

# PRODUCT SPECIFICATION

## “Íslenskt lambakjöt / Icelandic Lamb”

PDO ( X ) PGI ( )

### 1 RESPONSIBLE DEPARTMENT IN THE MEMBER STATE

#### ICELAND

**Name:** Department of food

**Address:** Ministry of Food, Agriculture and Fisheries

Borgartún 26

105 Reykjavík

Iceland

**Tel:** +354 545 9700

**Email:** [mar@mar.is](mailto:mar@mar.is)

### 2 GROUP

Name: Icelandic Lamb

Address: Hagatorg

107 Reykjavík

Iceland

Tel.: +354 563 0330

E-mail: [info@icelandiclamb.is](mailto:info@icelandiclamb.is)

### 3 TYPE OF PRODUCT

Class- Group 1.1 Fresh meat (and offal)

### 4 SPECIFICATION

#### 4.1 Name:

„ICELANDIC LAMB/ÍSLENSKT LAMBAKJÖT“

#### 4.2 Description:

##### *a) Description of the product and its characteristics*

The Icelandic sheep is a heritage breed of the North European short-tailed breeds of sheep. It is the largest remaining stock of all short-tailed breeds, accounting for 40-50% of all short-tailed sheep in Northern Europe. Iceland's sheep farming tradition began when the Vikings settled Iceland over 1,100 years ago. Icelandic lamb is a product of purebred lambs of the Icelandic sheep breed that are born and raised in Iceland and slaughtered at the age of four to five months. Modern Icelandic sheep are direct descendants of sheep that the early settlers brought with them. They are bred for meat quality and remain one of the purest and most protected varieties of sheep in the world. The uniqueness of the breed developed over centuries of isolation, on the one hand through natural selection and on the other through the demands that have been made on sheep in Iceland at various points throughout history. The Icelandic breed of sheep is still considered to be primitive in comparison to many other breeds and it is thought to have retained characteristics that have been bred out of other sheep stocks.

The Icelandic sheep is thought to exhibit little or no signs of interbreeding with other sheep stocks. It is believed that this is because the genes from foreign breeds that have been imported to Iceland have mostly disappeared through culling due to illness. The stock is also considered to show little sign of inbreeding. It is also assessed as being relatively fertile in comparison to other stocks and the ewes take good care of their lambs.

Icelandic sheep have a unique and distinctive appearance. About 80-85% of the stock is white although it generally contains wide colour variation. The wool also has unique characteristics that have developed since the age of settlement. The most distinctive characteristic of Icelandic wool is that it has two layers and two types of fiber: the outer layer, called *tog*, with long coarse hairs that are water-resistant; and the inner layer, *bel*, which is insulating and finer-haired. In Iceland, as elsewhere in Northern Europe, wool is a by-product of sheep farming, since the emphasis is placed on meat production. This emphasis is distinct in countries bordering the Mediterranean, for instance, where meat and wool are by-products and the main emphasis is placed on milk.

Sheep farming has a long and rich cultural tradition in Iceland. Many people believe that without sheep Iceland would have been uninhabitable to settlers many centuries ago. Sheep sustained the nation: their meat fed generation upon generation and their wool sheltered them from the cold.

Lambs in Northern Europe are generally put to pasture on grassland and as a consequence the meat has a stronger taste than, for instance, that of lambs from the Mediterranean area, which are fed on milk. The gamey taste and high percentage of omega-3 fatty acids and iron in the meat results in a unique taste compared with other types of lamb. The palatability of Icelandic lamb can be traced to the fact that lambs roam freely in demarcated wild rangelands and grow in the wild, natural surroundings of Iceland, where they feed on grass and other plants (see earlier discussion of the grazing practices and plant selection of sheep).

The substances that contribute to the flavour come from the vegetation which the lambs eat, and studies in Iceland have confirmed that the combination of grazing vegetation and other fodder

affects the flavour of the meat more than other factors. The meat shows signs of the lamb having fed on spicy plants and wild vegetation and a slight difference can be detected between the taste of meat from lambs that have roamed in highland areas, lowland areas or along the coast, respectively. The age of lambs at the time of slaughter is also an important factor in the palatability of the meat. Studies have also confirmed that if sheep are left to graze on angelica for about three weeks the flavour of their meat changes, acquiring a characteristically spicy taste and odour. Research shows there is therefore a clear connection between the palatability and origin of the meat. In addition, it has been demonstrated that a woolly taste is not present in meat from traditional Icelandic fall lambs.

The uniqueness of Icelandic lamb is also partly due to its high degree of tenderness. The factors believed to have the greatest effect on tenderness of lamb are the quantity and type of connective tissue, the age at the time of slaughter and cooling and storage after slaughter. It is also believed that the tenderness and fine texture of Icelandic lamb is due to the high percentage of red muscle fibers that can be traced to the sheep breed itself and its grazing practices, among other things. In general, meat toughens with age but this is not an issue in meat from five- to ten-month-old lambs.

International comparative trials of lamb providing measurements of its quality elements have demonstrated not only the palatability and tenderness of Icelandic lamb but also that it is high on the list as regards healthiness. It has been shown that Icelandic lamb is healthier than other types of lamb when it comes to the fatty acid composition in its cell membranes, as they contain the highest amount and percentage of omega-3 fatty acids. It is believed that this can be traced to the fatty acid composition of the fodder or grazing vegetation that has an effect on the percentage of omega-3 fatty acids in both the fat layers and the muscles of the lambs. It has also been stated that Iceland's climate may be one of the factors behind this high percentage of fatty acids. Furthermore, it has been demonstrated that Icelandic lambs do not experience stress before or during slaughter, which ensures very low acidity levels in the meat.

#### **4.3 Geographical area:**

The geographical area is the island of Iceland in the North Atlantic Ocean. Icelandic nature is unique on a global scale. Iceland straddles the Arctic and subarctic regions. Frequent volcanic activity, along with ice, wind and water have all visibly sculpted Iceland's surface. Iceland is rich in freshwater in various forms and glaciers are one of its defining characteristics, distinguishing it from other countries. Two thirds of its surface area are undergrown or barren sands, gravel plains, water bodies and glaciers. The biota on dry land is considered somewhat poor in species considering Iceland's size and geographical location. The vegetation consists of low plants and there are relatively few tree species. Vegetation in Iceland can be roughly divided into wetlands; forests and scrub; heath; moss and open-area vegetation. Along the coast there is a fertile belt of algae that is the foundation for a varied ecosystem on the country's beaches. Iceland is one of the countries richest in freshwater in the world, with high levels of precipitation and little evaporation, which makes for plentiful surface and groundwater.

#### **4.4 Proof of origin:**

Labelling and traceability of livestock products is according to Act No. 93/1995 on foodstuff. The purpose of this Act is to ensure as far as possible the quality, safety and wholesomeness of foodstuffs and that the labelling and other information of foodstuffs is correct and in accordance with the law. All livestock have earmarking/tagging to ensure the traceability from the herd of origin and/or the birth of the relevant animal until the sale of products, see Article 4 of Regulation no. 916/2012 on identification of livestock. Slaughtering, processing and packing take place in product distribution centers in accordance with applicable laws and regulations for the purpose of

ensuring authenticity and quality. The Icelandic Food and Veterinary Authority (MAST) has an inspector on duty in each slaughterhouse to ensure all requirements is being followed.

#### **4.5 Method of production:**

Number of sheep farms in Iceland 2022 are around 2000, and just 181 of them have over 500 sheep. Most of the farms are classified as small, family-run farms. Sheep numbers reached a record high of 896,000 winter-fed sheep in 1977. The stock has decreased in recent decades and the population today numbers are about 368,604 winter-fed sheep.

Iceland's conditions for sheep farming are unique in many ways. Low pollution levels, plentiful groundwater and clean air have a big impact, as do low pollution of rangeland, good treatment and living conditions. Nutritious wild pastures and hay are believed to reduce the need for fodder, and the diversity of vegetation available for grazing is extensive. Iceland's cold climate is thought to obviate the need to use pesticides in food production in the same amounts as in many other countries. These factors are of great importance in the production of high-quality Icelandic lamb. Following below is further discussion of how the origin and production method of Icelandic lamb affects the taste and quality of the meat.

##### *Traditional production and grazing practices of sheep*

Icelandic farmers keep winter-fed adult sheep indoors in the winter due to weather conditions. They are fed on hay that farmers collect during the summer. The lambing season begins between late April and early May and lasts until early June. The Icelandic lamb spends its life in the open air and grazes on cultivated grassland or rangeland from spring until fall.

Pasturing in grassland and wild rangeland is the most common way in which sheep feed in Northern Europe. In Iceland, newborn lambs most commonly feed on cultivated grassland, until wild pastures are considered fit for grazing. The majority of sheep are driven onto wild rangeland two to four weeks after the lambing season. Wild pastures that are used for summer grazing in Iceland are either located on land belonging to farms or on rangeland.

Rangeland has been used for pasturing livestock since the settlement of Iceland. Most such land is located in the mid-highlands, primarily because lambs that feed there generally have a faster growth rate. Although wild pastures used for summer grazing generally vary greatly in Iceland, highland vegetation is usually richest in protein, and this is one of the factors that contribute to the accelerated growth rate. The growth rate of lambs in lowland areas is therefore generally slower than that of lambs that roam in highland areas, particularly in early summer and midsummer, but their growth rates largely even out by the end of August.

The factors that are believed to have the most effect in relation to the growth and health of sheep is the nutritional value of food, ability to eat and utilization of food. Sheep mostly graze in more fertile areas, grassland and moors and rest in more rugged areas. The sheep's selection of plants changes with the seasons and according to the ripeness of the plants, and the Icelandic sheep mostly seeks out plants such as sea pea, stone bramble, garden angelica, dwarf fireweed and roseroot. Examples of grass varieties, sedges (cyperaceae) and ferns (pteridophytes) that are much sought after by sheep are alpine hair-grass, browntop, creeping bent grass, alpine bluegrass, red fescue and heath wood-rush. Among the flowering plants popular with grazing sheep are alpine bartsia, arctic meadow-rue, wood cranesbill, moss campion, sea thrift, northern bedstraw, northern dock, yellow marsh saxifrage and others. Icelandic trees and bushes that sheep like to feed on in the summer are, for example, mountain-ash, broad-leaved willow, woolly willow and

tea-leaved willow. If sheep have access to a beach they will graze there all year round, mostly when grazing conditions inland are poor. On Icelandic beaches, sheep have various seaweeds to choose from, and examples of seaweeds sought after by sheep are dulse, winged kelp, channeled wrack, spiral wrack, sugar kelp and brown algae.

Vegetation in lowland areas usually grows earlier and yields larger harvests than vegetation in highland areas, but lowland vegetation begins to wilt earlier in the fall. Sheep graze in wetland areas primarily in the spring and until the middle of the summer. In the later part of the summer, the sheep eschew wetland areas, as the nutritional value of most species there has become poorer than that of many species growing on drier land.

In early September, the growth rate of lambs in wild pastures begins to slacken. If they have not reached a size suitable for slaughtering by that time, their potential for growth can be enhanced by placing them in cultivated areas, i.e. meadows or green fodder areas, for about two to six weeks. In such cases the lambs always have access to other, supplementary grazing areas. This arrangement aims to achieve higher carcass weight in the fall, and it is also thought that this method promotes better quantile classification in slaughterhouses.

Farmers gather sheep from the mountains in the fall and that process can take up to a week. Ever since the age of settlement, farmers in each district have joined forces to round up sheep from rangeland and privately-owned land into a communal pen. Once they have been gathered, the sheep are sorted and each flock driven home by its owner or their representative. Icelanders have long used earmarking to identify their sheep and keepers of livestock are responsible for ensuring that all livestock in their possession are earmarked within the required time after birth with an approved earmark that will accompany the animal.

### *Slaughter*

Most slaughter takes place in the fall when lambs are about four to five months old. The traditional slaughter period begins between late August and early September and ends between late October and early November. Summer lambs are slaughtered between August 1 and September 15. Fall lambs are slaughtered during the traditional slaughter time, i.e. from September 15 to November 1. Both summer and fall lambs come directly from wild pastures or cultivated land. The supply of meat from freshly slaughtered lambs is therefore seasonal as a general rule but frozen lamb is available year-round.

Sheep to be slaughtered for export to foreign markets or for domestic distribution and consumption shall be slaughtered in accredited abattoirs, Article 13 b, Chapter IV A of Act No. 93/1995 on food stuffs..

Slaughter licence holders are companies that hold or conclude agreements on the use of accredited slaughterhouses and have obtained a license for operating a slaughterhouse from the Chief Veterinary Officer. There are six companies in Iceland that are authorized to slaughter sheep and process carcasses for export and domestic sale, operating slaughterhouses in a total of 8 locations.

Sheep roam in rangelands until the fall and are then rounded up and brought back to the farms. The farmer selects animals for slaughter and sends them to the slaughterhouse one day before slaughter takes place. The animals then rest overnight in a pen in the slaughterhouse. In the slaughterhouse the sheep are stunned unconscious/killed by electric shock before they are hung up and exsanguinated. After slaughtering, the meat is initially soft and the muscles are loose but then it stiffens. While the meat is undergoing rigor mortis and after it has passed there are chemical alterations to the meat, as the glycogen in the muscles changes into lactic acids which in turn release enzymes that affect the proteins in the muscles. This causes the meat to become more

tender and improve in taste. After the actual slaughtering has taken place it is nonetheless ensured that cooling does not occur too rapidly because this interrupts the natural rigor mortis process and causes the meat to become tough. If cooling is too rapid there is a risk of impaired quality, however cooling time can be significantly shortened if the carcasses are electrically stimulated after slaughtering.

The acidity level of the meat is monitored, as is the rate at which the temperature drops. The aim is that the temperature does not drop to below 10-12°C before the acidity level drops to a value below pH 6. The carcass is then examined by a veterinarian, after which it is weighed and inspected.

When this has been done, the meat is cooled at 0-4°C (at a preferred humidity of about 90%) and left to hang (in whole carcasses or in parts) for at least 20 hours or until the next day to cool down and become more tender. The carcass hangs for a minimum of 20 hours on average. Meat quality can benefit from dry aging for up to seven days.

#### *Processing, packing and storage*

Processing, packing, storage and so on are subject to the provisions of Act No. 93/1995 on foodstuffs. When the meat is processed in the agricultural processing plants, i.e. deboned or cut up, the temperature must have dropped below 7°C. The meat is then packed into airtight packaging, gas packaging or bulk packaging (boxes). Shelf life for packaged fresh product is up to six weeks. Shelf life for product in gas packaging is up to 11 weeks. If lamb is frozen the shelf life is set at two years.

In Iceland, meat is inspected by meat inspectors according to the provisions of the abovementioned Regulation and licensed abattoirs decide the pricing level for farmers in accordance with the findings of the inspection. At present, the applicable regulation regarding meat inspection is Regulation No. 500/2017, as amended. The Icelandic Food and Veterinary Authority (MAST) monitors the implementation thereof and in each slaughterhouse there is a meat inspector on duty who must be licensed by MAST and works under that institution's mandate.

## **4.6 Link**

### *Link between the quality/characteristics and the geographical environment*

The findings of the European project on lamb included a comparison of three Icelandic production methods for lamb with production methods in five other European countries. The palatability was assessed by trained tasters and consumers from the general public. Representatives from Iceland, England and France thought that the Icelandic lamb tasted best and found it somewhat gamey. Icelandic lamb was considered to be the most tender by the representatives of all participating countries. This was also confirmed by measurements of the physical characteristics of the meat that was examined. Age at slaughter and the quantity and heat solubility of collagen accounted for part of this difference. In addition, it was considered that a difference in muscle fiber between stocks was a factor. The findings also indicated that the principal distinctive characteristics of Icelandic lamb were:

- High ratio of muscle compared to fat and bone
- Very low percentage of meat impaired due to stress
- Low amount of connective tissue, little toughness and very tender back muscles

- Higher number and higher percentage of omega-3 fatty acids in back muscles compared with back muscles of other lambs
- High amount of iron
- Strong gamey taste.

According to the above, the uniqueness of Icelandic lamb first and foremost consists of a high degree of tenderness and gamey taste. Following below are arguments for how these characteristics can be traced to the Icelandic breed of sheep and its origins.

“Icelandic lamb” has been registered as a Protected Designation of Origin Product in the EU and Iceland.

EU: [https://eur-lex.europa.eu/legal-](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022XC0928%2804%29&qid=1677844489788)

[content/EN/TXT/?uri=CELEX%3A52022XC0928%2804%29&qid=1677844489788](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022XC0928%2804%29&qid=1677844489788)

Iceland: <https://www.stjornartidindi.is/Advert.aspx?RecordID=91b28e78-b055-4719-a975-65747fc3bd6d>

#### **4.7 Inspection body**

The Icelandic Food and Veterinary Authority (MAST) is an inspection and administrative body and the Competent Authority in Iceland in the field of food safety.

The Icelandic Food and Veterinary Authority (Matvælastofnun/MAST)

Austurvegur 64

800 Selfoss

Iceland

#### **4.8 Labeling**

Icelandic lamb is promoted by each seller/licensed abattoir separately on the domestic market and in export. In addition, the Icelandic Lamb Marketing Board provides common promotional material for the export market and foreign buyers. The Icelandic Lamb Marketing Board uses the following mark in its promotional material: “Icelandic Lamb Roaming Free Since 874” (collective mark). Icelandic lamb is sold in parts to domestic retailers and in whole or half carcasses to domestic wholesalers.

Icelandic lamb is produced under a strict regulatory arrangement as regards the entire process, from initial production of the product by the farmer to completion of processing and packing in the agricultural processing plant. Production therefore must meet all the requirements according to the applicable laws and regulations.