

Food commodities: Flour, bread, cereals and pasta

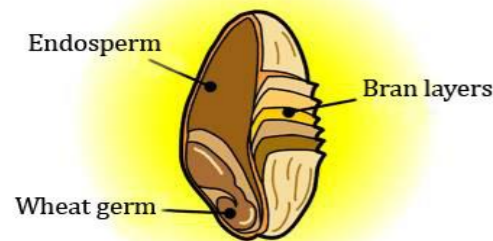
- Food is sourced, processed and sold in different ways.
- Food production and processing ensures that food is edible and safe.

What are cereals?

- Wheat, barley and oats are all types of cereals grown in the UK.
- Grains grow at the top of the plant, closely packed together called 'ears'.
- Each ear of wheat is made up of 45-50 grains, it is these starchy grains that we eat.

There are three parts to wheat grains:

1. bran layers – the coarse outer layer;
2. wheat germ – a new plant would grow from this part;
3. endosperm – the starchy store of food which the germ feeds on while it grows. The white flour we use to make many products comes from the endosperm.



Growing wheat, barley and oats

- Wheat is grown worldwide, different varieties are grown depending on the climate and geography of the country. In the UK 11-16 million tonnes are grown per year. It is planted in early autumn and harvested the following summer.
- About half the crop of wheat is made into food for human consumption, and some is used for animal feed (e.g. to feed chickens, cattle and pigs). About 3% of the crop is used as seed to plant for the following year.
- Other crops grown in the UK include barley with 6-8 million tonnes harvested and oats about 1 million tonnes.

Potato characteristics

Although every variety is different, potatoes can be divided into three groups or types.



Primary processing

Milling

- The grain from the cereals is used to make flour and milling is the process that turns wheat and oats into flour.
- The harvested grain is delivered to the mill where it is cleaned and conditioned.
- The grain is then passed through rollers and sieves to open and separate the different parts of the grain. Grains like oats are rolled and cut to produce flakes and oatmeal.

Malting

To make malt, cleaned barley, water, air and heat are needed. The main stages to malting barley are:

1. steeping – soaking the grains in water;
2. germination – allowing the grains to grow;
3. kilning – drying the grains.

Types of flour

- White – usually contains 75% of the grain and most of the bran and wheatgerm are removed.
- Brown – usually contains about 85% of the original grain and some of the bran and wheatgerm are removed.
- Wholemeal – made from the whole wheat grain.
- Malted wheatgrain – brown or wholemeal flour with malted grains added after milling.
- Wheatgerm – white or brown flour with at least 10% made up of wheatgerm added during milling.
- Strong – contains a higher gluten content to make a range of different breads, pizzas and crumpets.
- Plain – contains a lower gluten content and used to make biscuits, pastry, sauces, pancakes, batters and Yorkshire puddings.
- Self-raising – baking powder is added as part of the milling process and mainly used to make cakes and scones.



Around the world other flours are used which are not made from wheat. Some of the less common types include flour made from coconut, potato, peas and chickpeas. Other grains such as rye, oats and spelt are also used.

Uses of potatoes

Not all potatoes go straight to the shops, some are used as future crops where part of the crop is set aside for next years' planting and is used as seed potatoes.

Some potatoes are manufactured into potato products:

- crisps – potatoes are delivered to factories and washed, peeled, sliced, fried, flavoured, packaged and sent to retailers;
- ready prepared potatoes – British manufacturers of frozen potato products are the largest purchasers of British potatoes, e.g. chips, potato waffles, mashed potato.

Secondary processing

Flour into bread

The four basic ingredients to make bread are:

1. flour;
2. yeast (make the bread rise);
3. salt (adds taste and aids proving);
4. warm water.

Fat can sometimes be added to make the loaf lighter and extend the shelf life.

Malted ingredients

Malt is used in a wide variety of food and drinks to add flavour, colour, aroma, and texture. It can help extend the shelf life of foods (from cookies and cakes to drinks and baby foods).

What is a potato?

Potatoes are tubers, a fleshy swelling on roots that grow underground. There are over 4,000 edible varieties in many different colours, shapes and sizes.

Specialist breeders develop new varieties.

They strive for:

- better resistance to pests and diseases;
- better storage;
- greater nutrition;
- increased yields;
- consistency for better processing;
- improved quality and appearance;
- reduced need for inputs such as water and fertiliser.

Potato growing in Britain

Britain is one of the largest producers of potatoes in the world:

- 5.4 million tonnes are grown per year;
- there are 2,500 specialist potato farmers;
- potatoes are grown on 110,000 hectares;
- 40% of potatoes grown in Scotland are seed potatoes for growing not eating;
- 80% of potatoes grown are eaten in Britain.

Tasks.

1. Research five different types of bread from around the world that are baked and eaten for different occasions.
2. Research the farm to fork journey of potatoes. Prepare a presentation to share with the class next lesson. Include your favourite recipe and explain which variety to use.



CEREALS



POTATOES

Key terms

Fortify: Adding nutrients to food.

Gluten: Part of the grain that provides the elastic texture of dough.

Harvesting: Gathering crops when ready or ripe.

Malting: The process where barley grains are soaked and dried for malt.

Milling: The process to separate different parts of the grain.

Threshing: The method to remove the outer husk layer from rice grains.

Bread in the UK

All white bread commercially sold in the UK is made with white flour fortified with calcium, iron and B vitamins. It is a legal requirement to fortify flour in the UK.



Dextrinisation

When food containing starch is heated (without the presence of water) it can produce brown compounds due to dextrinisation. Dextrinisation occurs when the heat breaks the large starch polysaccharides into smaller molecules known as dextrins. Many of these dextrins can also produce a brown colour.

