

# The Artisanal Cheese Factory in the Context of the Araucanía Region – Chile

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**Abstract:** Traditional artisanal cheeses are known in Chile and Argentina as country cheeses, or in some other places as farm cheeses or farmhouse cheeses. All these terms are used to refer to cheeses made in small workshops or cheese factories, where the process is carried out by hand by the same members of the family and with a minimum presence of employees. A distinctive feature of cheese production is that the production processes have incorporated elements of the culture and environment in which the activity takes place. The purposes of this article referred to characterize the artisanal cheese factory and its producers in the context of the Araucanía Region in Chile. The region of La Araucanía is located in Chile, between the regions of Bío Bío and Los Ríos. Its area is 31,842 km<sup>2</sup> and its regional capital is the commune of Temuco. The type of study is quantitative of a transitional-descriptive type in 19 communes and 137 cheese producers of the provinces of Malleco and Cautín in the region of La Araucanía, territories where the cheese producers that are part of the sample are located. The characteristics of the producers, cheese factories and processes associated with the production of cheese, account for a cheese reality that has a set of potentialities and complexities necessary to consider not as problems of the artisanal cheese factory, but as realities and baselines on which it works and it is necessary to continue working in post of its empowerment and its value as part of the agri-food production system in the region of La Araucanía-Chile.

**Keywords:** Traditional Artisanal Cheeses, Cheese Producers, Production System, Araucanía-Chile.

## 1. INTRODUCTION

Traditional artisanal cheeses are known in Chile and Argentina as country cheeses, or in some other places as farm cheeses or *farmhouse cheeses*. All these terms are used to refer to cheeses made in small workshops or cheese factories, where the process is carried out by hand by the same members of the family and with a minimum presence of employees. A distinctive feature of cheese production is that the production processes have incorporated elements of the culture and environment in which the activity takes place (1). As a consequence of the growing interest in the valorization of food traditions in recent years, there has been a rediscovery of food and culinary processes and the valorization of food heritage (2), and artisanal cheese is one of the products par excellence of the productive and food dynamics of families and rural communities around the world.

The word artisan or artisanal implies that a cheese is produced mainly by hand, in small batches with particular attention to the traditional art of the cheesemaker, using as few mechanical processes as possible in the production of the same. These cheeses can be made from all types of milk and can include various flavors (3). Artisanal cheese dairies, therefore, are often appreciated by cheese lovers looking for high quality products and unique flavors. These small businesses play an important role in preserving cheese traditions and promoting diversity in the world of cheese. It is in this sense that the territory constitutes an important factor in cheese production, given the greater boom that designations of origin have today, as a mechanism of added value to the artisanal production of cheeses (4).

This notion of territory is not limited only to productive properties, but involves a much wider space of social and economic relations. The territory is a social construction and not an objectively existing space by virtue of physical

or economic variables (5,6); since in the territories circulate stories, meanings, discourses, people, goods and services. They are social spaces of opportunities and also of limitations (7), but they are also spaces of interaction between sociocultural structures and diverse institutional arrangements, which enables or hinders a dynamic of actors, markets, economic exchanges, relations of reciprocity and exchange, organizational processes, specific identities, construction of diverse social capital, among other components. Indeed, rural spaces face the need to rebuild their economies and energize their societies to respond to the new conditions associated with global capitalism (8).

Within these scenarios, it is that the production of cheeses and artisanal cheese has a specific space in the analysis of the economic-productive reality of Chile and specifically of the region of La Araucanía. Taking data from the Office of Agricultural Studies and Policies of Chile (ODEPA), Zamora (9) points out that these do not account for the different types or varieties of cheeses produced in the country, they only indicate if they correspond to Queso (semi-mature and mature) or Quesillo (fresh cheese). The review of this year's data (January to July 2023) in ODEPA, indicate that at the national level 52,868,192 kilos of cheese have been produced, and 8,873,923 of quesillo. These same data from La Araucanía indicate that there is no production of quesillo, and 1,758,182 kilos of cheese. The data correspond only to formalized companies and / or enterprises, leaving mostly the artisanal cheese factory out of the statistics, since few cheese factories comply with the requirements of legal formalization. It should be noted that only six regions of the 13 existing in the country are registered as cheese-producing territories.

In Chile, different types of cheese are made, but those of the Gouda type predominate, which occupy the first place in the market (estimates indicate that 65% of the production would correspond to this type of cheese). Then and also based on estimates, would follow the Mantecoso - Chanco cheeses, which correspond to the national product that has been traditionally consumed in the country, then appears the Quesillo or Queso Fresco and, the Mozzarella cheese that has grown a lot in recent times. In fact, chanco cheese was a typical product of the Kingdom of Chile that emerged thanks to the work of peasants between the Maule and Toltén rivers, whose first record dates from the eighteenth century, being praised by different chroniclers and travelers who had the opportunity to taste it (10).

At an industrial level and in smaller companies, other varieties of cheese are also produced, among which hard paste cheeses stand out, such as Reggianito, Camembert, Brie, Gruyère, Edam, Ahumado, Cottage and Ricotta. The production of Mantecoso – Chanco cheese was carried out mainly in artisanal SME plants, but for a few years, we have seen that large industries have already entered the market with their brands with this type of cheese, which is bad news for those SMEs that are not able to differentiate themselves and add value to their cheeses, since by cost and price they will not be able to compete. Another important element in the market scenario is that the consumption of cheeses per capita in Chile doubled between 2000 and 2017, going from 5 kg per capita to approximately 10 kg per capita, a figure that remained unchanged until 2020 and, according to projections and considering the production and foreign trade data of ODEPA, the year 2021 should exceed 11 kg of per capita consumption (9).

Between 2015 and 2025, the world cheese market is expected to increase by 1.4% per year, representing "accelerated growth for the next decade" (OECD - FAO, 2015). The same report states that the European Union will retain its leadership in cheese exports, with an estimated share of 38% by 2024 and an annual growth of 4%, higher than that of its main competitors, New Zealand, the United States and Australia. Currently, so-called developed countries have higher imports than developing countries. However, these are expected to grow at a rate of 3.6% per year in developing countries, surpassing by 2024 developed countries, whose imports will grow at a considerably slower rate of 0.4% per year (11).

From the increase in cheese consumption in Chile, there have also been changes in consumer expectations and a premiumization of products (2). Cheeses are in second place in the list of products most perceived as gourmet, characterized by being of high quality, having artisanal elaboration and limited availability. Among the attributes that consumers value most are outstanding taste, flavor blending, quality of ingredients, and higher price. To this is added a greater appreciation and popularity of locally produced cheeses, and those with Denomination of Origin

(11, 12). Artisanal cheese is a food that contributes protein to the diet of the population, while constituting a food cultural asset, sustains a local value chain (13), connects the identity of a territory to a consumer through historical and contemporary dynamics as part of its identity heritage (14).

Artisanal cheese is regularly produced by the fermentation of raw milk from sheep, cattle and goats, with family labor, and whose elaboration is defined by customs, tastes or environmental circumstances of each region. Informal producers consider that the use of their own techniques provides a better texture, flavor and aroma and that the implementation of new technologies can affect the final result of the cheese. This is a dairy derivative that is characterized by having generally superior sensory qualities compared to similar types or varieties of industrially produced pasteurized milk cheese. Because it presents a diverse microbiota involved in maturation in processes such as glycolysis, proteolysis and lipolysis which are fundamental for cheese production, consumer demand for this food has been increasing, however, natural foods are not always safer than those subjected to processes (15).

The authors also point out that studies have reported that the consumption of artisanal cheese has contributed to the increase in outbreaks of foodborne diseases, due to shortcomings in its manufacturing process mainly in critical points such as the use of raw milk, failures in handling, transport, storage and increased humidity, among others. These factors prevent maintaining a food with an adequate level of asepsis that allows to offer a product suitable for human consumption. The microbial load represents a clear indication of the quality of the product; Because the microorganisms present in cheese include all bacteria, molds and yeasts capable of developing in the presence of oxygen. The presence of possible contamination of the raw material, inadequate temperatures applied in the processes, poor storage and transport conditions.

Although the sale of raw milk is prohibited in Chile due to the risk of all these infections, in 2018 Article 235 of Supreme Decree 977 of 1996 (Decree 71, 1996) was modified. This article, which came into force in March 2020, states that the sale of cheeses made from raw milk is allowed as long as they have a maturation of more than 30 days and that they comply with all hygiene regulations in the previous obtaining, storage and production. The foregoing, under the assumption that, if in the proposed period no visible or characteristic defect grows out of the expected, it is unlikely that there is contamination (16).

However, the pasteurization process could compensate for certain hygienic lassitudes in the process, since it eliminates microbes and reduces their ability to develop later, working with raw milk invokes important hygienic precautions. Thus, the option for raw milk, a delicate and risky biological material, involves a set of shared sociotechnical practices and criteria – traditional and modern – that constitute true local quality standards (17). At the same time, the demand for traditional food products has increased, which are characterized by their regional identity, geographical indications, their production process and their sensory quality, and there is a trend towards a greater valorization of these products by a group of consumers who not only identify tangible aspects (sensory and nutritional aspects), but intangible aspects related to know-how. culture and history of the product, which represents an opportunity for this food group and its producers (18).

The theoretical references allow to contextualize the artisanal cheese factory, and give support to the purposes of this article referred to characterize the artisanal cheese factory and its producers in the context of the Araucanía Region in Chile.

## **2. MATERIALS AND METHOD**

### **2.1. Context of Study**

The region of La Araucanía is located in Chile, between the regions of Bío Bío and Los Ríos. Its area is 31,842 km<sup>2</sup> and its regional capital is the commune of Temuco. The territory of the region is divided into two provinces; Cautín and Malleco, which comprise a total of 32 communes. According to the 2017 census, the regional population was 957,224 inhabitants, of which 48.6% correspond to men and 51.4% to women (INE, 2019). In addition, according to the same census, the Mapuche population represents 32.8% of the total inhabitants of the region, representing the 314,174 people who consider themselves as belonging to the Mapuche people (INE, 2019). With

respect to the regional population according to the geographical area of residence, 29.1% corresponds to those living in rural areas and 70.9% to those living in urban areas, representing 278,680 and 678,544 people respectively (INE, 2019).

## 2.2. Method and Procedures

The type of study is quantitative of a transitional-descriptive type in 19 communes of the provinces of Malleco and Cautín in the region of La Araucanía, territories where the cheese producers that are part of the sample are located. The inclusion criteria used were: voluntary participation, being producers of cheeses with permanent links to the market, location of the cheese factory in the rural area of the Araucanía Region and self-identification as artisanal cheesemakers.

The data collection instrument was a structured questionnaire applied by agronomists and food engineers that considered the following components: identification of the cheesemaker, infrastructure and equipment of the cheese factory, production process and marketing of cheeses, networks and linkage organizations. The questionnaire was applied to cheese producers in their localities that would allow, in addition to the application of the instrument, and observation as a complementary data collection technique.

In procedural terms, the cheesemakers were previously contacted by scheduling a day of visit to the cheese factory; on that occasion they were personally informed of the objectives of the study and its scope, they were made aware and requested informed consent that establishes the objectives, the use of the information, the voluntariness of participation, the non-existence of associated risks, its decision to refuse to continue participating at any time, and that the requested data and the study are part of the program "Technology Transfer in the Regional Artisanal Cheese Factory" (code 40032727-0) executed by the Institute of Agroindustries of the University of La Frontera, with funding from the Regional Government of La Araucanía.

The processing of the information was carried out with the use of the Spss 23 software, being the analysis of descriptive type that allowed to respond to the objectives set.

## 3. RESULTS

### 3.1. Characteristics of cheese producers, cheese factories and cheese making processes in the Araucanía Region.

**Cheese producers.** The Araucanía region has 137 cheese producers registered through the R+D program in reference, 76% of the province of Cautín and 24% of the province of Malleco. The five communes with the most producers are Pitrufquén with 36, Toltén with 34, Loncoche with 10, Vilcún with 10 and Curacautín with 6. Four of the five communes that group the most producers belong to the province of Cautín. Of the total cheese dairies, 85 are led by men (62%), while 52 cheese factories are led by women (37%). The average age of producers is 51 years, with 20 years being the lowest age and 80 years the highest. Although there is an important gender difference in the participation of women in the cheese activity in the region, it should be noted that this only has to do with the ownership/leadership of cheese factories, since, being family businesses, women have an active participation that is not necessarily reflected in the data. but rather who are the household people who lead the cheese production.

With regard to the formal education of cheesemakers in the region, it stands out that 41% have completed or incomplete basic education, but at the other extreme there are also 14% who have completed higher education, so cheese production is also an economic option for those who have obtained university studies. In matters related to training and / or learning on cheese production, 32% have formal competencies of master cheesemaker, through specialized training in the field; 29% indicate that their learning is self-taught, and 39% of producers indicate that their learning derives from the observation of a relative, also ascribing it to a family inheritance.

In relation to the size of their company, in 89% of cases the self-categorization is of micro-entrepreneur size, that is, preferably of family type and where the production of cheeses is carried out by the owner, although the data includes other members of the family group that also participates directly in this process; In the other cases, there is the presence of workers who are responsible for its elaboration, but there is always someone from the cheese factory who is directly involved in its different stages. In the case of workers associated with cheese factories, 65% indicate that they have an average of 2.4 permanent workers; and in the case of temporary workers it reaches 12%. The work in these cases is associated with dairy and agricultural work associated with the property for the production of pastures and maintenance of facilities associated with livestock.

The ownership of the properties in the regularity corresponds to the categories themselves or as part of a succession by inheritance in 87%, being lower the cases of leases of the property space with 13%. It is worth mentioning that 62% of producers have water rights, this being an important resource for cheese production, not only linked to the product as such, but also to agricultural production such as pastures, and the maintenance of animal load on family farms. Add to this that in 55% of cases they have irrigation, which is an important element for the sustainability of property and cheese production.

The average number of plots for cheese production varies according to the type of cheese that is made and, therefore, the farm load of animals is an important factor that mainly determines production volumes. In the case of producers of cheeses with bovine milk, the average is 20.8 hectares; in sheep milk producers it is 15 hectares. on average, and 10 hectares. for those who produce cheeses with goat's milk. As far as cattle breeds that are raised for bovine milk production are concerned, the most mentioned are the Holstein Friesian, Carnation, Norman, and Jersey breeds. For sheep are counted the Mapuche and Lacha, while on the side of goats are the Saanen and Creole.

Finally, and as a sign of the relevance of cheese production for those who are part of this item within the Araucanía region, 63% of producers maintain that the income derived from the sale of cheese constitutes more than 60% of family income; 14 % of producers set this share at between 30 % and 45 %; 10% of producers place it between 45% and 60%; 8 % of producers between 15 % and 30 %; and, the remaining 3% does between 0% and 15% of family income.

**Cheese factories.** Cheese factories in the Araucanía region have had to update their infrastructure and equipment, both to increase production, optimize processes and improve the quality of their products. However, the habilitation of the cheese plant is a process under permanent construction, which requires constant attention. In this sense, the cheese factories of the region of La Araucanía are in a process of productive updating, being the main requirements referred to vats, presses, cold tanks, maturation chambers, pasteurizer, boilers and molds.

Only 17% of cheese factories have a maturation chamber, which places most cheese factories at a great disadvantage, since the maturation chamber is a fundamental equipment for the control of temperature and humidity conditions that allow to provide the different types of cheese with the desired organoleptic characteristics, and that leads to a differentiation and improvement of its product. In this way, although the cheese factories have experienced an improvement in recent times, issues such as the ripening chamber are an unavoidable obstacle to achieve a quantitative and qualitative improvement in the artisanal production of cheese, which is due to the economic resources involved in its acquisition.

To comply with the legal requirements of food production in Chile, producing companies must comply with a minimum framework consisting of four resolutions that verify that their infrastructure is suitable for food production. These correspond to drinking water, sewerage, riles (industrial liquid waste) and in the particular case of cheese factories, the resolution of the cheese sector. Most cheese producers do not have the necessary sanitary resolutions within the regulatory framework of the same; only 21 producers have all of them, and at the other extreme, 11 do not have any resolution. The sanitary resolution that is most repeated in the beneficiaries corresponds to that of drinking water with 77 producers, in second place, is the resolution of sewerage with 34 producers, followed by riles with 25 and item with 21.

Taking the above to producers with complete sanitary resolutions that allow them to act within Chilean sanitary regulations, it has to be that this only reaches 23%, the rest are cheese factories that have not started with the necessary requirements or that are advancing to the extent of their possibilities, especially economic. If we consider that the resolution of water, - often given by the existence of rural drinking water systems - is a basic condition for the item, the figures of those who only have this resolution is 45.5%, which adds another component of more complex analysis.

Although, the process of obtaining sanitary resolution is a guarantee when offering the products, the producers do not sufficiently assign the relevance that this has, nor the benefits that it brings with it in terms of the operation of the production facilities, processing, packaging and storage of the product. This is mainly due to a significant gap in equipment and infrastructure, and to the high costs involved in carrying out the different processes of obtaining resolutions; Costs not only with regard to economic and financial matters, but also in the consultancies that it entails and the times destined to the administrative procedures of the same.

Another associated reason for not obtaining all the sanitary resolutions, refers to the fact that an important part of its customers do not take into consideration the existence or not of these resolutions at the time of acquiring the products. In addition, obtaining the sanitary resolutions would entail an increase in the value of the price of the products, which could be a factor of loss of markets given the existing competitiveness, and the diversity of intermediaries involved in the placing on the market of artisanal cheeses. It should be noted that the regularity of the cheese factories makes a daily maintenance of the facilities, which is favorable for the sanitary criteria of production, being the cleaning products regularly used alkaline detergents, acid detergents and chlorine. Formalization is another element that is directly associated with obtaining sanitary resolutions, and within the region, only 25% of cheese enterprises have formal regularization of their microenterprise and have developed a trademark.

**Cheese production: raw materials and processes.** Milk is the fundamental ingredient in the production of artisanal cheeses and plays a crucial role in the quality, flavor and texture of the final product, being at the same time a very sensitive product to the degradation produced by microbiological agents that affect its quality and nutritional use, so its milking, processing and manufacture are important aspects.

In 87% of cheese producers whose source of milk comes from their own farm they report having a type of mechanical milking, whose main characteristic is that it is a question of imitating the action of the calf when suckling, that is, the milk is sucked causing a pressure differential, applying to the nipple a negative pressure known as partial vacuum, replacing the mouth, digestive tract and lungs with nipples, pulsator, vacuum pumps and a series of complementary elements that allow the producer to extract milk efficiently and in better sanitary conditions. The remaining 13% obtain milk by manual milking, which is the traditional procedure for small-scale production. Despite the variability of milk production at different times of the year - improving substantially in spring - 73% of cheese producers indicate that they have the raw material throughout the year, although in the months of lower production they must resort to buying milk for the cheese activity.

Field data referring to the main components of milk processing for cheese production indicate that 58% of producers do not have a cooling system, something worrying in health aspects, since it controls unwanted bacterial growth and guarantees its conservation. A high indicator is milk filtration, as 96% of producers report doing so by favoring the elimination of impurities and sediments that may negatively affect the flavor, texture and appearance of the cheese. Similarly, reducing the bacterial load and eliminating contaminants contributes to food safety and a longer shelf life of the cheese. A lower percentage than the previous one (65%) indicates that it performs a correct measurement of the temperature of the milk, at least at the time of reception, before coagulation, and during heating, ensuring that the milk is at the correct temperature at each stage of the cheese making process. The digital thermometer is the instrument of greater use, the measurement being carried out directly in the milk and not in samples, and the producers point out that this is very important to achieve the desired characteristics in the cheeses, but above all the flavor that is what the client looks for in an artisanal cheese.

Milk pasteurization is a process to eliminate or reduce the bacterial load present in milk, its main objective being to improve food safety by reducing the risk of foodborne illness and prolonging the shelf life of milk. This process is carried out by only 30% of producers. The pasteurization method used is to heat the milk to a temperature between 60 and 80 degrees for a time that can range from one minute to half an hour, and then cool it quickly. Double-bottom tubs are the most recurrent medium, since few have a pasteurizer.

The non-pasteurization of milk is an issue associated in the culture of artisanal cheese to the preservation of the flavors and natural characteristics of milk and, therefore, in the quality of cheese, being the basis for its practice; however, food safety issues are being a relevant factor, especially post-pandemic, for a change in its practice, also associated with an increase in sanitary resolutions that are controlled by the Health Service, and where, this aspect is an important control element. It is also necessary to point out that given the requirement and the increase in practice, soft pasteurization is the most used method allowing to reduce the impact on the organoleptic characteristics of milk.

With regard to the addition of ferments and additives, the rennet used in 98% corresponds to chymosin, being the remaining 2% divided equally between proteolytic enzymes of microbial origin and proteolytic enzymes of plant origin. 57% of producers use freeze-dried ferments, 31% do not use any type of ferment, 7% use ferments of natural origin and the rest is divided into another type of substance. Once the process is finished, it advances to the coagulation of the milk, by which a concentration of the solids of the milk and elimination of water is achieved by altering the casein and its precipitation, making it go from a liquid state to a semisolid or gel. After draining, the clot is cut into portions to increase the draining surface and thereby facilitate the evacuation of serum.

This process is executed with an instrument called lyre (one horizontal and one vertical), which contains a series of parallel and tensioned stainless steel threads, which facilitate a precise cut of the curd. The size of the cut determines the type of cheese to be made. Subsequently, a stirring of 10 to 15 minutes is usually performed, stirring gently to prevent the adhesion of the grains and the excessive breakage of these, in addition a short heating is carried out (slow and progressive) to decrease the hydration of the grains, their volume and accelerate the draining.

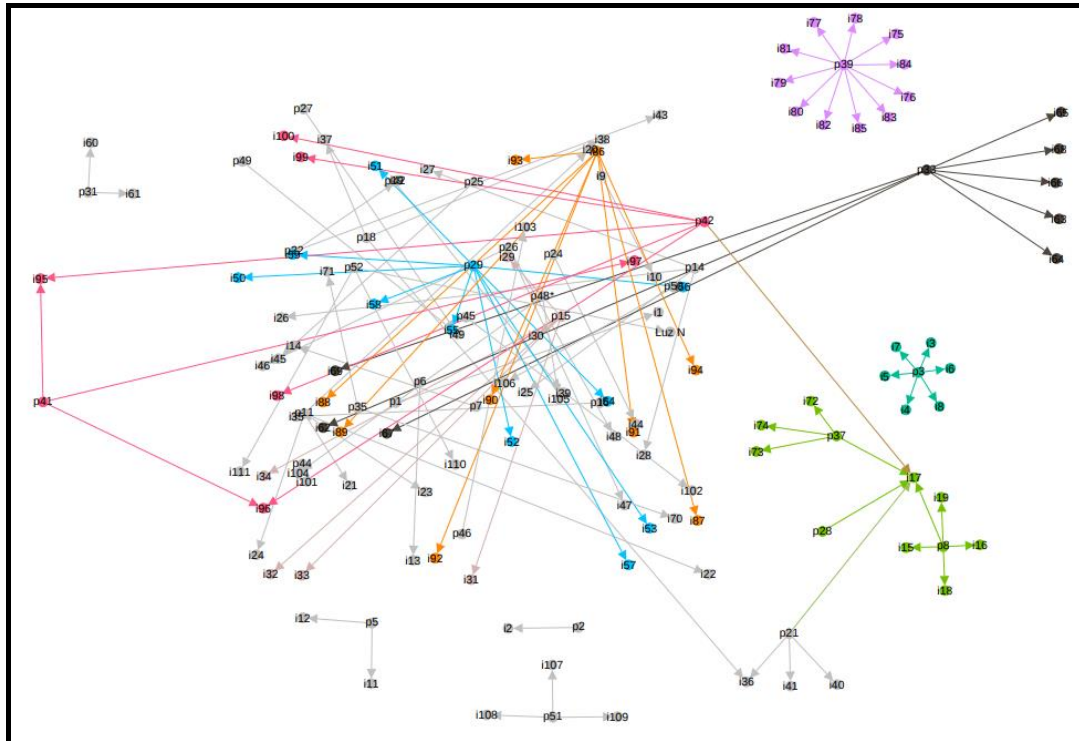
The curd is placed in molds to shape the cheese and undergoes a pressing process. Pressing helps remove the remaining whey and compact the curd, forming the structure of the cheese. The molds are variable depending on the cheese factory, but what prevails with cylindrical and rectangular type, being stainless steel the most used material given its ability to resist corrosion and level of hygiene. However, the mold depends on the type of cheese being made – hence its diversity – the desired characteristics of the cheese and the preferences of the cheesemaker; Since each mold has a direct effect on both the shape, drainage and texture of the cheese, but it is also important for the markets where they are marketed. Subsequently, salting by brining or direct application adds flavor, helps preservation and contributes to the formation of the characteristic crust in some cheeses.

The final part of the process is maturation, allowing the enzymes and bacteria present in the cheese to interact and transform its components, providing a wide variety of flavor profiles. The maturation of the cheeses is variable, although it does not exceed two or three weeks regularly, since there are very few cheese factories that have maturation chambers. In this context, it is not surprising that 42% say they market fresh cheese, followed by semi-mature cheese with 34%. The most sold fresh cheeses are quesillo and chanco buttery cheese. The semi-mature cheeses of greater production is mainly the one that type chanco mantecoso (70%), and in the case of mature cheeses it is this same type of cheese that predominates (90%).

The commercialization of the same is an important element to consider when establishing the characteristics of the cheese producers of the region of La Araucanía. Cheese sizes, sales frequencies and type of customers are necessary aspects to consider. As for the size of the cheeses, 72% of the producers maintain that the most sold is that in 1 kilo format, although in smaller proportions the formats of 500 grs. and 800 grs. are also elaborated and some cheese factories elaborate cheeses weighing more than 5 kilos. Although these are the most popular formats, according to the producers both the shape and size of the cheeses are closely related to the raw material, the number of workers, the manufacturing time, the season of the year and the infrastructure, so it is complex to

establish a type model that can be called as characteristic cheese of a place or season, although presumably the cheese of greater elaboration is what distinguishes the artisanal cheese.

In terms of sales frequency, most producers in the region sell weekly (54%) and daily, with 34%. The group of producers that sells weekly (65%), is usually related to one or more intermediaries who go from time to time to buy the cheese directly from the cheese factory. This indicates that other actors are responsible for the distribution and final marketing of products, with fewer cheese factories directly delivering their production to supermarkets or businesses established in cities.



**Diagram of customers linked to the artisanal cheese factory.**

The network diagram denotes the dispersion of customers associated with the artisanal cheese factory, where the absence of stable networks is denoted, since it is the low existence of permanent or habitual clientele of the producers. Only 7 producers have a total of 6 or more permanent customers and there are no customers that they have in common (P39 11, P29 10, P33 8, P40 8, P3 6, P15 6 and P42 ). The lack of a common clientele can respond to several factors. First, territorial focusing, in which each producer sells to its closest neighbors or floating clientele, this being a key characteristic of a highly atomized sector. A second factor may be related to the fact that producers seek to reduce competition and ensure the sale of their product in the market, so they do not share the information of their customers with their peers.

The times of pandemic were especially good for the cheese trade, and with it a greater number of intermediaries began to withdraw the product directly in the cheese factories, a component that remains today. The prices of cheeses have been varying with the increase in production and quality costs, if in 2020 it was sold between \$ 4,000 and \$ 4,500 per kilo (between 5 and 6 dollars), today the quality of the same and the raw materials makes the cost fluctuate between \$ 7,000 and \$ 9,000 per kilo, that is almost double the value of times of pandemic.

**CONCLUSIONS**



The characteristics of the producers, cheese factories and processes associated with the production of cheese, account for a cheese reality that has a set of potentialities and complexities necessary to consider not as problems of the artisanal cheese factory, but as realities and baselines on which it works and it is necessary to continue working in post of its empowerment and its value as part of the agri-food production system in the region of La Araucanía-Chile. The conclusive elements therefore focus on the value of craftsmanship in the cheese factory, the references found in the data, the importance of the actors and production spaces, and the cultural elements that allow the continuity and development of an activity that encompasses a set of particular interactions in the territory of La Araucanía.

The data on the reality that the artisanal cheese factory are scarce in all the contexts of the countries, but especially almost not explored in the rural sectors of Chile and the Region of La Araucanía in particular, and that has as relevant actors of this item to foreign settlers arrived in the territory in the late nineteenth and early twentieth centuries, and to the Mapuche population depository of the historical and cultural heritage of this region. The interethnic and intercultural relations have allowed the generation of a product with particular characteristics, rooted in communes such as Pitrufrquén with a high concentration of occupation of the territory with these particular characteristics, and where the designations of origin of the product come to occupy a prominent place as a productive economic source of families, but also with a reputation for quality of the products produced.

The artisanal cheese associated with the rural is an unavoidable condition when the client thinks of this type of products, that is why he also calls it "country cheese", and when an important proportion of the Araucanía region is rural, but it is also Mapuche, cultural contributions are incorporated as a central aspect in the stories of those who give a specific content to the cheeses made and how this is integrated. to processes of family and community life in these spaces.

The value of artisanal cheese, understood as cheeses combine fresh ingredients, traditional methods, knowledge and family recipes, cultural heritage, unique and tasty products that reflect the craftsmanship and dedication of its producers, constitute part of what artisanal cheese means not only as gastronomic and cultural heritage, but also as part of a process that energizes local economies and maintains a social and economic fabric in rural communities. Authenticity, sustainability, cultural preservation, quality, knowledge, among others, are elements that are reflected in a product adding value, but also generates a denomination of origin increasing and complicating diversity as an important source of innovation within the traditional.

The cultural value of the artisanal cheeses of La Araucanía, is based on an oral transmission and whose practice reflects the identity and history of the territories; These cheese factories are part of the gastronomic heritage, reinforcing the links between food production and the natural environment in a framework of rescue and enhancement of the specific resources of each area. The artisanal cheese factory becomes a mark of identity and a symbol of local identities, at the same time that innovation processes not only improve the quality of the products offered in the markets, but also contribute to the culinary offer and promotes the appreciation of the diversity of flavors and knowledge.

Certainly, the production of cheeses must be in accordance with sanitary standards, towards there the data denote that progress is being made in these objectives, but without losing the essence of what you want to transfer and mean, since they are a reflection and continuity of family histories. Finally, in these meanings the agency of women is a fact that should be highlighted, not only as entrepreneurs in the field, but as relevant agents in the framework of family economies that have cheese as a significant component of economic income and transmission of cultural heritage.

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DOI: <https://doi.org/10.15379/ijmst.v10i1.2894>

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