

TEACHER'S ACTIVITY REPORT 2018-2019

FACULTY: Science

DEPARTMENT: Biochemistry

IQAC ACTIVITY No: SVC/2018-19/BIOCHEM/NK/1

NAME OF THE ACTIVITY: Educational Visit to Yakult Factory (A Biotechnology based Industry)

DATE	FACULTY	DEPARTMENT/COMMITTEE	COORDINATOR NAME
25 th August, 2018	Science	Biochemistry	Dr. Nitika Kaushal (TIC) Dr. N. Latha
TIME	VENUE	NUMBER OF PARTICIPANTS	NATURE: Outdoor/Indoor
1:00pm-5:00pm	Yakult Danone Rai Park Sonapat	Students: 27 PG Diploma in Molecular and Biochemical Technology and B.Sc.(H) Biochemistry Faculty members: 4	Indoor and Outdoor
SUPPORT/ASSISTANCE:	Travel Grant of P.G.Diploma		

BRIEF INFORMATION ABOUT THE ACTIVITY (CRITERION NO. II ,V, VII)

TOPIC/SUBJECT OF THE ACTIVITY	Educational field trips and visits to premier research institutes and industries. The students were taken to the Yakult plant, one of the most well known Biotechnology based industries near Delhi.
OBJECTIVES	Yakult Danone India (P) Ltd is a 50:50 joint venture between Yakult Honsha, Japan and Groupe Danone of France, both of which are global probiotic leaders. The JV was formed in 2005 to manufacture and sell probiotic products in the Indian market. Yakult, a probiotic drink was launched in India in 2007.
METHODOLOGY	The students were shown and explained the methodologies taken up at the fermentation facility of the company. They got a real view of the equipment used for large scale upstream and downstream processing. Students were also shown a presentation about the type of work carried out in the company and had a detailed discussion on the process of probiotic drink production at a commercial level.
OUTCOMES	Students gained insight into the world of probiotics. They learned that daily consumption of YAKULT improves digestion and helps build immunity as the YAKULT bacteria colonize the intestine and interfere with the growth of harmful bacteria. They also learned that there was evidence which suggested that consumption of probiotics helps the body to fight against diarrhoea, constipation, common cold & cough. It boosts natural killer cells' activity which kill cancer cells thus protected us from cancer. Students got a wonderful opportunity to interact with the scientists and lab technicians working at the plant and also discussed career opportunities for science graduates and post graduates.

PROOFS & DOCUMENTS ATTACHED (Tick mark the proofs attached):

Notice & Letters	Student list of participation	Activity report ✓	Photos ✓	Feedback form
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Feedback analysis	News clip with details	Certificate	Any other	
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IQAC Document No: Departmental file no	Criterion No: IQAC file No;	Metric No:
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NAME OF TEACHER & SIGNATURE	NAME OF HEAD/ COMMITTEE INCHARGE & SIGNATURE	IQAC COORDINATOR (SEAL & SIGNATURE)
Dr. Meenakshi Kuhar Dr. N.Latha Dr. Nimisha Sinha	Dr.Nitika Kaushal Teacher-in-charge Department of Biochemistry	Dr. N. Latha IQAC Coordinator Sri Venkateswara College

For Reference

Criterion I	Curricular Aspects (planning & Implementation)	Criterion V	Student Support & Progression
Criterion II	Teaching Learning & Evaluation	Criterion VI	Governance
Criterion III	Research, Innovations & Extension	Criterion VII	Institutional Values & Best Practices
Criterion IV	Learning Resources and Infrastructure		

Proofs:

- P h o t o



- Activity Report

Report on YAKULT FACTORY VISIT (2018- 19)

INTRODUCTION

A field trip was organized by the SRI VENKATESWARA COLLEGE (DU) for the students of Post-Graduate Diploma and Biochemistry 2018-2019 on 25th August, 2018 to Yakult Danone Plant Rai Park, Sonepat. Yakult is a pro-biotic fermented milk drink which contains beneficial micro-organisms, helping to improve the digestion and build a strong immune system. We reached our destination at around 9:45 am and were escorted by their executive of Danone plant. The visit started with a presentation about the product and history related to the YAKULT. Followed by a few instructions we were taken to the different working area of the factory :

- Seed room
- Culture room
- Quality check room
- Packaging unit

There one of the team members explained us the production of Yakult in a step-wise and comprehensive way.

HISTORY OF YAKULT PROBIOTIC BRAND

In 1930 Dr. Minoru Shirota, a Japanese scientist, was the first in the world to isolate and culture a probiotic strain Lactobacillus casei Shirota (LcS) which reached the intestines alive in large numbers and imparted health benefits to the host. He used this strain to make Yakult, a fermented milk drink, so as to reach the benefits of the strain to people at large. In 1935 the first bottle of Yakult, a fermented milk-based drink, was produced in glass bottles. The nurses that worked for Dr. Shirota, later referred to as Yakult Ladies, started distributing Yakult to customers. This initiative of Yakult Ladies was done for women empowerment.

The fermented milk drink became so successful, and demand was steadily increasing that in 1955 Dr. Shirota established Yakult Honsha Ltd., (which literally means Yakult head office) in Tokyo, Japan

YAKULT IN INDIA

Yakult Danone India (P) Ltd is a 50:50 JV between Yakult Honsha, Japan and Groupe Danone of France, both of which are global probiotic leaders. The JV was formed in 2005 to manufacture and sell probiotic products in the Indian market. Yakult, a probiotic drink was launched in India in 2007, and is presently available in Hyderabad, New Delhi, Gurgaon, Noida, Faridabad, Goa, Ahmedabad, Rajkot, Jamnagar, Vadodara, Surat, Bengaluru, Mangalore, Mysore, Mumbai, Aurangabad, Nashik, Pune, Kolhapur, Chandigarh, Amritsar, Jalandhar, Ludhiana, Bikaner, Jaipur,

Jodhpur, Kota, Chennai, Salem, Coimbatore, Madurai, Moradabad, Meerut, Ghaziabad, Aligarh, Agra, Bareilly, Lucknow, Kanpur, Allahabad, Gorakhpur, Varanasi, Kolkata, Asansol. Yakult is manufactured at an ISO 9001:2015, HACCP and OHSAS 18001:2007 certified manufacturing facility in Sonepat, Haryana in India.

ABOUT PROBIOTICS

Probiotics are live bacteria and yeast promoted as having various health benefits. They are usually added to yoghurts and taken as food supplements, and are often described as good or friendly bacteria. Probiotics are thought to help in restore the natural balance of our gut (including attachments and intestines) when it's been disrupted by illness or treatment. They may be help in some cases but there's is a little evidence to support many health claims made about them. They are generally classed as food rather than medicine which means they don't undergo the rigorous like many other medicines do.

Advantages of YAKULT PROBIOTICS

The daily consumption of YAKULT improve digestion and helps build up immunity. YAKULT bacteria basically colonize the intestine and interfere in the growth of harmful bacteria. There are evidence which suggested that it helps the body to fight against diarrhoea, constipation, common cold & cough. It boasts NATURAL KILLER Cells activity which kill cancer cells thus helped us fight aganist cancer.

Manufacturing of YAKULT PROBIOTICS

1. SEED ROOM

Seed room is the first room inside the manufacturing plant of YAKULT. Inside this room skimmed milk powder (0% fat), water and glucose are mixed together with the most important ingredient – Shirota strain. All these ingredients is what the yakult-lactic acid bacteria made of. These bacteria are really good because this mother bacterium is being breed to reproduce more in this tank. The reason they need to add in glucose (sugar) is because the bacteria eats them as food. All these mixing inside the seed room takes place at 37°C.

2. CULTURE ROOM

Innoculum is added in the skimmed milk which is sterilised and allowed it grow the *Lactobacillus casei strain Shirota* for next 40 days. This solution then transferred in a 6,500 litre culture in 4 tanks each via the closed system of pipes and valves. The concentrate is then transferred to a mixing and storage tank. The tank is chilled to around at 2°C. Sterilized flavours, syrup solutions and vitamins are added to the concentrate.

3. QUALITY CONTROL

Samples are collected for laboratory analysis throughout the production process to confirm the quality measures. Their testing involves more than 150 samples per production run, upon which a total of more than 200 tests are conducted. These determine the *Lactobacillus casei* numbers, check for potential contaminants, microbiological quality, composition acidity, physical attributes and taste.

4. BOTTLING AND PACKAGING

The polystyrene plastic bottles are produced from moulding machines. On the other site, the bottles are wrapped with individual bottle labels. Then they are filled with YAKULT, capped with a foil lid, sealed and transferred along the conveyor belt to the packaging facility. Bottles are sorted into groups of five and wrapped in polypropylene film. Ten "5 packets" are group together in polypropylene and when heat shrink it forms a carbon, forming a carbon of 5 yakult bottles.





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(University of Delhi)

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A.O(I/C)

This is to certify that the Activity report (Teacher/Department /Society/Association) has been submitted for documentation to IQAC, Sri Venkateswara College, University of Delhi.

N. Latha

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