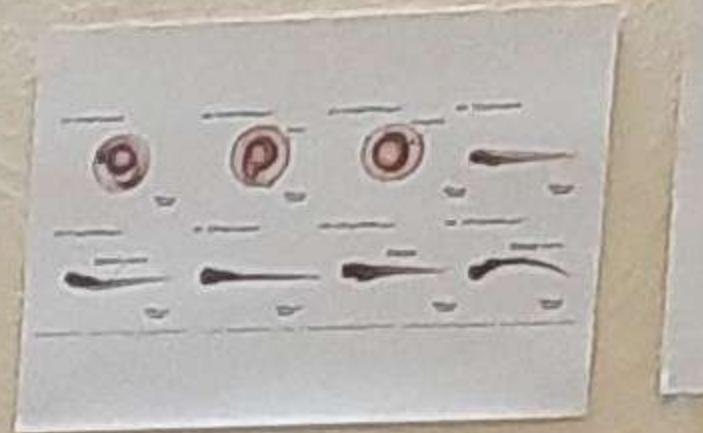




Establishment OF Zebrafish *Danio rerio* CULTURE
B Unit set up on 6-02-23 (I 2:6)
Timer ON - 10:00 am (II-1:5), (II 2:4)
OFF - 12:00 am

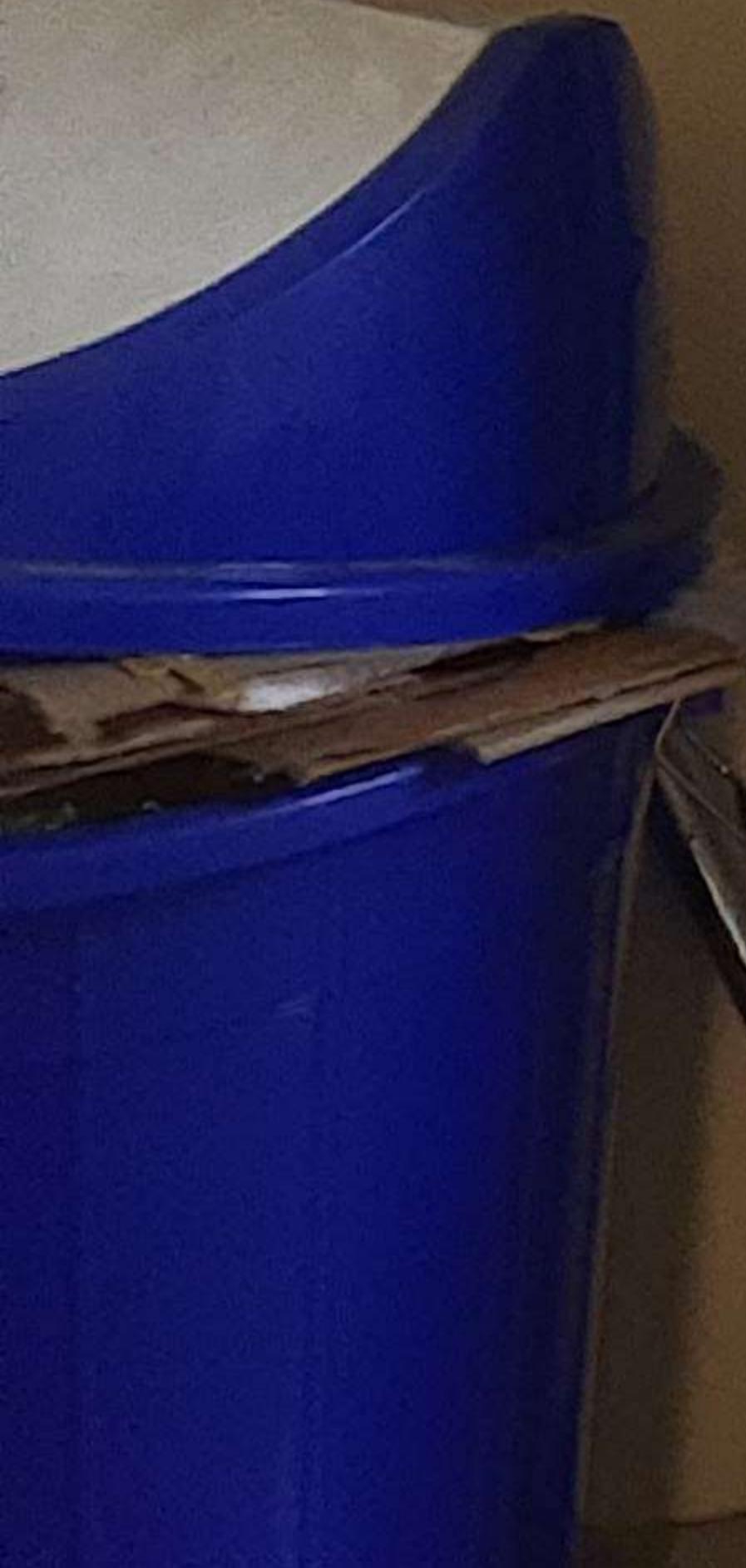
Fishes Obtained 9th Sept
Total Male - 08 (05) (As on 11/1/23)
Total Female (18) (15) (As on 11/1/23)
Ilma, Aayushi, Divya - [6th - 12th Feb.
6th - 12th March]
Tannu, Tasmine, Arun, Bhawna - [23rd - 29th Jan.
13th - 19th Feb.
till 22nd Jan.
27th - 5th March]
Kapil, Purveet, Soven - [30-5th Feb.
20-26th Mar]
Shikha, Vaishali, Zubishan, Shruti - [30-5th Feb.
20-26th Mar]



Large wooden bench with a white protective sheet covering the top surface.
Two smaller wooden stools placed under the main bench.

Small wooden table with a red tray holding several small containers.
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Topic - To establish the Culture of Zebrafish (*Danio rerio*) in our lab to know its Breeding process.

- Objective -**
 - The main purposes of doing this research are to inform action, gather evidence for theories, and contribute to developing knowledge in a field of study.
 - We are 4 members as a team of same department who pursue this research, (Manshi, Tejash, Maitra, Khushi Vaishnavi , Khushi Agarwal)
 - Doing research equips gives us knowledge about the world and skills to help us all living organisms to survive and improve our lives.
 - Also helps us to think broad in developmental Biology which is our subject.
- Introduction -**
 - The zebrafish is a popular fresh water aquarium fish. It is easy to breed. These properties have also contributed to its increasing use as a model animal in research, as they complement its experimental advantages such as:
 - small size (2.5-4 cm) in length,
 - transparency of the offspring
 - the availability of an ever increasing toolkit for genetic studies
 - high number of offsprings
 - External and rapid development
 - also the zebrafish has fully sequenced genome and over 70% of annotated human genes have true Orthologues in the zebrafish genome.
 - Zebrafish have already been used to help unlock a number of the biological processes behind muscular dystrophy and are an important model for understanding the mechanisms of development and disease.
 - Zebrafish embryos are nearly transparent which allows researchers to easily examine the development of internal structures.
 - Zebrafish have the unique ability to repair heart muscle i.e. if part of their heart is removed they can grow it back in a matter of weeks. That's why we also want to know about the behaviour of zebrafish.
- Methodological approach -**
 - Zebrafish can easily be maintained and bred in the laboratory. After selecting an Aquarium we will install flexible system for maintenance of fishes such as water continuously flow in tank and the water such as faeces, nitrate, ammonia filtrate through sponge filter paper to oxygenate the water.
 - As Zebrafish is sheet fish, 5 litre/L can be maintained.
 - Will maintain the temperature about 23°C by heating the room.
 - Will usually keep under a 14 hours light and 10 hours in dark.
 - Will fed 2 times in a day/day with flake foods, pellet, living artemia larvae.
 - Will add crushed to turnover waste into sediment.
- Expected outcomes -**
 - Under the maintenance conditions zebrafish reaches sexual maturity in 2.5-3 months.
- Thesis structure -**

We are experimenting on zebrafish due to its genetic and cellular homology with mammals. We will make sure to consider the doctrine of three "Rs" (i.e. Refinement, Replacement, Reduction). Good laboratory practices (GLP) must be followed to ensure the welfare of the fish. We will make sure to minimize the potential pain, suffering or distress caused due to mechanical pressure, extreme temperatures and corrosive chemicals. We would ensure and always have a check on all the water quality parameters, temperature (ideal 28.5°C) and food habits of the fish.
- Estimated Budget -**

For starting the Culture the overall budget including the aquarium, heater (for maintaining temp), filter, food and decoration and fishes is around Rs.2,000 approx. which is quite feasible and cost effective.
- Approximate Time -**

Apprx. 4-4.5 months are needed for overall observation and establishment of the culture of zebrafish.
- References -**
 - Youngencarta website from Google. <http://www.youngencarta.org/factsheets/the-zebrafish-in-research>
 - ZMC theoretical part.
 - 3.

ACHARYA Narendra DTV COLLEGE
University Of Delhi,
Govindpuri, Kalkaji, New Delhi
ACCREDITED 'A' Grade by NAAC With Score of 3.31
Star DBT College

Zebra Fish Activity Log

ITEM CHECK	MONTH: September 2012 ROOM No. T-3																															IN ANY EMERGENCY CONTACT PHONE: 0965071651			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				
DAILY																																			
Check feed and water																																			
Swims/Mop floor																																			
Temperature																																			
ALTERNATE DAYS																																			
Check timer																																			
Autoclaving of nets																																			
Water change																																			
Physical count of fishes																																			
Cleaning Of Filter																																			
WEEKLY																																			
Cleaning of breeding units																																			
Autoclaving of breeding units																																			
EVERY TWO WEEKS																																			
Restocking of fishes																																			
MONTTHLY																																			
Evaluating Health of fishes																																			
Washing of Aquarium																																			
Checking and Cleaning of lab																																			

SUGGESTIONS AND COMPLAINT BOX