



Unit 2 Topic 1

Coffee processing

INTRODUCTION

Everyday's life begins with a cup of Coffee is defined as a beverage made by percolation method or collecting decoction from the roasted and powdered seeds of coffee. Coffee was first known to be used in 15th century in Ethiopia and widely liked and consumed commodity all over the world. The leaves, which also contain caffeine, were munched at first. At some point, the fruits were used for coffee making. "Coffee brewing" was first introduced by the Arabs, thereby deriving its name from Arabic. Coffee is presently cultivated in numerous countries thereby providing employment to a large population in the world. Coffee ranges from black, light to dark brown, white, beige and can be consumed in hot or cold condition.

1. PRODUCTION

The world coffee demand and supply depends on the prices on the world market. Next to oil, coffee stands second in world trade. Coffee is cultivated in 60 different countries. Brazil is the leading producer of coffee in the world. Brazil has produced more than 40 percent of that total global coffee production. Vietnam's production is forecast at a record up to 13 percent. India stands sixth in global coffee production of 3 percent.

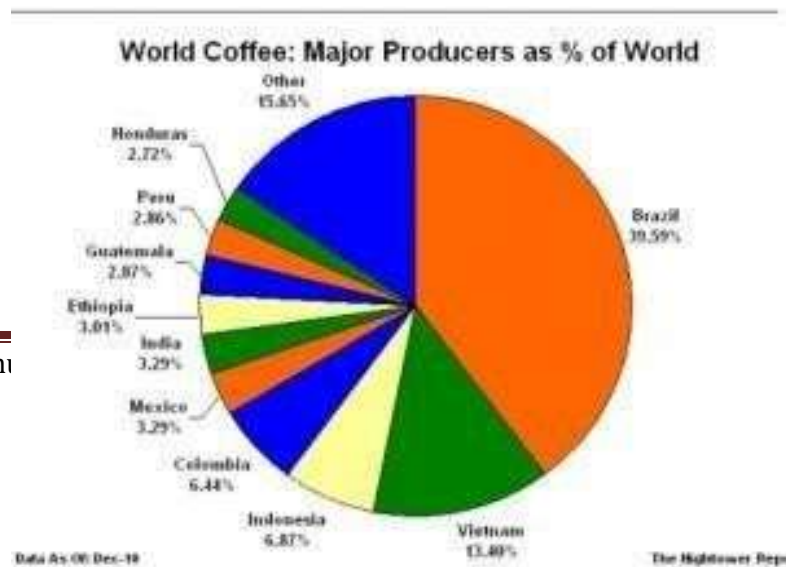




Fig.1. Major coffee producers of the world

Karnataka is the leading producer of coffee in India accounting to 53 percent followed by Kerala 28 percent and Tamil Nadu 11percent. In India coffee, coffee is grown in shade for purest varieties.

2 Varieties:

Among the nearly 60 varieties of coffee, Arabica, Robusta and Liberica are three major varieties grown worldwide.

2.1 Arabica (*Coffea arabica*)

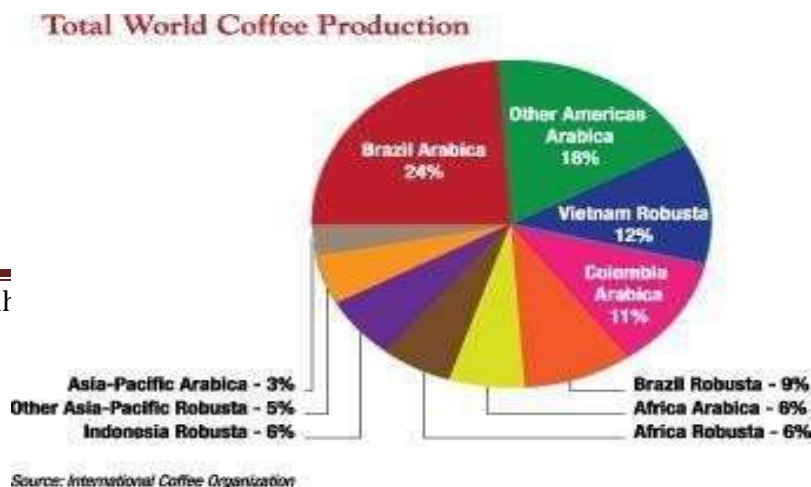
The Arabica variety coffee is highly demanded due to its superior flavour and aroma. Arabica is grown in low temperature climatic conditions at nearly 15-20°C. *Coffea arabica* contributes to about 90% of world's trade in coffee.

2.2 Robusta (*Coffea canephora*)

Robusta varieties are grown in hot climates more than 20°C. Owing to their higher soluble solid content they are much preferred for instant coffee production.

2.3 Liberica (*Coffea liberica*)

These varieties of trees grow in both extreme climates. This yields bitter tasting coffee.





(<http://www.futuresindustry.org>)

Fig.2. World coffee production by variety

Arabica, the mild aromatic coffee makes up more than 60 percent of total world coffee production, whereas *Coffea canephora* contributes to 9 percent and *C. liberica* represents 1 percent only.

3. Harvesting & Processing:

Coffee belongs to the Rubiaceae family. The coffee tree is a shrub, with a total life of about 70 years, yielding commercial profitability from the fifth year.



FIG. 3 THE COFFEE TREE



FIG.4 THE COFFEE CHERRY

3.1 The cherry

The coffee fruit is termed as “The cherry”. Cherry ripening takes several months with subsequent color change in every stage. The cherries take several months to ripen, turning yellow to red and finally black. The harvest index for the cherries is when they turn reddish in color. The exocarp is the outer red skin within which the pulpy mesocarp is present followed by the endocarp, beneath which the two beans



are present with the flat surfaces facing each other. The seed coat termed as “silver skin” is another thinner membrane that covers the seed coat. Usually there are two coffee beans and rarely one berry termed as pea berry is present. After 8 to 9 months of the flowering stage, the berries are ready for picking. A vital part in harvesting is to pick only the red and firm ripe berries. The over-ripened garnet-red, violet or black results in the final product an unpleasant flavor and taste.



Fig.5. The coffee cherry

3.2 Harvesting

3.2.1. Four methods of coffee picking are practiced throughout the world:

- **Stripping** is a manual method where the entire branch contents are stripped and then separating the ripe cherries alone. This method produces poor results.
- The second method employs a comb that is easily flexible causing only the ripe cherries to fall down.
- Third method is the mechanical method which makes use of mechanical vibrators that are rigidly clamped to the tree, that gives a vibration to make the ripe fruit to separate and is thus collected.
- The widely followed method all over the world is the handpicking method. This is the most expensive method due to the intensive labor, but results in good quality coffee.



3.3. Coffee Cherry Processing

The removed coffee beans are subjected to drying before they are roasted. Generally, the two methods that are practiced in drying of coffee beans are the dry and the wet method. Green coffee is the term referring to unroasted coffee beans.



Fig.6. Ripe coffee cherry