

Dairy consumption

In general terms, in Spain, milk and its derivatives can be said to come from 3 types of animals, in the following proportions: more than 75% from cows, about 13.5% from sheep and between 10-12% from goats. In 2015 world demand was for 826.8 million tonnes of ECM (Energy Corrected Milk), while world production went up to 830.9 million tonnes of ECM.

The average world consumption per capita is 114 kg.

The world census on milking animals is approximately 370 million heads (cows and buffalos) and this is expected to rise to 400 million by 2025, by which time the average consumption per capita will have risen to 130 kg, and world production will be about 1,038 million tonnes of milk.

World production of milk is geared to increasing by about 177 million tonnes, a 23% rise, by 2025. Most of this growth (73%) is believed to stem from developing nations, particularly India and Pakistan. This productive expansion refers mostly to fresh dairy products, meaning that there will not be an increase in processed dairy products, as it will mainly be for domestic consumption.

It is believed that India will experience the highest growth and will become the main producer worldwide, with about 210 million tonnes ECM.

Within the 28 European countries Spain is the 7th producing country of cow's milk, with 4% of the total. As for sheep's milk it is at the top of the list in 1st place with 17% of the total. And in goat's milk production Spain is in 2nd place with 22% of the total.

PRODUCTION SYSTEMS

In general terms, in Spain, milk and its derivatives can be said to come from 3 types of animals, in the following proportions: more than 75% from cows, about 13.5% from sheep and between 10-12% from goats, much of the latter is used in the elaboration of so-called "mixed cheese" (queso mezcla) because of its high percentage of fat.

In 2015 3,500 thousand tonnes of liquid milk (3,500 million kg) were produced in Spain. About 800t of yogurt and fermented milk, 436t of cheese, about 100t of cream and another 40t of butter were also produced.

In the same year 1,557 dairy producing companies were registered in our country.

As for the consumption of dairy products, the most consumed is liquid milk, above all semi-skimmed, which reached figures of 1,473 million litres in 2015. The region where most milk is consumed is Castilla-León, with an average of 94.97 l per capita per annum, and the region consuming the least milk is the Canary Islands with an average of below 60 l per capita per annum.

The total consumption of dairy derivatives in Spain was 1,597 million kg, most of which was cheese with 21% (347 million kg). The consumption rate of cheese is 7 kg per person per year. With respect to exports, Spain exported approximately 1.8 million t of dairy products between 2013 and 2015, and forecasts estimate that this figure will rise to 2.2 million t by 2025.

Goat and sheep

Goat milk farms are not usually based on area and so the farm keeps animals shut away and they are given feed and don't usually go outside. About 20% of milking goats are kept on intensive farms, the rest are in semi-extensive farms, which supplement grazing with fairly high contributions of feed concentrate. However, the trend in recent years shows that for the goat herd with high-yielding milk breeds the period of lactation is being reconverted towards semi-intensive or intensive systems, with higher and higher contributions of feed concentrate aimed at increasing the yield. Goats are highly territorial animals and when kept in confinement may suffer from stress, generate conflictive situations and even death by dehydration or starvation because of the existence of one dominant individual.

The pregnancy of sheep and goats lasts about 5 months, slightly less in goats with twin births. In milking herds the females are milked for 7-9 months, until they are inseminated again at the end of this period. The aim is to achieve one birth per year, in some farms females are even milked when they are pregnant. Goats which feed by grazing generally produce about 1.5l of milk per day, reaching a production of about 300-400 litres per lactation. In intensive farms goats may reach a production of 800 litres per lactation.

The specialist milk producing breeds are used to produce suckling kids. The kid weighs about 3-4 kg at birth and is fed on natural or artificial milk for 45 days after which it is separated from its mother to be sent to the slaughterhouse. This happens to about 75% of them.

Reproduction

In intensive dairy-producing livestock farms forced artificial insemination of the females is the key tool for reproduction of sheep and goats. In dairy sheep farms the typical rate of reproduction is continuous, with high rates of fertility by natural breeding, thus increasing profitability, milk and meat production, with the sale of the lamb.

Also in goat farms it is indispensable that they have at least one pregnancy per year for the business to be considered "profitable".

Cows

Cow pregnancies last 9 months and they usually only give birth to one calf. The age of the first conception usually takes place between 13-14 months, and so the first birth is at about 24 months. On dairy farms cows are usually kept alive until 6-7 years of age, in other words so that they may have 4-5 pregnancies. After this time they are "discarded" and substituted for younger animals which will be exploited in the same way.

The most commonly used breed for this type of production is Holstein, also known as Friesian, originally from Germany and the Netherlands, and which are considered very "profitable" because of their high milk and meat production and their adaptability. It is the most highly exploited breed due to its high yield, which, although it can vary depending on the handling of the animal and its feeding, may produce up to 20,000 litres of milk per year. This means an average of 65 litres per day (following the calculation of lactation of 305 days), however typical values are usually below this rate.

In dairy farms the mortality rate of calves is quite high. This mortality may be attributed to factors such as before weaning the animals are highly vulnerable, (it is very important that they take Colostrum between 30 minutes and 8 hours after being born) consequently this process can take its toll.

Weaning is a process which should be done gradually, when it is done suddenly calves suffer a high level of stress and as we have seen some animals do not survive the process. Studies have shown that weaning calves at early an age is more likely to cause stereotypies.

In the majority of farms the calf is separated from its mother 24 hours after birth. It is not economically viable for it to consume its mother's milk, which is intended for sale. The calf is then fed artificially with milk from suckler cows or replacement milk, from a bucket or teat, twice a day.

The method chosen to feed the calf is important, the fact that they have to drink from a bucket instead of suckling means that they stop feeding more quickly. It also means they do not satisfy their need to suck, which causes them to try to suckle other calves which may be within reach. This not only bothers and causes stress to the other animals, but also increases the risk of contracting diseases. If calves are fed by teat, they satisfy this innate sucking behaviour. This sucking action also increases the release of hormones such as insulin, favouring fat and protein synthesis, which helps digestion and decreases the incidence of diarrhea, another serious problem among calves [also among lambs].

A calf is considered such until 6 months of age and until that time may stay in the pens designated for calves. During this time the accommodation must satisfy the animals needs: a deep bed with plenty of straw, space to lie down, available water and adequate ventilation. Although individual accommodation is not common during the first weeks, the law states that no calves may remain enclosed more than 8 weeks in an individual enclosure and that these enclosures must not have solid walls, instead they should have perforated partitions or panels, which allow visual and tactile contact between calves.

Furthermore, they may not be kept tied up and must get at least 8 hours natural or artificial light per day.

Studies have shown that calves which are housed individually show higher incidences of stereotypies than those housed in groups, for example the most common is to make movements with their tongue.

Among management practices of the dairy industry there are procedures such as dehorning or clipping (to prevent horns growing) and cutting the tail, under the belief that it is more hygienic despite not having scientific studies proving these benefits.

Dehorning consists of removing corneal tissue before it becomes fixed to the skull, which means eliminating the corneous buttons by burning them with caustic paste or red hot metal. This prevents the growth of the horns which all cows would develop under normal circumstances. If this operation is not carried out at an early age, before 2 months, when it is still made up of soft tissue, it may become very painful for the animal. During the recovery period it is necessary to treat the pain, normally by giving them anti-inflammatory drugs, which furthermore manage to reduce the levels of stress in the animal and care for the wound, which sometimes takes months to heal.

The tail is crucial to cows and cutting it off, apart from being painful, increases their degree of discomfort, the presence of flies bothering them and, consequently, their nervousness.

From an early age cows learn to associate situations with experiences which have produced fear or pain, so their first milking and the way this is carried out are crucial to their day to day lives. Furthermore, just as with other ruminants, cows have a 300° panoramic vision, without the need to move their head. But their vision is monocular, meaning that at the side of the animal their vision is less clear and they cannot distinguish the terrain or depth easily, so the route to the milking shed, which they have to walk several times a day may provoke great stress. That's why a lot of importance is given to the design of the paths on the farms. They should be free of obstacles, without slopes, wide and without changes of light which may scare them.



Complementary information

[Directive 2008/119/CE on breeding calves.](#)