CUBE NATIONAL MEET -2022

Microbes, Pagalapos & Rotifers

STEM CHAT GAMES

Location: HBCSE-TIFR Mankhurd Mumbai

Image - "Pagalapos Islands of HBCSE-TIFR Mankhurd Mumbai" - CUBE chat

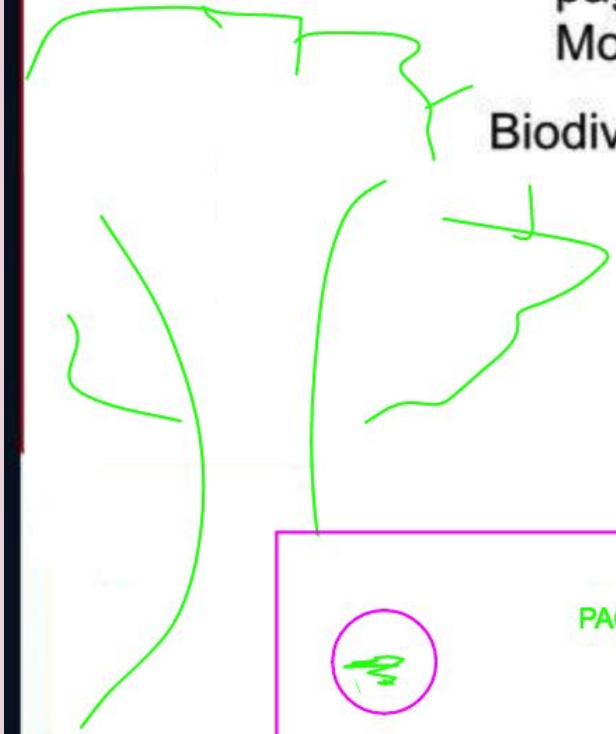
00:01

CUBE chatShaala:27/10/2020

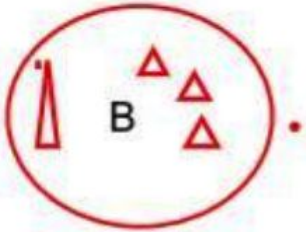
pagalapos
Moist soil

galapagos islands
Finches

Biodiversity at doorstep

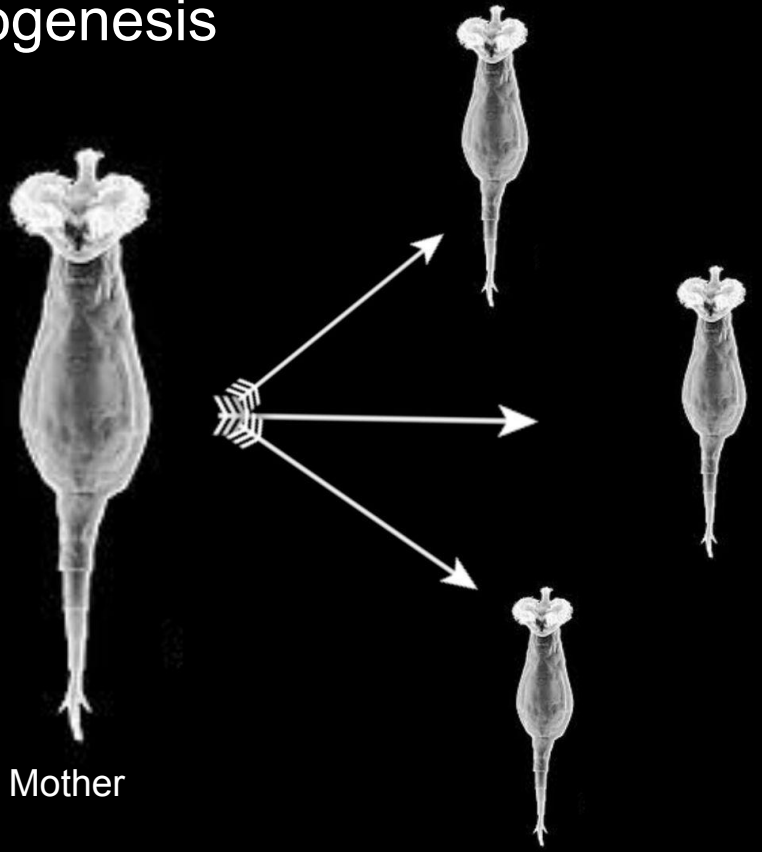


long Beak



short beak
& Long beaked
finches

Asexual reproduction
Parthenogenesis



Mother

Identical childrens
(offsprings)

Image by - [Bdelloidea - Wikipedia]

Introduction

- **Why**
  - Pandemic ,Lockdown (No wetlab)
- **Benefit**
  - No obstruction to continue biology work
- **How?**
  - BY DIY MICROBIOLOGY LAB

Microbiology in Our Kitchen labs

Tap water

Frugal Media

Glassware

Kitchen Burner

Microbiology Home Lab

- Frugal Nutrient Agar

1. Carbon Source
2. Nitrogen Source
3. Salt
4. pH
5. Agar (China Grass)
6. Sterilization

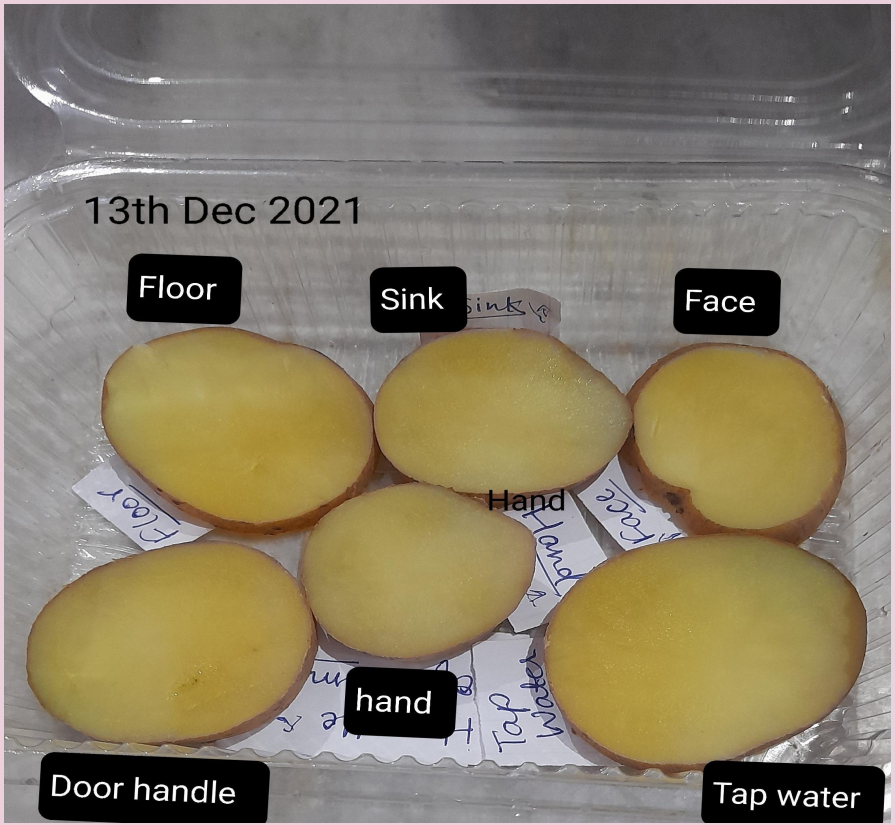
Frugal Nutrient Broth (No Agar)

- Biofilm formation in positive control after 48 hrs

Future plans of this work

- To grow the organisms on frugal nutrient agar
- To study the biofilm formation using foldscope
- To characterize the bacterial morphology using DIY microscope

First microbial culture started on 13th December 2021



Dr Robert koch
Got Nobel Prize in 1905

OBJECTIVE

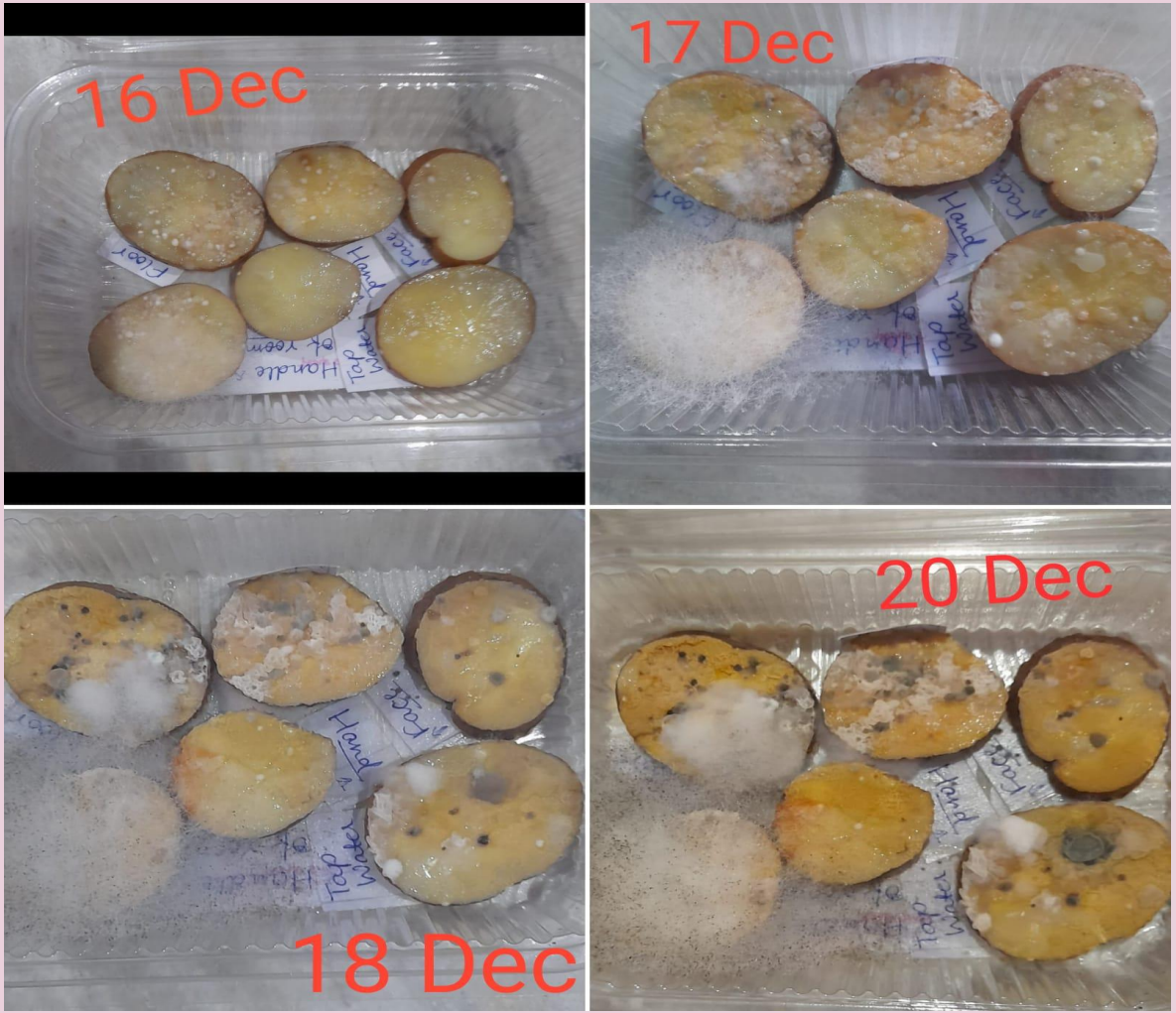
To grow the microbes from various places.

REQUIREMENTS

1 potato
2 knife
3 cotton covered tooth pick
4 plastic box.

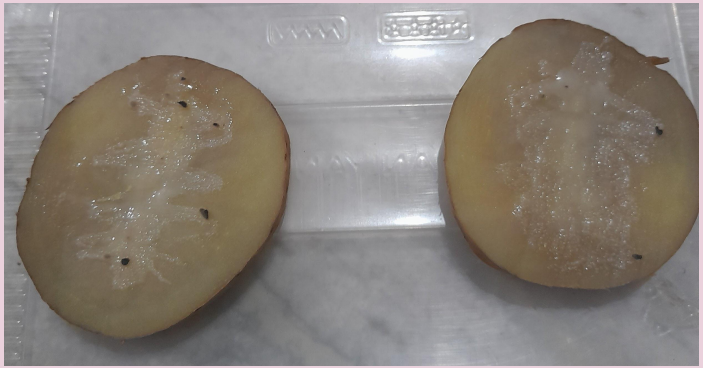
SAMPLES-

Face, Sink, Floor, Door handle, Hand, Tap water.



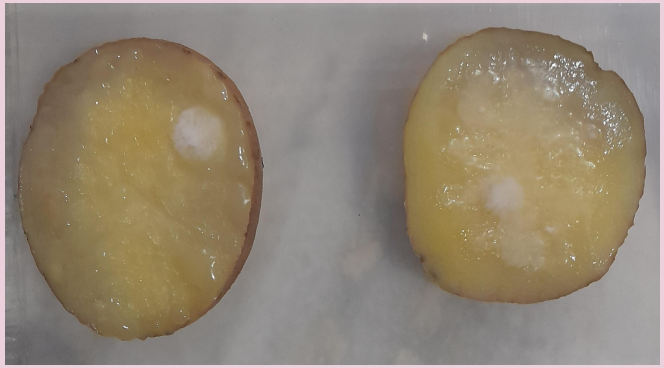
- ***Goof up***
- *No control slice.*

BLACK COLOR MICROBIAL COLONY SUBCULTURE FROM FACE SAMPLE STARTED ON 20TH DEC 2021



22nd Dec.2021

WHITE COLOR MICROBIAL COLONY SUBCULTURE FROM TAP WATER SAMPLE STARTED ON 20TH DEC 2021



22nd Dec.2021

CONTROL

22nd Dec.2021

FIRST CURD BACTERIA CULTURE STARTED ON 15TH JANUARY 2022

Test 1

Test 2

Control

GOOF UP - More inoculum- no isolated colony

SECOND CURD BACTERIA CULTURE STARTED ON 22nd JANUARY 2022

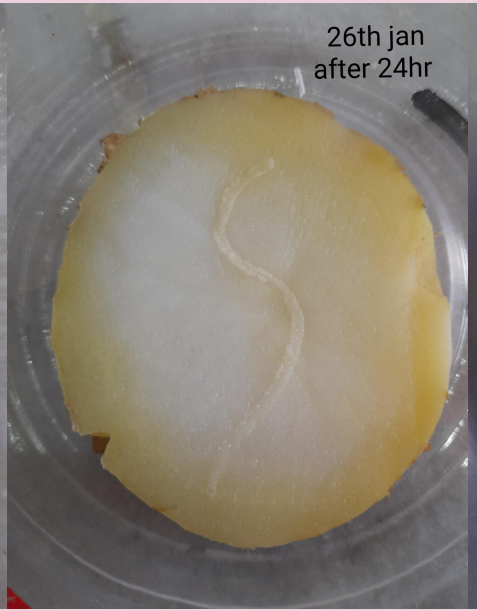
Test 1

Test 2

FIRST CURD BACTERIA SUBCULTURE STARTED ON 25th JANUARY 2022

Test 1

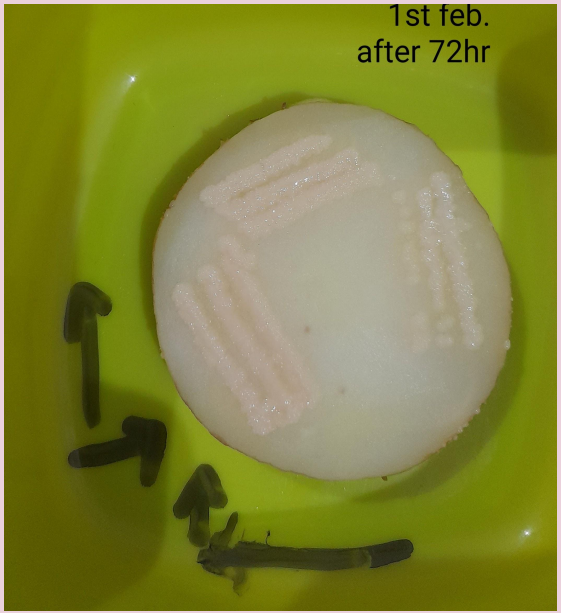
Test 2



Test 3

Control

Second curd bacteria Subculture started on 29th Jan 2022



Test 1

Test 2

Control

Test 1

Test 2

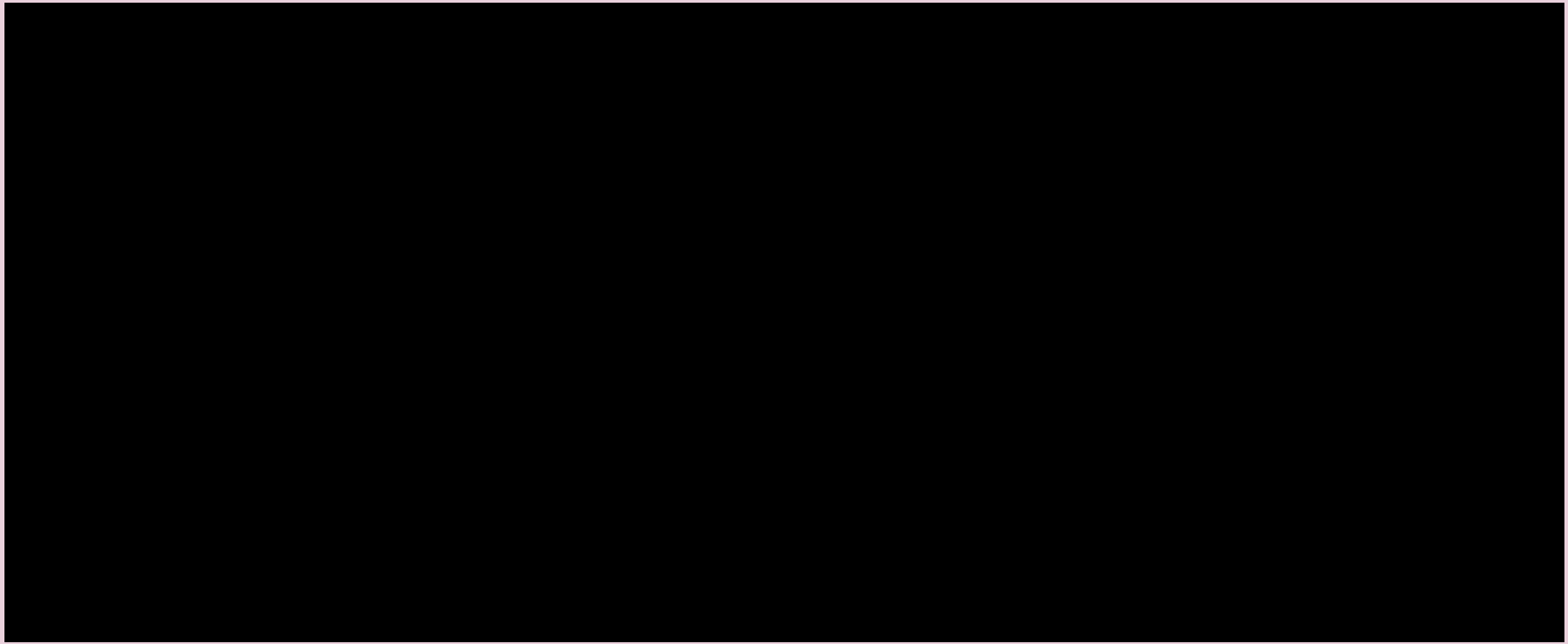
Control

Goof ups - Celebrating mistakes

- No Control.
- Because of huge inoculum - no isolated colony
- Late subculture, so contamination is there.

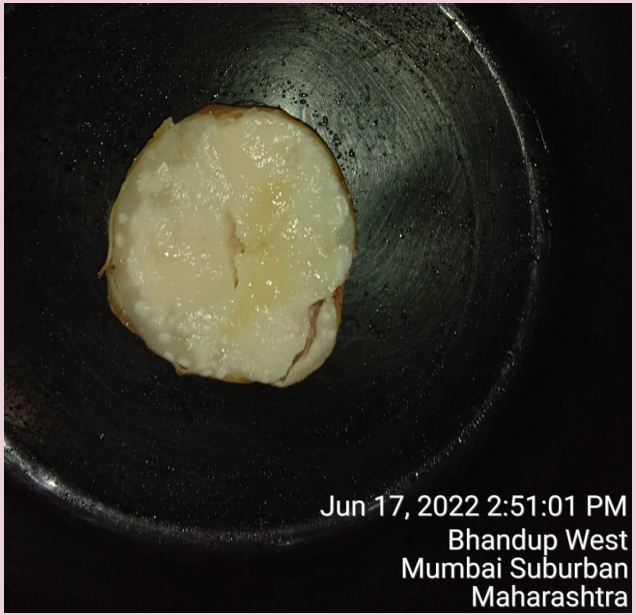
FUTURE PLAN
To identify different types of curd bacteria on the basis of there colony morphology.

Curd bacteria culturing demonstration by Archita Rajbhar cube lab Bhandup-W



Observation

Test



Control

Cube homelab Kolkata /Batul Pipewala (January ‘22)

Boiled potato slice t1 and t2 after 24 hours

Of spreading milk along the “S” shape

Clearly show milk bacterial colonies along

The “S” shape . The control potato slice

Shows negligible growth after 24 hours.

Bacterial colonies on potato

Closeup photo of the “S” shape bacterial

Growth show white, convex, raised, round

Colonies of bacteria from milk on Potato.

Demonstration of fungal culturing by Sakshi Belose cube lab Bhandup-W

Observation of fungal growth(Aspergillus)

Isolation of Microbes from Freshwater collected from upavan lake by Yogesh kale and Anupkumar Mourya cube lab Bhandup-w

Requirements :

1. Semi-boiled potato
2. Containers
3. Dettol
4. Freshwater (upavan lake,Thane-w)
5. Needle
6. Knife
7. Tissue

Observation of microbes from freshwater

Future plan of this Experiment

- To isolate & study bacterial colonies using Potato as media
- To carry out Gram Staining of Bacteria for our future studies in home lab

Collaborators

Enas Shirin Fatma, Sana Jalili, Archita Rajbhar, Sakshi Beloshe, Srujal Jain, Aditya Joshi, Batul Pipewala, M.C.Arunan, Saida Sayyed, Yogesh Kale,Anup Mourya.