



### **III Frequently asked questions:**

#### **1. Mention briefly about history of chocolate?**

**Ans:** Human's liking for chocolate began at least 4,000 years ago in Mesoamerica, the present day southern Mexico and Central America, where cacao grew wild. *Olmecs* unlocked the secret of how to eat this bitter seed. It is believed that chocolate is derived from the Maya verb *chokola'j* which means, "to drink chocolate together". Christopher Columbus was the first European to discover the existence of cacao tree. Today, chocolate industry has evolved so vast that 40 to 50 million people depend on cocoa for their livelihoods—and chocolate farmers produce 3.8 million tons of cocoa beans per year.

The process involves harvesting cacao, refining coca to cocoa beans, and shipping the cocoa beans to the manufacturing factory for cleaning, coaching and grinding.

#### **2. Explain briefly the step involved in processing of cocoa seeds?**

**Ans:** Cocoa comes from tropical evergreen Cocoa trees, such as *Theobroma cocoa*, which grows in the wet lowland tropics of Central and South America, West Africa and Southeast Asia (within 20 degree of the equator) Following are the steps involved in processing of cocoa seeds:

a) Harvesting of the pods: Cocoa pods that are borne on the trunk and branches of cocoa trees are harvested when they're ripe. The pods are taken to a processing house. Here they are split open and the cocoa beans are removed. Pods can contain upwards of 50 cocoa beans each.

b) Fermentation of beans: The beans collected from the pods are heaped and the beans undergo fermentation. During fermentation the beans turn brown. This process may take five or eight days.

c) Drying of fermented beans: After fermentation, the cocoa seeds are dried. Drying can be mechanized or sun drying. The drying process usually takes about a week and results in seeds that are about half of their original weight. The dried beans are packed and sent to chocolate manufacturers.

#### **3. Explain the steps involved in the manufacturing of chocolate?**

**Ans:** The dried cocoa beans in the chocolate factories are refined into chocolate. Generally, manufacturing processes involves following steps:

##### Step 1: Roasting and Winnowing the Cocoa

The chocolate manufacturers roast the cocoa beans.. This develops the colour and flavour of the beans. The outer shell of the beans is removed, and the inner cocoa bean is broken into



small pieces called “cocoa nibs.” The roasting process makes the shells of the cocoa brittle, and cocoa nibs pass through a series of sieves, which strain and sort the nibs according to size in a process called “winnowing”.

### Step 2: Grinding the Cocoa Nibs

Grinding is the process by which cocoa nibs are ground into “cocoa liquor”, which is also known as unsweetened chocolate or cocoa mass. From this the fat called cocoa butter and cocoa powder. The cocoa powder is mixed with cocoa butter and sugar. In the case of milk chocolate, fresh, sweetened condensed or roller-dry low-heat powdered whole milk is added, depending on the individual manufacturer’s formula and manufacturing methods.

### Step 3: Blending Cocoa liquor and moulding Chocolate

After the mixing process, the blend is further refined to bring the particle size of the added milk and sugar down to the desired fineness. The Cocoa powder or ‘mass’ is blended back with the butter and liquor in varying quantities to make different types of chocolate.

After the completion of blending, moulding is the final procedure for chocolate processing. This step allows cocoa liquor to cool and harden into different shapes depending on the mould. Finally, the chocolate is packaged and distributed around the world.

#### **4. Write the importance of roasting and winnowing the cocoa manufacturing of chocolate?**

**Ans:** The chocolate manufacturers roast the cocoa beans. This develops the colour and flavour of the beans, which we look forward. The outer shell of the beans is removed, and the inner cocoa bean is broken into small pieces called “cocoa nibs.”

The roasting process makes the shells of the cocoa brittle, and cocoa nibs pass through a series of sieves, which strain and sort the nibs according to this process called “winnowing”.

#### **5. Write the difference between milk chocolate, white chocolate and dark chocolate?**

**Ans:** i) Milk chocolate: It contains sugar, milk or milk powder, cocoa powder, cocoa liquor, cocoa butter, lethicin and vanilla.

ii) White chocolate: It contains sugar, milk or milk powder, cocoa liquor, cocoa butter, Lethicin and Vanilla.

iii) Dark chocolate: It contains cocoa powder, cocoa liquor, cocoa butter, sugar, Lethicin and Vanilla.

#### **6. What is blending and molding chocolate?**



**Ans:** The blend means the mixing process, to bring the particle size of the added milk and sugar down to the desired fineness. The Cocoa powder or 'mass' is blended with the butter in varying quantities to make different types of chocolate.

After the completion of blending only, moulding is the final procedure in the processing. This step allows cocoa liquor to cool and harden into different shapes depending on the mould. After this chocolate is packaged and distributed throughout the world.

### **7. Write the characteristics and quality of various chocolate?**

**Ans: Bittersweet Chocolate:** This contains at least 35 percent pure chocolate with small amount of added sugar, also known as dark chocolate. Characteristically, they are darker and less sweet than semi sweet. Specific sweetness and colour varies based on manufacturer requirements.

**Semisweet Chocolate:** This is the major type of chocolate, it contains 35 percent pure chocolate with added cocoa butter and sugar. They are available in many forms (block, discs, squares, chips).

**Milk Chocolate:** Milk chocolate contains at least 10 percent pure chocolate with added cocoa butter and sugar. Characteristically they contain less pure chocolate than semisweet or bittersweet chocolates. Flavour of these chocolates is milder than darker chocolates.

**Sweet Baking Chocolate:** Sweet chocolate has at least 15 percent pure chocolate with added cocoa butter and sugar. It tastes sweeter than semisweet chocolate.

**Unsweetened Cocoa Powder:** Unsweetened cocoa powder is pure chocolate with most of the cocoa butter removed. They are treated to neutralize the naturally occurring acids, thus giving them a mellowed flavor and dark red color.

**White Chocolate:** White chocolate is made by combining cocoa butter with sugar, milk solids and flavouring is usually vanilla.

**Premelted Chocolate:** Premelted chocolate is a semi liquid, unsweetened product made of cocoa powder and vegetable oil.

**Candy Coated chocolate:** Also known as confectioners' coated chocolate and chocolate-flavored coated candy. This is a chocolate like product with most of the cocoa butter removed and replaced with vegetable fat. It is easier to work with this type of chocolate for dipping and molding as it requires special steps to get glossy appearance and melts at higher temperature. They are mainly available in assorted colors and flavors.

**Mexican Chocolate:**

Mexican sweet chocolate has cinnamon and sugar added to the pure chocolate. Sometimes



ground almonds may also be added.

**8. What is unsweetened cocoa powder and where it is used?**

**Ans:** Unsweetened cocoa powder is pure chocolate with most of the cocoa butter removed. Characteristically cocoa powders are labeled as “Dutch-process” or “European-style”. They are treated to neutralize the naturally occurring acids, thus giving them a mellowed flavour and dark red color. They are mostly used in baking

**9. Mention the types of commercially available chocolates?**

**Ans:** Bittersweet chocolate, Semisweet chocolate, Milk chocolate, Sweet baking chocolate, Unsweetened Cocoa Powder, Premelted Chocolate, Candy coated chocolate, Mexican Chocolate.

**10. What are the special characteristics of candy chocolate and Mexican chocolate?**

**Ans:** Candy coated chocolate is also known as confectioners' coated chocolate and chocolate-flavoured coated candy. This is a chocolate like product with most of the cocoa butter removed and replaced with vegetable fat. It is easier to work with this type of chocolate for dipping and moulding as it requires special steps to get glossy appearance and melts at higher temperature. They are mainly available in assorted colours and flavours.

**Mexican Chocolate:** Mexican sweet chocolate has cinnamon and sugar added to the pure chocolate. Sometimes ground almonds may also be added. Ibarra brand is one of the most popular brands in Mexico

**11. Write a note on the worldwide consumption of chocolate?**

**Ans:** The top twenty countries that consume chocolate are considered 'well-developed' or 'advanced'. Brazil is the only country, which actually considers chocolate to be a natural resource. Seventy percent of the worldwide profit from chocolate sales is concentrated in the western countries. 80% of the world chocolate market is accounted by just six companies which includes Nestle, Mars and Cadbury. Europeans alone, consume around 40% of the world's cocoa per year, 85% of which is imported from West Africa.

**12. What is the nutritional composition of chocolate and its impact on health?**

**Ans:** The major components of chocolate are approximately 54% cocoa butter, 11.5% protein, 9% cellulose, 6% tannic acids and colour, 5% water, 2.6% salts, 1% sugars, 0.2% caffeine and 10% organic acids and aromas. Depending on an individual chocolate manufacturer's recipe the amount of cocoa mass will range from 7-15% in milk chocolate and 30-70% in dark chocolates. In terms of nutrition every 453 grams of milk chocolate contains: 2300 calories, 140 grams of fat, 100 milligrams of cholesterol, 370 milligrams of



sodium, 270 grams of carbohydrates and 31 grams of protein

The excess consumption of chocolate and chocolate products has deleterious effect on health especially on long term. Obesity and poor dental health may be attributed to the chocolates alone.

**13. Which company is the largest processor of cocoa bean in India?**

**Ans:** Campco (Central Arecanut and Cocoa Marketing and Processing Cooperative Ltd.) is an Indian cooperative that was founded in 1973 in Mangalore, Karnataka. They are the largest processors of cocoa bean in the country. This is mainly cultivated in Indian states of Kerala, Karnataka and Assam. Some of its products are: Bar, Krust, Fun Tan, Melto, Snack Bar, Treat, Turbo & Dairy Cream.

**14. Which are top cocoa producing countries in the World?**

**Ans:** Cote d'Ivoire produces 1,448,992 tonnes and Ghana- 835,466, Indonesia- 777,5000, Nigeria – 367,000, Cameroon-275,000, Brazil – 256,186, Ecuador – 128,446, Mexico – 82,000, Peru – 71,175, Dominican Republic – 68,021 and India produces 13,000 tonnes.

**15. Define Dutch process of European style of cocoa beans?**

**Ans:** Unsweetened cocoa powder is pure chocolate with most of the cocoa butter removed. Characteristically this cocoa powders are labeled as “Dutch-process” or “European-style”. They are treated to neutralize the naturally occurring acids, thus giving them a mellowed flavor and dark red color. mainly used for Baking.