

A STUDY ON AQUA PRODUCTS IN GANAPAVARAM FISH MARKET

A Project submitted to S C H V P M R GOVERNMENT DEGREE COLLEGE



**In partial fulfilment of the requirement for the Award of the Degree in
BACHELOR OF SCIENCES 2021-22**

Submitted By

AQUACULTURE CLUSTER STUDENTS-III B.Sc B.Z.C

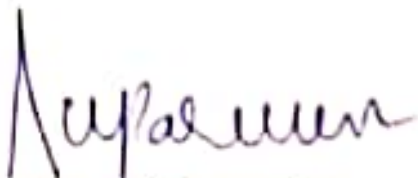
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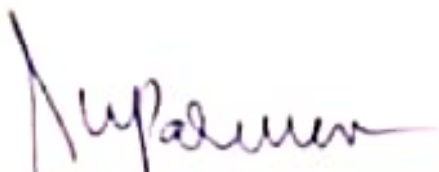
**UNDER THE GUIDANCE OF SK. PARVEEN
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CERTIFICATE

This is to certify that the project work entitled "A STUDY ON AQUA PRODUCTS IN GANAPAVARAM FISH MARKET" is a bonafide project report carried out by Sk.MASHA 193337110063 of III.B.Sc B.Z.C. Aquaculture Cluster Elective student submitted to the Department of Zoology, S C H V P M R Government Degree College , GANAPAVARAM during April 2021-22


PROJECT GUIDE


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DECLARATION

I SK.MASHA (193337110063) declare that the project entitled "A STUDY ON AQUA PRODUCTS IN GANAPAVARAM FISH MARKET" is the project work done by us under the guidance of SK. PARVEEN, Lecturer in Zoology, Department of Zoology , S C H V P M R Government Degree College GANAPAVARAM during April 2021-22. This has not been submitted in any part or full for the award of any Degree in any University or Institution.

SK.MASHA

DECLARATION

I R.MOUNIKA (193337110062) declare that the project entitled "A STUDY ON AQUA PRODUCTS IN GANAPAVARAM FISH MARKET" is the project work done by us under the guidance of SK. PARVEEN, Lecturer in Zoology, Department of Zoology , S C H V P M R Government Degree College GANAPAVARAM during April 2021-22. This has not been submitted in any part or full for the award of any Degree in any University or Institution.

R.MOUNIKA

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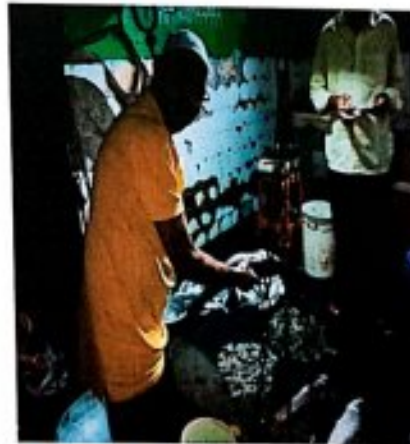
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GENERAL INTRODUCTION

Ganapavaram fish market in Andhra Pradesh is a place where fish and fish products of commercial importance are subjected to sale.

Regulation of fish production and consumption through sale is known as fish marketing which is integrated part of fish industry.

The potential demand of fish in the markets changes according to the taste and needs of consumers. Therefore traders have to care for maximum production, best possible quality, packing, brand name pricing the product of their lively supply to consumers to get better result on investment. Constant advertising has to be done for the awareness of new products so as to gain highest amount of output. Thus fish market is important not only as a source of food but it is directly associated with the economy of country, it earns foreign exchange also by selling the commodities in international market.









OBJECTIVES OF THE STUDY

1. To study the Habitat of the organism from which they are collected.
2. To study the Source of collection from the organism are brought the market.
3. To study the market rate of the organisms.
4. To study the Season of availability in market.
5. To study the Nutritional value of the organism.
6. To study the general characters of the organism.
7. To study any distinguished or remarkable characters of the organism.

MATERIALS AND METHODS

Data on the various aqua products sold in the fish market of Ganapavaram as gathered in the form of questionnaire and answers

method. The survey was done to gather information of various aqua products, viz freshwater fish various fish and prawns that are cultured nearby areas. The data gathered from the fish sellers was noted and the nutritional values are obtained from the internet sources.

RESULTS AND DISCUSSION

The data obtained from the fish sellers was recorded and arranged in the order of freshwater fish, freshwater prawn, Marine fish, and marine water prawn.

Scientific Name: Catla Catla

Common Name: Botcha



Habitat : Fresh water

Source of collection : Rivers, reservoirs

Market rate : Rs 150 – 200/kg

Season of availability : June – September

Energy – 100kcal Protein – 19.5gm

Fat - 2.4gm

General characters:

- **Body short, deep and laterally compressed with rounded abdomen**
- **Large scaleless head, head depth exceeds half of the head length; snout is bluntly rounded.**
- **Eyes are large. Mouth wide, upturned with prominent protruding lower jaw; upper lip is absent and the lower lip is thick, continuous and with a free posterior margin; barbules absent.**
- **Lower jaw with movable articulation at the symphysis. Gill rakers long and fine; pharyngeal teeth in three rows, 5.3.2/2.3.5 pattern.**

Scientific name : Labeo rohita

Common name : Rohu



Habitat : Fresh water fish Source of collection

: Rivers, reservoirs, Fish ponds Market rate :

Rs 130 – 170/ kg

Season of availability : June – September

Nutritional value : Energy – 97kcal in 1 piece

Protein – 88% Fat – 12%

General characters:

- **Body moderately elongate. Mouth inferior and lips thick and fringed, with distinct inner fold.**
- **Fin ray counts: dorsal (3/12-13), pectoral (17), pelvic (9), anal (7) and caudal (19).**
- **Dorsal fin inserts anterior to pelvic fins and ends in line with or slightly anterior to anal fin.**
- **Scales cycloid and moderate in size. Lateral line with 40-44 scales.**
- **Body color blue to brownish along the back, silvery on the sides and belly.**

Scientific name: Cirrhinus mrigala
Common name: mrigal carp, yerramosu.



Habitat : water fish
Source of collection : Krishna river, ponds,
Market rate : Rs 600-900/kg
Season of availability :June – September
Nutritional value :Protien – 7.1 mg/gm
Fat – 1 -14.8%.

General Characters:

- **Body elongate with depressed and obtusely rounded snout.**
- **Scales large and cycloid.**
- **Lateral line continuous to centre of caudal fin base.**
- **Abdomen rounded, body depth and head length nearly equal.**
- **Mouth terminal and wide, lips without fringe, upper lip not continuous with lower lip.**

Scientific name : Hilsa hilsa
Common name: Pulasa



Habitat :Fresh water fish
Source of collection :Godavari river
Market rate : Rs 3000 /kg
Season of availability : June – September
Nutrition value :Protein – 25g
Fat – 22g Energy – 310 kcal.

General characters:

- In Andhra Pradesh, the saying goes "Pustelu ammi ayina Pulasa tinocchu", meaning It's worth eating Pulasa/lilish by even selling the nuptials.
- This fish is called as PULASA in Godavarı districts of Andhra Pradesh State in India. The name Pulasa stays with the fish for a limited period between July-Sept of a year, when floods(muddy)water flow in Godavari River.
- This time the fish is in high demand and sometimes \$100 per kilo.
- Body colour is silvery with gold and Purple.
- No teeth on jaws. 45 – 47 scalesIn lateral series.

Scientific name :Tor tor
Common name: Tor mahseer



Habitat : Fresh water fish
Source of availability : Rivers, fish ponds.
Market rate : 1800 – 2000rs/kg
Season of availability in months : June – September
Nutritional value : Energy – 2000k.cal,
Protien : 17.29gms

General characters:

- Tor tor, commonly known as the tor mahseer or tor barb, is a species of cyprinid fish found in fast-flowing rivers and streams with rocky bottoms in Bangladesh, Bhutan, India, Nepal, and Pakistan.
- It is a commercially important food and game fish. Its population is rapidly declining in its native range due to overfishing. It is a large fish, reaching 36 cm (14 in) at maturity, but lengths of 150 centimetres (4.9 ft) have been recorded.
- The fish is well armoured by their record large scales, each reaching up to 10 cm (3.9 in) in length.

Scientific name : Tilapia mosambicus
Common name : Tilapia



Habitat : Fresh water
source of collection : reservoirs, lakes and ponds
Market rate : Rs 600 – 1000 /kg
Season of availability : June – September
Nutritional value : Tilapia are low in saturated fat

General characters:

- The native Mozambique tilapia is laterally compressed, and has a deep body with long dorsal fins, the front part of which have spines.
- Native coloration is a dull greenish or yellowish, and there may be weak banding. Adults reach approximately 35 centimetres (14 in) in length and up to 1.13 kilograms (2.5 lb).
- Size and coloration may vary in captive and naturalized populations due to environmental and breeding pressures.
- It lives for up to 11 years.
- It is a remarkably robust and fecund fish, readily adapting to available food sources and breeding under suboptimal conditions.
- It also tolerates brackish water and survives temperatures below 50 °F

Scientific name: *Channa striata*
Common name: Snakehead murrel fish



Habitat : Fresh water
Source of collection : Rivers,
Market rate : Rs 300 – 400/kg
Season of availability : March - June
Nutritional value : 1.1% of fat and 78.3% of water,

General characters:

- *Channa striata*, the striped snakehead, is a species of snakehead fish. It is also known as the common snakehead, chevron snakehead and snakehead murrel.
- It is native to South and Southeast Asia, and has been introduced to some Pacific Islands (reports from Madagascar and Hawaii are misidentifications of *C. maculata*)
- It grows up to a meter in length, though because of fishing, this size is rarely found. It has a widespread range covering southern China, Pakistan, most of India,
- It is an important food fish in its entire native range, and is of considerable economic importance.

Scientific name: Cyprinus carpio
Common name: Bangaru teega



Habitat : Fresh water fish

Source of collection : Rivers, resevoirs, ponds

Market rate : Rs 600 – 800/kg

Season of availability : October - February

Nutritional value : Energy – 112k.cal, protien – 17.5gms, fat – 4.7g, Calcium – 47mg.

General characters:

- The common carp or European carp (*Cyprinus carpio*) is a widespread freshwater fish of eutrophic waters in lakes and large rivers in Europe and Asia.
- The native wild populations are considered vulnerable to extinction by the International Union for Conservation of Nature (IUCN), but the species has also been domesticated and introduced into environments worldwide, and is often considered a destructive invasive species, being included in the list of the world's 100 worst invasive species
- It gives its name to the carp family Cyprinidae. Remarks:
- Common carp are omnivorous. They can eat a herbivorous diet of aquatic plants, but prefer to scavenge the bottom for insects, crustaceans (including zooplankton), crawfish, and benthic worms.
- They easily survive winter in a frozen over pond and rarely cultured.

Scientific name: Pungasius pungasius
Common name: Basa or chaluva jella



Habitat : Fresh water fish
Source of collection : Rivers, reservoirs, ponds
Market rate : Rs 300 – 500/kg
Season of availability in months : March - August
**Nutritional value : Calorie breakdown : 24% fat, 76%
protien.**

General characters:

- **Pangasius pangasius** , the Pangas catfish, is a species of shark catfish native to fresh and brackish waters of Bangladesh, India, Myanmar and Pakistan.
- It has also been introduced to Cambodia and Vietnam. This species grows to a standard length of 3 metres (9.8 ft).
- This species is important as a food fish. It is one of only two species of Pangasius native to South Asia, the other being *P. silasi* from the Krishna River.
- The body is elongated and laterally compressed.
- Uppersurface of head is unpolished and snout is rounded. Colour on abdomen is silvery, side of head contains golden tinge.

Scientific name : Rastrelliger kanagurta
Common name: kanagurta



Habitat : Fresh water fish
Source of collection : Rivers, reservoirs, ponds
Market rate : Rs 300/kg
Season of availability : June – September
Nutritional value : protien – 73%, Fat – 3.8gms

General caharacters :

- The flathead grey mullet (*Mugil cephalus*) is an important food fish species in the mullet family Mugilidae.
- It is found in coastal tropical and subtropical waters worldwide. Its length is typically 30 to 75 centimetres (12 to 30 in).
- It is known with numerous English names, including the flathead mullet, striped mullet (US, American Fisheries Society name), black mullet, bully mullet, common mullet, grey mullet, sea mullet and mullet, among others.

Scientific name : *Mystus seenghala*
Common name: Seenghala or mukul jella



Habitat : Fresh water fish
Source of collection : Rivers, reservoirs, ponds
Market rate : Rs 200 – 400/kg
Season of availability : April – August
Nutritional value : Protein – 34%,
Fat- 1.7gms Vitamin-A – 200mg

General characters:

- ***Mystus seenghala* Body is devoid of scales, elongated and compressed.**
- **Mouth is almost terminal with shallow cleft.**
- **Colour – brownish along the back, silvery on the flanks and beneath. 40cm in length.**

Scientific name: Penaeus monodon

Common name: Giant tiger prawn/Jumbo prawn



Habitat : Marine water prawn

Source of collection : Seas and oceans

Market rate : Rs 300 – 400rs/kg

Season of availability : October – January

**Nutritional status : Energy – 280 to 370k.cal,
protien- 40 to 50%, Carbohydrates – 20%**

General characters:

- **Penaeus monodon**, commonly known as the giant tiger prawn or Asian tiger shrimp (and also known by other common names), is a marine crustacean that is widely reared for food.
- Females can reach about 33 cm (13 in) long, but are typically 25– 30 cm (10–12 in) long and weight 200–320 g (7–11 oz); males are slightly smaller at 20–25 cm (8–10 in) long and weighing 100– 170 g (3.5–6.0 oz).
- The carapace and abdomen are transversely banded with alternative red and white.

Scientific name: Penaeus indicus

Common name: Indian white prawn



Habitat : Marine water prawn

Source of collection : Marine water

Market rate : Rs 400rs/kg

Season of availability in months : September – December

**Nutritional value : Energy – 20k.cal,
Protien – 15%,**

General characters:

- The Indian prawn (*Fenneropenaeus indicus*, formerly *Penaeus indicus*), is one of the major commercial prawn species of the world. It is found in the Indo-West Pacific from eastern and south-eastern Africa, through India, Malaysia and Indonesia to southern China and northern Australia.
- Adult shrimp grow to a length of about 22 cm (9 in) and live on the seabed to depths of about 90 m (300 ft). The early developmental stages take place in the sea before the larvae move into estuaries. They return to the sea as sub-adults.
- The Indian prawn is used for human consumption and is the subject of a sea fishery, particularly in China, India, Indonesia, Vietnam and Thailand. It is also the subject of an aquaculture industry, the main countries involved in this being Saudi Arabia, Vietnam, Iran and India.

Scientific name: Litopenaeus vannamei
Common name: vannamei



Habitat : Freshwater
Source of collection : Rivers, fish ponds
Market rate : Rs 300/kg
Season of availability in months : April – June
Nutritional value : Energy – 120cal, Protein – 18gms, Fat – 6gms

General characters:

- is a marine crustacean that is widely reared for food
- The abdomen is banded with brownish grey and pale yellow transverse bands, while the antennae are banded brown and yellow. It has a uniformly smooth carapace and abdomen.
- The rostrum has 7 or 8 dorsal teeth and 3 ventral teeth. The atrodorsal crest and groove, the carina, extends beyond the epigastral tooth with the post-rostral carina almost reaching to the rear of the carapace. The maximum total length is 180mm for males and 228mm for females, weighing up to 130g.

Dried fishes : Fresh fish rapidly deteriorates unless some way can be found to preserve it. Drying is a method of food preservation that works by removing water from the food, which inhibits the growth of microorganisms.

Open air drying using sun and wind has been practiced since ancient times to preserve food. Water is usually removed by evaporation (air drying, sun drying, smoking or wind drying) but, in the case of freeze-drying, food is first frozen and then the water is removed by sublimation. Bacteria, yeasts and molds need the water in the food to grow, and drying effectively prevents them from surviving in the food.

Fish are preserved through such traditional methods as drying, smoking and salting. The oldest traditional way of preserving fish was to let the wind and sun dry it.

Drying food is the world's oldest known preservation method, and dried fish has a storage life of several years. The method is cheap and effective in suitable climates; the work can be done by the fisherman and family, and the resulting product is easily transported to market.



Scientific name : sea savada
Common name: pattisavada



Habitat : marine water

Market price : 300/ kg

Character stics :

- **"DRY FISH" normally knew as or called "Sukhua" in Odia language.**
- **It has strong odours when you are frying/cook it, but its taste is very good or even better when we have it with Pakhala (Rice with water) typically Oriya dish**
- **(Sukhua) dried fish contains high percentage of proteins, and omega 3, fatty acids minerals, and vitamins, for healthy body and mind.**
- **Dry Fish are commonly cooked in Indian kitchens.**

Nettaadlu



Habitat : marine water

Market price : 280/ kg

Character stics :

- **"DRY FISH"** normally knew as or called **Nettadlu** .
- It has strong odours when you are frying/cook it, but its taste is very good or even better when we have it .
- (**Nettadlu**) dried fish contains high percentage of proteins, and omega 3, fatty acids minerals, and vitamins, for healthy body and mind.
- **Dry Fish** are commonly cooked in Indian kitchens.

kanagatth



Habitat : marine water

Market price : 250/ kg

Character stics :

- **"DRY fish" normally knew as or called kanagatt.**
- **It has strong odours when you are frying/cook it, but its taste is very good or even better when we have it .**
- **(kanagatt) dried fish contains high percentage of proteins.**
- **It also has omega 3, fatty acids minerals, and vitamins, for healthy body and mind.**

Talaparigi enduchepa



Habitat : marine water

Market price : 300/ kg

Characterstics :

- **"DRY FISH" normally knew as or called "Talaparigi enduchepa" .**
- **It has strong odours when you are frying/cook it, but its taste is very good .**
- **(talaparigi) dried fish contains high percentage of proteins, and omega 3, fatty acids minerals, and vitamins, for healthy body and mind.**
- **Dry Fish are commonly cooked in Indian kitchens.**

PRESERVATION :

1.FREEZING:



- Freezing preserves fresh fish by locking any water present into a solid form (i.e. ice). This makes the water unavailable to bacteria and thus prevent bacterial growth. Unfortunately one of the side-effects of freezing fish can be that frozen water crystals pierce the cell walls.
- This can make the defrosted fish mushy in texture.
- To limit this type of cell damage fish should be frozen using a process known as quick freeze-drying.
- Freezer burn can also be a problem if the processed fish is not protected once frozen. If left for too long in a freezer, the intense cold can cause further drying and damage to the surface of the flesh resulting in a "burn".
- This can be avoided by vacuum packing the fish before freezing it. Alternatively the fish can be packed in a sauce so that the drying effect of freezing acts on the sauce rather than on the fish itself.

Salting :

- Salting is the preservation of food with dry edible salt. It is related to pickling (preparing food with brine, i.e. salty water), and is one of the oldest methods of preserving food. Salt inhibits the growth of microorganisms by drawing water out of microbial cells through osmosis.
- Concentrations of salt up to 20% are required to kill most species of unwanted bacteria. Smoking, often used in the process of curing meat, adds chemicals to the surface of meat that reduce the concentration of salt required. Salting is used because most bacteria, fungi and other potentially pathogenic organisms cannot survive in a highly salty environment, due to the hypertonic nature of salt.
- The water activity, a_w , in a fish is defined as the ratio of the water vapour pressure in the flesh of the fish to the vapour pressure of pure water at the same temperature and pressure.
- It ranges between 0 and 1, and is a parameter that measures how available the water is in the flesh of the fish. Available water is necessary for the microbial and enzymatic reactions involved in spoilage. There are a number of techniques that have been or are used to tie up the available water or remove it by reducing the a_w .
- Traditionally, techniques such as drying, salting and smoking have been used, and have been used for thousands of years.
- In more recent times, freeze-drying, water binding humectants, and fully automated equipment with temperature and humidity control have been added. Often a combination of these techniques is used.



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3.DRYING :

- Fish preservation by drying means preserving fish by removing water from it's body through heating them
- This system is very popular and about all types of fish can preserved by drying. Sunlight, solar dryer, oven etc. are used for preservation of fish.
- In case of drying this types of small sized fish there is no need to remove innards, scales etc. from their body.
- But sometimes if needed remove those from the fish by slightly pressuring on their belly.
- Wash the fish properly by using clean and fresh water.
- Then keep the fish on a bed and make it dry by sunlight.
- It takes about 3-5 days to make the fishes fully dry.
- Keep the fish free from worms, insects and birds while drying. In this case reticular or mosquito net can used.
- For drying the fish fast turn over those several times a day.



CONCLUSION

The information about the various habitats of the different organisms that were sold in the fish market was known. The source of collection from the organism that were brought to fish the market was known. The market rate of the organisms that were sold in the market was known. The seasonal availability of the different aqua products that were sold in the fish was known. The nutritional value of the different organism in the fish market was known. The general characters and the identifying characters of the organism that were sold in the fish market were known. Distinguished or remarkable characters of the organisms sold in the fish market were known.

In a nut shell by doing fish market survey in Ganapavaram, the students were able to gain knowledge about the different aqua products in the market and an overall understanding of the aqua products gathered from the wild and also from the aquaculture fish farms was gained.

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