulating its fat content to 2.8% to 3.0% for standard Quartirolo and 3.4% to 3.5% for Cremoso (creamy) Quartirolo cheese. Vats of up to 5,000- to 10,000-liter capacity are used. Calcium chloride and vegetable colorant are added as well.

Afterward, with the milk at a temperature of 89.6° to 93.2°F (32° to 34°C), 1% of lactic starter is added. The starter is usually a combination of *Streptococcus thermophilus* and *Lactobacillus bulgaricus*. Starter is prepared in the usual form on selected fluid-reconstituted dry skimmed milk or special substrates. After five minutes, rennet, usually liquid and of bovine origin, is added to achieve coagulation within 10 minutes.

When the curd has become sufficiently consistent, it is cut softly with a harp, with wider separation between wires, in cubes of 2 to 3 cm (0.79 to 1.18 inches). Time must be allowed for a clear whey to appear and then settle. The cutting then continues with a standard manual or mechanical harp until a grain of 1 cm (0.30 inches) is obtained. The curd is allowed to settle again for 25 to 30 minutes, during which time it must be stirred occasionally and carefully.

The acidity of the whey must be increased at this point by about 0.03% to 0.04%. The whey is then withdrawn and the curd is placed in square molds measuring 20 to 24 cm (7.9 to 9.5 inches) and 11 to 12 cm (4.3 to 4.7 inches) high. Thick plastic film is placed on top of and underneath the curd instead of cloth and it is held at a temperature of 104° to 109.4°F (40° to 43°C), turned every half hour. The treatment is suspended when the whey expelled reaches an acidity of 0.65% to 0.78%. The curd is then immediately unmolded and placed in cold brine at 35.6° to 39.2°F (2° to 4°C). It is held there for three to four hours and then is removed from the brine for ripening at 46.4° to 50°F (8° to 10°C). Its yield reaches 12% average.

The cheese must be kept refrigerated until its consumption. This is important to assure its good physical-chemical, flavor and microbiological properties. It reaches its optimum at 15 to 20 days, depending on the size, form and ripening temperature.

Almost no rind is formed, so for delivery to the point of sale it is coated with white corn fecula, wrapped in waterproof paper and packed in a cardboard box.

Since the product has a short life, it does not require a sophisticated package. Nevertheless, in recent years Quartirolo cheese has been vacuum-packed by some producers.

Reggianito

Background/Description: During the second half of the 19th century and during the first years of the 20th century, Argentina received a great influx of Italian immigrants. They brought with them the manufacturing methods of Grana, a hard, granular cheese. The production of Grana cheese was developed successfully in Argentina due to the good climatic conditions and the abundance of pastures, hay and milk.

The Argentine Food Code specifies the following characteristics: "The denominations of Argentine Parmesan cheese, Argentine Reggiano cheese and Argentine Reggianito cheese are applied to products of hard paste made with standardized milk, acidified by starters and coagulated by rennet and/or specific enzymes." They should comply with the following conditions:

- Mass: Cooked, molded, pressed, salted and ripened
- Paste: Compact, consistent, brittle and fine grana; sweet taste, slightly salted; mild aroma, clean, pleasant and well developed; white to yellow color
- Rind: Smooth, consistent, well formed
- Form: Cylindrical, flat
- Fat content (on dry matter): Minimum 30%
- Moisture: As hard paste it should contain 27% to 35%
- Size, weight and ripening time:
 - Extra large: More than 30 kg (66 pounds), minimum ripening time 18 months. It is called Argentine Parmesan.
 - Large: 20 to 30 kg (44 to 66 pounds), minimum ripening time 15 months. It is called Argentine Reggiano.
 - Medium: 15 to 20 kg (33 to 44 pounds), minimum ripening time 12 months. It is called Argentine Reggiano.
 - Small: 5 to 10 kg (11 to 22 pounds), minimum ripening time six months. It is called Argentine Reggianito. (The term "Reggianito" is a diminutive of Reggiano.)

Generally the cheese at the point of consumption has a diameter of 23 cm (9 inches), a height of 14 cm (5.5 inches), a weight of about 7 kg (15.4 pounds), a moisture content of 30% and a fat content in dry matter of 40%.

Production: For all cheeses in Argentina, two operations are compulsory: 1) “hygienization” of the milk, submitting it to mechanical processes to eliminate impurities that could be contained in the product; and 2) pasteurization of the milk by systems approved by the authorities. The exception is hygienized milk that is used for the production of cheeses that are ripened for at least 60 days. In other words, producers of Reggianito cheese have the legal option of working with raw or pasteurized milk.

The milk is pasteurized or elaborated raw, and the first procedure is very beneficial to control milk with high bacterial counts. Its fat content is regulated by mechanical methods using centrifugal force at 2.4% to 2.6%, although in factories this can vary between 2.2% and 3% or more, which changes the characteristics of the typical Argentine Reggianito cheese.

Milk is then transferred to the production vats. The temperature of the milk in the vat is raised to between 86° and 91.2°F (30° and 34°C); the usual temperature is 86° to 89.6°F (30° to 32°C). Calcium chloride and sodium nitrate are then added to the pasteurized milk at a rate of about 200 grams per 1,000 liters.

The starter is then added. This is the “fermented” whey of a good elaboration of Grana cheese. The whey is raised to a temperature of 113°F (45°C) for about 18 hours, reaching an acidity of 1.2% to 1.4%. There has been a large variation in many countries in the composition of these wheys with the passage of time. Years ago they were incubated at 86° to 95°F (30° to 35°C) and a mixed flora of *Streptococcus* and *Lactobacillus* was observed, with a final acidity of around 0.65% to 0.75%.

Today the whey starter described in the first place is normal, with the almost exclusive presence of *Lactobacillus*. It is generally agreed that an acidity of 1.2% to 1.3% is adequate, although there are producers who increase the acidity to 1.5% to 1.6%. The whey starter is renewed daily, and its good microbiological and flavor conditions should be controlled closely, since it can easily contain undesirable characteristics.

The whey starter is added to the milk in the required volume to increase the acidity to 0.04% to 0.05%. This is the equivalent for a starter whey of 1.2% to 1.25% acidity of about 3% to 4% on milk volume. Immediately after the addition of the starter, the rennet is incorporated in sufficient quantity to produce coagulation in seven to eight minutes at a temperature of 86° to 89.6°F (30° to 32°C).

When the curd develops sufficient consistency, it is cut in criss-cross form with the harp and mixed softly with a paddle for a few minutes. The coagulum has to be soft but firm enough to get a clean split when a finger is inserted and raised. The curd is then

cut with a manual or mechanical harp. Once the cutting is finished, the harp is withdrawn and the agitators are placed to maintain the grains of the curd in agitation. After two to five minutes to give firmness to the grains, steam is applied. Within 15 to 20 minutes, the temperature should rise to 113°F (45°C).

The heating is then stopped while agitation continues, and this is when most of the whey is drawn off. After it is kept in this condition for about 10 minutes and once its consistency is verified and an ideal drainage is obtained, the curd is heated to 122° to 125.6°F (50° to 52°C). The heat treatment is suspended and it is agitated a few minutes more, and then the agitators are stopped completely, allowing the grains to settle at the bottom for 10 minutes. The elaboration time counting from the addition of rennet until the extraction of the mass from the vat should not exceed 70 minutes. The acidity level in the whey should rise by 0.01% to 0.02% between the moment of the first cut until curd extraction.

The curd is then enclosed in a large, coarsely woven dipping cloth in the classic procedure; it is hoisted slowly over the kettle, and the excess whey drains. The bag of curd is then lowered onto a table where the cloth is withdrawn; the mass is turned upside-down and is carefully cut in blocks. Strainer vats are also used in combination with large mechanical vats where the whey is withdrawn together with the curd by gravity. Curd is replaced in molds. The mold is cylindrical with dimensions of 17 cm (6.7 inches) high and a diameter of 26 cm (10.2 inches).

The molding operation is quick; the cheeses are then pressed softly. After 30 minutes to one hour, the cheese is released from the press, the cloths are carefully replaced in position and the cheese is pressed for another two hours. The operation is repeated, and the cheese is pressed for another four to six hours.

Usually the cloths are withdrawn and the cheese remains in its molds overnight in a fresh place, with a temperature of around 59°F (15°C). The pressing time depends on the type of press used and the pressure applied. Afterwards the cheese is weighed. The yield should be about 8.0% at the end of pressing and the form usually weighs about 8 kg (17.6 pounds). The cheese is allowed to dry for about a day before salting.

In Argentina, salting by immersion in brine is most popular. A weaker brine concentration of 25% sodium chloride by weight can be used at first, and another afterwards at a concentration of 30% to 31% by weight. Using a weak brine first facilitates the diffusion of the salt toward the middle of the cheese. A more concentrated solution is used then for a true and efficient salting. Using the saturated brine directly can create problems such as premature hardening of the rind as well poor permeability. Sometimes a combination of salting in brine followed by salting with dry salt is used.

When salt brines are used, cheese remains immersed for a period of 10 to 12 days. An immersion of a day and a half for each kilogram (2.2 pounds) of cheese is recommended. The cheese should be turned every day and always be sprinkled with dry salt on the floating surface. It is also common to see salting equipment with a deep tray that keeps all the cheese under the level of the salting brine.

The salting temperature is important; it should be about 59°F (15°C) to facilitate the penetration of the salt and control the development of the contaminating flora of the cheeses and allow the growth of the lactic flora in the interior. An acid pH of about 5.5 contributes to this effect on the proteolytic bacteria in the brine. Reggiano is salted more intensively than the Italian cheeses—about 3.0% versus 1.5% to 2.0%. This is because of market reasons and also helps to control the possible development of *Clostridium* in the cheese mass. The loss of weight due to salting is around 6.5%.

When salting is finished, the cheese is allowed to dry for one day and is then taken to the ripening room, where the temperature is between 59° and 64.4°F (15° and 18°C) and the relative humidity is 80% to 85%. The cheese is turned frequently and is kept clean by washing and scraping, although this treatment should not be abused. After six months of ripening, the cheese is ready for market, and its yield should be about 6.7%, with weight loss in the ripening room of 10% to 11%.

The cheese is sold painted black, and different products approved by the Argentine Food Code are used in this application. This is used exclusively grated for seasoning “pastas.”

Sardo

Background/Description: Sardo, or Sardo Romano, is a Romano-type cheese originally made on the island of Sardinia. Today it is also made in Argentina as well as the United States. Initially Sardo was made from ewe's milk only, but now it is made from a mixture of cow's and ewe's milk. When made from ewe's milk only, it is properly called Sardinian Pecorino Romano or, briefly, Pecorino Sardo. The aged cheese is used for grating.

Tafi

Background/Description: Tafi is the name of a cheese made in Tucuman, Argentina. Tafi is a semi-hard, ripened cheese made from raw whole cow's milk at the farmstead level. Its rind is covered with mold.

Production: Cheese whey from the previous day's manufacture is added as starter. Coagulation using rennet takes two hours at 86° to 89°F (30° to 31°C). The coagulum is cut and the mixture of curd and whey is heated to 102° to 104°F (39° to 40°C) with stirring for three hours. Most of the whey is then drained off and salt is added. The salted curds are placed in cylindrical metal molds and pressed for 14 to 16 hours. The cheese (1 to 1.25 kg), which has a smooth, close-knit body, has a maximum of 50% moisture and a minimum of 35% fat. It is ripened for at least 60 days at 72°F (22°C) and acquires a surface fungal flora.

BOLIVIA

Altiplano

Background/Description: Altiplano is a soft, fresh cheese made from raw whole cow's and sheep's milk. This cheese was known at the time of the Incas and was made on the Altiplano, a high plateau in the Andes in western Bolivia. Its production has spread to lower areas but the technology has remained almost unchanged.

Production: Raw milk is coagulated with calf rennet in about two hours at 89.6°F (32°C). The curd is salted, ladled into straw molds and pressed for three hours. This cheese, which is not packed, is kept in salt at 43° to 53.6°F (6° to 12°C).

Quesillo

Background/Description: Quesillo is a fresh, unripened soft cheese made from whole or partly skimmed cow's milk or from a mixture of sheep's and goat's milk. Quesillo is also made in Chile and Ecuador and is known in Mexico as Panela, in Paraguay as Paraguay Cheese and in Nicaragua as Queso Blanco. Two types of technology are applied, depending on the scale of production—small or semi-industrial scale.

Production: In the traditional technology used for small scale production, raw milk is coagulated with powdered or liquid rennet in 45 to 60 minutes at 86° to 89.6°F (30° to 32°C). The coagulum is cut into 2 cm cubes and stirred gently for a while. Some of the cheese whey is removed and replaced by brine; the curd is transferred to molds lined with cheesecloth and pressed by hand. It is sold on the same day and the shelf life is only two to four days. In general, the quality is poor.

In semi-industrial technology, the main difference is that milk is pasteurized at 161.6° to 167°F (72° to 75°C) for 15 seconds or at 140° to 149°F (60° to 65°C) for up to 30 minutes. The milk is cooled to renneting temperature, 89.6° to 95°F (32° to 35°C), calcium chloride is added and coagulation is obtained in about 30 to 40 minutes. The rest of the technology is similar to that used in the traditional method. Some peculiar variations in the technology should be mentioned. For example, the rennet used to make Paraguay cheese is obtained by soaking dried calf abomasum (stomach) in lemon or bitter orange juice.

Queso Benianco

Background/Description: Queso Benianco is known also as Queso Chaqueño. It is a semi-hard, ripened cheese made from whole cow's milk.

Production: According to traditional technology, only raw milk is used and no heat treatment is applied to the milk. Coagulation is obtained by soaking a piece of calf abomasum (stomach) directly in the milk; it takes about two to three hours at 77° to 82.4°F (25° to 28°C). The coagulum is not cut but is ladled directly into molds, where it is pressed for six to eight hours. After removal from the molds, the cheese is dry-salted, ripened at room temperature and sold unpacked.

In semi-industrial production, the milk is pasteurized to 149°F (65°C) for about 15 minutes and cooled to renneting temperature, 86° to 89.6°F (30° to 32°C). Coagulation is obtained in 15 minutes with commercial rennet and the coagulum is cut into 2 cm cubes. After the whey is drawn off, the curds are transferred to molds (rectangular or circular) lined with cheesecloth and pressed for five to six hours. The cheese is then salted in stirred brine for 12 hours at about 68°F (20°C) and ripened at room temperature for three weeks.

BRAZIL

Background/Description: Brazil is an enormous country covering 3,288,000 square miles. The dairy industry, which is largely localized in urban regions and along the coast, is well developed and uses modern equipment. Cheese and other dairy products are made in increasing amounts today.

The national cheese varieties include Minas, Prato, Mussarela, fresh Ricotta and Grana, usually based on standard European varieties, particularly those in the Netherlands, Portugal, Spain and Italy. The word “queijo” (cheese) is placed before the name of the variety, e.g., Queijo Minas.

Production: Manufacturing procedures closely follow the normal European methods. The milk is normally pasteurized, and coloring matter added for some varieties (e.g., Queijo Prato). Calcium chloride is often used at the rate of 25 grams per 100 liters of milk. Common starters are used and liquid or rennet powder dissolved in warm, weak brine is added to the milk at a temperature of 86° to 95°F (30° to 35°C).

Coagulation takes place in 30 to 60 minutes, depending on the variety, and the coagulum is cut with American-type knives. Warming may be done using hot water or steam, and the whey is removed. After pressing, salting may be done by adding salt to the curd, dry salting or brining the cheese, or sometimes by adding salt to the milk. Some cheeses, such as Minas Frescal, Mussarela and Requeijae, are consumed fresh.

Ripening for others normally consists of storing the cheese anywhere from 15 days to a year in a room at 50° to 59°F (10° to 15°C) and with controlled humidity. Sometimes the cheese may be ripened at room temperature. Packaging may be by waxing or wrapping in coated paper or cellophane.

Catupiri

Background/Description: This very popular cheese is eaten as a dessert or with quince or guayaba marmalade.

Production: Milk is standardized at 2% to 3.5% fat, adjusted to 73°F (23°C) and 1% starter is added. Only about a quarter of the normal amount of rennet (6 ml per 100 liters of milk) is added to give a coagulation time of two to three hours. The curd is cut into 5 cm pieces, ladled into bags and left at ambient temperature for four hours, and then placed in a cold room for 12 to 14 hours.

The acidity should by now be 0.60% and the moisture 46%. The curd is milled and the moisture is adjusted to 50%. Then 2% sodium citrate is added and the mass is heated to 165°F (74°C) and it is stirred for 20 minutes. Flavoring (e.g., starter distillate) may then be added, and the cheese is packed in cartons and cooled.

Coalhada

Background/Description: Coalhada is a fresh, creamy cow's milk cheese usually eaten with sugar.

Quartirollo

Background/Description: This is a fresh cheese that develops a fruity flavor on keeping. It is made with cow's milk and has a moisture content of 50%. Quartirollo is also produced in Argentina. (See *Quartirollo under Argentina.*)

Queijo de Coalho

Background/Description: Queijo de Coalho, also known as "rennet cheese," is a ripened, semi-hard cheese made from raw whole cow's milk. It is consumed fresh.

Production: Up to 2% of sour cheese whey is added as starter. Coagulation is achieved in 15 minutes at 98.6°F (37°C), either with calf rennet or with an enzyme extracted from the stomach of a type of rodent called a moco (a kind of guinea pig from the arid areas of Brazil). The coagulum is cut and stirred by hand and with a large spoon. About 75% of the volume of cheese whey is drawn off, heated and poured back on the curd to raise its temperature to 131°F (55°C) and "cook" it. All the whey is then drawn off and salt is added to the curd, which is put into wooden molds and pressed by hand initially and then mechanically for two days. Curing takes up to a month at room temperature.

Queijo de Manteiga

Background/Description: Queijo de Manteiga is a processed cheese known also as Requeijao Baiano, Requeijao Crioulo or Requeijao do Nordeste. Actually, Queijo de Manteiga is prepared from the fresh curd of Queijo de Coalho before molding.

Production: Salt is added to the curd, which is melted in a kettle by heating and stirring at 194°F (90°C). Locally made butter (Garrafa) is mixed with the melted curd and the mixture is poured into wooden frames and allowed to cool at ambient temperature.

Queijo Minas

Background/Description: Queijo Minas is a semi-hard cheese made from whole cow's milk. Queijo Minas is also known as Queijo de Serro.

Production: Milk of 3% to 4% fat and 0.15% to 0.18% acidity is usually pasteurized, but if it is of good quality, it may be used raw. About 1.5% starter is added to the milk at 89.6°F (32°C), and sometimes 25 grams of sodium nitrate per 100 liters of milk is added, too. If pasteurized, 25 grams of calcium chloride are added. After the addition of 22 ml of rennet, the milk is stirred for three minutes and then the vat is covered.

When sufficiently firm, the coagulum is cut slowly, once with the vertical knife and then in the other direction with the horizontal knife to create 1 cm or slightly smaller pieces of curd. After five minutes the

mass is stirred gently for one minute and then at five-minute intervals, using a wooden grid. This procedure continues for 45 to 60 minutes.

The whey is then drawn off and the curd is pressed in the vat using a perforated platform of stainless steel and a weight of 3 kg (6.6 lbs) per kilogram of curd. After milling, the curd is placed in cloth-lined metal molds of 17 cm (6.7 in) diameter and 12 cm (4.7 in) height to contain 1,500 grams (3.3 lbs) of curd. The four corners of the cloth are then folded over the top and a metal disc is placed on top.

The cheese is pressed under a weight of 15 kg (33.1 lbs) for 30 minutes. It is then taken out, the cloths are washed in hot water and the cheese inverted and the cloths replaced. It is then pressed under a weight of 20 kg for 16 hours. The cloths are removed, the cheese is dried for two days and then it is salted on one surface, replaced in the mold for a day, and then salted on the other surface for a day. The cheese is then washed and left to dry for one or two days.

The first stage of ripening takes place at 50° to 53.6°F (10° to 12°C) and 84% to 88% relative humidity for six to eight days with daily turning. The cheese is wrapped tightly in a cloth soaked in linseed or cottonseed oil, and transferred to a room at 55.4° to 59°F (13° to 15°C) and 90% to 95% relative humidity. It is turned every other day and treated with a solution of 3% calcium chloride and 4% salt for a period of 14 days. Finally, the cheese is washed with 1% calcium chloride solution, dried and waxed.

The texture of the cheese is homogeneous and features well-distributed small holes of irregular shape. The color is pale cream and the flavor mildly acidic and pleasant. The shape is a cylinder, 17 cm (6.7 in) in diameter, 4 to 6 cm (1.6 to 2.3 in) thick, with a weight of 1,000 to 1,200 grams (2.2 to 2.6 lbs). The average composition is 43% moisture, 27% fat, 25.5% protein, 4% to 8% ash and 2% to 3% salt.

Queijo Prato

Background/Description: Queijo Prato is considered the most important cheese in Brazil. There are five varieties: Minilanche, Lanche, Coboco, Prato and Estepe. The varieties differ in shape, weight and duration of ripening: They are rectangular, square or cylindrical, and are cured for 18 to 60 days.

This cheese closely resembles the Dutch Gouda, but is colored. It is officially classified as a full-fat, moderately scalded, semi-hardened and ripened cheese, with a plastic body and homogeneous texture, apart from regularly distributed oval “eyes” or holes that are 34 mm in size. The flavor is mild and pleasant.

The cheese is cylindrical-shaped with a diameter of 25 cm (9.8 in) and a height of 15 cm (6 in). Its weight is 4 to 4.2 kg (9 lbs). The average composition is 32% moisture, 28% fat, 28.5% protein, 5.1% ash and 2.2% salt.

Production: To make Queijo Prato, milk with a content of 3% to 6% fat and 0.16% to 0.18% acidity is pasteurized and cooled to 89.6°F (32°C). Then 25 to 30 grams of sodium nitrate, 25 grams of calcium chloride and one tablet of color dissolved in 5 ml of warm water are added to each 100 liters of milk, together with 2% starter. After stirring well, the milk's color should become golden yellow. About 30 ml of liquid rennet is added per 100 liters to bring about coagulation in 50 to 55 minutes. In the summer, 35 ml may be required.

When sufficiently firm, the coagulum is cut in both directions with the vertical knife and then with the horizontal knife until the pieces are reduced to a uniform size of about 5 mm. The mass is stirred for 20 minutes and then allowed to stand for two minutes, after which 35% to 45% of the whey is drawn off. With renewed stirring, water heated to 185°F (85°C) is gradually added to a total of 13% of the original milk. The temperature should rise to 107°F (42°C) and if not, then it is raised to this by steam. Salt is added at the rate of 300 grams per 100 liters of milk. Stirring must be constant and the temperature maintained until a handful of curd can be squeezed into a light coherent block.

The time of year must be taken into consideration in deciding the time to draw the whey; a firmer curd is required in summer. The curd is allowed to settle for two to three minutes and the whey is drawn off by pressing the curd with perforated plaques with a weight of 2 kg per kilogram of curd for 20 minutes. The curd is then broken up into 5 kg blocks, covered with a cloth and placed in wooden molds with leveled base and side, 25 cm in diameter and 15 cm high. The corners of the cloth are folded over and lids put on. The curd is pressed first at 60 kg for 30 minutes, at which point the cheese is removed, the cloths are wrung out in hot weak brine and the cheese is returned for pressing at 80 kg weight for three hours. The cloths are then removed and the cheese is pressed for 30 minutes and then held in water at 37° to 41°F (3° to 5°C) for 14 hours.

Salting is carried out in 18% to 20% brine for two days, followed by drying off for two days. The first stage of ripening is at 52° to 55°F (11° to 13°C) and 80% to 83% relative humidity for eight to 10 days. When a suitable coat has formed, usually after five to seven days, the cheese is rubbed with linseed or cottonseed oil.

The second stage of ripening is at 57° to 61°F (14° to 16°C) and 84% to 88% relative humidity, the cheese being turned every other day and rubbed with a cloth moistened in a solution of 4% salt and 3% calcium chloride. A slightly higher temperature may be used if maturing appears to be slow. It should be complete 40 to 45 days after manufacture, when the cheese is brushed with water. The coat should be velvety but well formed, and it should have a deep, golden color. When dry, the cheese is waxed and wrapped in cellophane.

Reino

Background/Description: This is a hard cow's or goat's milk cheese, similar to aged Portuguese Serra.

Requeijão

Background/Description: Requeijão is a cream cheese made in northern Brazil. It is white and mild with a consistency from solid to creamy.

The most common variant of this cheese is Requeijão Cremoso, which is very creamy in consistency and usually sold in clear glasses or plastic cups.

Production: Skim milk, with or without lactic starter, is held until it coagulates. The coagulated milk is heated, with stirring, to a temperature as high as 175°F (79.4°C). The whey is drained off, and the curd is gathered in bags and pressed. Then it is placed in flat pans, broken up and washed with warm skim milk in the proportion of two parts skim milk to one part curd. The skim milk-curd mixture is then heated, with stirring, as before. When the curd sticks together and the casein in the skim milk curdles and adheres to the mass of curd, the whey is drained off again, and the curd is pressed and washed with warm skim milk as was done earlier.

The heating and stirring of the mixture and draining of the whey are repeated once more. Then the curd is mixed, salt is added at 2% to 2.5% and it is kneaded on a table for about 15 minutes. Hot butterfat or rich cream is added at the rate of one part butterfat to five parts curd, and the mixture is heated and stirred. The cheese is then molded in parchment-lined boxes. About 11 pounds of cheese is obtained from 100 pounds of skim milk and 3.4 pounds of rich cream. The average composition is moisture, 55% to 70%; fat, 8% to 20%; and protein, 16% to 20.5%.

CHILE

Chanco

Background/Description: Chanco is a semi-hard ripened cheese made from whole cow's milk. This variety is the main Chilean cheese, and its name comes from a small village near the Pacific coast, about 400 km (249 mi) south of Santiago. Until the 1950s, Farm Chanco was made at farm level or in small-scale dairies; since then, its production has been industrialized. Chanco represents almost 50% of cheese consumption in Chile.

Chanco is made in rectangular molds measuring 50x30 cm (20x12 in), and 10 to 12 cm (4.5 in) high. It is a buttery, smooth cheese with an open texture and a slightly acidic, pungent flavor that leaves a slight aftertaste. The average analysis is 48% to 50% moisture.

Production: There is no standard method of production, but generally the fresh milk is set with commercial rennet at 95° to 100°F (35° to 38°C) and clots in about 40 minutes. When the curd starts to collect whey at its surface, it is broken or in some cases cut with wire knives into pieces 2 to 5 cm in size. The curd is allowed to settle for five minutes and then is slowly and gently stirred for another five to 10 minutes. When it has settled again the whey is gently taken out from the surface by repeatedly dipping in a round, flat metal vessel or scoop for about 30 minutes.

During this period, the temperature comes down to 89.6° to 93°F (32° to 34°C). The curd collects slowly at the bottom of the vat and when nearly all the whey is gone, the curd is still very soft, with 68% to 70% moisture. At this stage, warm brine is added and the curd is carefully broken and kneaded for three to five minutes. After 10 to 20 minutes of contact with the brine, the curd is transferred to rectangular wooden molds and covered with cheesecloth, filling only half the molds. These are placed on a table and the curd, covered with a cloth, is submitted to open-hand pressure, alternating every five minutes with pressure applied with the closed fist, over the complete surface of the cheese.

After 30 minutes, the molds are filled with the rest of the curd and the hand pressure is continued for another 20 to 30 minutes. When sufficient whey has been extracted, the molds are put under the press and submitted to 15 to 20 kg weight for each kilogram of cheese. After four to six hours in the press, the cheese is turned, the cloths are changed and the molds are returned to the press until the next day.

Chanco Produced in Factories

Production: In dairy plants, a similar cheese is produced with pasteurized milk. The procedure varies from plant to plant but, broadly speaking, the cheese is made following a schedule that could be said to be between the methods for St. Paulin and Tilsit cheese. Milk of 0.16% to 0.18% acidity is standardized to 2% to 2.7% fat and 0.5% starter and 2% to 3% water is added. Sufficient rennet is added to the milk at 30% to 33% to clot it in 30 to 40 minutes. The coagulum is cut to pieces of 5 to 7 mm over five to 10 minutes and the curd is stirred for 10 to 15 minutes.

One-third of the whey is then removed, the curd is stirred for three minutes and then water heated to 158° to 167°F (70° to 75°C) is added to bring the temperature to 98.6° to 100.4°F (37° to 38°C) in 10 to 15 minutes. After further stirring for 15 to 20 minutes, 200 to 500 grams of salt per 100 liters of milk is added and the curd is pressed under the whey in the vat for a short time. The whey is then drained off and the curd is cut into blocks, put into molds and pressed until the following morning.

The cheese is then salted in 18% brine at 53.6°F (12°C) for one or two days. Ripening takes place at 53.6° to 57°F (12° to 14°C) for 20 to 30 days. After a week, the cheese develops a red smear or slime that plays a role in the ripening. The cheese is known locally as “Mantecoso.”

Mantecoso

Background/Description: In Chile, Mantecoso is a semi-hard cheese similar to Port-Salut. (See *Chanco*.)

Quesillo

Background/Description: Quesillo, meaning “small cheese” in Spanish, is a fresh, sweet rennet curd that is very high in moisture.

Production: Quesillo manufacture is simple, but extreme hygienic care must be taken in order to maximize the shelf life of the product. The curdling time is longer than usual due to the lack of milk ripening and absence of lactic acid fermentation. No cultures are added during the manufacturing procedure. Some manufacturers add salt to the milk to create a uniform, slightly salty taste in the fresh curd.

The lack of lactic acid fermentation and acid development, in addition to the fact that the curd is not heated or cooked, produces curds that are sufficiently firm for future handling. The number of stirring repetitions in the vat is determined by the degree of firmness of the curd, and the three-minute stirring procedure, followed by a 10-minute rest, is repeated as many times as required to develop the proper firmness of the curd for trenching during whey drainage and handling during hooping.

A very important part of the whey drainage takes place overnight in the hoop under refrigerated conditions. The following day, the fresh Quesillo is taken out of the hoop where it has been shaped into a cylindrical tube measuring 16.5 cm (6.5 inches) by 5 cm (2 inches) and weighing 360 grams. Normal yields are 16.4 kg of curd per 100 liters of milk, which means that for 360 grams (about 12.5 ounces) of Quesillo unit, 2.2 kg (about 4.85 pounds) of milk is required.

The Quesillo is wrapped first with a lining of parchment paper and placed in a polystyrene bag that is sealed for distribution. The average composition is 73% moisture, 4% to 4.2% fat, 16.4% protein, 2.8% ash and 0.8% salt.

Queso Andino (“Andean Cheese”)

Background/Description: The Andino cheese at the rural cheese factories is normally processed at an altitude of 3,000 to 4,000 meters (9,000 to 12,000 feet). At this altitude, milk boils at 176°F (80°C). Heating is accomplished with kerosene burners if electricity isn’t available, and incubation of starters is carried out in insulated boxes that are kept warm with warm water, similar to a thermos bottle.

Production: The milk is weighed and directly emptied into the cheese vat, where it is brought to pasteurization temperature with a kerosene burner located under the double-jacketed vat. Cooling to 91° to 93°F (33° to 34°C) is accomplished with running water in the jacket, and the milk is set for 30 minutes.

After coagulation, the curd is cut with a 2 cm harp, stirred for 15 to 25 minutes and allowed to rest for five minutes. About 35% of the whey is then drawn off with a cloth and a pail, and replaced with water at 104° to 122°F (40° to 50°C) in a proportion of 50% to 80% of the whey removed, followed by stirring for 10 minutes. Total time from rennet addition to dipping of the curd is 70 minutes.

Hoops are filled with the curd dipped in the pails. Turning of the hoops is started immediately after filling, and there are second, third and fourth turns at 30-minute intervals. Pressing of the curd is slight; between the second and fourth turns, a 4 kg weight is placed on top of the 15.2 cm (6-inch) diameter tubes and then the hoops are left for 12 hours without weight. The cheese is placed in brine for eight to 10 hours and it is allowed to ripen for 14 days. Yield based on the matured cheese is 8.5 liters of milk per kilogram of cheese, or 11.8% based on used milk.

COLOMBIA

Bernian

Background/Description: Bernian is a piquant cheese that is ripened for about a week, then wrapped in foil. It is made from cow’s milk and contains 50% moisture.

Pera

Background/Description: This is a small, fairly hard, spun-curd cheese that is made from partly skimmed cow’s milk and stuffed with candied fruit.

ECUADOR

Quesillo

Background/Description: This is a small cheese made from fresh cow's milk. The finished product is wrapped in banana or maize leaves.

Queso Andino

Background/Description: Queso Andino was introduced in the 1970s in the mountainous areas of Peru first and subsequently in Ecuador. It is a soft, ripened cheese made from pasteurized milk.

Production: Milk is pasteurized at 149°F (65°C) for 15 to 20 minutes. Lactic starters are added at 91° to 93°F (33° to 34°C) and then coagulation is obtained by rennet powder in 30 minutes. The coagulum is cut and stirred for 15 minutes.

When the curd grains are the size of beans (1.5 cm or .5 in), stirring is stopped, the curds are left to settle and 30% to 35% of the whey is drawn off and replaced by the same quantity of hot water. The curds are stirred for another 10 minutes and, after the whey has been removed, they are pre-pressed, put in molds and left to drain for 12 hours without pressing. The cheese is then salted in high-density brine and cured on wooden shelves at 53.6° to 57°F (12° to 15°C) for about two weeks.

PARAGUAY

Campesino ("Farmer Cheese")

Background/Description: This fresh cheese is made with salty cow's milk and is lightly pressed.

Paraguay Cheese

Background/Description: Paraguay cheese is also similar to the Quesillo cheese made in Bolivia. It is consumed fresh or used for the preparation of typical dishes such as Sopa Paraguaya, a cake made from maize flour.

Quesillo

Background/Description: Like the version made in Ecuador, Quesillo is a small, fresh cow's milk cheese that is wrapped in banana or maize leaves.

PERU

Mantecoso

Background/Description: Mantecoso is a popular farm-made soft cheese.

Queso Andino

Background/Description: Queso Andino is a soft, ripened cheese that is also made in Ecuador and Peru.

Requesón

Background/Description: Requesón is a Ricotta-like cheese used in cheese spreads. It is often sold wrapped in fresh corn husks.

Production: Requesón, like Ricotta, is obtained by heat coagulation of whey proteins from skimmed or unskimmed whey. Some whey is set aside on the previous day and left to acidify for 24 hours at 100.4°F (38°C). The next day the bulk of the whey, which was kept cool, is heated to about 158°F (70°C). Acidified whey is added and mixed well with “sweet” whey and heating is continued. As the temperature of the bulk increases, the albumin coagulates and floats on the surface of the liquid. As soon as boiling starts, the whey is removed from the source of heat and is allowed to rest for a while.

The coagulated proteins coalesce and albumin soon forms clusters or a continuous cake on the surface of the liquid. The albumin is collected by skimming the surface or by pouring liquid and coagulum through cheesecloth placed in a bucket or similar container. The four corners of the cloth are tied and it is hung for six to eight hours to drain off the remaining deproteinated whey. Salt or sweetening agents may be added and the Requesón is ready for consumption.

URUGUAY

Colonia

Background/Description: Colonia is a semi-hard, ripened cheese made from whole cow's milk, both for the domestic market and for export.

Production: Milk is standardized at 2.8% fat and pasteurized at 161.6°F (72°C) for 15 seconds. Lactic starters and calcium chloride are added. Coagulation with calf rennet takes place at 89.6°F (32°C) in about 25 minutes. The coagulum is cut into 5 mm cubes and heated slowly for about 20 minutes to 118.4°F (48°C); this temperature is then maintained for 30 minutes.

After the whey has been drained off, the curd is pre-pressed, molded and then pressed mechanically for three hours. During this period, the cheese is turned over four times and each time the pressure is increased. The cheese is then salted in brine for three days at 53.6° to 55.4°F (12° to 13°C) and cured for 20 to 25 days at 77°F (25°C).

Yamandu

Background/Description: Yamandu is a semi-hard, ripened cheese made from cow's milk with a fat content standardized at 3.2%.

Production: Milk is pasteurized at 161.6°F (72°C) for 15 seconds and then cooled to 91.4°F (33°C). Acidified whey is added as starter, together with calcium chloride, sodium nitrate and coloring substance. Powdered or liquid rennet is used for coagulation, which takes about 40 minutes at 91.4°F (33°C).

The coagulum is then cut into 5 to 7 mm cubes, pre-pressed, molded and subjected to a progressively increasing mechanical pressure. The cheese is salted in high-density brine for two days at 53.6°F (12°C), left to dry and packed in plastic bags or coated with wax. They are cured for days at about 61°F (16°C). This cheese keeps for about four months.

VENEZUELA

Cuajada

Background/Description: This is a creamy cow's milk cheese that is wrapped in maize or banana leaves.

Guayanes

Background/Description: Guayanes is a semi-hard, unripened cheese made from raw whole or partly skimmed cow's milk.

Guayanes is usually sold unpacked but also can be packed in plastic bags.

Production: No starters are used and the milk is coagulated with calf rennet at room temperature. The coagulum is cut when ready, whey is partly removed and the curd is cooked in water at 194°F (90°C). During this process the curd is stirred continuously until it is molded. The rest of the whey is drained off but without pressing.

Llanero

Background/Description: Llanero, known also as Americano cheese, is similar to Queso Blanco. This variety is made in Venezuela's extensive southern and eastern plains, a hot region with natural grasses. Production there has been diminishing year by year until it dropped to well below that of the state of Zulia, which is on the western side of the country.

In the central zone and along the coast, almost all of the milk is taken to Venezuela's 16 pasteurizing plants. Only some of the Llanero dairy cows are milked, and sometimes only during the four months of the year following the rainy season. They are milked once a day, with calf, by hand, and in an open corral adjoining the cheese "shop." The primitive cheese shop or factory is an open shed with a straw roof covering an area of 20 to 40 square meters, held up by posts, with an earthen floor and enclosed with barbed wire or stakes. The simple utensils are a receptacle made of leather to put the milk in, a wooden beater or stirrer, wooden girdles to mold and compress the cheese, a platform of boards to press the cheese and wooden or metal pails for milking. On the plains there are few milkmen or milkmaids, so milking takes time, perhaps three hours or more.

Production: The milk is placed in the receptacles, filtered and the curd made on the spot with pig rennet or salted bovine rennet dried in the sun. The hygienic condition of this product and the yield of cheese are both very variable. The cheesemaker estimates the required quantity of rennet and adds it to the milk while he stirs it with a wooden pallet.

He waits until he sees it has clotted and then plunges his arm and hand into the receptacle and stirs and heats the coagulated milk until it turns into a pulp. He then waits for the mass to settle and helps the sedimentation by pushing down the floating curd with his hand. Having done this successfully, he runs off the whey, makes the curd into a ball and squeezes it with his hand to get out as much whey as possible. A good deal of the fat is lost in the process. He next prepares the molds on a platform, kneads the curd with his hands, adds salt and then transfers it to the molds. After this he lays on a wooden cover and puts the cheese in the press for 12 to 14 hours. This produces a white cheese with a semi-hard body, half cream or slightly less in fat content and of low commercial value.

The primitive cheese factory has now been improved in various parts of the country. The hide receptacle has been replaced by a wooden or metal vat, with a concrete floor instead of an earthen floor and brick walls instead of posts and stakes, and a metal mesh screen keeps away the flies.

Queso de Cavallo

Background/Description: Queso de Cavallo is a pear-shaped cheese made in Venezuela.

Queso de Cincho (or Queso de Palma Metida)

Background/Description: Queso de Cincho is a sour-milk cheese made in Venezuela. It is spherical, 8 to 16 inches in diameter, and is wrapped in palm leaves.

Queso de Mano (“Hand Cheese”)

Background/Description: This handmade cheese, as its name implies, is generally produced on a small scale. De Mano cheese is a semi-hard, unripened cheese of the “pasta filata” type made from raw whole cow’s milk.

Production: No starters are used and the temperature of the milk is adjusted to 102°F (39°C) and renneted. Coagulation is obtained in about 15 hours at ambient temperature.

The coagulum is cut and the curds are separated from the whey, heated in salted water and worked by stretching and kneading. When the elasticity of the curd is adequate, it is formed by hand into small flat disks. It is sometimes wrapped in banana leaves. This cheese is soft, elastic and creamy.

OTHER

Filled Cheese

Filled cheese is made from milk or skim milk to which foreign fat has been added. The foreign fat is added either by stirring it vigorously into the milk and using enough rennet to coagulate the milk quickly or by incorporating the fat into the milk by homogenization. The cheese then is made in the usual manner. Filled cheese, whether made in the United States or imported, is a taxable product, subject to various federal and state laws that define the conditions under which it can be manufactured and sold.

ABOUT THE ORIGINAL AUTHOR

Jim Path

Jim Path grew up in a Wisconsin cheesemaking family and learned to make cheese at an early age from his mother and father. After graduating from the University of Wisconsin-Madison, he returned to the family cheese factory to eventually become general manager. In 1987, Path joined California Polytechnic State University in San Luis Obispo, Calif., where he worked as principal research associate. In 1991, he moved back to Wisconsin and the Center for Dairy Research to work as the cheese outreach specialist and coordinator of the Specialty Cheese Program, the World Cheese Exchange (Web-based) Database and the Wisconsin Master Cheese Maker Program. Path retired in 2005.

REFERENCES

- Belfiore, M.P., 1979 Proc. 1st Biennial Marschall International Cheese Conference
- Bruhn, J.C., 1986 Proc. 23rd Biennial Marschall International Cheese Conference
- Carr, S., 1992. Cheese, A Complete Guide to Cheese of the World
- Covacevich, H., Kosikowski, F.V., 1981 Proc. 2nd Biennial Marschall International Cheese Conference
- Davis, J.G., 1976. Cheese, Vol. III, Manufacturing Methods, Elsevier, N.Y.
- FAO, 1993. Production Yearbook
- Fox, P.F., 1993. Cheese, Vol. 2, Major Cheese Groups
- Kosikowski, F.V., 1979 Proc. 1st Biennial Marschall International Cheese Conference
- Lopes-Guisa, Felipe. Personal Correspondence
- Sanders, G.P., USDA. Cheese Varieties and Descriptions
- Tornoe, Juan Guillermo, 2005, Hispanic Trending, (http://juantornoe.blogspot.com/hispanictrending/2005/01/hispanicstyle_c.html)
- Wisconsin Dairy Council, 1995. Personal Correspondence



DMG DAIRY MANAGEMENT INC.™

10255 West Higgins Road, Suite 900
Rosemont, Illinois 60018-5616

© 2008 Dairy Management Inc.™