

Rayat Shikshan Sanstha's

**D. P. Bhosale College, Koregaon**

**Department of Microbiology**

**Students Seminar**

Seminar of B.Sc III Microbiology students

- Semester V
- Semester VI

**(2021- 22)**

Rayat Shikshan Sanstha's  
**D.P. Bhosale College, Koregaon**  
**Department of Microbiology**


**NOTICE**

The Department of Microbiology will organise a seminar from 25<sup>th</sup> - 29<sup>th</sup> Jan 2022 at 3:00-4:10 pm for the students of B.Sc III on the basis of their concern topics based on Course XI - Food and Industrial Microbiology. There are 15 students each one will provide 10 minutes for deliberation. Topics are allotted and list is given below. All are cordially invited to be present.



**Professor-in - Charge**

Ms. Shivani Kshirsagar



**HEAD**  
**DEPARTMENT OF MICROBIOLOGY**  
**D.P. BHOSALE COLLEGE, KOREGAON**  
**Dept of Microbiology**

Ms. Sonal Inje

Sr.No.	Roll No.	Name	Topics	Date & Time
1.	22663	Adsul Akanksha Pramod	Food as a substrate for microorganisms and Source of microorganism to food	28/01/2022 3:00-3:10 pm
2.	23664	Bankar Jyoti Dattatray	Food spoilage: 1) spoilage wine, 2) beer & 3) spoilage of vinegar	28/01/2022 3:20-3:30 pm
3.	22665	Barge Tejal Sudhir	Food preservation: General Principles and methods	28/01/2022 3:40-3:50 pm
4.	22466	Bhosale Nikita Rajendra	Food poisoning: Role of microorganisms in food poisoning -Staphylococcal	28/01/2022 4:00- 4:10 pm
5.	22667	Bhosale Shivani Suresh	Food poisoning: Role of microorganisms in food poisoning - Fungal (aflatoxin)	29/01/2022 3:00-3:10 pm
6.	23668	Bhosale Shravani Shailesh	Food infections: Salmonellosis.	25/01/2022 3:00-3:10 pm
7.	22669	Gole Mayur Dinkar	Probiotics: Concept and applications	29/01/2022 3:20-3:30 pm
8.	22670	Inamdar Sahil Amir	Preservation of industrially important microorganisms: Methods & Culture collection centers.	25/01/2022 3:20-3:30 pm
9.	22671	Kadam Pratik Ajay	Industrial production of Alcohol: - Organisms used, Inoculum preparation, Fermentation media, Fermentation conditions, Extraction and Recovery.	25/01/2022 3:40-3:50 pm
10.	23672	Kamble Shrushti Manojkumar	Industrial production of Grape wine: - Definition, types, production of table wine (Red and White) and microbial defects of wine	25/01/2022 4:00-4:10 pm
11.	23673	Mali Sujit Ashok	Industrial production of Penicillin: - Organisms used, Inoculum preparation, Fermentation media, Fermentation conditions, Extraction and Recovery. Concept of semi synthetic penicillin	29/01/2022 3:40-3:50 pm
12.	22674	Mane Shubhada Dilip	Downstream processing & product recovery :Centrifugation and flocculation.	27/01/2022 3:00-3:10 pm
13.	22675	Nikam Tejas Shashikant	Downstream processing & product recovery: filtration and solvent extraction	27/01/2022 3:20-3:30 pm
14.	22676	Sawant Shivam Rajendra	Downstream processing & product recovery: distillation and precipitation	27/01/2022 3:40-3:50 pm
15.	22677	Yewale Pratik Subhash	Downstream processing & product recovery: crystallization and chromatography	29/01/2022 4:00-4:10 pm

Rayat shikshan sanstha's

**D. P. Bhosale College, Koregaon**

**Department Of Microbiology**

**B.Sc. III Microbiology**

**Paper: Food and Industrial Microbiology**

**Day of Date: Tuesday, 27th January 2022**

**Name of student: Akanksha promod adsul**

**Seminar topic : Food as a substrate of microorganisms and source of food to microorganisms**

## **Synopsis**

**Introduction : microorganisms use food as a substrate and cause spoilage. There are some primary source of microorganisms found in food.**

**Outline : Introduction for food as substrate**

**Intrinsic factor-nutrient content, pH and buffering capacity, redox potential, antimicrobial barrier, water activity.**

**Extrinsic factor-Relative humidity, temperature, gaseous atmosphere**

**Sources- soil, water, air etc.**

**Summary : microorganisms use food as a substrate into some substrate limitations and environmental limitation factor.**

**Reference : [www.pdfnet.com](http://www.pdfnet.com) , [www.youtube.com](http://www.youtube.com)**

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**D. P. Bhosale College, Koregaon**

**Department Of Microbiology**

**B.Sc. III Microbiology**

**Paper : Food and Industrial Microbiology**

**Day of Date: Friday, 28 January 2022**

**Name of student : Jyoti dattatray bankar**

**Seminar topic : Food spoilage, wine spoilage, beer spoilage, vinegar spoilage**

## **Synopsis**

**Introduction : Food spoilage is metabolic process that causes the food to unacceptable to human consumption and studying wine, beer and vinegar spoilage.**

**Outline : introducing food spoilage process, causes of food spoilage, wine spoilage, wine spoilage organisms, beer spoilage, vinegar spoilage and how to prevent food spoilage**

**Summary : food spoilage is caused by microorganisms, yeasts, insects and other environmental factors like pH, temperature, light. It can be prevented by controlling growth of microorganisms in food.**

**Reference : [www.pdfnet.com](http://www.pdfnet.com)**

**[www.google.com](http://www.google.com)**

**Food microbiology books available online**

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**D. P. Bhosale College, Koregaon**

**Department Of Microbiology**

**B.Sc. III Microbiology**

**Paper : Food and Industrial Microbiology**

**Day of Date: Friday, 28th Jan 2022**

**Name of student : Tejal Sudhir Barge**

**Seminar topic : Food preservation – General Principles and methods**

## **Synopsis**

**Introduction : Food preservation General Principles and methods**

**Outline : Definition and food preservation**  
**Principal and food preservation**  
**Objectives and food preservation**  
**Technique and food preservation**

**Summary : food preservation involves food preserving technique that not damage the food colour ,texture, flavour increase self life of different food item**

**Reference :www.pdfnet.com**  
**www.youtube .com**

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**D. P. Bhosale College, Koregaon**

**Department Of Microbiology**

**B.Sc. III Microbiology**

**Paper: Food and Industrial Microbiology**

**Day of Date: Friday, 28<sup>th</sup> January 2022**

**Name of student: Nikita Rajendra Bhosale**

**Seminar topic : Food poisoning: Role of microorganisms in food poisoning**  
**staphylococcus**

## **Synopsis**

**Introduction** : • *Role of microorganisms in food poisoning staphylococcus.*

**Outline** :

- Characteristics of Staphylococcus.
- What is Staphylococcus?
- Food poisoning symptoms
- Some people are at higher risk food poisoning
- What are the treatment for food poisoning

**Summary** : Staphylococcus food poisoning is a gastrointestinal illness caused by eating foods contaminated with toxins produced by staphylococcus aureus bacteria. Their symptoms, some people are at higher risk food poisoning, Treatment etc.

- **Reference** : • [www.staphylococcusinformation.com](http://www.staphylococcusinformation.com)  
• [www.foodpoisoning.com](http://www.foodpoisoning.com)



**Rayat Shikshan Santha's  
D.P.Bhosale College Koregaon**

**Department of Microbiology**

**B.Sc.3 Microbiology**

**Paper: Food and Industrial Microbiology**

**Day & Date: Tuesday, 25<sup>th</sup> Jan 2022**

**Name of Student: Shravani Shailesh Bhosale**

**Seminar Topic: Food infection: Salmonellosis**

**Synopsis**

**Introduction:** Salmonella: Food infection, what is Salmonella Food infection?

**Outline:** Signs & Symptoms of Salmonella food poisoning,  
Risks factors of Salmonella food poisoning,  
Which type of doctors treat Salmonella food poisoning?

**Summary:** Treatment of Salmonella food infection,  
Complications of Salmonella food poisoning,  
Tips to prevent Salmonella food poisoning.

**Reference: 1. YouTube.com**

**2. Google**

**3. Food & industrial book.**



Rayat shikshan santha's

**D.P.Bhosale college,koregaon**

**Department of Microbiology**

**T.Y. B.sc Microbiology**

**Paper : Food and Industrial Microbiology**

**Day of date :Saturday, 29 January, 2022**

**Name of student : Bhosale shivani Suresh**

**Seminar topic:Food poisoning;role of microorganism in food poisoning; fungal (Aflatoxin)**

## **Synopsis**

**Introduction:** Aflatoxin which is main reason of food poisoning are family of toxins produced by certain fungi that are found on agricultural crops such as maiz,peanuts,cotton seeds and tree nuts.The main fungi that produce Aflatoxin are aspirigillus flavus and aspirigillus parasitic which are abundant in warm and humid reasons of the world.

**Outline:**Food poisoning,role of microorganism in food poisoning.  
Fungal (aflatoxin)

**Summary:**AFTs are the most will known and researched mycotoxin.Maize and groundnut are the most contaminated commodites.Food items,medicinal herbs can also be infected by this pathogens.contamination is more common in developing country.AFTs-B1 is most potent AFT to cause HCC and other adverse health effect to human and animal.Even though it is common in Ethiopia,the country has no aflatoxin and other mycotoxin regulatory system

**Reference:**[www.pdfnet.com](http://www.pdfnet.com)

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**D. P. Bhosale College, Koregaon**

**Department Of Microbiology**

**B.Sc. III Microbiology**

**Paper: Food and Industrial Microbiology**

**Day of Date: Saturday, 29th January 2022**

**Name of student: Mayur Dinkar Gole**

**Seminar topic : Probiotic: concept and application**

## **Synopsis**

- **Introduction** : Probiotics, which means for life was meant to contrast antibiotics popularly prescribed and known to also destroy beneficial organisms and impact the immune system.
- **Outline** : Introduction of probiotics. How do probiotics work, type of probiotics bacteria, probiotic concept and application.
- **Summary** : The main job of probiotics, or good bacteria is to maintain healthy balance in your body by supporting digestion, immune function and controlling inflammation.
- **Reference** : Food and industrial microbiology book of TY B.Sc.  
Google  
Www.youtube.com

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**D. P. Bhosale College, Koregaon**

**Department Of Microbiology**

**B.Sc. III Microbiology**

**Paper : Food and Industrial Microbiology**

**Day of Date: Tuesday, 25 January 2022**

**Name of student : Sahil amir inamdar**

**Seminar topic : Presevation of industrially microorganisms.**

## **Synopsis**

**Introduction : Preservation of industrially important microorganisms;methods& culture collection centers.**

**Outline : Introduction of Preservation of microorganisms,main concept and description.**

**Summary : Introduction,methods of Preserve continuous metabolic state including fresh media culture,overlying culture with mineral oil,storage in soil,store in saline suspension,method of Preserve suspended metabolic state including drying in vaccum,lyophilization,liquid nitrogen,silica centre and culture collection centre**

**Reference :**

**[www.youtube.com](http://www.youtube.com)**

**Industrial microbiology-miler Tybsc**

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**D. P. Bhosale College, Koregaon**

**Department Of Microbiology**

**B.Sc. III Microbiology**

**Paper : Food and Industrial Microbiology**

**Name of student : Pratik Ajay Kadam**

**Seminar topic : Industrial Production of Alcohol**

## **Synopsis**

**Introduction : Industrial Production of Alcohol.**

**Outline : Production of Alcohol , Main Concept Description and Diagrams**

**Summary : The production of industrial alcohol, ethanol become commercially feasible on large scale after 1906 when the industrial alcohol act was passed.**

**Reference : Industrial Microbiology – Miler, TY.BSC Microbiology**

**Textbook, Youtube , Google , Wikipedia & Class Notes.**

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**D. P. Bhosale College, Koregaon**

**Department Of Microbiology**

**B.Sc. III Microbiology**

**Paper : Food and Industrial Microbiology**

**Day of Date: Friday ,27 January 2022**

**Name of student : Nikam Tejas Shashikant**

**Seminar topic : Food as a substrate of microorganisms and source of food to microorganisms.**

## **Synopsis**

**Introduction : Down stream processing & products recovery**

**Outline : Introduction for filtration & solvent extraction**

- **Filtration by 3 method plate frames method, rotary vaaccume filtration method, and membrain filtration method—3 sub types micro filtration, ultra filtration & reverse osmosis system and we'll diagrams ,**
- **Solvent extraction .by agar agar methods and diagrams etc.**

**Summary : The down stream processing used in well quility suspension Well quility suspension of filtration and solvent extraction of industrial leveling by next processing**

**References--- [www.pdf.net.com](http://www.pdf.net.com)**



**Rayat shikshan sanstha's**  
**D.P bhosale college, Koregaon**  
**Department of microbiology**  
**B.Sc. III microbiology**  
**Paper ; Food and industrial microbiology**  
**Day and date ; 31 January 2022**

**Name of student ; kamble srushti manojkumar**

**Seminar topic ; production of grape wine**

### **Synopsis**

**Introduction ; Vitis [grapewine] is a genus of 79 accepted species of vinning plants in flowering plants Vitaceae. The genus is made up of species predominantly from northern hemisphere. It is economically important .**

**Outine ; industrial production of grape wine, grape wine definition, production of table wine[red and white wine] and microbial defeats of wine.**

**Summery ; grape wine is an alcoholic beverage which is produced by the process of fermentation. Yeast consume the sugar in grapes and convert it into ethanol and carbon dioxide releasing heat. Klockera, saccharomyces yeast, and lactic acid bacteria cause wine spoilage.**

**Reference ; Links**

- 1.Wine making ;Wikipedia**
- 2. Bacterial spoilage of wine**

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**D. P. Bhosale College, Koregaon**

**Department Of Microbiology**

**B.Sc. III Microbiology**

**Paper: Food and Industrial Microbiology**

**Day of Date: Thursday, 27th Jan2022**

**Name of student: Shubhada Dilip Mane.**

**Seminar topic : Downstream Processing and Product Recovery; Centrifugation, Flocculation**

## **Synopsis**

**Introduction:** 1) Definition, 2) Stages of Downstream, 3) Centrifugation, 4) Flocculation

**Outline:** 1) Removal of Insoluble, 2) Products Isolation, 3) Product Purification, 4) Products Polishing

**Summary:** Downstream Processing is Completion of Fermentation or Bioconversion

**Reference : 1% –**

<http://www.sjctni.edu/Department/bt/eLecture/Down%20stream%20processing.pptx>

1% – <https://www.slideshare.net/amitcasi1/downstream-processing-group-ppt>

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**D. P. Bhosale College, Koregaon**

**Department Of Microbiology**

**B.Sc. III Microbiology**

**Paper : Food and Industrial Microbiology**

**Day of Date: Saturday, 29/01/2022**

**Name of student : SUJIT ASHOK MALI**

**Seminar topic : Industrial production of penicillin**

## **Synopsis**

**Introduction** : what is penicillin ,Organisms used, Inoculum  
Fermentation preparation, Fermentation condition  
Concept of semisynthetic.

**Outline** : Fermenters used , Betch , Fed Betch ,Continuous .  
Concept of semisynthetic.

**Summary** : By Betch Fermenter penicillin is produced in industry.  
Fungus penicillin chrysogenum organisms is use in  
production.

**Reference** : Www.Google. Com , Www. YouTube . Com

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**D. P. Bhosale College, Koregaon**

**Department Of Microbiology**

**B.Sc. III Microbiology**

**Paper : Food and Industrial Microbiology**

**Day of Date: Thursday , 27-Jan-2022**

**Name of student : Shivam Rajendra Sawant .**

**Seminar topic : Precipitation and Distillation .**

## **Synopsis**

**Introduction : Downstream Processing & Product Recovery :  
Precipitation and Distillation .**

**Outline : Introduction of Precipitation and Distillation , Main Concept  
Description and Diagrams .**

**Summary : . Precipitation :- The insolubility of many salts used in the  
selective isolation of some industrial Products.  
. Distillation :- Distillation may be achieved in three  
stages - Evaporation , Vapor - liquid , Condensation .**

**Reference : Industrial Microbiology – Miler, TY.BSC Microbiology  
Textbook, Youtube , Google , Wikipedia & Class Notes.**

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**D. P. Bhosale College, Koregaon**

**Department Of Microbiology**

**B.Sc. III Microbiology**

**Paper : Food and Industrial Microbiology**

**Day of Date: Saturday, 29<sup>th</sup> January 2022**

**Name of student :** Yewale Pratik Subhash

**Seminar topic** : Downstream processing and product recover :  
crystallization and chromatography

## **Synopsis**

- **Introduction** : Process of formation of solid crystal precipitating from a solution, melt or more rarely deposited directly from a gas.
- **Outline** : Crystallization method, cooling, evaporation, solvent antisolvent addition. Chromatography: types, types of affinity chromatography.
- **Summary** : A technique for the separation of a mixture by passing a medium in which the components moves at different rates.
- **Reference** : Food and industrial. microbiology book of TYBsc

Google

[Www.youtube.com](http://www.youtube.com)



**D.P. Bhosale College, Koregaon**

**Department of Microbiology**

**NOTICE**

B.Sc III year students are hereby informed that there will be a Seminars from 15/06/2022 to 17/06/2022 . Seminars will held on the basis of the concern topics based on Course XV –Environmental Microbiology. Each students should deliberate the seminar in 10 minutes . Allotted topic list is given below. All are cordially invited to be present.

Professor-in – Charge

R.M.Nadaf



S.R.Inje



**HEAD**

**DEPARTMENT OF MICROBIOLOGY**

**D.P. BHOSALE COLLEGE, KOREGAON**

**H.O.D**

Dept of Microbiology

	<b>Roll No.</b>	<b>Name of Student</b>	<b>Topic</b>	<b>Date</b>
1	22663	Adsul Akanksha Pramod	Solid waste	15/06/22
2	22664	Bankar Jyoti Dattatray	Liquid waste	15/06/22
3	22665	Barge Tejal Sudhir	Physico-chemical and Biological characteristics of Sewage and Chemical treatment - Chlorination	15/06/22
4	22666	Bhosale Nikita Rajendra	Biological treatment: Trickling filter, Activated sludge process, Oxidation ponds	15/06/22
5	22667	Bhosale Shivani Suresh	Biological treatment: Anaerobic digestion, Septic tank, Root zone technology	15/06/22
6	22668	Bhosale Shravani Shailesh	Characteristics and treatment of waste generated by Sugar Industry and Distillery	15/06/22
7	22669	Gole Mayur Dinkar	Characteristics and treatment of waste generated by Dairy Industry and Hospital	16/06/22
8	22670	Inamdar Sahil Amir	Eutrophication	16/06/22
9	22671	Kadam Pratik Ajay	Biological safety in laboratory and Good Laboratory Practices	16/06/22
10	22672	Kamble Shrushti Manojkumar	Cleanroom classification	16/06/22
11	22673	Mali Sujit Ashok	Routine Environmental monitoring programme in pharmaceutical industries- Air monitoring, Surface monitoring and Personnel monitoring.	16/06/22
12	22674	Mane Shubhada Dilip	Leaching of Copper	16/06/22
13	22675	Nikam Tejas Shashikan	(Bioleaching i) Introduction ii) Microorganisms involved iii) Chemistry of Microbial leaching iv) Laboratory scale and pilot scale leaching v) In situ leaching - Slope, heap	17/06/22
14	22676	Sawant Shivam Rajendra	Bioremediation	17/06/22
15	22677	Yewale Pratik Subhash	Leaching of Uranium	17/06/22

011 NO : 22000

IN No : 2019064946

## **SYNOPSIS**

**D.P BHOSALE COLLEGE, KOREGAON**

Department of microbiology

BSC - III

**Paper – environmental microbiology**

**Day and Date – 15-06-2022, Wednesday**

Seminar topic – Solid waste

### **INTRODUCTION –**

What is waste? What is solid waste? Characteristics of solid waste which includes pH, electrical conductivity, total volatile solids, Ash.

### **OUTLINE –**

Waste, solid waste, characteristics – pH, electrical conductivity, total volatile solids, Ash.

### **SUMMARY –**

Solid waste are unwanted substance that are discovered by human society, these include urban waste, industrial waste, agriculture waste, biochemical waste, radioactive waste.

### **REFERENCE –**

[WWW.PDFNET.COM](http://WWW.PDFNET.COM)

[WWW.YOUTUBE.COM](http://WWW.YOUTUBE.COM)

Roll no - 22664

PRN no - 2019052961

## **Synopsis**

D.P.BHOSALE COLLEGE, KOREGAON

DEPARTMENT OF MICROBIOLOGY

BSC-III

**Paper-Environmental microbiology**

Day and Date - 15-06-2022, Wednesday

Seminar topic - Liquid waste

### **INTRODUCTION -**

What is liquid waste? What is pH, electric conductivity, BOD, COD in waste water. How liquid waste are harmful to human health or the environment.

### **OUTLINE -**

Liquid waste - pH, electric conductivity, BOD, COD, total solids, dissolved, suspended, volatile solids, chloride, sulphate concentration, oil and grease etc

### **SUMMARY -**

Liquid waste are wastewater, fats, oil or grease, used oils or harmful household liquid. Liquid waste can quickly seep into the earth. This pollution can cause harm to plant growing in the soil as well as animals or people who consume food from contaminated soil

### **REFERENCE -**

[www.pdfnet.com](http://www.pdfnet.com)

[www.youtube.com](http://www.youtube.com)

Roll No.- 22665  
PRN NO.- 2019052262

## SYNOPSIS

D.P. BHOSALE COLLEGE, KOREGAON

Department Of Microbiology

Paper- Environmental Microbiology

Day and Date- 15/6/2022, Wednesday

Seminar topic- Physico chemical and Biological characteristics of Sewage of  
chemical treatment chlorination.

### INTRODUCTION-

- Physical characteristics of sewage- Temperature, colour, odour, turbidity.
- Chemical characteristics of sewage- Organic, matter, chloride, sulphur, BOD, dissolved oxygen, ph, nitrogen.
- Biological characteristics of sewage- Bacteria, Algae, fungi, virus, protozoa
- What is chlorination?

### OUTLINE -

- Sewage, physical, chemical and Biological characteristics of sewage chlorination.

### SUMMARY

- Sewage also called waste water is the contaminated waste water from homes, schools, business etc.

### REFERENCES-

[www.PDFNEE.com](http://www.PDFNEE.com)  
[www.youtube.com](http://www.youtube.com)



Rayat Shiksha Sanstha's

Shivaji University Kolhapur

D.P.Bhosale College Koregaon

Department of Microbiology

Tybsc-Microbiology

paper 5: Environmental Microbiology

Day and Date:15/6/202

Name: Shravani Shailesh Bhosale

Seminar Topic: Characteristics and treatment of  
waste generated by sugar industry and distillery

Synopsis

**Introduction :**Characteristics & Treatment of waste generated by  
sugar industry and Distillery

**Outline:** Sugar mill waste, Manufacturing process of Sugar mill,  
importance of Distillery

**Summary:** sources and contamination of waste, effect of  
receiving water, Treatment of sugar industry and Distillery

**Reference :**

1. [www.google.com](http://www.google.com)
2. [www.youtube.com](http://www.youtube.com)

# SYNOPSIS

D.P.BHOSALE COLLEGE, KOREGAON.

DEPARTMENT OF MICROBIOLOGY

BSC-III

Paper- Environmental Microbiology

Day and Date- 15/06/2022, Wednesday

Seminar topic- EUTROPHICATION

## INTRODUCTION -

What is Eutrophication? (definition), its classification, its source, consequences of eutrophication, control

## OUTLINE -

The process or increase in nutrient of a water and as a result to support algal productivity is called eutrophication.

It generally takes place in lake. Classification- 1) oligotrophic lake 2) mesotrophic lake 3) eutrophic lake. Sources- 1) Natural Eutrophication 2) Artificial source

## SUMMARY -

Eutrophication sets off a chain reaction in the ecosystem, starting with an overabundance of algae and plants. The excess of algae and plants matter eventually decompose, producing large amount of carbon dioxide. This lowers the ph of sea water, a process known as ocean acidification.

## REFERENCE -

<https://oceanservice.noaa.gov>

# SYNOPSIS

**D.P. BHOSALE COLLEGE , KOREGAON**

**Department Of Microbiology**

**BSC – III**

**Paper – Environmental Microbiology**

**Day And Date – 17/06/2022, Friday**

**Seminar Topic – Environmental Monitoring Programme in  
pharmaceutical industries**

**NAME – MALI SUJIT ASHOK**

## ❖ INTRODUCTION :-

Routine Environmental Monitoring Programme in pharmaceutical industries ,Air Monitoring, Surface Monitoring and Personal Monitoring.

## ❖ OUTLINE :-

Air Monitoring – Active microbial air Monitoring , Passive Monitoring

Surface Monitoring – Rapid Surface

Personal Monitoring

## ❖ SUMMARY :-

The Safety Of patients and the efficacy of drugs and biologics by preventing their contamination with microbes.

## ❖ REFERENCE – [WWW.google.com](http://WWW.google.com)

[WWW.youtube.com](http://WWW.youtube.com)

Roll No.- 22674  
PRN NO.- 2019052233

## **SYNOPSIS**

D.P. BHOSALE COLLEGE, KOREGAON

Department Of Microbiology

B. Sc. -III

Paper- Environmental Microbiology

Day and Date- 17/6/2022, Friday

Seminar topic- Leaching of Copper

### **INTRODUCTION-**

- What is bioleaching?
- What is copper leaching?
- Mechanism of copper leaching?
- Compounds and minerals
- Outline of microbial leaching of copper

### **OUTLINE -**

- Bioleaching
- Upper leaching
- Mechanism copper leaching

### **SUMMARY**

- Extraction of metal from low-grade ores by implying micro-organism reactants loses electron during a reaction. ores means naturally accruing solid material which a metal.

### **REFERENCES-**

[www.youtube.com](http://www.youtube.com)

Roll NO :- 22676  
PRN NO :- 2019052987

Rayat shikshan sanstha's

**D. P. Bhosale College, Koregaon**

**Department Of Microbiology**

**B.Sc. III Microbiology**

**Paper : Environmental Microbiology**

**Day of Date: Friday , 17-Jun-2022**

**Name of student : Shivam Rajendra Sawant .**

**Seminar topic : BIOREMEDIATION**

## **Synopsis**

**Introduction : Bioremediation .**

**Outline : Introduction of Bioremediation , Defination  
Types and Applications .**

**Summary : . Bioremediation :- Defination , Types of Bioremediation ,  
Applications of Bioremediation .**

- 1) Microbial Bioremediation .**
- 2) Algal Bioremediation .**
- 3) Macrophyte Bioremediation .**

**Reference : Environmental Microbiology , TY.BSC Microbiology  
Textbook, Youtube , Google , Wikipedia & Class Notes.**

PRN No - 2019052979  
Seat No - 22075

synopsis

DP Bhosle college Koregaon,

Department of microbiology,

BSC III

**paper xv environmental microbiology,**

date & day 17/7/2022 Friday,  
seminar topic bioleaching.

introduction --

Microorganisms involved in biochemistry of Microbial leaching ,laboratory scale and pilot scale, In situ leaching - Slope, heap

Outline--

The Microorganisms involved in *bioleaching* *Theo bacillus laptop spirillum feros oxidases*  
*Thermophylic bacteria heterotrophic* microorganisms chemistry of microbiology bioleaching  
Laboratory scale and pilot scale leaching vIn situ leaching

summary--

Bioleaching is a process in mining and bio hydrometallurgy that extracts valuable metals from a low-grade ore with the help of microorganisms such as *bacteria* or *Achaea* .

reference

Chrome , you tube , Guru Chankya Notes