

Fact Sheet

Chocolate Manufacturing

From Trees to Beans



The Production of Cadbury's delicious chocolate begins with the cocoa tree. It produces large cocoa pods that sprout from tree trunks and main branches. There aren't that many of them though – each tree only produces around 30 pods each year. Each pod contains 30-40 seeds, which sit in a sweet white pulp, rather like cotton wool – these seeds are the cocoa beans.

DID YOU KNOW? It takes a whole year's crop from one tree to make 1lb (454g) of cocoa - no wonder it is so precious!

Cadbury buys cocoa comes from Ghana in West Africa, where the main harvesting period takes place between October and December. When they're ripe, the cocoa pods turn a rich golden colour. They are then cut down from the trees and the pulp and beans are removed from the outside husk. The beans are then fermented. There are two main methods of cocoa bean fermentation: Heap and Box. In West Africa, the Heap method is used. The cocoa beans are piled up on a layer of banana leaves, with more leaves placed on top to cover them. They are then left for five or six days to ferment – this is when much of the chocolate flavour develops! The pulp around the beans becomes liquid drains away.

Next, the wet beans are dried in the sun and turned frequently so that they dry evenly – this is crucial because if any beans are still wet, they'll go mouldy when they are stored. Once the farmers are happy the beans are dry, they're taken to buying stations where the beans are weighed and packed into sacks. In Ghana, the official Ghana Cocoa Board will grade the cocoa according to quality, before the beans are taken to the port. Once Cadbury has selected its cocoa beans, they arrive in the UK and are transported to one of the world's most efficient processing factories at Chirk, North Wales.



The Production Process

The beans are delivered to Chirk, emptied out on to a conveyor belt and thoroughly cleaned and processed. The beans are then roasted in a revolving drum called a continuous roaster. Hot air is filtered into the roaster as the beans pass along it, and it is during this process that you'll begin to smell chocolate!

The roasted beans are 'kibbled' (broken in to small pieces) and then 'winnowed' (the brittle shells are blown away, leaving just the 'nibs', the centre of the beans). The nibs are then ground in a mill until they become a chocolate-coloured liquid, rather like thick cream, over half of which is cocoa butter. The liquid is called 'mass' or 'cocoa liquor' and this is the basic ingredient for all cocoa and chocolate products.

Mass contains cocoa butter and about half of this is pressed out. You're then left with a solid block that can be ground into cocoa powder and is used to make Cadbury Drinking Chocolate.

The cocoa mass is sent to the Cadbury milk factory in Marlbrook near Hereford. Here it is mixed with sugar and fresh full cream milk, which has already been condensed into a thick liquid.

DID YOU KNOW? Cadbury works very closely with its dairy farmers: Selkley Vale farmers provide Cadbury UK with over 50% of our milk requirements.

The mixture is dried in vacuum ovens to become milk chocolate 'crumb'. The crumb is taken to Cadbury's manufacturing factories and milled between enormous rollers before extra cocoa butter and special flavourings are added.

DID YOU KNOW? A fleet of tankers deliver over 250 tonnes of chocolate crumb from Marlbrook and 50 tonnes of cocoa butter from Chirk, to our Bournville chocolate factory every day!

Next, the milk chocolate needs to be 'conched' (rolled and kneaded so that it becomes silky smooth), and 'tempered' (cooled to a particular temperature to make it more stable).

DID YOU KNOW? The five chocolate making lines at Bournville can make up to 100,000 tonnes of liquid chocolate a year!



Chocolate Moulding

Once we've made dark chocolate and milk chocolate, what happens next depends on what confectionery we're making.

Bars of chocolate like Cadbury Dairy Milk, are called 'moulded' products because chocolate is poured into a mould to make them. Liquid chocolate is poured in, shaken (to make sure it fits the mould perfectly and to remove any air bubbles), and then cooled before being wrapped at high speed.

DID YOU KNOW? 64,800 bars can be wrapped in 1 hour!

'Countline' products are brands such as Crunchie and Double Decker, often with a chocolate covering around a different centre. The centres of the bars are laid out on a conveyer belt, and they pass under an 'enrobing' machine, which covers each bar in a layer of liquid chocolate.



Cadbury Creme Eggs are made by a special process. The shells are made by depositing liquid chocolate into a mould. Liquid fondant, or 'goo', is then deposited straight on top; because the fondant has a greater density, it pushes the chocolate out the the sides. Liquid. The two halves of the egg are then 'slammed' together like a book when the chocolate is still soft, so that they stick together.

Quality checks are built in at the end of the production process before packing. Our clever machinery is able to automatically check unmoulded chocolate bars for appearance, shape and weight.