

## Cocoa Processing

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Raw cocoa is bitter, astringent and devoid of chocolate flavour. The original taste, flavour and colour of the chocolate are due to interplay of different chemicals developed during processing. Biochemical process for development of chocolate flavour start during fermentation stage and lasts during drying, roasting and conching.

### Harvesting of ripe pods

- Harvest the pods at optimum maturity (when fruits turn three quarters yellow, orange or red depending upon the variety). Harvesting is done at the stalk using a machete, pruning shears or sickle. Avoid damage to flower cushions which will produce new flowers and fruits of subsequent harvests

### Breaking the pods

The pods are broken within 5 days of harvest. Separate the healthy pods from damaged ones to differentiate between the grades.

### Fermentation

The beans should be fermented to help produce chocolate flavour, reduce bitterness, lose its viability, remove mucilaginous coating and enable the cotyledons to expand.

**There are four different methods of fermentation which are as follows**

- 1) **Heap method-** It involves keeping a mass of not less than 50kg of wet beans over a layer of banana leaves which are spread over few sticks to keep them a little raised over the ground level to facilitate the flow of sweating. The beans are mixed on the 3<sup>rd</sup> and 5<sup>th</sup> days. Beans can be taken out for drying on the seventh day
- 2) **Tray method-** Wooden trays, 10 cm deep are divided into a number of sections by means of a wooden partition that will fit into appropriate grooves at required distance. A convenient tray can be of 25cm width and 60 cm length. Wet beans are filled in tray and levelled. Fermentation is completed in four days
- 3) **Basket method-** Mini bamboo baskets, closely woven with a diameter of 20cm and 15 cm height are taken for a capacity of 2kg. The baskets are lined with one or two layers of torn banana leaves to facilitate drainage of sweatings. The beans are to be taken out and stirred well 48 hours and 96 hours after the initial setting. Beans can be taken out for drying on the seventh day.
- 4) **Box method-** Boxes of different shapes and sizes are used. The bottom of boxes are provided a number of holes at 10cm distance and three such boxes are arranged in a row so that beans can be transferred from one box to the other. On the sixth day beans are taken out for drying.

## Drying

At the end of fermentation the moisture content of beans is around 60% and this must be reduced to less than 8% before the cocoa can be stored, sold or transported. The beans are dried naturally or artificially.

## Polishing

During drying the beans are polished to improve their appearance. Polishing also protects the beans from fungal infections during storage.

## Cleaning and bagging

After drying and polishing, beans are cleaned of any extraneous matter and are packed in clean, sufficiently strong and properly sewn jute bags.

## Grading

Grading is done by a mechanical grader which separates the beans based on their size.

## Storage

The great emphasis to achieve optimum quality from harvest to drying must continue during transport and storage. The jute bags containing dried cocoa beans are placed on a pallet to avoid contact with the ground and walls. The storage location must be clean, dry, well aerated and protected from the rodents and humidity to ensure the quality of produce.

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