



## REARING SYSTEMS

Dairy cows mostly graze outdoors during the summer, and stay indoors over the winter. The indoor sheds are spacious and airy, allowing the cows to rest, stand and move around freely. Some cows are indoors all year round.

A dairy cow needs to give birth to a calf in order to produce milk. The calf is reared and cared for by the farmer. The milk is collected, pasteurised and bottled before making its way to the shop shelves for you to buy.

During this milking period she is put in calf again. Before she has another calf she has a 'dry' period (like maternity leave), where the cow will rest and prepare for the birth of next calf.

Some dairy cows are bred purely to produce their replacement heifers for the farmer. Some farmers cross-breed with a variety of beef breeds to produce calves – these then become breeding cattle in the beef herd or are reared to be sold as beef for the food chain.

Milking is very similar to a calf suckling and does not hurt the cow. Dairy cows would feed their calves naturally, at four to six hourly intervals. Cows are milked 2-3 times a day at different times depending on the farm and the type of milking system. The three main types of milking system in which cows are milked are herring bone parlour, rotary parlour and automated milking system using robots. With the robotic system, the cows choose when they want to be milked. There are around 150 automated milking systems in Scotland. One robot can milk between 60 and 65 cows a day.

## FEEDING

Most British dairy cows eat grass in summer and silage (pickled grass or maize, see *Case Study – Silage cards*) in the winter. This is supplemented with dry feeds such as cereals and protein feeds with added vitamins and minerals to ensure a nutritionally balanced diet.

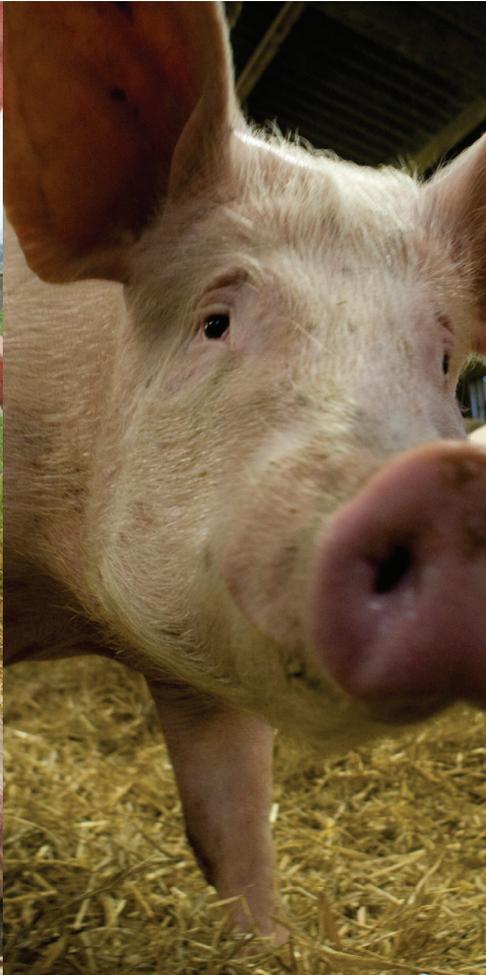
Each dairy cow eats between 25 and 50 kilograms of feed and drinks around 60 litres of water per day. Some cows need to drink 100 litres, or more, depending on how much milk they produce.

## PRODUCTS and LABELLING

Each cow gives an average of 25 litres of milk per day, depending on how recently she has had a calf. This equates to 8,995 litres per annum. Milk can be used to make cream, cheese, yoghurt and ice cream.

Once milked, the fat in the milk floats to the top. This makes it easy to remove and we are able to produce whole milk (blue top), semi skimmed (green top) and skimmed milk (red top). To stop the fat in your milk bottle rising to the top the milk is homogenised before it reaches the supermarket shelves.

Dairy cows also provide meat and both the male and female calves can be raised to provide us with veal.



## REARING SYSTEMS

The pig industry in Scotland is concentrated in the North East. 60% of the national breeding herd live on farms in Aberdeenshire. There are 331,000 pigs on Scottish farms, of which 37,300 are breeding females. 24,700 tonnes of pig meat is produced per year worth £86 million. There are two systems used in the pig industry, indoor and outdoor.

1. In outdoor systems, pigs live in fields and have access to pig arcs (small sheds). They have an area they can access and electric fencing is used to keep the pigs in.
2. In indoor systems, pigs usually live in groups and are bedded on sawdust or straw.

Outdoor pig farms tend to be located in areas like the north east of Scotland where the ground is sandy and free draining to reduce soil damage. Indoor production is not limited by location, but does require a specialised farm set up.

The number of producers raising pigs in Scotland has reduced over the past few years, with the cost of production being a key factor.

Pregnancy in pigs lasts for 3 months, 3 weeks and 3 days, having piglets is known as farrowing. A sow will farrow approximately 2.5 times a year.

Pigs are very sensitive to temperature change. If outdoors in summer, pigs use mud as sunscreen to protect their fair skin. In colder weather they will require extra bedding to keep warm. Heat lamps will also be used indoors.

## FEEDING

Pigs eat pig nuts (a pellet) that contains everything the pig needs to grow. Pigs that live outside also root around in the earth and will eat anything they dig up, including worms and bugs. They will also eat vegetables.

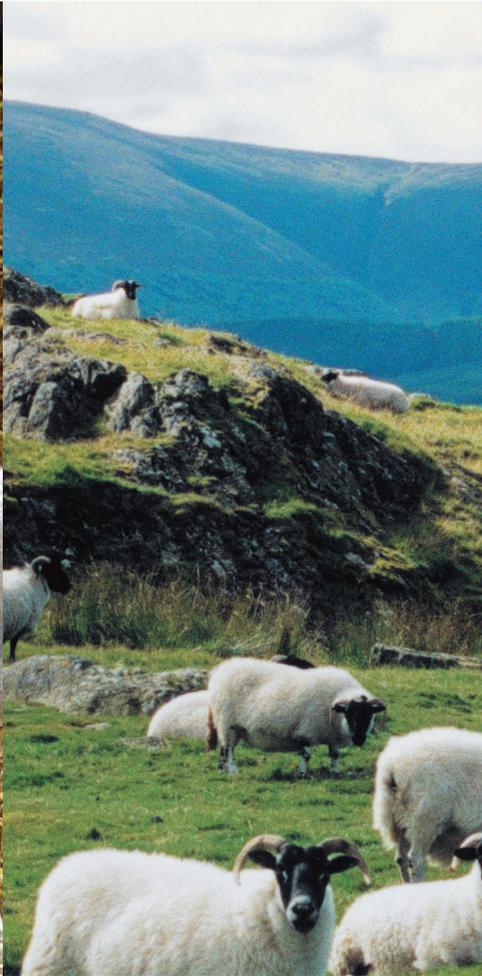
## PRODUCTS and LABELLING

The main product that comes from pigs is pork. Pork is available all year-round. Fresh pork is very versatile and can be used in a variety of recipes. Pork is a good source of protein, zinc and B-vitamins.

Ham and bacon also come from pigs. They're classed as processed meats as they have been processed to extend their shelf life.

Many of the cuts from a pig are not utilised by consumers in the UK for example, offal and pig cheeks. These are exported to other countries. UK pork exports at the end of 2015 accounted for 17,200 tonnes and an increasing volume is exported to China. China is still the main export market for UK pig meat offal.

We also import pork and UK imports continue to rise, with Denmark, Germany, the Netherlands and Spain all continuing to increase shipments to the UK. The meat, fish and poultry convenience market is currently worth £3.6 billion and pork accounts for 11% of this market.



# Lamb



RHET QMS

## REARING SYSTEMS

The industry is organised into three categories: hill sheep, upland sheep and lowland sheep. There are 2.9 million breeding ewes on Scottish farms.

**Hill flocks:** are in the main, breeding flocks. The majority of ewe lambs are retained as flock replacements for older ewes. Older ewes are generally sold on to farms on the slightly lower ground after lambing four times.

**Upland flocks:** usually produce mules (a cross between a lowland ram and an upland/hill ewe) which are bought by lowland breeders to cross with meat breeds. They are also used direct for meat production.

**Lowland flocks:** tend to benefit from comparatively better climate, improved soil type and better grazing. These factors combine to produce quality prime lamb.

Most sheep breeds come into season (ready to mate) in autumn/winter, and gestation is around 5 months, so lambing traditionally occurs in spring. The farmer puts the ewes (females) to the rams (male) (called 'tupping') in groups so they can predict the arrival date of the first lambs. Ewes are scanned to let the farmer know how many lambs they are having. This helps the farmer feed the sheep accordingly.

Some farmers move the ewes ready to give birth into a lambing shed so they are protected from weather and predators. Other farmers lamb outside.

## FEEDING

Sheep eat grass and during the lambing season are given concentrates (a nutritional balanced blend). They may also eat hay, dried peas, barley, turnips, and swedes.

## PRODUCTS and LABELLING

Sheep give us wool, which can be used to make clothes, carpets, to make insulation and in fabrics e.g. upholstery as it has good fire retardant properties. There are around 60 different breeds and as well as wool, some farmers use sheep's milk to make cheese. Sheep provide lanolin, a natural oil produced by sheep to condition their wool, which is used in cosmetics.

Sheep also provide meat. Scotch Lamb PGI (*see Quality Assurance card*) has been quality assured for its whole life in Scotland. There are many different cuts including leg, shoulder, rack of lamb, neck and shank which are sold as joints, mince, cutlets and diced for stewing. Lamb is available from around 5 months after birth and older sheep provide mutton. For lambs born in spring, they reach the shop shelves from August onwards.

Lamb is also imported from New Zealand which is a journey of 11,000 miles. New Zealand lamb is also sold throughout the peak Scotch lamb season so it is worth checking labels before you buy.



# Poultry



## REARING SYSTEMS

Poultry includes chickens, ducks, turkeys and geese.

There are two categories of poultry. Those raised for meat (broilers) and those raised for eggs (layers).

Broilers are either kept indoors in a very large barn or are free range and have access to the outdoors.

Laying poultry may be free range, kept in large open barns or kept in cages as part of a cage system. Here, they lay eggs that are collected up by conveyor belts and there are guidelines in place for cage enrichment.

## FEEDING

Poultry are fed a specially prepared food to make sure they get all the nutrients they need. This comes in different forms – meal and pellet. Although free range birds get outside to eat bugs and insects, they do not find enough food to feed on.

## PRODUCTS and LABELLING

Poultry can lay eggs all year round. Where the birds are free range, production reduces when the days are short. For birds kept indoors, the light levels are maintained to

simulate daylight to ensure they lay. Eggs are stamped with a lion mark which provides evidence that the hen that laid the egg has been treated for salmonella. As well as the lion, your egg will have a code on it. The code tells you the country the egg was laid in (eg UK), the type of system it was laid in (0 = organic, 1 = free range, 2 = barn and 3 = cage) and the number of the farm where the egg came from. Each farm holding has its own unique number (*see Case Study - Eggs cards*).

Before it reaches you the egg has undergone a number of tests and has been separated into firsts or seconds. Firsts are good eggs which are then sorted by size into small, medium, large and extra large. Seconds are eggs which don't meet the grade due to a range of problems, for example cracks. These eggs are not discarded but used in the manufacturing of ready made products and as liquid egg. When a young bird lays an egg it often lays a double yolk. These are larger than your average egg and can be identified by shining a very strong light through the egg (candling).

The industry also provides meat – chicken, turkey, goose and duck.

Poultry often carries the Red Tractor logo. This logo confirms traceability, food safety, animal welfare and environmental protection for the poultry product.



# Beef



## REARING SYSTEMS

The beef industry is the largest sector of Scottish agriculture.

There are 424,500 beef cows on Scottish farms and the output from beef farming in Scotland has been estimated at £849m.

There are two types of beef farmer:

**Breeders** – some beef farmers produce calves. The calf is either raised until it is large enough to slaughter or it is sold on to another farmer to grow on.

**Storers/finishers** – these farmers buy in calves from other farmers and ‘finish’ the growing process.

In Scotland, examples of beef breeds used are Charolais, Galloway and Shorthorns. However, male dairy calves and calves from dairy cows sired by a beef breed bull are also raised for beef.

Most cattle are housed in winter months, and are outside from about April-October.

## FEEDING

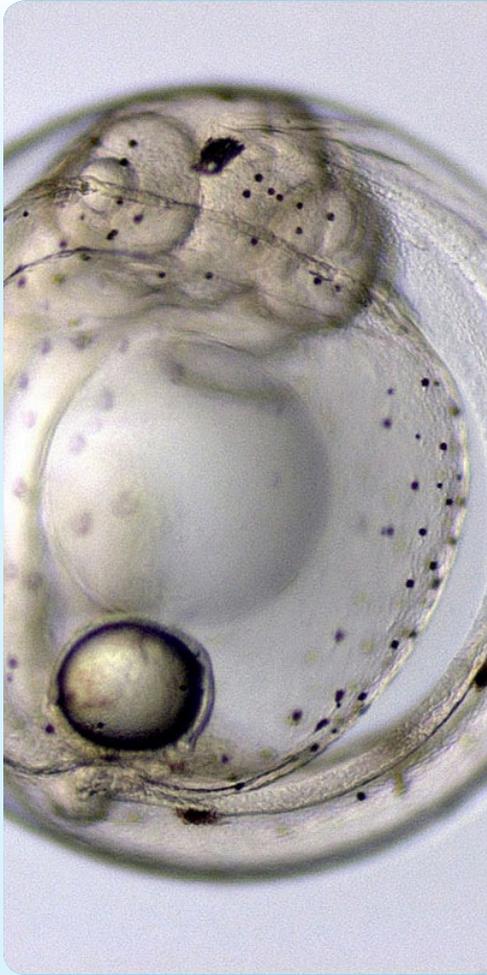
When beef cattle are outside they eat grass. When they are kept indoors they eat silage (pickled grass, *see Case Study – Silage cards*) and concentrates (balanced ration of nutrients). Barley is a key ingredient in beef cow rations.

## PRODUCTS and LABELLING

Beef cattle give us beef. There are different cuts of beef which come from different parts of the animal. Cuts include: steak, mince, shin, oxtail, flank and rib. Beef is also used in many different products: burgers, scotch pies and beef soup.

Scotch Beef PGI (Protected Geographical Indication) (*see Quality Assurance card*) is specially selected beef from Scotland. Scotch Beef PGI is sourced from selected Scottish farms that must adopt best practice regarding animal welfare and natural production methods. This is your guarantee of a genuinely authentic product.

Cattle also give us leather (*see Case Study – Leather card*), gelatine and cow by products are used in a number of products from toothpaste to antifreeze.



## PRODUCTION

The North Sea is very productive and provides a wide range of fish and shellfish. Around Scotland, fish are caught from the wild as well as being farmed in large enclosures.

Fishing trawlers go out to sea to catch fish. Different species live in different places, so different techniques are required to catch them.

Shellfish include crab, scallop and lobster. Catching shellfish is an intensive process and may involve baited pots, dredging and hand catching.

Farmed fish include salmon and trout. The fish are raised from eggs to the final adult fish which is then harvested for consumption.

Pelagic fish are those that are found at sea and swim in the open water. These fish form shoals (large groups) and it is these shoals which are fished using nets. Mackerel, whiting and herring are pelagic fish.

Demersal fish are those whitefish that live on or close to the seabed. These fish are caught using nets that are pulled along the seabed. Haddock, hake and cod are demersal fish.

Bivalves include mussels and oysters which are filter feeders and they are both farmed. Mussels attach to pieces of rope which are hung in the sea or loch water. Oysters can be raised on-land indoors in mesh bags or nets.

## PRODUCTS and LABELLING

Fish provide a source of protein and some species (oily fish) are also high in Omega 3. Fish can be baked, poached, shallow fried, steamed, deep fried, microwaved, grilled or barbecued. The majority of fish are sold as fillets, however many species are available whole from fishmongers.

## SEASONALITY

Different fish have in seasonal peaks and shellfish like mussels have spawning periods when harvesting does not take place (see the Food and Farming Calendar for more information on the seasonality of seafood in Scotland).



# Case Study Pig Products

## HEALTH

- Burns patients – pig skin can be used to treat burns victims, e.g. skin grafts
- Collagen injections
- Pigs play an important role in drug development and pig heart valves are not rejected by the human immune system
- Other medicines, e.g. insulin

## FOOD and DRINK

- Beer, wine and fruit juices – pork gelatine is used to remove the cloudiness caused by tannins
- Bread – L-cysteine is a protein from animal hair (including pigs) which is used to soften dough
- Ice cream, whipped cream and yoghurt – may contain pig gelatine
- Sweets – pig collagen is converted into gelatine and used in sweets and foodstuffs, including wine gums, liquorice and even Percy Pigs
- Black pudding – made with pigs blood and a mixed cereal filling

## BEAUTY and HYGIENE

- Tattoo training – tattoo artists practise on sections of pig skin
- Body lotions, foundations and anti-wrinkle cream – contain pig fatty acids
- Shampoos, conditioners, fabric softeners – fatty acids from pig bones are used to give a pearly white appearance
- Toothpaste – contains glycerine from pig fat

## OTHER

- Tambourines – often made from pig skin
- Shoes – may use bone glue from pigs to improve leather quality
- Photographic film – uses collagen from pig bones
- Pet foods – often contain pig gelatine, ears and snouts are deep fried as dog treats
- Crayons
- Paint – uses bone fat to enhance the glossy properties



# Quality Assurance

## OVERVIEW

Quality Meat Scotland (QMS) is responsible for livestock quality assurance in Scotland. Over 90% of Scotland's cattle farms, 80% of sheep and almost 100% of pig farming businesses are members of farm assurance schemes.

There are six QMS quality assurance schemes that cover the entire lifespan of animals born in Scotland: cattle and sheep, feeds, haulage, auction markets, processors and pigs. Traceability of products is key.

The whole chain assurance scheme means only animals that meet stringent assurance standards at every point in their lives are eligible to be classed as Scotch Beef PGI or Scotch Lamb PGI. Only cattle, sheep or pigs that have been born and raised on assured Scottish farms and processed by assured processors in Scotland can be classified as 'Scotch Beef', 'Scotch Lamb' or 'Specially Selected Pork'.

Animal welfare and wellbeing are of paramount importance in ensuring the highest product quality and the QMS Animal Welfare and Wellbeing Charter recognises the five freedoms of animal welfare. Farms are inspected annually and the Scottish SPCA supports and approves the assurance schemes.

The PGI (Protected Geographical Indication) is the legal protection system to guarantee a genuinely authentic product. Both Scotch Beef and Scotch Lamb have held this approved status since 1996.

## SCOTCH BEEF

Scotch Beef is whole chain assured beef from Scotland. Scottish beef is different to Scotch Beef PGI. Scottish beef is ordinary beef from Scotland, without QMS quality guarantees. It holds no PGI status. To ensure you get the best possible beef from Scotland, choose Scotch Beef PGI.

## SCOTCH LAMB

Scotch Lamb has been quality assured for its whole life in Scotland; the farm and processor has been independently audited to make sure they meet stringent requirements regarding animal welfare and natural production methods. This all means that the Scotch Lamb you buy is fully traceable back to its farm of origin.

## SPECIALY SELECTED PORK

The Scottish Pig Industry enjoys a worldwide reputation for high standards of production. To carry the Scottish red meat industry's premium brand Specially Selected Pork, pigs must have been born, reared and slaughtered in Scotland and spent their entire life on QMS Assured holdings.



# Feeding Livestock

## TYPES OF FEED

Animal feed can be divided into four groups: forages (e.g. grasses), cereals and other home-grown crops, compound and products and by-products of the human food and brewing industries.

**Forages:** When cattle and sheep are outside in the warmer months they eat grass which is sometimes supplemented with other foods to provide a balanced diet. Grass grows when the temperature goes above 5°C. Farms with livestock often preserve grass that grows in the summer months for use in the winter when livestock is indoors. Grass can be preserved by drying (hay), part drying (haylage) or pickling/fermenting (silage). Silage can also be made from cereal crops such as maize and wheat, which are harvested whole and then chopped into fragments. Forage crops are high in fibre.

**Cereals and other home-grown crops:** These are feeds with a high energy and/or protein content. They may be fed to livestock on the farm where they are grown or bought in from outside. Cereals may be fed as straight (by themselves) or as mixes.

**Compound feed:** Compound feeds are manufactured and may be pelleted and contain additional vitamins and minerals. Concentrates are high in energy and low in fibre and are usually further divided into energy and protein concentrates. Pigs and poultry are unable to digest forages, and so their diets consist almost entirely of these feeds, together with by-products.

**By-products of the food and brewing industries:** These by-products remain after the production of food for human consumption and are widely used as feeds for livestock. These include the residues of rape and soya meal processing, spent grains from brewing and malting, and by-products of the baking, bread-making, and confectionery industries.

## LIVESTOCK DIETS

**Cows:** Eat grass in the summer months and conserved forage (grass or silage, or hay) in the winter. Grass may be supplemented to increase milk yield or weight gain.

**Sheep:** Eat grass; other food stuffs are usually fed only to pregnant and lactating ewes and to young lambs. During winter months they may also be fed on root crops, including swedes, which are often eaten in the fields in which they are grown (strip grazing).

**Pigs:** Eat cereal grains, oilseed meals (often in pellet form), and other by-products of the human food industry. Outdoor pigs may also be fed root crops such as swedes, turnips and soya.

**Poultry:** Eat manufactured rations based on cereal grains, especially those reared in poultry houses. Free range poultry also graze on grass and soya.

**Fish:** Those reared in water cages receive a pelleted feed, which includes fish derivatives and plants.



# Case Study Leather (1 of 2)

## WHAT IS LEATHER?

Leather is a material made from the skin of animals, birds, reptiles or fish through a process called tanning, which preserves the skin or hide, and stops it from decaying or rotting, so it can be used to make long-lasting clothing, furniture or other products.

The Scottish Leather Group (SLG) is one of Scotland's largest companies in the textile sector and it is the largest company making leather in the UK. The company employs over 700 people and sells leather products across the world, to makers of cars, airplanes, boats, furniture, fashion and beauty products and even pet treats.

Long ago, leather was made using knives, water, salt, urine, dung or animal brains and tree bark. Making leather was an extremely smelly business! The tanned hides were used for clothing, shoes, armour, water carriers, boats or shelters. At SLG, making leather has gone from being craft-based (hand-made) to engineering-based (made by machine). Different chemicals are used for jobs previously done by urine and dung. All parts of the hide are used, even waste which goes to the SLG Thermal Energy Plant and is used to make steam used in the leather making process.

Acids, alkalis and enzymes are added to the hide at different stages to make the hide smoother, more flexible, durable or easier to work with.

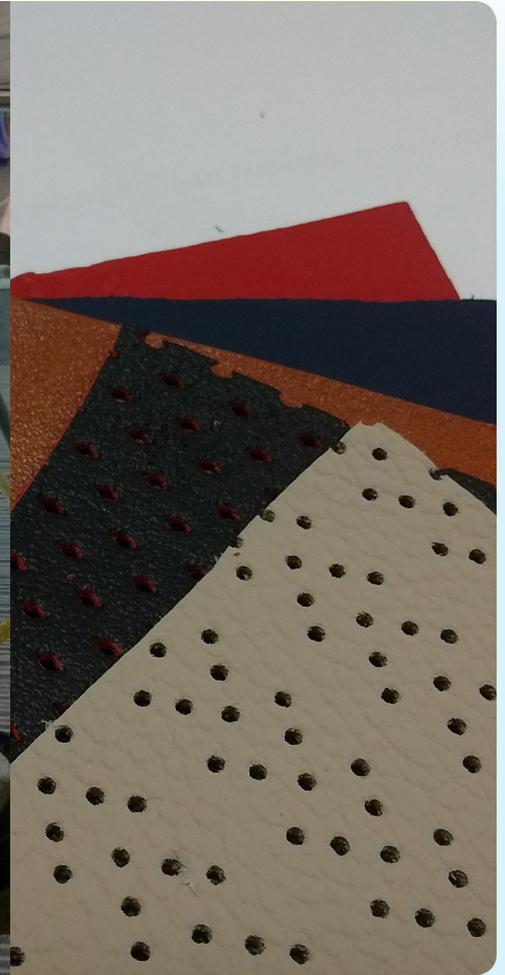
Raw hides are sent by meat factories to SLG and come mainly from cows farmed in Scotland and England. In the tannery section, giant drums the size of oil tankers containing different chemicals, clean salt, flesh and fat from the skins, and remove the hair from the hide. Hides are then tanned with mineral salts or by an organic (chrome-free) method.

Machines split each hide into two layers, the top grain layer is the highest quality and stronger. The bottom layer is softer and normally used for suede or split leather. Collagen is removed from the hide and is usually sold for collagen-based food and beauty products.



Scottish Leather Group **Scottish Textiles**  
SKILLS PARTNERSHIP





# Case Study Leather (2 of 2)

## COLOUR

Hides are wet-dyed base colours such as black, brown, navy or red, then dried and stretched. They are passed through staking or milling machines which pound or twist the leather to make it softer.

The Colour Kitchen is where specific colours are mixed. SLG can create any colour leather the customer wants but this takes time and a lot of care, especially when working with a natural material like leather. The colours are sprayed or applied by machine to the hides.

A spectrophotometer in the Colour Pod checks samples of leather at different stages to make sure the colour is correct.

The leather may then be embossed, punched with a pattern, or coated with a special finish before passing to the cutting section.

## CUT

A computer checks each hide for marks and weak spots and works out the best layout for the pattern pieces to avoid these imperfections.

Each car interior needs many pieces of leather cut correctly. Giant 'cookie' cutters are placed on the hide and a machine presses these down with a force of 100 tonnes per square inch. Each piece is then skived (shaved) around edges by machine to the correct thickness so it is easy to sew, and numbered by laser so pieces don't get mixed up! Pieces are checked at every stage to make sure there are no marks or faults.

The perfect pieces of soft, smooth, coloured leather are then carefully packed and sent off to the customer where they may be used to decorate the inside of some of the world's most luxurious buildings, planes, trains or automobiles.

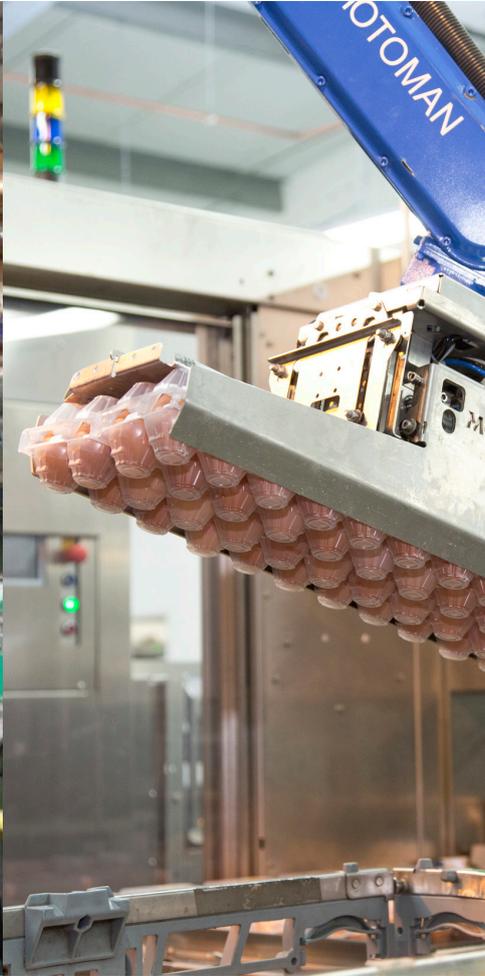
There are many different job roles in textiles, leather and fashion in Scotland and each person's skills are important to create the final luxury product. Visit [textileskills.com](http://textileskills.com) to discover more about careers in textiles and the skills you could learn.



Scottish Leather Group



Scottish Textiles  
SKILLS PARTNERSHIP



# Case Study Eggs (1 of 3)



## GRADING

Hens, ducks and geese all lay eggs however the vast majority of eggs produced for the consumer are hen eggs. Eggs have a number of properties and are tested and graded before they reach the shop shelves.

There are 2 grades or classes of egg and all eggs produced in the UK must comply with EU Regulations.

Class/grade A (firsts)

All eggs sold to the consumer are class A eggs and they have the following properties:

- A clean, smooth undamaged shell. The egg must be clean but the producer cannot wash the egg so dirty eggs are rejected.
- An air space no bigger than 6 millimetres.
- A clear white, gelatinous and free from meat and blood spots.
- A centrally suspended yolk.
- No nasty odour.
- Must NOT contain an embryo.

All Class A eggs must be graded and candled. Candling involves shining a strong beam of light through the egg which helps identify any internal defaults like blood or meat spots). After laying, the eggs are transported to a

packing station. They are then transferred on to an egg grader. This machine, checks for cracks, dirt, candles the egg (looks and removes those with blood or meat spots) weighs (grades) the egg then puts them into a retail pack (pre – pack) or on to egg trays. A traceability code is stamped on the pre pack giving best before date, time packed and which packing station the egg was packed at.

Class/grade B (seconds)

Eggs that do not meet the A grade are used in the egg processing industry and are pasteurised liquid egg, sometimes UHT treated, frozen or dried. Where a producer has too many class A eggs with no market, these will also go to the egg processing industry.



# Case Study Eggs (2 of 3)



## FRESHNESS AND STORAGE

Eggs are stamped with a best before date which is a date 28 days after the date of lay and the majority of eggs reach the consumer within 3 days of being laid.

Egg shell is porous and over time water evaporates from the egg. The white also becomes runnier as proteins denature and is more likely to spread when the egg is cracked. This process can be slowed down by storing eggs in the fridge. They should also be stored pointed end down (with the air cell at the top and kept away from strong smells).

The Haugh Unit (HU)

This is the method used to determine egg quality and freshness. This formula considers egg weight in grams and albumen height in millimetres. It provides a range of HU values from single figures in extremely poor quality eggs to over 100 plus in very good quality fresh eggs.

What to look out for

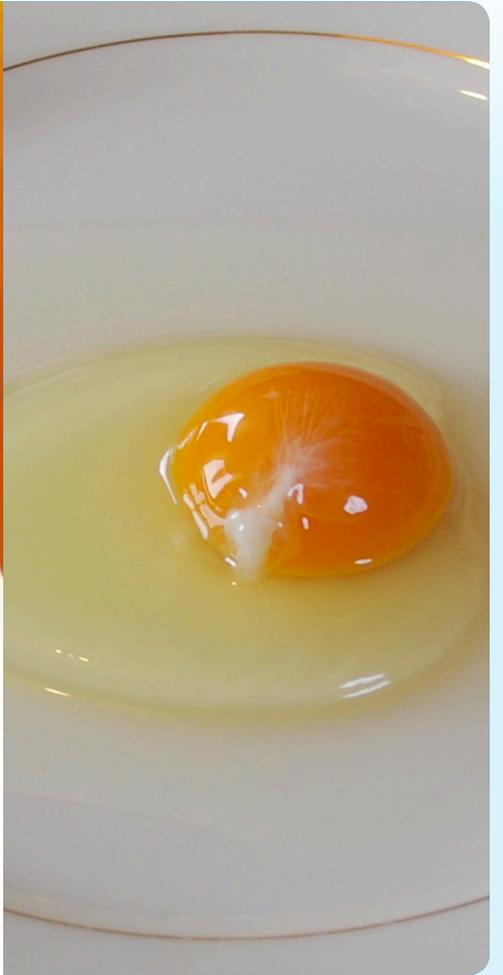
Occasionally blood spots are found on an egg yolk. These tiny red spots are caused by the rupture of a blood vessel on the yolk surface during formation of the egg or by a similar accident in the wall of the oviduct. Candling eggs (shining a strong beam of light through the shell) helps identify these blood spots and these

eggs are removed but it is impossible to catch them all. Meat spots are brown in colour and are pieces of tissue from body organs – usually the ovary. Meat spots are more common in eggs laid by older birds and you often find more in brown eggs as the candling method is less effective with a brown shell compared to a white shell.

Both chemically and nutritionally, eggs with blood spots and meat spots are fit to eat. You can remove the spot with the tip of a knife.

What is a double yolker?

Young birds when they first come into lay need time for their egg laying system to settle down so. Double-yolked eggs are often produced by young hens whose egg production cycles are not yet completely synchronised. As a result sometimes two yolks may get released together and combine in one egg.



# Case Study Eggs (3 of 3)



## THE YOLK

### The egg yolk

The yolk, or yellow portion, of an egg makes up about 34% of the liquid weight of the egg. It contains all of the fat in the egg and a little less than half of the protein. The yolk of a large egg contains about 55 calories.

With the exception of niacin and riboflavin, the yolk contains a higher proportion of the egg's vitamins than the white, including vitamins B6 and B12, folic acid, pantothenic acid and thiamin. All of the egg's vitamins A, D, E and K are in the yolk. Egg yolks are one of the few foods naturally containing vitamin D. The yolk also contains more calcium, copper, iron, manganese, phosphorus, selenium and zinc than the white. In fertilised eggs, the yolk is the site of embryo formation. It's the yolk which is responsible for the egg's emulsifying properties.

Yolks are assessed using a scale called the Roche scale. The Roche scale measures carotenoids in the yolk which are vital anti-oxidants and important in chicken health and reproduction. Feed manufacturers add carotenoids to chicken food.

The Roche scale numbers all the different shades of yellow and orange that a yolk may be on a colour fan.

If an egg producer is aiming for a specific colour of yolk they can supplement their feed with the type and quantity of carotenoids that will deliver precise and consistent food colour and meet consumer expectations around the world.

### The egg white (Albumen)

The albumen makes up around 2/3rds of the egg weight. The white contains more than half the egg's total protein, the majority of the egg's niacin, riboflavin, magnesium, potassium and sodium, and none of the fat. The white of a large egg contains about 17 calories.

Albumen doesn't appear white until an egg is beaten or cooked. The cloudy appearance comes from carbon dioxide. As eggs age, carbon dioxide escapes, so the albumen of older eggs is more transparent than that of fresher eggs.

The albumen consists of four alternating layers of thick and thin consistencies. Egg white thins with age, because its protein changes in character. That's why fresh eggs sit up tall and firm in the pan while older ones tend to spread out.

When you beat egg white vigorously, it foams and increases in volume six to eight times. Egg foams are essential for making meringues, puffy omelettes, soufflés, angel food and sponge cake.