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# Majorero PDO cheese production systems: Cheese making and commercialization

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**Abstract.** The objective of this paper is the analysis of Majorero Protected Designation of Origin (PDO) systems making a special point on cheese making and commercialization. The study included in DOQUECAN project was performed on all farms and cheese factories (16) of Majorero PDO. The information was obtained from surveys and recorded data from the technicians of the Regulator Council. Majorero goat cheese is a typical product of Fuerteventura (Canary Islands, Spain), and is manufactured from Majorera goat's milk according to the specifications of its Regulatory Board (1996). It was the first Canary Island cheese and the first Spanish goat's cheese to obtain this distinction. Fuerteventura island has a rich farming tradition, and goats are very important to their economy. This cylindrical fat cheese could be consumed fresh (8-20 days), semihard (30 days) or hard (>60 days), weighing from 1 to 6 kilograms. The goat's census included in Majorero PDO farms was nearly twenty-five thousands (24,937). All the farms used mechanical milking machines. Most of them (85%) transformed crude milk into Majorero cheese while the remaining 15% pasteurized their milk. Every producer used commercial rennet and starters in the cheese making process. The most usually commercialization method was direct sale (75%) although intermediaries had also a great importance (65%).

**Keywords.** Dairy goats – Cheese making – Labelled products.

## **Systèmes de production de fromage AOC Majorero : élaboration et commercialisation**

**Résumé.** L'objectif de cette communication est d'étudier les systèmes de production de l'Appellation d'Origine Contrôlée (AOC) Majorero en accordant une attention particulière à l'élaboration et à la commercialisation du fromage. L'étude, mise en place dans le cadre du projet DOQUECAN, a été conduite sur des exploitations et des fromageries (16) de l'AOC Majorero. L'information a été obtenue à partir des contrôles et des données des techniciens du Conseil Régulateur. Le fromage Majorero est un produit typique de l'île de Fuerteventura (aux Îles Canaries, Espagne), fabriqué au lait cru avec des chèvres de la race Majorera en respectant le cahier des charges de l'appellation d'origine (1996). Il a été le premier fromage canarien et le premier fromage de chèvre espagnol à recevoir cette distinction. L'île de Fuerteventura a une riche tradition dans la production animale et les chèvres jouent un rôle important dans l'économie. Ce fromage gras, cylindrique, peut être consommé frais (8-20 jours), semi-affiné (30 jours) ou affiné (> 60 jours), avec des poids variant de 1 à 6 Kg. Le recensement des chèvres des exploitations appartenant à l'AOC indique près de vingt-cinq mille têtes (24937). Toutes les exploitations utilisent la traite mécanique. La plupart d'entre elles (85%) transforment le lait cru en fromage Majorero, tandis que les 15% restantes pasteurisent leur lait. Tous les producteurs utilisent la présure et les initiateurs commerciaux dans la fabrication fromagère. La méthode de commercialisation la plus fréquente est la vente directe (75%) même si les intermédiaires ont aussi un rôle important (65%).

**Mots-clés.** Chèvres laitières – Fabrication du fromage – Produits sous signe officiel de qualité.

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## **I – Introduction**

Majorero goat cheese is a typical product of Fuerteventura (Canary Islands, Spain), and is manufactured from Majorera goat's milk according to the specifications of its Regulatory Board (Orden Ministerial de 16 de Febrero de 1996). It was the first Canary Island cheese and the first Spanish goat's cheese to obtain this distinction.

The objective of this paper is the analysis of Majorero PDO systems, making a special point on cheese making and commercialization. The study, included in DOQUECAN, project was performed on all farms and cheese factories (16) of Majorero PDO. The information was obtained by surveys and recorded data from the technicians of the Regulator Council.

## II – Material and methods

The information was obtained by surveys from February 2007 to June 2007, direct observation and data recorded by the technicians of the PDO Regulator Council. Sixteen surveys were carried out from all Majorero PDO cheese farms. The total census controlled by Majorero PDO is 24,937 goats.

The questionnaire was based on the methodology used in previous Canarian projects that studied the characteristics of Canarian cheeses (Darmanin *et al.*, 1992). The information registered included data on milk producing animals, farm management systems and a detailed description of the cheese-making practices, ripening and commercialisation. The questionnaire is structured in a total of 12 information blocks, from which 81 variables were taken. Complementary information was obtained from 170 consumer surveys.

## III – Results and discussion

Majorero cheese is exclusively elaborated and ripened in Fuerteventura Island. This type of cheese is elaborated all around the year because Majorera goats as other Canarian goat breeds are not seasonal; this fact allows a type of parturition organization just as a continuous milk production.

The predominant system of production was semiextensive. Majorera goats are perfectly adapted to arid lands, were they take their pastures and also provide an interesting dynamic function in order of their daily walking. The forage resources could be considered as scarce based mainly on arid and semiarid shrubs as *Solsole vermiata*, *Barsia tomatora* (*Chaopudiaceas*) and other *Atriplex* species on saline ecosystems. The pastures often depend on seasonal rainfall regimes; prolonged drought periods are not unusual. The most important pastures are legumes (*Medicago* spp., *Trifolium* spp.), Poaceae (*Avena* spp., *Hordeum* spp.) or Brassicaceae (*Raphanus raphanistrum*, *Eruca sativa* and *Sinapis arvensis*). Pastures represent less than 20% of the daily diet of animals.

Majorera goat is considered as a very good milk producer with an average yield of 551 kg of milk in 210 days of lactation, with 4.4% of fat and 3.7% of protein content (Álvarez *et al.*, 2007). It takes about 5.90 kg of milk to produce 1 kg of cheese.

The average herd size was 415 goats and 9 males. The standard deviations are high which indicates greater variability. The farms were divided on two groups, farms that make hand-made cheese from raw milk and farms that make cheese with pasteurized milk. Regarding the milking structures, all the farms had mechanical milking machines with correct practices on milking management.

Only 15% of the farms used pasteurized milk. In contrast to the above, in 85% of the cases, the milk was processed directly into Majorero cheese. Unlike other Canarian PDO cheeses, [Palmero cheese (Fresno *et al.*, 2002)] all cheese farms used commercial rennet to coagulate the milk for cheese elaboration. Just 5% of the farms used standard microbial origin rennet and the rest used the typical animal commercial rennet extract.

The cheese making process is basically the same for all PDO cheese makers. Majorero cheese is elaborated exclusively with Majorero goat breed milk, except ripening cheeses that allows till 15% of Canarian sheep breed milk. Milk processing begins with the milk filtering. All the farms used standard commercial cultures except two of them that used as starter the whey of the previous day. In raw milk cheeses, the coagulation is realized immediately after milking lasting

between 30-60 minutes. In pasteurized process, the milk is conserved in refrigerator tanks for one or two days. Afterwards the curd is cut for 5-10 minutes into pea grains; it goes down for 10-15 minutes and then is trespassed to the moulds where the curd is pressed intensively mechanically (70%) or by hand (30%). The moulds have a characteristic plaited palm drawing. The saltiness method was usually manual (only 40% of the cheese makers used brine) with salt addition by each side with 18-22 hours of interval.

The cheese is conserved in ripening chambers (natural or not) till cheeses reach 8-20 days (fresh cheeses), 30 days (semi hard cheeses) and more than 60 days (hard cheeses) when they are sold. The cheese factories that work with pasteurized milk also elaborated cheeses less than 8 days of ripening, but this production is not controlled by PDO Regulator Council.

The most usually commercialization method was direct sale (75%) although intermediaries had also a great importance (65%). Table 1 shows some commercial aspects: size of cheeses and average price of cheese in farms.

Consumers surveys showed that most cheese is bought in large supermarkets, from the cheese counter. It is cut according to the specification of the customer, and is not generally marketed pre-cut and wrapped. There appears to be a general acceptance that this type of cheese is of high quality although the consumers have shown a lamentable lack of knowledge in the significance of the PDO and are unfamiliar with the logo and its significance. This may indicate that the decision making between brands is haphazard, and the PDO cheeses need a higher level of promotion for effective differentiation.

This is an aspect which will need to be looked at more closely when marketing as this survey suggests that the PDO is an important instrument only when used in conjunction with other careful marketing strategies and publicity.

**Table 1. Characteristics and prices of Majorero PDO cheeses**

Cheese characteristics		Type of cheese	Average Price (€)
Weight	1-6 kg	Fresh	7.56
Height	6-9 cm	Semi-hard	9.19
Diameter	15-35 cm	Hard	10.29

Source: experimental data.

## IV – Conclusion

Predominant Majorero PDO cheese production system is semiextensive linked to arid lands. The weaknesses of this cheese production system are important difficulties for the application of sanitary regulation, decrease of the abortions and kid's mortality and also cheese commercialization.

Cheese making continues as a traditional process although main changes have been observed recently: the use of commercial rennet and starters, pneumatic presses and brine for salting the cheeses.

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## References

- Álvarez S., Fresno M., Méndez P., Castro N., Fernández J.R. and Sanz Sampelayo, M.R., 2007. Alternatives for improving physical, chemical and sensory characteristics of goat cheeses: The use of arid-land forages in the diet. In: *J. Dairy Sci.*, 90, p. 2181-2188.

- Darmanin N., Sánchez J.C., Capote J. and Fresno M., 1992.** Características de la elaboración artesana de los quesos en la isla de La Palma. In: *Proc. XVI Jornadas Científicas de la Sociedad Española de Ovinotecnia y Caprinotecnia*, Pamplona, 1991, Gobierno de Navarra (ed). Graphycems, Pamplona, p. 492-494.
- Fresno M., Álvarez S., Darmanin N., Batista P. and Pino V., 2002.** Caracterización del proceso de ahumado del queso Palmero. In. *Alimentación, Equipos y Tecnología*, 173, p. 87-92.