

# **FOOD TECHNOLOGY BEVERAGES**

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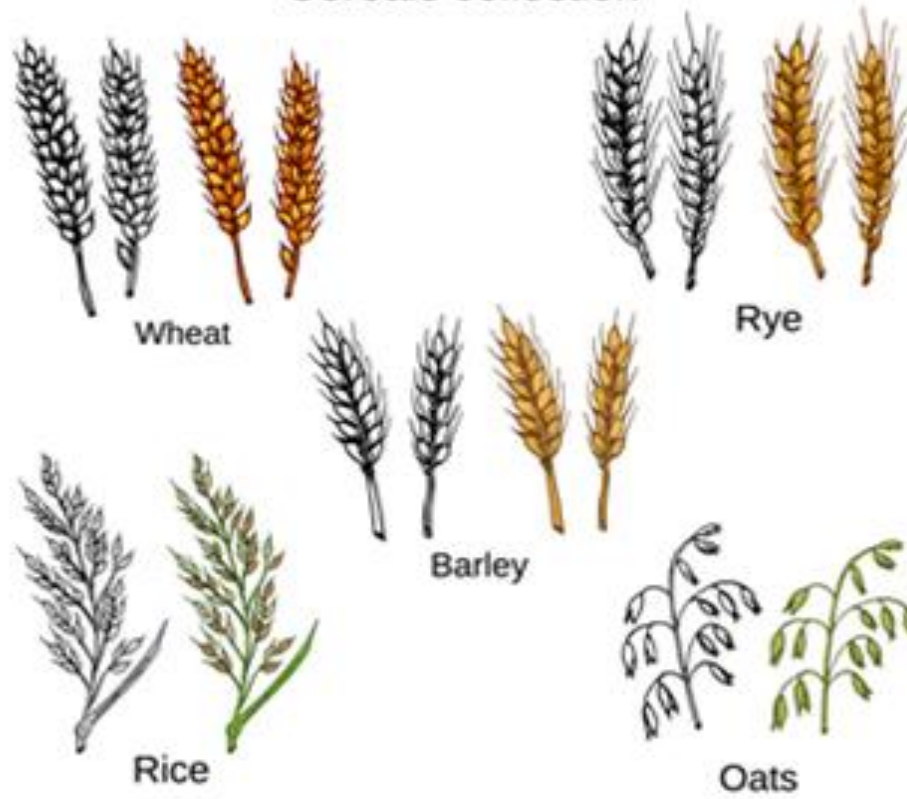
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**BON SECOURS COLLEGE FOR WOMEN**

**THANJAVUR**

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Cereals collection



# What is Beverage?

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‘Beverages’ is a **liquid drink other than water**, and can be potable for instance tea, coffee, beer etc.

## Types of Beverage

- Alcoholic beverages
- Non-Alcoholic Beverages

# Non-Alcoholic Beverages:

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- Non-Alcoholic beverages means non-intoxication drinks (Yeast is not added to convert sugar into alcohol during the fermentation process) or **sweet carbonated drinks which does not have any alcohol percentage.**
- For eg: Coffee, Tea, Squashes, Smoothies, Shakes, Juices, Syrups, comes in different ways canned, bottled, cooled.

# Paraguay Tea:

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- Paraguay Tea, is next to coffee, tea and cocoa. It is obtained from the leaves of various species principally *Ilex paraguariensis*.
- . The leaves like tea contain up to 0.5 percent **theine**, a volatile oil and some **tannin**
- The beverage is usually prepared in a cup by pouring **boiling water on the leaves**, often with sugar and lemon.
- Paraguay is the universal drink of millions in **South America** but has not been popular in other parts of the world.

# Guarana:

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- This is one of the more stimulating of all caffeine beverages as it contains **three times as much caffeine** as coffee. It is prepared from the seeds of *Paullinia cupana*, a large woody climber of the Amazon region
- One half teaspoon of the reddish brown guarana in a cupful of water is equivalent to 2-3 cups of strong coffee. Guarana contains some tannin, a volatile oil. It is astringent with a bittersweet taste. The beverage is widely used in **Brazil** especially in the **Mato Grosso** where the plant is cultivated to some extent.

- Other Non-Alcoholic beverages such as **Khat, Cola, Cassine** . *Cathae dulis* is a shrub that grows wild in Abyssinia and is cultivated in other parts of **Northeastern Africa**. The dark-green leaves are used in **Arabia** to yield **khat**, a principal beverage
- The seeds of *Cola nitida* are the Cola Nuts of Africa. Inhabitants of **Africa** and elsewhere use it for beverage purposes. The seeds are imported worldwide for use in various soft drinks.
- This is a tea like beverage obtained from a *Ilex vomitoria*. It grows in sandy soil of the coastal plain from Virginia to Mexico where it is often found in dense thickets. Although the use of *cassine* was first reported from **Florida** as early as 1562 and was used to some extent by the early European settlers.



**KHAT**



**PARAGUAY  
TEA**



**CASSINE**



**GUARANA**



# Alcoholic Beverage:

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- Alcoholic beverage is any fermented (**presence of yeast**) drink such as alcohol, wine, beer or distilled ethanol as an intoxicating agent.
- These are fermented from the sugars in fruits berries, grains, milk, honey, plant saps, tubers.
- Beer is the best known member of the malt family alcoholic beverages, which also includes ale, stout, porter and malt liquor.
- There are two classes of Alcoholic beverages



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(1) **The fermented beverages** wherein the alcohol is formed by the fermentation of sugar present either **naturally** in the source or produced by the **transformation of starch**

(2) **The distilled beverages** that are obtained by **distillation** of some **alcoholic liquor**. By the 21st Century the health benefits of using moderate amounts of alcoholic beverages became apparent to the medical profession. Wine especially has been found to prolong longevity and reduce risks of some diseases such as cancer and arteriosclerosis.

# Fermented beverages

## (i) Beer Fermentation:

Beer is an un-distilled product of grain-mash fermentation brought about by yeast. Beer fermentation involves the conversion of starchy raw materials into sugars and then into alcohol. It is generally prepared from malted barley but other starchy grains, e.g. maize, rice are also used as raw materials. Yeasts especially ***Saccharomyces cerevisiae*** or ***S. carisbergensis*** are used in the fermentation process.

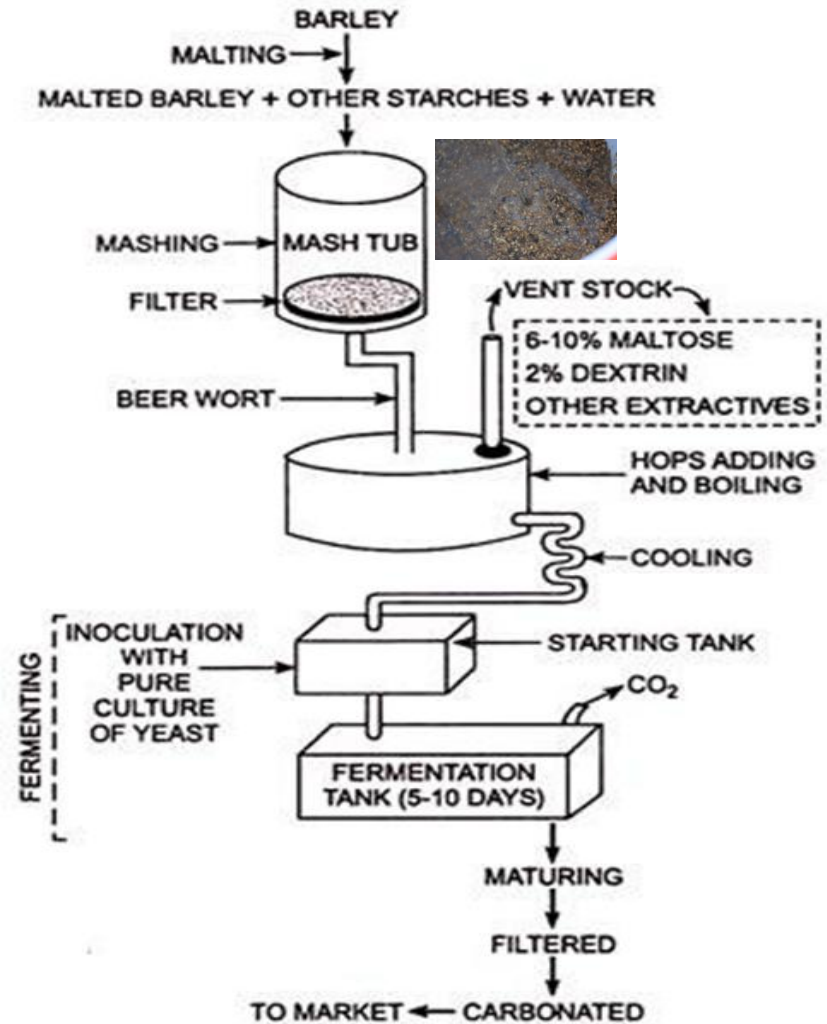


FIG. 40.2. Commercial production of beer.

# Types of Beer:

## (i) Lager beer

It means literally, the **stored beer**. Lager beer is produced by '**bottom**' fermentation and is rather high in alcohol (3.93%) and extract with a relatively low proportion of hops.

## (ii) Bock beer:

It is a **heavy beer**, dark in colour and high in alcohol (4.69%). It is brewed for consumption in early spring.

## (iii) Ale beer:

Ale beer is pale in colour, tart in taste, high in alcohol (4.75%) and contains more hops. This beer is produced by '**top**' fermentation.

## (iv) Porter beer

## (vi) Stout beer

## (v) Weiss beer

## (ii) Wine Fermentation:

Wine is an un-distilled product of fruit juice fermentation brought about by yeast. Wine is produced by the normal alcoholic fermentation of fruit juices, especially the grape juice. The microorganisms used in the wine fermentation are the strains of ***Saccharomyces cerevisiae***.

## 2. Types of Wine:

Variety of grape, strain of yeast, nature of fermentation, etc. result in various varieties of wines. The latter differ from each other in so many attributes that it becomes difficult to classify them properly.

However, some important varieties of wine are as follows:

(i) Red wines:

The wines red in colour are put under this category. In preparing them the **grapes are crushed and stemmed but their skins and seeds are left in the 'must'**. The alcoholic content percentage of these wines ranges from 11 to 12.

Examples:

Rose wines, Burgundy wines, Claret wines, Vinorosso wines, etc.

(ii) Dry wines:

Those wines which fall under this category **contain too little sugar to be detected by taste**, i.e., the sugars are almost completely fermented. Alcohol percentage of dry wines ranges from 19-20.

Examples:

Post wines, Tokay wines, Muscatel wines, etc.

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(iii) Sweet wines:

Those wines are “**sweet wines**” that have good quantities of unfermented sugars.

(iv) Sparkling wines:

These are the wines that are made effervescent by secondary fermentation in closed containers and contain CO<sub>2</sub>. They too possess 11-12% alcohol.

Examples:

Sparkling Burgundy, Champagne, etc.

# Distilled Alcoholic Beverages:

## (i) Whisky:

Whisky is distilled from fermented **grain-mash** containing upto 50% ethyl alcohol.

## (ii) Rum:

Rum is any alcoholic distillate from the fermented **juice of sugarcane, sugarcane syrup, sugarcane molasses or other sugarcane by-product and contains** about 40% alcohol. Blackstrap molasses containing 12-14% fermentable sugar are fermented by *Saccharomyces cerevisiae* or other yeasts at pH 4.0-4.7 and initial temperature of 27°C which rises finally to 35.5°C. Fermentation is completed within 3 to 7 days.

Rum is usually aged (matured) in charred **white-oak barrels** and possesses a characteristic flavour, aroma and colour. Rum may be used in the preparation of ice cream, candies, in curing of tobacco and, sometimes, as medicine.





### (iii) Gin:

Gin is the liquor which is prepared by distillation from a fermented mash of **malt** or **raw grain**. The finest gin is distilled from the malt of **barley** and rye. It requires several distillations. The flavor of gin and its medicinal value are due to oil of juniper.

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### (iv) Brandy:

Brandy is the distillation product of fermented **grape juice** (wine) and contains about 40-50% alcohol. The best brandy is made in France in the Charente district. The finest grade of brandy are made from **the white wines**. The **brown colour** of brandy develops when it is stored in **wooden casks**. Sometimes, the brandy is coloured with caramel. It contains about 60-70% alcohol.

### (v) Vodka:

It is Russian alcoholic beverage (distilled) produced by the yeast fermentation of **potatoes**. It is allowed to **age for long periods in wooden casks**; flavour and aroma are introduced into the purified alcohol during the blending process.

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THANK YOU

