

## 5 Different Uses of Microbes

### Content: 5 Different uses of microbes.

1. Production of Antibiotics
2. Production of Dairy Products
3. Production of Bread making
4. Production of Food Yeast
5. Production of Organic Acids



### 1. Production of Antibiotics

Industrial microbiology can be used to produce antibiotics via the process of fermentation, where the source microorganism is grown in large containers (100,000–150,000 liters or more) containing a liquid growth medium. Oxygen concentration, temperature, pH and nutrient are closely controlled.



## 2. Production of Dairy Products

Different strains of bacteria and fungi are used for fermentation of milk in order to produce a wide variety of dairy products. The main bacteria are lactic acid bacteria that are used for coagulation of milk and thereafter, these can be processed for diverse products. Eg. Cheese, Butter, Yogurt, Ice-cream, etc.



## 3. Production of Bread making

Sourdough is a type of bread produced by a long fermentation of dough using naturally occurring yeasts and lactobacilli. ... The starter cultivates yeast and lactobacilli in a mixture of flour and water, making use of the microorganisms already present on flour; it does not need any added yeast.



## 4. Production of Food Yeast

Yeast is used as a very nourishing material and is often taken as a food supplement. *Torulopsis utilis* is a food yeast cultured and marketed commercially. Yeast is a good source of Vitamin B complex and also rich in proteins. Yeast is a by-product of brewing industry, and is also cultured in a medium containing molasses, cane sugar, potatoes or other fermentable carbohydrates.



## 5. Production of Organic Acids

Generally, organic acids are produced commercially either by chemical synthesis or fermentation. ... All organic acids of tricarboxylic acid cycle can be produced in high yields in microbiological processes. Among fermentation processes, the production of organic acids is dominated by submerged fermentation.

Organic acids constitute a key group among the building-block chemicals that can be produced by microbial processes. ... Major types of organic acid produced by microbial activity are citric acid, succinic acid, lactic acid, itaconic acid, lactobionic acid, gluconic acid, fumaric acid, propionic acid, and acetic acid.

