

# Happy Cows Milk Program

## as a leverage of pasture and animal welfare

Eduardo Vasconcelos

Estrada Regional Ribeira Grande ; Ribeira Grande – Açores  
(Portugal) ; [evasconcelos@goupe-bel.com](mailto:evasconcelos@goupe-bel.com)



### Happy Cows Milk Program

In January 2015 the Groupe Bel launched in Azores- Portugal the Happy Cows Milk Program in a partnership with farmers to develop the best practices in milk production and take advantage of the natural conditions of Azores to produce free grazing milk all around the year with the goal to develop a premium milk, meaning having a higher nutritional milk (higher level of fat acids, omega 3, vitamin A and E and lower rate omega 3/omega 6) with concerns about animal welfare, environmental impact and food safety.

The best practices were based on technical information from International Dairy Federation (FAO and IDF, 2012) and on several available information from the biggest Dairy groups, like Arla Foods (ARLA FOODS, 2019)) and covers animal nutrition, milk hygiene, animal health, animal welfare and environment.

Also, it was developed for Azores a list of requirements (FROMAGERIES BEL PORTUGAL, 2019) that the farmer needs to fulfill, related with milk quality, external expertise, conditions of milking parlor and milking room, silage conservation, feeding park and access to the farm, to have a higher milk safety and improve the conditions farmers do they day to day.

The farmer must comply with the 5 pillars of the Happy Cows Milk Program: The Grazing, Animal Welfare, Sustainable Production, Quality and Food Safety and Efficiency through an audit carried out by SGS, an international audit company, every two years and twice a year a survey is carried out by BEL employees.

In each pillar BEL has a partnership with specialists to stimulate the continuous improvement of the Happy Cows Milk Program and provide the best milk aligned with consumers trend.

#### – The Grazing

The cows need to be on the pasture all year around (except when the weather does not allow it or during the night) and comes inside to be milked and to be fed with silage and concentrated feed as a complement.

The pasture is the natural habitat of the cows where they can express, in the best way, their natural behavior.

It is mandatory that every day, fresh grass be present in cows' diet, because fresh grass is the natural way of increase the milk nutritional quality and provide consumers with the best milk.

In this pillar there is a project with other stakeholders to improve the nutritional quality of the pastures, introducing clovers and other species more resistant to water stress and altitude to be able to get more protein from our one land.

Main control points included on contract with farmers and object of audit:

- Fresh grass in daily feed
- Available water in clean water drinkers
- Control of water quality
- Control of security interval of plant protection products
- Correct management of pastures

## - Animal Welfare

Also, animal welfare is a way to promote a better milk, a more efficient production and to respond to a growing consumer concern.

The farmer needs to pass on the Animal Welfare Protocol, developed with Veterinary University of Lisbon that is based on the observation of the animal's behavior and illness signs and need to be aware of the potential dangers that infrastructures pose to animals. He also has to follow the cow's body condition and available food and water needed daily to meet the physiological needs of the animals.

Main control points included on contract with farmers and object of audit:

- The numbers of water drinkers allow free access to all cows
- The feeding place is proportional to animal number
- The feeding place has sufficient ventilation to allow fresh air to enter
- The facilities are built to avoid bruising on animals
- Health plan for all animals
- Calves must be on groups after 1 month
- Heifers should be on pasture after 6 months of age

## - Sustainable Production

The farmer must respect the environment and safeguard natural resources in order to ensure the milk production and its quality for future generations.

Need to have a management of the effluents and waste (plastic, phytopharmaceuticals and medicines) on the farm and be aware for energetic efficiency, meaning that the farm needs to have enough space to stock the manure, need to separate the waste, such as plastic and use the right channels to deposit the phytopharmaceuticals and used or out-of-date medicines.

The Agrarian Institute of Lisbon is beginning a work with BEL to lower the carbon footprint and develop best practices to reduce the environmental impact together with Terraprima, a specialized Portuguese company in sustainability.

Main control points included on contract with farmers and object of audit:

- The feeding is stock away from source of contamination
- Effluent management plan
- Regular checking of leaks
- Use VALORFIT system to plant protection waste products
- Waste separation
- Correct drugs elimination

## - Quality and food safety

In this pillar, the farmer needs to be compliant with:

- Water and food of good quality and provide traceability
- Cleaning plans and use of suitable cleaning products
- Infrastructures made of impermeable and easy cleaning materials
- Equipment preventive and regular maintenance
- Pest control
- Milk quality criteria that are more stringent than the law, like lower level of somatic cells (250.000/ml month average), total plate count (25.000/ml month average) and aflatoxins (<0,025 µg/kg)

It is in progress a work with Minho University to follow the milk nutritional value and ways to improve

Main control points included on contract with farmers and object of audit:

- Milk quality more demanding than legislation
- Foot-washing at the entrance to the milking parlor and footbath at the exit
- Container for receiving milk from diseased and/or treated animals.
- The milking room is organized and don't have products not related with the milk tank and not allowed animals
- Only products approved or suitable for food industry
- Hygiene plans for facilities and equipment
- The feeders are exempt of accumulation
- Plan and register pest control for rodents and insects

## - Efficiency

In everything that we do, we need to be as much efficient that we can. All the pillars of the program seek production efficiency like the decrease of food waste, control of animal health reducing treatments, better energy efficiency and use of external expertise.

Main control points included on contract with farmers and object of audit:

- The tank has an annual maintenance and fault-prevention program
- Proceeds regularly to clean the fins of the condenser
- In milk room there is an air conduct to channel hot air to the outsider
- Mandatory external services like milk control and pairing

By this BEL aims to ensure the economic sustainability of the farms

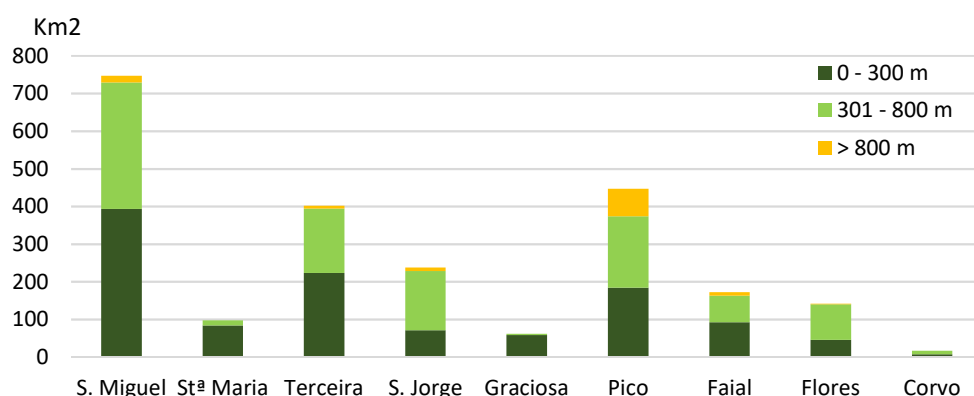
In the audit performed by SGS, the farmers that meet 90% of Best Practices and 100% of the requirements gets a certification that allow them to receive around more 10 percent on milk price and access to investment finance.

	<b>Certified Happy Cows Milk Program</b>	<b>Others</b>
Number farms	37	308
% Milk	24%	76%

## Happy Cows Milk Program as a leverage of pasture

In Azores currently, 81% of the total used surface area and 88% of the useful agricultural area of the Azores is covered by permanent and temporary medium-term pastures (SERVIÇO REGIONAL DE ESTATÍSTICA). Permanent pasture is generally more than 20 years old and temporary pasture is sown regularly and / or maintained for several years until the producer considers it to be too infested or unproductive and decides to renew it. Seeded pastures are generally integrated in a rotation with maize for silage.

FIGURE 1 – Allocation of the surface by altitude (km<sup>2</sup>).



Most of the permanent pastures are in medium and high-altitude areas of the Azores (Figure 1) and temporary pastures are in low altitude where the maize for silage is done with more intensity. The climatic conditions of each altitude zone have influence over the grass yield.

The medium altitude zone is the most appropriate for grazing during all year because water deficit is rarely present and because temperatures are not limiting to plant growth.

Grazing management presented in any of the production zones is of the continuous type, where animals have access to large grazing areas throughout the season. The existing plots have different dimensions, often delimited by vegetation (trees or others) and / or sometimes by stone walls. In the practice of grazing these plots access to fresh pasture is controlled with the presence of the electric fence, and a new fresh pasture range is provided daily, being mandatory to the farmers that belong to Happy Milk Cow Program.

PICTURE 1 – Cows in the pasture.



With the growing of the number of cows per farm, the farmer tends to close the cows inside to better manage the herd and get higher return from the land linked to the use of high productive cows breed but that goes against the traditional way of producing milk in Azores (Picture 1) and in contradiction with the consumer trend (<https://www.businesswire.com/news/home/20180712005539/en/Top-Dairy-Industry-Trends-Impact-Dairy-Consumption>).

In the pasture the cows can express their natural behavior and get a higher nutritional milk, richer in fat acids, omega 3 and in the ratio omega 6 / Omega 3, besides some vitamins (A and E) and calcium.

Also, based on grass the farmer can have a lower production cost potentiating the production of grass in detriment of other factors of production bought externally

The Happy Cows Milk Program obliges farmers to keep the traditional way of production milk on Azores with the attraction of better milk price to lead farmers, in the future, to invest more in reducing external factors used on the farm and being more sustainable.

Because the free grazing is in the heart of the Happy Cows Milk Program, gradually will be given more importance to the nutritional quality of the milk and will be there that the farmer will be able to valorize his product.

## **Happy Cows Milk Program as a leverage of an animal welfare**

There is no doubt that consumers of dairy products are in favor of the grazing milk. At the root of this feeling is the fact that the natural cows graze is associated with the quality and naturality of the product and the welfare of the animals. Some of these correlations have a great emotional aspect and their validity needs to be tested, but others have already been proven by science (ELLIS *et al.*, 2007).

It is therefore very important that the assessment of the impact of the environment or management on Welfare be supported by the most rigorous and objective investigation possible. We must ask the cows and not assume based on what we think it should be, and ask the cows means look to cows conditions: body conditions, lesions, vulvar discharge, broken tails, udder asymmetry, teat hyperkeratosis, escape distance, etc.

First the facts: dairy cows are ruminants, with a stomach prepared to eat plants with a high fiber content; are gregarious animals, having a relatively complex social organization; have an anatomical structure prepared to walk on soft ground and to eat with a low head; and they need to lie down in comfort many hours a day to ruminate. On the other hand, modern dairy cows have increased nutritional needs and suffer greatly from exposure to wild climates, especially moist heat.

So, what does science (LEGRAND *et al.*, 2009) already tell us about the welfare of dairy cows on pasture. I will summarize the immense that has already been studied in three areas: impact on health, behavior and physiology.

As for health, we know that pastured cows have lower prevalence of nail diseases and therefore of claudication, inflammations of articular areas, bare or injured body, mammals, uterine infections and mortality. That is, they usually have greater longevity.

In terms of the possibility of displaying natural behavior of the species (considered one of the 5 Liberties that define animal welfare), grazing benefits the animals allowing a more natural way of feeding and lying down and getting up. The lying down time may be shorter, since the animal needs to stay upright and move further to graze. However, it seems to promote comfort because they are more time to ruminate while lying down (KROHN and MUNKSGAARD. 1993).

Also, about behavior, grazing cows show lower rates of aggression and more affiliative behaviors.

However, the behavior of dairy cows may be adversely affected in pasture if there is high exposure to heat, winds and insects. In such cases, if protection measures are not provided, welfare levels may be very low, being mandatory to provide shelters to cows during pasture.

Finally, in physiological terms some concerns arise, especially in cows genetically prepared for high milk yields. In fact, in permanently grazing cows, the energy needs can be completely fulfilled giving rise to low body condition, diseases such as ketosis and still low levels of fertility. The solution

is to look for animals with lower milk capacities, but often with a richer milk, to improve the pastures or to supplement with concentrated food the animals at risk.

Some papers (LEGRAND *et al.*, 2009) have tried to ask the cows directly, which environment or conditions they prefer. These tests are based, in brief, on giving simultaneous access to the pasture and the stables with food in the manger to different groups of cows. With some minor variations, almost all studies show that cows prefer to be grazed, especially at night. There are a few exceptions (prefer the intensive laundering system) as being when there is bad weather and in the case of high producing cows, which probably cannot meet their energy needs with grass only.

In short, pasture seems to favor health and the display of the natural behavior of dairy cows

**PICTURE 2 – Natural behavior.**



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