

# ATOMIC ENERGY CENTRAL SCHOOL

## CHEMISTRY PROJECT WORK

BY

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CLASS :- XII-B

ROLL NO. :- 07

# CHEMISTRY PROJECT

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I, HIREN D PATEL, ROLL NO. 07 am submitting this copy of Chemistry Project work as an evidence of my work in Chemistry Laboratory.

# CERTIFICATE

This is to certify that Master Hiren P Patel ,A student of class XII of the Atomic Energy Central School, Roll No.: 07 session 2009-2010, has satisfactorily completed the required chemistry project work as per the syllabus of Standard XII in the laboratory of the school.

Date:

Chemistry Teacher  
(Mr.R K Sawhney)

Principal's Signature

External examiner's Signature

# ACKNOWLEDGEMENT

I selected this project as a part of my studies, titled "PREPARATION OF SOYABEAN MILK AND ITS COMPARISON WITH NATURAL MILK".

As a gratitude, I convey my sincere thanks to Mr. R K Sawhney and Lab. Assistant Smt. Raksha Pandya who was the constant guide during the period of study and without whose help it would not have been possible for us to complete this project.

HIREN P PATEL  
XII-B (SCIENCE)  
2009-2010

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# INTRODUCTION

- ❖ Natural milk is an opaque white fluid secreted by the mammary gland of female mammal. The main constituents of natural milk are proteins, carbohydrates, minerals, vitamins, fats and water and is a complete balanced diet. Fresh milk is sweetish in taste. However, when it is kept for a long time at a temperature  $35 \pm 5^{\circ}\text{C}$  it becomes sour because of bacteria present in air. These bacteria convert lactose of milk into lactic acid which is sour in taste. In acidic conditions casein of milk starts separating out as a precipitate. When the acidity in milk is sufficient and temperature is around  $36^{\circ}\text{C}$ , it forms semi-solid mass, called curd.
- ❖ Soya bean milk is made from soybeans. It resembles natural milk. The main constituents of soya bean milk are proteins, carbohydrates, fats minerals and vitamins. It is prepared by keeping soyabens dipped in water for sometime. The swollen soyabeans are then crushed to a paste which is then mixed with water. The solution is filtered and filtrate is soyabean milk.

# *Experiment*

## *AIM*

PREPARATION OF SOYABEAN MILK AND ITS COMPARISON WITH THE NATURAL MILK WITH RESPECT TO CURD FORMATION, EFFECT OF TEMPERATURE AND TASTE.

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## REQUIREMENTS :-

- ❖ *Beakers*
- ❖ *Pestle*
- ❖ *Mortar*
- ❖ *Measuring cylinder*
- ❖ *Glass-rod*
- ❖ *Tripod-stand*
- ❖ *Thermomter*
- ❖ *Muslin cloth*
- ❖ *Burner*
- ❖ *Soyabeans*
- ❖ *Buffalo milk*
- ❖ *Fresh curd*
- ❖ *Distilled water*



## *PROCEDURE:-*

1. Soak about 150 g of soyabeans in sufficient amount of water so that they are completely dipped in it. Keep them dipped for 24 hours.
2. Take out swollen soyabeans and grind them to a very fine paste-mortar.
3. Add about 250 ml of water to this paste and filter it through a muslin cloth. Clear white filtrate is soyabean milk. Compare its taste with buffalo milk.
4. Take 50 ml of buffalo milk in three beakers and heat the beakers to  $30^{\circ}$ ,  $40^{\circ}$  and  $50^{\circ}$  respectively. Add  $\frac{1}{4}$  spoonful curd to the beakers. Leave the beakers undisturbed for 8 hours and curd is ready.
5. Similarly, take 50 ml of soyabean milk in three other beakers and heat the beakers to  $30^{\circ}$ ,  $40^{\circ}$  and  $50^{\circ}$  respectively. Add  $\frac{1}{4}$  spoonful curd to each of these beakers. Leave the beakers undisturbed for 8 hours and curd is formed.

OBSERVATION :-

TYPE OF MILK	BEAKER NO.	TEMPERATURE	QUALITY OF CURD	TASTE OF CURD
BUFFALO MILK	1	30°		
	2	40°		
	3	50°		
SOYABEAN MILK	1	30°		
	2	40°		
	3	50°		

RESULT :-

For buffalo milk, the best temperature for the formation of good quality and tasty curd is ..... °C and for soyabean milk, is ..... °C.

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