

# Screenshots of Seed Money Project Allocation

Session 2022-23

21 March 2023-Dr Sonik (Physics)

The screenshot shows a Zoom meeting interface. On the left, a slide titled "Sol-gel method" is displayed with the following bullet points:

- ▶ Optimised quantity of starting material (Tin (II)chloride dihydrate,  $\text{SnCl}_2 \cdot 2\text{H}_2\text{O}$ ) will be dissolved in 40 ml of absolute ethanol using a magnetic stirrer.
- ▶ The mixture will be stirred for 50-60 minutes at 333 K for getting a homogenous solution of mixture.
- ▶ This homogenous solution will be kept at room temperature in a closed container for 24 hrs for getting the gelated solution of the mixture.
- ▶ This concentrated gel will be placed in a hot oven and heated at 373 K until the gel turns into a white powder. This powder is put in a muffle furnace for calcination.
- ▶ Then calcined powder is put in a mortar and grained using a pestle for one hour. The obtained dry and fine powder will be used for characterization studies.

On the right, a gallery view shows four participants: Sonik Bhatia, Dr Natasha, Dr Rohit Mehra, and Gopi Sharma. The bottom toolbar includes icons for Mute, Stop Video, Participants (4), Chat, Share Screen, Record, Reactions, Apps, Whiteboards, and a Leave button.

Recording

## Hydrothermal method

- hydrothermal synthesis greatly influence the morphology and the crystal size of the synthesized products.
- Here the desired amount of starting material like tin chloride (eg 0.1 M and 0.16 M) will be mixed with 1:1 weight ratio of ethanol and distilled water.
- For enhancing the reactivity and homogeneity of the solutions, a magnetic stirrer shall be used and the solution will be mixed for optimized minutes.
- During stirring, NaOH is slowly added until a desired pH is reached.
- The mixture then will be transferred into an autoclave. Solid product shall be filtered and washed several times with distilled water and ethanol, and with a final drying at 100°C in an oven

Soni, Bhatia  
Dr. Natasha  
Dr. Rohit Mehra  
Gopi Sharma

### 16 March 2023-Dr Harleen (Physics)

Zoom Meeting

Participants (4)

- Dr. Natasha (Host, me)
- Dr. Harleen Singh (Co-host)
- Pargin Bangotra (Co-host)
- Gopi Sharma

## Deciphering the alterations induced in the micellization behavior of surface-active molecules

Research Proposal under CURIE grant



PRESENTED BY:  
Dr. Harleen Singh

DEPARTMENT OF PHYSICS  
KANYA MAHA VIDYALAYA, JALANDHAR,  
PUNJAB, INDIA

18 March 2023

28°C Sunny  
Search  
ENG IN  
13:31  
16-03-2023

Zoom Meeting

Participants (4)

- Dr Natasha (Host, me)
- Dr Harleen Singh (Co-host)
- Pargin Bangotra (Co-host)
- Gopi Sharma

## Micelle Formation

When a molecule with amphiphilic structure is dissolved in aqueous medium, the hydrophobic group distorts the structure of the water.

As a result of this distortion, some of the surfactant molecules are expelled to the surfaces of the system with their hydrophobic groups oriented to minimize contact with the water molecules.

When the water surface is or begin to be saturated, the overall energy reduction may continue through another mechanism: **Micelle Formation**

The **critical micelle concentration (cmc)** is defined as the concentration of surfactants above which micelles form.

16 March 2023

28°C Sunny

Dr. Natasha & Dr. Monika (Maths)

Project\_Seed Money - Microsoft PowerPoint

Home Insert Design Animations Slide Show Review View

Slide Show

Resume Slide Show

Slides Outline

- Analysis of Local Interactions and Networks on transmission dynamics of an infectious disease
- Infectious Disease: Introduction
- Some Infectious Disease
- Epidemiology

## Analysis of Local Interactions and Networks on transmission dynamics of an Infectious disease

Proposed by  
 Dr. Natasha Sharma (PI)  
 Dr. Monika Rani (Co-PI)  
 Ms Ankita, Ms Etika (Students)

Department of Mathematics  
 Kanya Maha Vidyalaya, Jalandhar

Click to add notes

Slide 1 of 15 | Office Theme | English (United States)

3:12 / 17:19

Project\_Seed Money - Microsoft PowerPoint

Home Insert Design Animations Slide Show Review View

Resolution: Use Current Resolution  
Show Presentation On: [Dropdown]  
Use Presenter View

From Beginning Current Slide Slide Show  
Set Up Hide Slide Show  
Start Slide Show

Slides Outline

1 Analysis of Local Interactions and Networks on transmission dynamics of an infectious disease

2 Infectious Disease: Introduction

3 Some Infectious Disease

4 Epidemiology

Click to add notes

Slide 1 of 15 "Office Theme" English (United States) 0:19 / 17:19

Proposed by  
Dr. Natasha Sharma (PI)  
Dr. Monika Rani (Co-PI)  
Ms Ankita, Ms Etika (Students)

Department of Mathematics  
Kanya Maha Vidyalaya, Jalandhar

Dr. Jatinder pal  
Dr. Natasha Sharma  
Dr. Monika  
Abul Kumar Verma  
veena  
Etika Jaggi

Project\_Seed Money - Microsoft PowerPoint

Home Insert Design Animations Slide Show Review View

Clipboard Copy Paste Format Painter  
Layout New Slide Delete  
Font Paragraph Drawing

Slides Outline

1 Analysis of Local Interactions and Networks on transmission dynamics of an infectious disease

2 Infectious Disease: Introduction

3 Some Infectious Disease

4 Epidemiology

Click to add notes

Slide 1 of 15 "Office Theme" English (United States)

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Department of Mathematics  
Kanya Maha Vidyalaya, Jalandhar

Dr. Jatinder pal  
Dr. Natasha Sharma  
Dr. Monika  
Abul Kumar Verma  
veena  
Etika Jaggi

# 15 March 2023 Dr Swati-(Chemistry)

Zoom Meeting | You are viewing Swati Awasthi's screen | View Options

Participants (6): Dr Natasha Sharma (Host, me), Swati Awasthi (Co-host), Gopi Sharma (Co-host), Dr Vickram Jeet Singh (Co-host), Kritika Thakur, Sakshi

## TYPES OF IONIC LIQUIDS

Most commonly used cations:

- 1-alkyl-3-methyl-imidazolium
- N-alkyl-pyridinium
- N-alkyl-N-methyl-piperidinium
- Tetraalkyl-ammonium
- Tetraalkyl-phosphonium
- N-alkyl-N-methyl-pyrolidinium
- 1,2-dialkyl-pyrazolium
- N-alkyl-thiazolium
- Trialkyl-sulfonium

$R_{1,2,3,4} = \text{CH}_2\text{CH}_2$ , ( $n = 1, 3, 5, 7, 9$ ); aryl, etc.

Some possible anions:

water-immiscible		water-miscible
[PF <sub>6</sub> ] <sup>-</sup>	[BF <sub>4</sub> ] <sup>-</sup>	[Cl <sub>2</sub> CO <sub>2</sub> ] <sup>-</sup>
[NTf <sub>2</sub> ] <sup>-</sup>	[OTf] <sup>-</sup>	[CF <sub>3</sub> CO <sub>2</sub> ] <sup>-</sup> , [NO <sub>3</sub> ] <sup>-</sup>
[BR <sub>4</sub> R <sub>3</sub> R <sub>2</sub> R <sub>1</sub> ] <sup>-</sup>	[N(CN) <sub>3</sub> ] <sup>-</sup>	Br <sup>-</sup> , Cl <sup>-</sup> , F <sup>-</sup>
		[Al <sub>2</sub> Cl <sub>7</sub> ] <sup>-</sup> , [AlCl <sub>4</sub> ] <sup>-</sup> (decomp.)

Fig. 1 Some commonly used ionic liquid systems [2].

30°C Haze | 14:00 15-03-2023

Zoom Meeting | Participants (7): Dr Natasha Sharma (Host, me), Swati Awasthi (Co-host), Gopi Sharma (Co-host), Dr Vickram Jeet Singh (Co-host), Kritika Thakur, Sakshi, XB6-09Arshdeep Kaur

## APPLICATIONS

4

30°C Haze | 14:00 15-03-2023

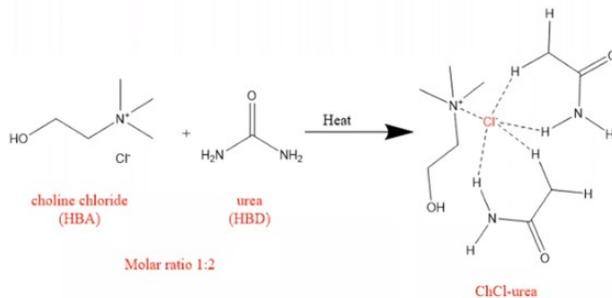
## Key Requirements for a New Solvent



5

## Deep Eutectic Solvents (DESs)

- DESs were first coined in 2003 by Abbott and his co-workers, who described a cholinium chloride and urea based DES.
- Deep eutectic solvents are a liquid eutectic mixture of two or more Bronsted/Lewi's acid and base components



A. P. Abbott, G. Capper, D. L. Davies, R. K. Rasheed, V. Tambyrajah, *Chem. Commun.* (2003) 70.

## Drug Solubilization/Release

- The non-polar organic layer (also hydrophobic drugs) is immiscible with polar-aqueous layer. This miscibility is enhanced by a solute, which can distribute between the two immiscible components.
- One of the solutes which makes a highly stable suspension (emulsion) is surfactant. However, the surfactant are chemicals which are harsh to the environment.
- **Biocompatible surface-active agents are needed to be synthesized to overcome this limitation.**
- **DES will be explored for emulsification as an active solute or solvent**
- The reduction of surface tension of water by addition of DES and such system will be scanned for gelation.
- Typically, during solid-like gel formation, the spherical non-polar/polar droplets are stabilized by surfactant. These stable droplets due to overcrowding changes their shape from spherical to hexagonal or distorted spherical.
- Thus, DES will be scanned for gelation properties. These gel-like emulsions will be then used for surface wettability

characterization using model substrates.

## 15 March 2023- Tank Sinderpal-(Chemistry)

Zoom Meeting

Recording...

**CLASSIFICATION OF DYES**

Dyes	Examples of dyes	Chemical structure's example	Applications of dyes
<b>Acid dyes</b>	Congo red Methyl (orange and red) Orange (LI) Acid (blue, black, violet, yellow)	Acid blue 25	Wool, silk, nylon (polyamide) Polyurethane, fibers
<b>Direct dyes</b>	Marian yellow, Direct black Direct orange, Direct blue, Direct violet, Direct red	Direct black 38	Cotton, wool, flax, silk, leather in (alkaline or neutral bath)
<b>Sulfur dyes</b>	Sulfur black Leucosulfur black	Sulfur black	Cellulose, fibers
<b>Reactive dyes</b>	Reactive red, Reactive blue Reactive yellow, Reactive black, Remazol (blue, yellow, red, etc)	Reactive black 5	Cellulose, fibres wool, polyamide
<b>Disperse dyes</b>	Disperse blue Disperse red Disperse orange Disperse yellow Disperse brown	Disperse red 17	Polyamide, fibers polyesters, Nylon polyacrylonitriles
<b>Vat dyes</b>	Indigo, Benzanthrone Vat blue, Vat green	Vat green 6	Wool, flax, wool, rayon fibers
<b>Azoic dyes</b>	Mono azo dyes, diazo dyes, triazo dyes	Azo dye	Textile, cosmetic, leather, paper paint, food industries
<b>Basic dyes</b>	Methylene blue, Basic red, Basic brown Basic blue, Crystal violet, Aniline yellow, Brilliant green	Methylene blue	Polyester, wool, silk mad-acrylic nylon

Anionic dyes include various dyes' groups such as acid dyes, reactive dyes, azo dyes and direct dyes while cationic dyes are the basic dyes.

Participants (9)

Find a participant

- Dr Natasha Sharma (Host, me)
- Swati Awasthi (Co-host)
- Gopi Sharma (Co-host)
- Dr Vickram Jeet Singh (Co-host)
- Barjinder Kaur
- Kritika Thakur
- Manju Sahni
- Sakshi
- XB6-09Arshdeep Kaur

30°C Haze

14:16 15-03-2023

## 17 May 2023-Dr. Sandeep Sagu (Biotechnology)

CURIE PPT - PowerPoint

shiv kumar

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Clipboard Slides Font Paragraph Drawing

## Introduction

- Biofilm is a structured consortium formed by microbial cells adhered to each other and surrounded by a self-produced extracellular polymeric matrix attached to a living or inert surface.
- Biofilms have been found to develop on human and animal tissues as well as on metals, and installed clinical devices (Vidyasagar, 2016).
- Biofilm plays an important role in causing persistent infections in humans. Another major concern with biofilms is that they inhibit anti-infection activities, resulting in antibiotic resistance (Wu et al., 2015).
- Microbial biofilms cause 60-80% of human microbial infections, making it an important medical issue (Costerton et al., 1999). As a result, it is difficult to eradicate a bacterial biofilm infection once it's established.
- Biofilms can be degraded in a number of different ways, including physical, chemical and enzymatic methods (Hughes et al., 2017). As there are several harmful effects of chemicals, therefore researchers have started using enzymes to degrade biofilms (Saggu et al., 2019).
- This study will deal with the isolation of soil-dwelling bacteria that is capable of producing biofilm degrading proteases.

Slide 2 of 16 Accessibility: Investigate

Notes Comments

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CURIE PPT - PowerPoint

shiv kumar

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Clipboard Slides Font Paragraph Drawing

## Objectives

- Isolation and purification of protease producing bacteria from soil
- Identification and characterization of protease producing bacteria by morphological, biochemical and molecular methods
- Screening of proteases responsible for biofilm degradation
- Purification and characterization of biofilm degrading enzymes from bacterial isolates

Slide 2 of 16 Accessibility: Investigate

Notes Comments

2:42 / 24:31



The screenshot shows a PowerPoint presentation titled "Expected outcomes" with the following content:

- 1. The protease producing bacteria will be isolated from soil. 16S rRNA sequences of isolated bacterial strains will be submitted to NCBI GenBank.
- 2. The protease from different bacteria will be exploited for biofilm degradation signifying its therapeutic and industrial applications in biofilm removal in the future.
- 3. The isolated strains can be exploited for various other biotechnological applications such as detergent and leather industries.

The presentation is shown in a video conference window with a sidebar on the right containing several participant thumbnails, including Dr. Natasha Sharma, Dr. Sandeep Kaur Saggu, Dr. Pooja Chitambar, and Gopi Sharma. The status bar at the bottom of the window shows the time as 9:19 / 24:31.

17 May 2023-Mrs. Shikha Vashisht-(Botany)

The screenshot shows a video conference grid with several participants. The participants visible are:

- Dr. Archana Sani
- Sadhana Tandon
- Dr. Mandeep Kaur
- Dr. Natasha Sharma
- Shikha Vashisht
- Nusrat Khatoon
- Palak
- Akrit Kaur Gill

A large purple square with a white letter 'D' is prominently displayed in the center of the grid. The status bar at the bottom of the window shows the time as 1:32 / 57:34.

## Introduction

- ▶ Water is vital and life sustaining natural resource.
- ▶ The unlimited and unwise utilization of water resources for industrialization, agriculture, and other economic activities has led to the deterioration of water quality.
- ▶ Therefore it is unavoidable to characterize water quality and assess temporal change in water quality.
- ▶ Kali Bein is an important tributary of river Satluj. It is a highly polluted rivulet.
- ▶ Phytoremediation is a technique that uses plants to remove pollutants from the soil or water.
- ▶ Due to its affordability, adaptability, and eco-friendly nature, phytoremediation has the potential to become a crucial tool in the fight against environmental pollution.



23:03 / 24:31



## LITERATURE REVIEW

- ▶ **Singh et al., 2022** collected groundwater samples from tributaries of Punjab. A total of 45 samples were analyzed for physico-chemical parameters, heavy metals, and health risk assessment. The study found that most of the samples were below the permissible limits set by the BIS and WHO.
- ▶ **Singh et al., 2022** studied different statistical techniques and water quality index (WQI) to evaluate the condition and spatiotemporal distribution of water quality in seven wetlands in Punjab, including two natural and five man-made wetlands.
- ▶ This study is the first of its kind to be conducted on the Holy Kali Bein rivulet. It reveals that the water quality of the rivulet is satisfactory at its source, but deteriorates as it nears the Harike wetland (a Ramsar site) due to the discharge of municipal waste and agricultural runoff along the rivulet's banks. **(Singh et. al. 2020)**
- ▶ Now a days there is a need for adopting sustainable methods to enhance wastewater treatment capabilities and application of invasive plants in phyto-technologies for reducing pollution can be a viable solution in wastewater treatment management.

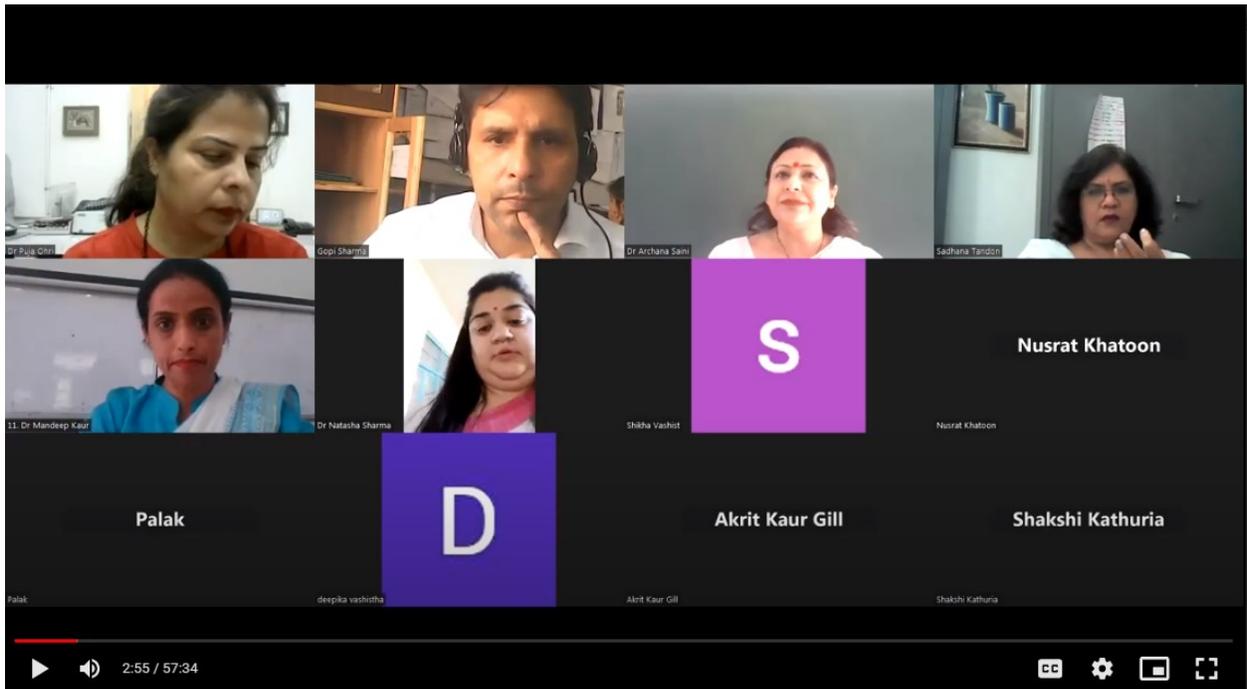
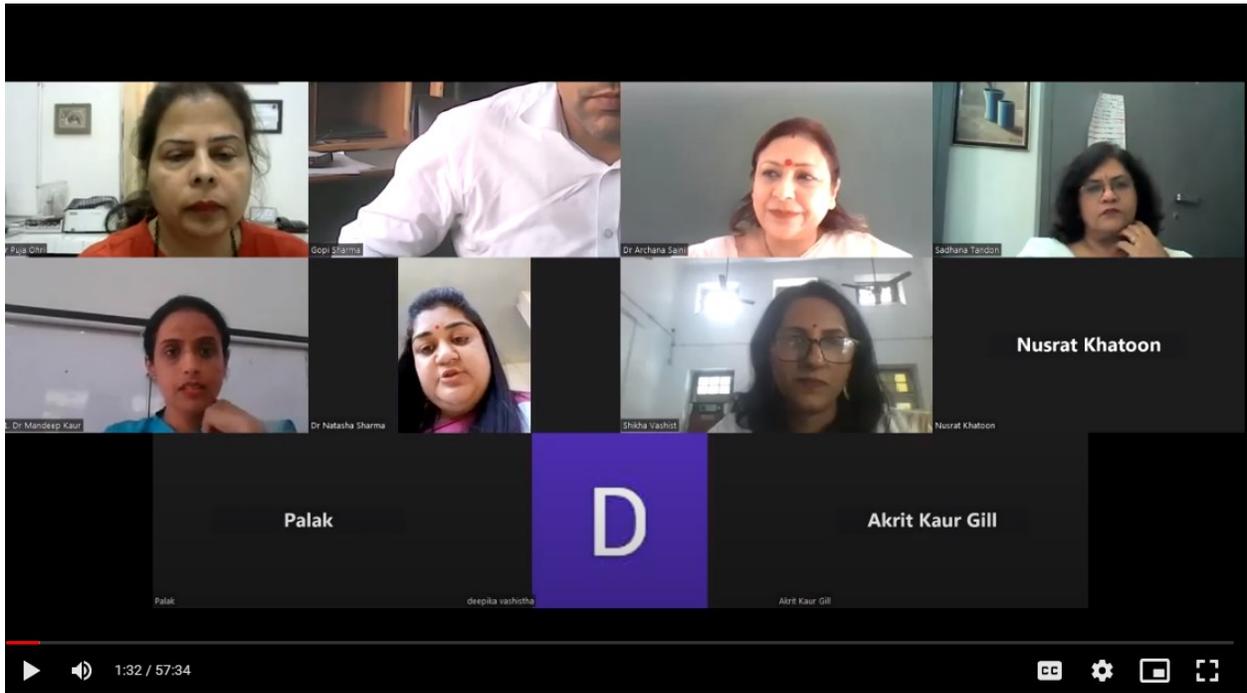


24:11 / 24:31

(Aqdas et al., 2022)



17 May 2023 -Dr. Mandeep-(Zoology)



**Evaluation of insecticidal activity of monoterpenes against stored grain pest *Tribolium castaneum* (Herbst)**

**Speaker: Dr. Mandeep Kaur**  
Assistant Professor

**PG Department of Zoology**  
**Kanya Maha Vidyalaya Jalandhar**

**17 May 2023-Mrs. Deepika Vashishta (Botany)**

**Zoom Meeting**

Recording...

**Participants (5)**

- Host (Host, me)
- deepika vashishta (Co-host)
- Natasha (Co-host)
- Gurcharan Kaur
- Gopi Sharma

**BACKGROUND**

- Introduction of National Health Mission (2005) resulted in fall in levels of mortality and trend reversal regarding HIV, malaria, and tuberculosis in India
- But mortality and morbidity burden due to Non-communicable diseases (NCD) is increasing
- 60% of deaths in India because of NCD-cardiovascular diseases, chronic respiratory disease, cancer and diabetes
- Punjab witnessing a disturbing growth in NCDs related mortality especially metabolic disorders
- Cardiovascular diseases (CVD) most prevalent cause of death with 21.7% (age group 15-39 years) and more than 40% in higher age group\*
- Diabetes contribute 5.5% to death rate (age group 15-39 years) and more than 7% in higher age group\*
- Prevalence in Punjab of diabetes (hyperglycaemia)-14.3% , hypertriglyceridemia- 21.6% and hypercholesterolemia- 16.1%

\* International diabetes federations, 2010  
\*Indian Council of Medical Research, Public Health Foundation of India, Institute for Health Metrics and Evaluation, 2010

Windows taskbar: 11:15 AM 5/17/2023

Zoom Meeting

Recording...

## RESEARCH INTEREST

- There is scarcity of studies conducted in the state in the recent past to investigate genetic association of diabetic and non-diabetic using SNP
- Thus, its important to investigate **the molecular basis of dysregulated glucose and cholesterol levels in population of our state using SNP approach**
- This study would help in
  - ✓ Identification of gene and their associated SNP
  - ✓ Determination of Genetic predisposition of this complex disease, and that can offer targets for development of pharmacological agent in future

Participants (5)

- Host (Host, me)
- deepika vashista (Co-host)
- Gurcharan Kaur (Co-host)
- Natasha (Co-host)
- Gopi Sharma

Host

deepika vashista

Gurcharan Kaur

Natasha

Gopi Sharma

Activate Windows  
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Type here to search

36°C 11:16 AM 5/17/2023

Zoom Meeting

Recording...

rs9939609-  
Intronic SNP

5' 1 2 3 4 5 6 7 8 9 3'

FTO GENE  
Yellow boxes-EXONS

In literature, AA genotype is associated with obesity as compared to AT and TT genotype

Participants (5)

- Host (Host, me)
- deepika vashista (Co-host)
- Gurcharan Kaur (Co-host)
- Natasha (Co-host)
- Gopi Sharma

Host

deepika vashista

Gurcharan Kaur

Natasha

Gopi Sharma

Activate Windows  
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36°C 11:17 AM 5/17/2023

17 May 2023-Dr. Prabha (Zoology)

CURIE PROJECT (1) - Microsoft PowerPoint

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Clipboard Paste Copy Format Painter New Slide Delete Slides Font Paragraph Drawing

Slides Outline

1 KANYA MAHA VIDYALAYA, JALANDHAR  
Proposal for  
RESEARCH PROJECT  
Under CURIE Grant

2 Evaluation of IPM Strategy and Ecological sustainability  
measures against a pest and Parasitoid Biology for  
the control of Pest

3 Introduction

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Slides Outline

10. Slide Area

11. Content Placeholder

12. Content Placeholder

13. Content Placeholder

14. Content Placeholder

## Assessment of samples

**Oxidative stress markers assay** The oxidative stress assessment will be conducted through analysis of Thio-barbituric acid reactive substances, total Glutathione and Oxidized Glutathione levels.

**DNA damage marker assay** The alkaline single-cell gel electrophoresis assay will be carried out according to the technique given by Singh *et al.*, (1988) with slight modifications incorporated later on in the original technique by Ahuja and Saran (1999) to access DNA damage. Appropriate staining method will be used to get the results.

**Micronucleus (MN) assays** Slides will be prepared using method of Yadav and Chadha (2002) with slight modifications. Buccal smear will be formed from exfoliated cells collected from buccal mucosa. Slides will be fixed and scored. Photomicrography will be done with the help of Labo-vision microscope.

**Statistical Analysis** Data will be subjected to appropriate statistical techniques to estimate extent of damage and correlation chronic exposure level and various stress markers and DNA damage markers studied.

15 of 15 34:52 / 57:34 (India)

Gopi Sharma  
Dr. Prabha  
Dr. Natasha Sharma  
Dr. Pooja Ojha  
Priya Rajhans  
Dr. Pooja Ojha

17 May 2023-Dr. Nalini (Zoology)

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3. Consequences of using fertilizers

4. This has been mentioned the strong way in our country, especially in the form of pesticides and chemical fertilizers (Ghorbani et al., 2021).

5. Vermicomposting is an eco-friendly alternative to chemical fertilizers

6. Vermicompost: an ecofriendly alternative to chemical fertilizers

7. Click to add notes

15 of 15 47:43 / 57:34

Notes Display Settings Comments

Kapil Paul

Gopi Sharma  
Dr. Natasha Sharma  
Kapil Paul  
Dr. Prabha  
Dr. Pooja Ojha  
Dr. Pooja Ojha  
Priya Rajhans

- vermicompost not only increases crop growth and yield but also improves soil physico-chemical properties.
- Vermicompost might enhance the soil's physical properties, such as porosity, aeration, drainage, corrosion resistance, and infiltration, offering a better environment for root development (Ahmad et al., 2021).
- Vermicomposting for plant development has attracted more interest during the past 20 years (Ghorbani and Sabour, 2021). Hence, using environmentally friendly fertilizers like vermicompost and its derivatives is necessary to combat the issues brought on by chemical fertilizers (Gudeta et al., 2022).

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3 Consequences of using fertilizers

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6 Vermicompost: an ecofriendly alternative to chemical fertilizers

7

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Dr. Natasha Sharma  
Kapil Paul  
Dr. Prabha  
Dr. Puja Ohri  
Dr. Puja Ohri  
Prihi Rajbhar

## Vermicompost: an ecofriendly alternative to chemical fertilizers

andjnmr

- Improves soil health
- Enhances nutrient recycling
- Soil microbial activity increases
- Increase nutrient use efficiency
- Waste water treatment and vermifiltration

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6 Vermicompost: an ecofriendly alternative to chemical fertilizers

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49:49 / 57:34

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Gopi Sharma  
Dr. Natasha Sharma  
Kapil Paul  
Dr. Prabha  
Dr. Puja Ohri  
Dr. Puja Ohri  
Prihi Rajbhar

## Methodology

- The seeds of the plants to be used as host plant will be procured from local market of Jalandhar, Punjab.
- The vermicompost will be prepared in the vermicult of the KMV college after procuring young non-clitellate *Eisenia foetida*
- Different concentrations of the vermicompost and its derivatives will be checked for their efficacy to be used as biofertilizer.

