About cocoa

Cocoa Production

Cocoa, which is the main ingredient in chocolate, comes from cocoa beans. These beans grow in a cocoa pod on a cocoa tree (biological name Theobroma Cacao L, so called by the Swedish botanist Linnaeus back in the 17th century. Theobroma means “Food of the Gods”).

In order to keep up with consumer demand, and avoid decline of this raw material, The Nestlé Cocoa Plan initiative is essential in encouraging and helping farmers to improve the quality and quantity of their cocoa harvests.

Cocoa pods take about six months to develop, starting from small delicate flowers. There are hundreds on a single tree. Once they are pollinated, they develop into ‘cherelles’, tiny pods just a few millimetres long that grow into ripe cocoa pods.

Each cocoa pod contains between 20 and 50 beans, is about 15cm to 25cm long and 7cm to 10cm wide. On average, a single pod weighs about 500 grams. As a rough guide, a mature tree grows to about eight metres high, but to make harvesting easier, is generally pruned to about six metres. In a single year it can yield up to 2,500 beans. That’s enough to make anything between, say, twenty-five and fifty 100 gram bars of chocolate, depending on their amount of cocoa content.

Where cocoa is produced

Cocoa trees are quite fragile. They grow only near the equator, between 20° north and 20° south. They do well in temperatures of 20°C to 32°C and like plenty of rainfall. They are relatively small trees that like some shade and humidity so are therefore found on the lower level of evergreen rain forests.

There aren’t many places in the world where the conditions are right to grow cocoa. Well over half the world’s total production is grown in two West African countries – Côte d’Ivoire (39%) and Ghana (19%). Other countries which produce significant quantities are Indonesia (13%), Nigeria (5%), Cameroon (5%) and Ecuador (3%). Apart from Côte d’Ivoire, we buy our beans from Ghana, Indonesia, Ecuador and Venezuela.

Most cocoa farming is small scale. Around 95% of cocoa is grown in smallholdings of less than four hectares (10 acres) and is typically a family enterprise, much as it was 100 years ago. The whole process of growing, harvesting and drying the beans is usually not mechanised.

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Harvesting cocoa beans

In the big cocoa-producing countries in West Africa, cocoa trees produce pods all year round. The main harvest is spread over a period of six months, starting in September and peaking around November when the farmers are very busy. A second, smaller harvest starts in April or May and continues into July. The whole harvesting process can therefore take several months.

Picking and opening the pods

The first step in harvesting is to cut the pods off the tree. Farmers usually follow the old traditional methods to do this, using machetes or long bamboo poles with knives attached. The next step is to split the pods open and scrape out the beans, which are embedded in pulp in five long rows. The beans are put into a big pile, usually on a layer of banana leaves.

At this stage the beans are very moist and fleshy. They have a soft white sweet milky skin or shell, rather like a broad bean.

Natural fermentation

As the sweet fruity pulp drains away, it ferments naturally in a similar way to apple juice fermenting to become cider. During this process heat is generated. The heaps of cocoa beans are covered with more banana leaves to keep in this heat and protect the beans from rain. The temperature of the beans goes quite high, up to 50º centigrade. All this affects the beans and they lose some of their raw, bitter flavours and the real flavour of cocoa starts to develop.

After this fermentation process, which can take between three and five days, the beans are a rich brown colour but still wet to touch.

Drying the beans

The moist beans are spread out to dry in the sun for up to seven days with frequent turning and checking for any spoilage.

Fermentation and drying affects the quality of the beans. They need to be dried sufficiently to bring their moisture level down as low as 8%. Properly dried beans lose about half their original weight. When the beans are dried, they’re ready to be packed into sacks to be sold and transported. Most go to ports for shipping overseas.

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Diseases that threaten cocoa

Cocoa trees are vulnerable to pests and diseases that can seriously affect the crop, or even wipe it out entirely.

Black Pod disease is caused by a fungus that attacks the trees, particularly the pods, causing brown patches that gradually cover the surface, before spreading to the inside of the fruit. For example, in Côte d’Ivoire, it’s estimated that up to 30% of their cocoa is lost because of Black Pod disease every year.

Witches’ Broom is also caused by a fungus, but this fungus attacks not only the pods, but also the floral cushions and buds. Affected trees no longer produce proper pods, and shoots grow to look like “witches’ brooms”.

Cocoa tree varieties

There are four main varieties of cocoa tree: Criollo, Forastero, Trinitario and Nacional. The Criollo variety is the original cocoa tree, and the ‘prince of cocoas’, with a reputation for fineness and a mild aroma. It accounts for less than 1% of all cocoa, partly because it’s more sensitive to weather conditions and more vulnerable to insects and diseases, and therefore more difficult to cultivate. It also yields smaller harvests. It’s grown in Venezuela, Madagascar and some Central American countries.

The Forastero group of varieties is very diverse and is more resistant to disease and pests and therefore much more productive than the Criollo. Originally grown in the high Amazon region, it’s now the predominant variety cultivated in Africa and consequently accounts for over 90% of world production. This variety forms the basis of the cocoa and chocolate industry.

The Trinitario varieties of cocoa are a natural biological hybrid between the Criollo and the Forastero, which originated in Trinidad where the Spanish colonists had established plantations. This variety produces “fine” or “flavour” cocoa beans with a fruity, molasses or raisin taste.

The fourth type is Nacional, which produces fine cocoa Arriba beans and is found exclusively in Ecuador.