

Discovering Beef Farming

Man's history of beef dates back many thousands of years, from the wild free roaming oxen depicted in Neolithic caves. Domesticated cattle are known to have been kept in Babylon as long ago as 5000 BC. The ancient Egyptians also left evidence of beef eating; beef ribs that were discovered in the tombs of the dead were meant to provide sustenance on the journey to the next world.

Until the last 200 years or so, cattle were important as draught animals to pull ploughs and carts. They were only slaughtered at the end of their working lives and consequently by today's standards most beef was of very poor quality. In the poorer countries of the Third World cattle are still used principally as draught animals with milk and meat as a secondary income. The manure produced by cattle is important for use as fertiliser and fuel.

In the eighteenth century, Robert Bakewell, a Leicestershire farmer, began selectively breeding his sheep and cattle. He only mated the animals that grew best and improved the size and shape of his stock. His aim was to produce animals with a deep body and a large rump and hind legs. Bakewell's cattle were the predecessors of the modern beef breeds which grow quickly producing good quantities of meat. The rise of beef in the eighteenth century was aided by the introduction of turnips and clover in crop rotations which provided nutritious foods for livestock in the winter. Lighter machinery meant that horses took over much of the draught work previously done by oxen.

Breeding Beef Cattle

Some breeds of cattle are known as 'dual purpose' because they are suitable for producing milk and beef. But modern farming divides cattle into either beef or dairy breeds aiming at high productivity through specialisation. British beef breeds evolved in different parts of the country. They include Hereford, Galloway, Beef Shorthorn, Aberdeen Angus and South Devon. In the 1960s larger breeds were introduced from the continent such as Charolais, Limousin and Simmental.

The dairy industry needs cows to calve once a year in order to maintain milk production; each cow produces around four offspring in her life, thus creating a surplus of calves. Only one of these calves is needed to replace the cow when her milk yields start to decrease. This means the remaining three calves are available for meat production.

Dairy farmers plan in advance which calves will be reared for beef and cross most of the selected cows with a bull from a beef breed. The resulting calf will have 50% beef characteristics and 50% dairy characteristics and will yield more meat than a pure dairy animal.

About half of our beef comes from 1.4 million specialist beef cows called 'suckler' cows because they suckle their own calves. They are concentrated mainly in the uplands of Britain. These cows are sometimes pure-bred but, more usually, are crosses of two or more breeds chosen to meet the farming conditions. For example, the thick

weatherproof coat of the Galloway is especially useful in the wet conditions of its native west of Scotland.

Rearing Beef Cattle

New-born calves from dairy cows receive colostrum within the first six hours of life and for the first three days. Colostrum is the first milk a cow produces and contains essential antibodies, vitamins and minerals which protect the calf during its life. The calves from the dairy herd are reared on milk replacer diets until they are weaned onto solid food at about six weeks. The dairy cow continues to produce milk which is used for human consumption.



A young Hereford pedigree bull which will be used for breeding

Calves in beef suckler herds remain with their mothers for the first 6-9 months of their life until they are separated for finishing.

Young female cattle are called heifers; males are bulls. Most males are castrated which makes them less aggressive. These animals are called steers or bullocks. Bulls grow the fastest, heifers the slowest and steers between the two.

There are several methods of rearing beef. Most animals spend the summer months in fields grazing and are housed in the winter when the grass has stopped growing. Others are housed all the year round. Housed animals are fed a variety of foods. Grass is fed either dried as hay or preserved as silage¹. Maize silage² is also sometimes fed. The diets are supplemented with other ingredients to produce more nutritious foods. These supplements can be cereals such as barley or protein feeds such as beans. Cattle diets use feeds which humans cannot consume, e.g by-products from flour manufacture or margarine production.

Beef animals can be slaughtered at any age between one and two and a half years. Generally, animals that graze take longer to reach slaughter weight than those fed on concentrates or cereal-based feeding. The average weight at slaughter for steers and heifers is approximately 300kg. The dressed carcass that ends up at the butcher's shop weighs about half of its live weight. Beef animals are not fed synthetic hormones in the UK or Europe.

Beef animals are slaughtered in a modern abattoir where the conditions are strictly supervised and every effort is made to ensure that the operation is humane. The meat is then cut up into various types of joint and the offal, such as liver and the kidneys are separated for sale.

¹ Grass silage is produced by cutting young, high quality grass and sealing it in a clamp or by baling it and wrapping it with polythene. The silage ferments to produce acids which preserve it as a high quality feed. Silage is used more often than hay for feeding cattle nowadays. Hay needs to be dried in the field so silage is less dependent on the weather.

² Maize silage is made from the whole crop including the stem, leaves and cob and is cut in October or even November.

The meat is 'hung' or matured in chillers for between 7 and 21 days depending on the market it is being prepared for. Hanging tenderises the meat and develops its flavour.

Recent years have seen the development of demand for gourmet quality beef often based on organic systems or rare breeds like the Longhorn. Gourmet beef comes typically from older cattle which produce a stronger flavoured beef. Higher fat levels and longer hanging also add to eating quality.

Some calves are reared for veal, for which they are ready at 16-22 weeks old. All British veal calves are reared in large groups in straw yards with natural lighting.

Nutrition

Like all meat, beef and veal are very high in protein. They also contain significant quantities of 'B' vitamins and minerals such as sodium, potassium and phosphorus. Offal, particularly liver, is rich in Vitamin B12, A, C and D, folic acid, iron and riboflavin.

Further information:

There is more information on beef production on the EBLEX website under the banner 'Action for Profit': <http://www.eblex.org.uk/>

The National Beef Association brings together British cattlemen:
<http://www.nationalbeefassociation.com/>

There is more information about the painstaking process of preparing our beef once it has left the farm at
<http://www.redmeatindustryforum.org.uk/supplychain/pdfs/BlueprintLeafletBeef.pdf>

There are examples of gourmet beef production on the Rare Breeds Survival Trust site at <http://www.rbst.org.uk/rare-breeds-meat/main.php> . Also at <http://www.huntsham.com/>

This factsheet was written by the Meat & Livestock Commission and has been updated by Alan Spedding with help from Duncan Pullar of MLC

Further information about the Meat and Livestock Commission and its work can be obtained from: www.mlc.org.uk

[last updated October 2007]