Chapter 8

Cocoa

Learning objectives:

After reading this chapter, learners would be able to:

- understand the meaning of the term cocoa
- understand the processing of cocoa and it includes:
- understand the collection of cocoa products
- understand the fermentation
- understand the drying
- understand the roasting
- understand the winnowing
- understand the Dutch processing
- understand the grinding
- understand the extraction

Guide to better learning

Introduction

Definitions

Different Species of Cocoa

Criollo

Forastero

Famous Cocoa Producing Countries

West Africa

Brazil

America

8.1 Introduction:

The cocoa plant is a small tropical tree originally grown in South America and now commercially grown in West Africa. It needs a good soil, low altitude and high rainfall to grow.

The fruit of the tree which grows on the branches as well as main trunk is used for making cocoa and chocolate. The fruit is a large pod 4 inches -12 inches in length, about 4 inches in diameter and has a hard leathery rind containing 25-75 seeds in five distinct rows embedded in soft pulp.

The famous species of cocoa are Criollo and Forastero. The cocoa comes from countries like West Africa, Brazil and America; with West Africa being the biggest producer of Cocoa.

8.2 Processing of Cocoa:

The processing of cocoa involves various processes right from collection, fermentation to extraction and finally making it into fine cocoa powder. The processing is as follows:

8.3 Collection:

The ripe cocoa pods are collected, split open and beans and pulp surrounding is scooped out.

Fermentation:

These are then fermented under controlled conditions. Sweat boxes are used for fermentation where temperature is allowed to rise to 40° - 50° C (104 - 122° F).

8.4 Why Fermentation?

Fermentation is done for two basic reasons:

a) To kill the germs, prevent germination of the seeds and decomposition of the bean.

b) To encourage the enzyme reaction reducing bitterness and developing the flavour.

The beans absorb the liquid from the fermenting sugary pulp, which is then converted into alcohol and then to acetic acid. The fermentation is stopped as soon as the mass of beans passes into the acid stage. If fermentation is allowed to continue, it would develop unpleasant flavours and odours in the beans.

8.5 Drying:

The drying is done by passing through a mechanical chamber or by exposing in the sun for two to three days, occasionally turning them over.

8.6 Roasting:

In this stage separation of shell from the beans takes and moisture is lost. Roasting also assists in developing of flavours and aroma.

8.7 Winnowing:

It means removal of shell; it is done by passing through a series of rollers and sieves. Thus de-shelled beans obtained are called as nibs.

8.8 Dutch Processing:

In this process, nibs are immersed in alkaline solution which further develops colour and flavour. After drying, the nibs may be re-roasted to correct the moisture content.

8.9 Grinding:

The nibs are ground into very small particles to produce cocoa and cocoa butter.









8.10 Extraction:

The cocoa mass is fed into felt lined steel pans fitted with a removable perforated lid and is subjected to hydraulic press, some of the fat is forced through filter-cloths leaving behind solid residue called press cake. This is removed from the pan, cooled to set colour, pulverized or powdered and then sieved. This is mixed with small amount of salt and vanilla flavouring to make cocoa powder.