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To
The Principal
Indira Gandhi National College
Ladwa, KKR

Subject → Request for an educational tour.

Respected Sir,
I am a student of class BSC final year Medical of your college. I write on the behalf of the entire class. We kindly request you to arrange for us an educational tour to the 'Sultan fish farm' and 'Karan lake' as it is a part of our syllabus. ('A visit to lake/ reservoir/ fish breeding centre'). It will be a great opportunity for us to learn new facts. Hoping for a positive response.
Thankyou.
Yours Obediently
Aditi Verma
BSC III Yr (Med.)
Roll no - 120207030008
Date → 11 April 2023.

Rf: Anjalie & Sh. Mukesh Kr
11/04/2023

Educational Trip, Date: 13 April 2023

Visit to Fish farm (Butana, Nilokheri)

Name	Class	Roll No.	Mob. Number	Sig.
Mahesh	BSC III	12020703000 1	9991789973	Mahesh Kumar
Deepanshi	BSC III	12020703000 2	7988603354	Deepanshi
Diksha	BSC III	12020703000 3	9050956970	Diksha
Saraswati	BSC III	12020703000 5	8168731061	Saraswati
Muskan	BSC III	12020703000 7	8930337784	Muskan
Aditi Verma	BSC III	12020703000 8	9588323400	Aditi.
Jyoti	BSC III	12020703001 3	8307883868	Jyoti
Nasreen	BSC III	12020703001 4	8168251933	Nasreen

Angel

ACKNOWLEDGEMENT

I owe my sincere thanks to our Principal sir, Dr. Ravish Kumar Chauhan for giving us the opportunity to visit fish farm.
My heartfelt gratitude also goes out to Assistant professor. Ms. Anjali Garg and Lab attendent Mr. Munilal for guiding us through the various ponds, fishes and Recirculating aquaculture System.

Thankyou.

Aditi Verma
BSC IIIrd Yr
12020703008

Aditi.

POND

NURSERY POND

Ponds

Ponds are small and shallow water bodies of standing water with slightest wind action. No exact limit of size and depth are laid down for a pond. The ponds are of three types :-

(i) The small water bodies, remanant of lakes earlier.
(ii) The small, shallow water bodies, which did not develop as lake.
(iii) Those water bodies which are constructed or excavated.

The ponds are also classified as village ponds, irrigation pond spill ponds, moats, rock pools, rain water ponds etc. The ponds are called perennial ponds if water is always present and if water is present seasonally called temporary ponds.

Types of Ponds :-

Nursery ponds :- These are those ponds where hatchling and fries are kept for growth. There are small water reservoir near the hapas. The idial size of nursery pond is 55 ft X 35 ft X 5 ft.

Normally nursery ponds are prepared before hatching of hatchlings. In these ponds, cowdung and fertilizer like ammonia sulphate, Sodium sulphate, sodium nitrate etc are used to grow zooplankton and phytoplankton. These planktons provide food to hatchlings.

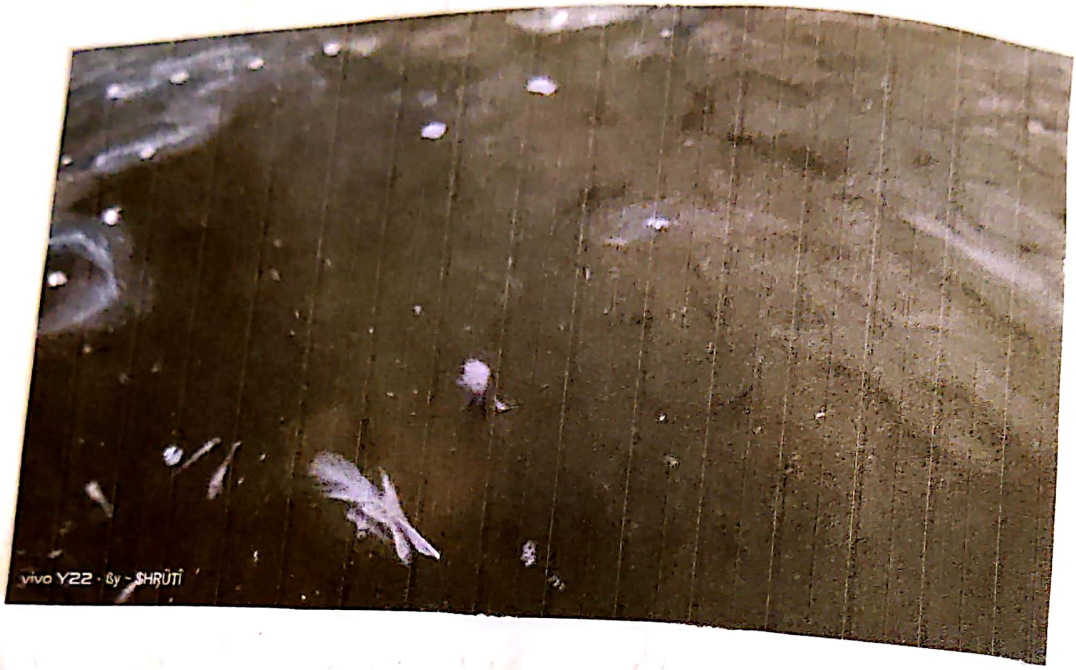
Rearing pond

Stocking pond

Rearing pond :- The rearing ponds are to maintain proper growth of fingerlings. The rearing ponds are long and narrow to provide long distance swimming to the fishes. It helps in proper growth of fishes. Normally the rearing ponds are 6-8 ft deep. The pond supply should be according to the population of the fingerlings. The water supply to these ponds may be annual or perennial. These ponds should not have any type of predators.

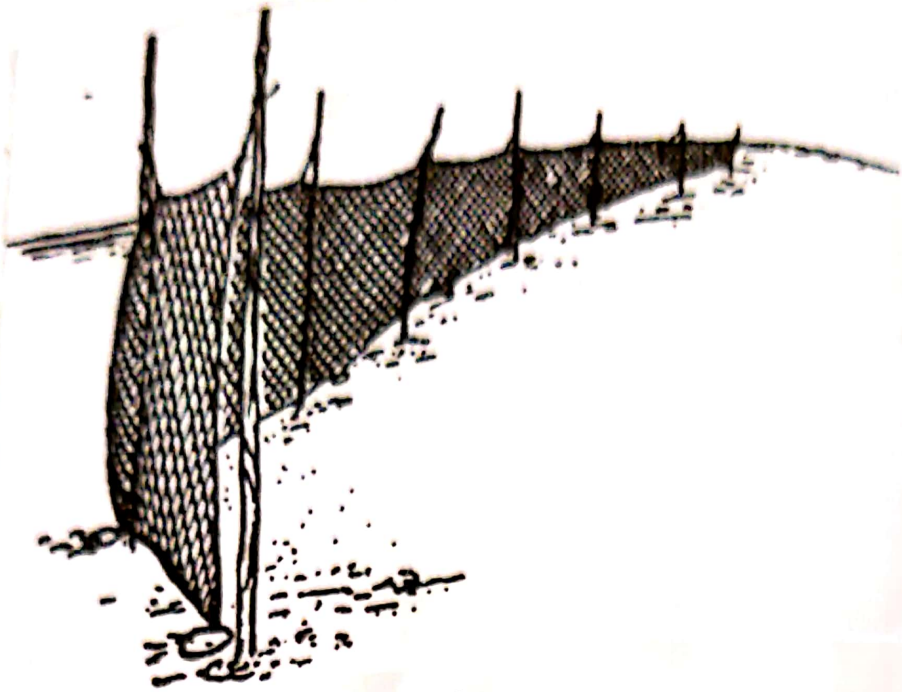
Stocking pond :- These are large size ponds where fingerlings are allowed to attain full size and kept there till harvesting
In this pond, the fishes are provided artificially food in the form of oil cakes, mustard, powdered rice, groundnut etc. That food should be easily digestable and economical.
To increase the production of natural food like plankton organic manure and inorganic fertilizer are added to the ponds.
The best time to provide food is morning.
As the fishes attain maximum size and grows fully, harvesting should be done.

Harvesting → the arrangement in which the full grown fishes are captured from water is called Harvesting.



Conditioning pond

Conditioning pond ⇒ Conditioning means drying, cleaning, Scarifying and other operations which could change the purity or germination of the seeds and require the seed lot to be restested to determine the label information.



fixed Nets

Cast Net

Fishing Gears

These are instruments of fish catching and are of various types. It includes a variety of nets, hooks and lines, traps, spears, harpoons. In the world more than 90% of fishing is done by nets.
The fishing gears have to break off operations after certain period of activity for rest and repair. The entire period between the launching of a fish gear and launching it again after a gap is called fishing cycle.

Fixed nets

The nets which are fixed in water body or in the tidal region are called fixed nets. These are of various sizes and mushes. To keep nets in position, wooden poles, called Stakes and float or Sinkers are used. These nets are usually rectangular or conical in shape. These nets are called panch or behunds or ghuri jal in West Bengal

Cast Nets → It is commonly called ghagariyaa jal or throw net It is almost bell shaped. Its strings are made up of cotton or nylon. On its lower circular margins, weights are present called Sinkers, to make it heavier. The no of mushes at apex is 50 and at margins are around 1000. The net spread in water like umbrella.

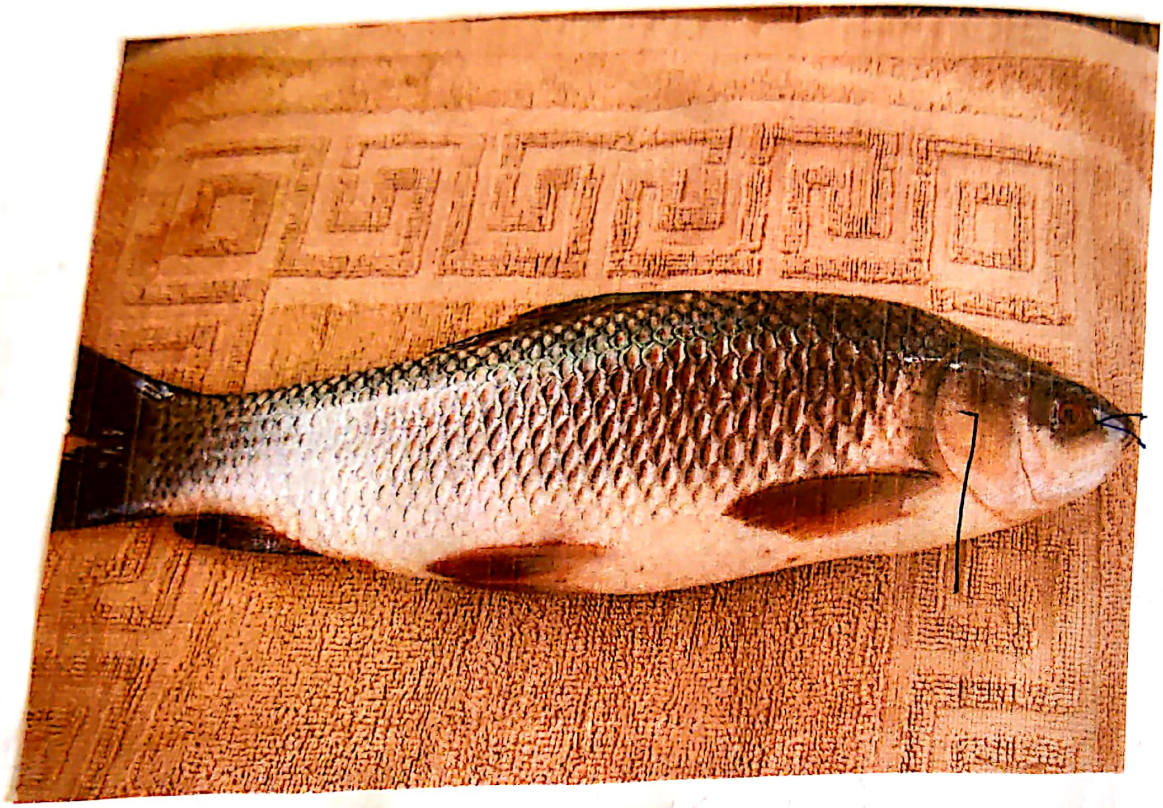
Hand Net

Drag Net

Hand Net → A hand net, also called Scoop net, is a fishing net or meshed basket held open on a rigid hoop, which may or may not be mounted to the end of a handle. A hand net with a long handle is often called a dip net. When it is used by an angler to help fetch out a hooked fish, it is called a 'landing net'.

Drag net :D This type of net is used in ponds. It is also called chanti or patli jal. This net is as long as width of pond. On the surface there is present floating lines and on the lower surface there is present head line with sinkers. It requires 20-30 persons to move drag net along the bottom from one end to other. By this way, fishes are accumulated at one end and are captured in one end.

Another type of drag net known as tana jal, is used in Gangas. It is 100 m long and 10 m wide and has 5 cm mesh. The net is used against the water current. It is used in catching of hilsa mainly.



Labeo rohita

Labeo rohita (Rohu)

Habitat → Labeo rohita is a fish of Carp family, cyprinidae, found commonly in rivers and freshwater lakes in and around South asia and South East Asia. In hindi it is called Rohu.

Habit →
- It is a herbivore, It is oily white fish.
- It has modified thin ~~layer~~ hair like gills rakers, suggesting that it feeds by sieving the water.
- It is diurnal and generally solitary.

Morphology :-

1. It has streamlined body, lips are fringed, one pair of barbels is prominent even from 15-20 mm size and is whitish grey in colour.
2. The caudal peduncle has a dark spot which connect both the edges giving the appearance of a band.
3. In some fry, the spot is more circular on dorsal surface or the back of the fingerlings is slightly greenish

Cirrhinus mrigala

Cirrhinus mrigala (mrigal)

Habitat → Krishna, Kaveri, godavari and west flowing rivers, drainages where it was transplanted

Habits → (i) The fish belong to Carp family and Resembles labeo rohita except that it has a wider mouth and thin lips.

(ii) Breeding takes place in flood rivers during July - Sept.

(iii) It attains a length of 50 - 65 cm within a year & a weight of 1.4 - 2.5 kg.

Morphological features → (i) The fry of mrigal has slender elongated body. The head is narrow and mouth is wide and ~~narrow~~ terminal.

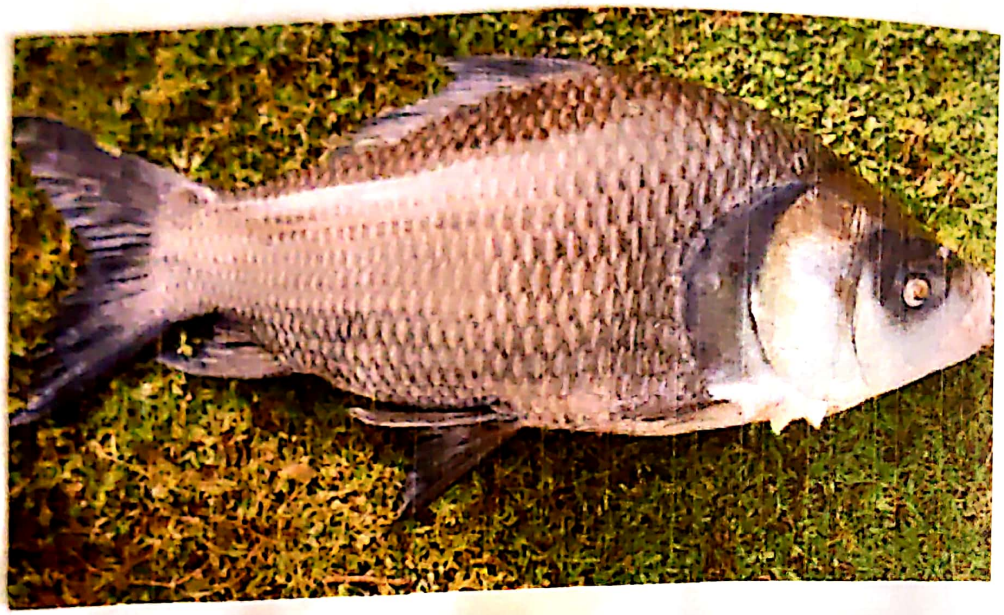
(ii) The lips are thin without any fringes, a black spot appears on the caudal peduncle at a very early stage.

(iii) The spot finally takes the shape of diamond at the 30 - 35 mm stage at this stage, a pair of grey barbelly is also visible.

Cyprinus carpio

Cyprinus carpio

Life Cycle → Spawn is marginal, shallow, weed infested areas. A polytypic plastic species with a marked tendency to produce 'varieties' and 'races' in response to selective breeding and environmental influences. Carp is polygamous. A spawning female is usually followed by several males. Under tropical conditions carp breeds throughout the year.



Catla - catla

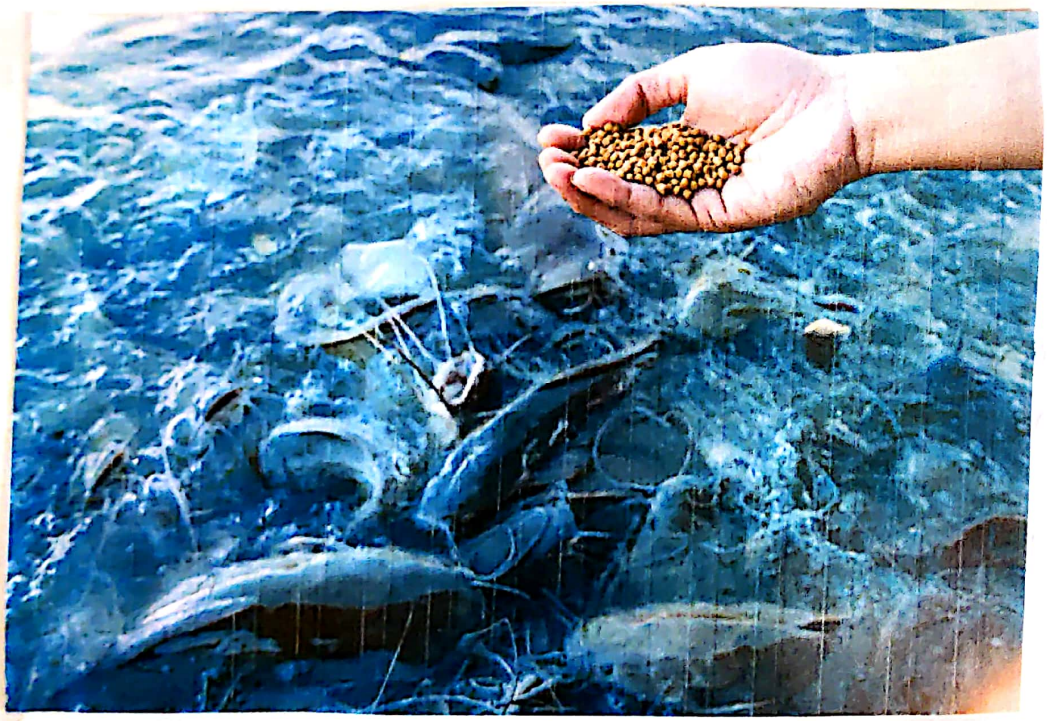
Catla - catla

Habitat → The fish is distributed throughout India. Catla is endemic to the riverine system in northern India, Indus plain and adjoining hills of Pakistan, Bangladesh, Nepal and Myanmar and has been introduced lately into almost all riverine system reservoirs and tanks all over India.

Habit → (i) The natural distribution of Catla seems to be governed by temp. dependency rather than latitude and longitude. The min^{m} temp tolerance limit is -14°C.
(ii) It can live both in fresh and brackish water and can be seen in tidal areas.

Morphological features → (i) The head is broad and moderately large, no barbels present, mouth is anterior, lips slightly thick but not fringed.
(ii) the dorsal profile of anterior portion of body is convex and ventral side is concave.
(iii) The first ray and dorsal edge of the dorsal fin have brakish tinge.
(iv) The colour of the fins is either grey or blackish.

fish feed.



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Fish Feed :→

The artificial food is food products given to the different stages of fish, in addition to natural fish. Example, just after being stocked, the spawn start feeding voraciously on zoop lankton. So after 2-5 days of stocking, the natural food available in nursery become very low so some supplementary food is required for survival and growth. It is called artificial food. The commonly used artificial food for cakes of groundnut, coconut and mustard.

Recirculating aquaculture

Recirculation Aquaculture :-

The recirculating aquaculture system is a unique method of fish farming. In this method, the fishes are cultured in the indoor ponds at the controlled optimum conditions. The recirculating system filter and clean the water for recycling back through the fish tanks. The new water is added to the tanks only to make up for the splash out and evaporation. Some is thrown out to flush out the waste material.

The fish grown in RAS are provided the best conditions required to remain healthy and grow.

i) There is a continuous supply of clean water.
ii) The optimum temp. is maintained.
iii) The dissolved Oxygen level is also maintained.
iv) There is regular detoxification and Removal of waste from water.

The main advantage of RAS over open pond culture are :-

i) There is max^{m} production of fish with limited supply of water and small space.
ii) The fish can be grown throughout the year.
iii) There is complete and convenient harvest of fishes.
iv) The diseases of fishes can be controlled easily.

Karna lake.

Karna Lake (Karnal)

Karna Lake is a major tourist attraction in Karnal District of Haryana. It is located at a distance of 125 km. from both Chandigarh and Delhi, thus serving as a midway halt while traveling between the two cities on the famous Grand Trunk Road.

Folklore has it that Karna, a famous character from India History who played a major role in the war of Mahabharat, used to bathe in this lake. It is surmised that the city of Karnal derives its name from Karna - Taal, which translates to Karna lake.

Teacher - Ms. Anjali Garg

lab Attendent - Mr. Muni Lal

Students - 1. Aditi Verma

2. Mustan

3. Jyoti

4. Deepanshi

5. Saraswati

6. Mahesh

7. Diksha

8. Naveen.