**Lactose Fermentation By Lactobacillius Bulgaricus & Streptococcus Thermophilus**

The starter cultures in yogurt are : 1) Lactobacillus bulgaricus and 2)Streptococcus thermophilus.

**The function of the starter cultures :**

is to ferment lactose (milk sugar) by lactase enzyme to produce lactic acid. The increase in lactic acid decreases pH (4-4.5) and causes the milk proteins are clot to form yogurt.

Other bacterial cultures, such as Lactobacillus acidophilus and Bifido-bacteria may be added to yogurt as probiotic cultures.

[Probiotic](http://www.milkfacts.info/Nutrition%20Facts/Milk%20and%20Human%20Health.htm#Probiotics): cultures benefit human health by improving lactose digestion , gastrointestinal function, and stimulating the immune system.

The environment temperature of the starter cultures to grow 40-45°C .

### General Yogurt Processing Steps:-

### [Pasteurize Milk](http://www.milkfacts.info/Milk%20Processing/Yogurt%20Production.htm#YPast)

### [Homogenize](http://www.milkfacts.info/Milk%20Processing/Yogurt%20Production.htm#YHomo)

### [Cool Milk](http://www.milkfacts.info/Milk%20Processing/Yogurt%20Production.htm#YCoolMilk)

### [Inoculate with Starter Cultures](http://www.milkfacts.info/Milk%20Processing/Yogurt%20Production.htm#YStarter)

### [Cool](http://www.milkfacts.info/Milk%20Processing/Yogurt%20Production.htm#YCool)

### [Add Flavors & Fruit](http://www.milkfacts.info/Milk%20Processing/Yogurt%20Production.htm#YFruit)

### [Package](http://www.milkfacts.info/Milk%20Processing/Yogurt%20Production.htm#YPkg)

**Procedure Of Estimation Lactic Acid Product:**

1- Filtrate yoghurt in gauze to separate the whey.

2- Taken 2 ml of whey + 4 ml of distilled water + 12 drop of reagent in the beaker or flask .

3- Titrate the sample with the base (NaOH ) until reaching to balance point (The onset of appearance the color pink).

4- Read the volume of the base that used.

5- Use the following Arithmetical formula to get the percentage of titrable acidity for lactic acid.

Lactic acid % =volume of NaOH \* Normality of NaOH \* Molecular weight equivalent of L.A

 Sample Weight \* total titratable volume

knowing that:

**Normality of NaOH = 0.1**

**Molecular weight equivalent of L.A (Lactic Acid)=0.09008**

**Sample Weight=2**

**total titratable volume= 2+4=6**

**Lactic acid % =** ? \* 0.1 \* 0.09008

 2 \* 6