

Food and animal feed

The demand for food

In October 2009 the United Nations' Food and Agriculture Organisation of the United Nations met in Rome. It concluded that the world's population will be 34% higher in 2050 and that global food production must increase by 70% to meet this increase and to combat poverty and hunger. This increase does not account for food used for biofuels.

Food and good health

The Food Standards Agency (FSA) has identified the components of a balanced diet¹ for good health. It is based on five food groups:

Figure 1
Worldwide more than 1 billion people are undernourished or their food intake is chronically insufficient.
(UN-FAO assessment, July 2009)



Food group	Nutrients provided
Bread, cereals and potatoes	Carbohydrate (starch), fibre, some calcium and iron B, and vitamins
Fruit and vegetables	Vitamin C, carotenes, folates, fibre and some carbohydrate
Milk and dairy	Calcium, protein, vitamin B ₁₂ , vitamins A and vitamin D
Meat, fish and alternatives	Iron, protein, B vitamins (particularly B ₁₂), zinc and magnesium
Foods containing fat; foods and drinks containing sugar	Fat, including some essential fatty acids, but also some vitamins. Some products also contain salt or sugar. Sugar, with minerals in some products and fat in some others.

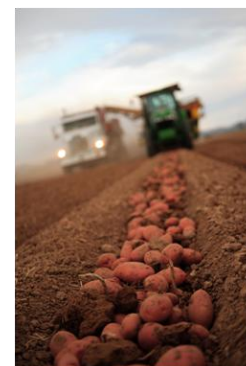
Note: Fibre is now called non-starch polysaccharides (NSP)

Food crops

Most of the world's people rely on crops of just thirty plant species in their diet. However, many more species are important food sources - around 7000 plant species have been used by humans for food Kew, Royal Botanical Gardens.²

Fewer than twenty of the tens of thousands of edible plants in the world provide 90% of the world population's food.

Figure 2
Potatoes are an example of a staple crop.



Farmers and growers produce arable crops such as cereals and sugar beet and horticultural crops such as fruit and vegetables.

¹ <http://www.food.gov.uk/multimedia/pdfs/bghbooklet.pdf>

² <http://www.kew.org/plants-fungi/plant-fungi-uses/food/index.htm>

The small numbers of plants that provide 90% of the world population's food are called staple crops. They are mainly cereal grains or starchy root vegetables that can be stored for a long time, and vary from region to region depending on geography, type of soil and climate.

Rice, corn, wheat and potatoes are amongst the most important staple crops worldwide. Others such as barley, buckwheat, cassava, lentils, millet, oats, rye, sorghum, soybeans, sweet potatoes and yams are very important in certain parts of the world. Growing staple crops is usually referred to as agriculture.

Plants that are grown on a smaller scale and sold at higher prices are sometimes called cash crops. Growing these is usually referred to as horticulture.



Figure 3 Wheat is the most predominant crop grown in the UK.

Land use

Recent satellite images have led scientists to suggest that about 40% of Earth's surface is used for farming.³ However, it is not clear just how much is cultivated land rather than, for example, natural grazing. The total surface of land on Earth is $1.5 \times 10^8 \text{ km}^2$. The maps suggested that around $0.18 \times 10^8 \text{ km}^2$ were being used for crop production and perhaps $0.36 \times 10^8 \text{ km}^2$ were being used to raise livestock.



Figure 4 Rows of lettuces being grown commercially.

In 2010 Defra published these data for the UK:⁴

Land used for agricultural crops in the UK in 2010 was 4.4 million hectares. A little over 3 million hectares of this was used to grow cereal crops and oilseed crops account for a further 0.7 million hectares.

Vegetables and salad grown for human consumption make up the largest proportion of the UK's horticultural area at 121 thousand hectares.

Animal feed

A large number of plants are grown for animal feed, including grass, clover, maize and sugar beet.

Some plants are grazed or foraged by animals. Others are harvested and taken to the animals (this is usually referred to as fodder) and include hay, straw and silage.

Finding out

How is the nutritional value of a food product measured?



Figure 5 Food products carry labels that provide information about their nutritional value.

³ http://news.nationalgeographic.com/news/2005/12/1209_051209_crops_map.html

⁴ <http://archive.defra.gov.uk/evidence/statistics/foodfarm/landuselivestock/junesurvey/documents/June2010-UK.pdf>