

RRDS GOVT. DEGREE COLLEGE, BHIMAVARAM, W.G.Dt, A.P
(Affiliated to Adkavi Nannayya University, Rajamahendravaram)

Estd:1972

☎ 08816-223458

🌐 www.rrdsgdc.ac.in



Accredited by NAAC

AISHE:C-24023

✉ gdcbhimavaram.jkc@gmail.com

Department of Zoology

2022-23

CERTIFICATE PROGRAMES

Name of the Programme : **POST HARVEST TECHNOLOGY OF
FISH AND FISHERIES**

Duration : 31 hours

No of Students Enrolled : 30

Starting Date : 6.10.2022

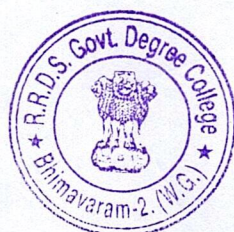
Ending Date : 10.11.2022

Faculty /Resource Persons : K L RAO

Lecturer in Zoology

RRDS Govt Degree College

Bhimavaram



V. Srinivas
PRINCIPAL
R.R.D.S. Govt. Degree College
BHIMAVARAM-534 202.

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DEPARTMENT OF Zoology

2019-20

Certificate Programme on POST HARVEST TECHNOLOGY OF FISH AND FISHERIES

Curriculum

SYLLABUS

UNIT-I: Handling and Principles of fish Preservation Handling of fresh fish, storage and transport of fresh fish, post mortem changes (rigor mortis and spoilage), spoilage in marine fish and freshwater fish.

Principles of preservation – cleaning, lowering of temperature, rising of temperature, denudation, use of salt, use of fish preservatives, exposure to low radiation of gamma rays..

UNIT-II: Methods of fish Preservation Traditional methods - sun drying, salt curing, pickling and smoking. Advanced methods – chilling or icing, refrigerated sea water, freezing, canning, irradiation and Accelerated Freeze drying (AFD)

UNIT-III: Processing and preservation of fish and fish by-products Fish products – fish minced meat, fish meal, fish oil, fish liquid (ensilage), fish protein concentrate, fish chowder, fish cake, fish sauce, fish salads, fish powder, pet food from trash fish, fish manure.

Fish by-products – fish glue, Using glass, chitosan, pearl essence, shark fins, fish Leather and fish maws.

UNIT-IV: Sanitation and Quality control Sanitation in: processing plants - Environmental hygiene and Personal hygiene in processing plants. Quality Control of fish and fishery products – pre-processing control, control during processing and control after processing.

Learning Outcomes:

Students at the successful completion of this course will be able to

- 🕒 Identify the types of preservation methods employed in aquaculture
- 🕒 Choose the suitable Processing methods in aquaculture
- 🕒 Maintain the standard quality control protocols laid down in aqua industry
- 🕒 Identify the best Seafood quality assurance system

SCHEDULE

Duration –One Hour per Day (4 to 5 pm)	SYLLABUS TO BE COVERED
Day 1	Introduction to handling and Principles of fish Preservation Handling of fresh fish, storage and transport of fresh fish,
Day 2	spoilage in marine fish and freshwater fish
Day 3	Principles of preservation – cleaning, lowering of temperature, rising of temperature, denudation,
Day 4	use of salt, use of fish preservatives, exposure to low radiation of gamma rays..
Day 5	post mortem changes (rigor mortis and spoilage),
Day 6	Introduction to Methods of fish Preservation Traditional methods - sun drying ,Salt curing,
Day 7	pickling and smoking.
Day 8	Advanced methods – chilling or icing,
Day 9	drying refrigerated sea water, freezing,
Day 10	canning, irradiation
Day 11	Accelerated Freeze drying (AFD)
Day 12	Introduction Processing and preservation of fish and fish by- products Fish products – fish minced meat.
Day 13	fish meal, fish oil, fish liquid (ensilage), fish protein
Day 14	concentrate, fish chowder,
Day 15	fish salads, fish powder,
Day 16	pet food from trash fish,fish manure.
Day 17	Fish by-products – fish glue,
Day 18	pearl essence, shark fins,
Day 19	Using glass, chitosan
Day 20	fish cake, fish sauce
Day 21	fish Leather
Day 22	fish maws.
Day 23	Sanitation and Quality control
Day 24	Sanitation in: processing plants
Day 25	Environmental hygiene
Day 26	Personal hygiene in processing plants.
Day 27	Quality Control of fish and fishery products – pre-processing control
Day 28	control during processing
Day 29	control after processing
Day 30	Revie of above lesson

Methodology followed

1.Lecture method 2. Interactive Sessions 3. Participative Learning

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DEPARTMENT OF ZOOLOGY

01.10.2022

Resolution for Conducting Certificate Course

It is resolved by the faculty of Department of ZOOLOGY to conduct Certificate Course titled “: POSTHARVEST TECHNOLOGY OF FISH AND FISHERIES” for the academic year 2022-2023. In this regard it is also resolved to seek permission and cooperation from the Principal, RRDS Government Degree College to conduct the course for 30 hours of duration.

Faculty Members

- 1 P.P. ~
- 2 Somy
- 3 G.U. mahes
- 4 Gm
- 5 N. Malli

Department In Charge

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To

The In charge

Department of ZOOLOGY

RRDS Govt. Degree College

Bhimavaram

Sub: Conduct of Certificate Programme for the Academic Year 2022-23

- Permission accorded

As the certificate courses help in value addition and enhance the knowledge and skills of the students, permission is accorded to Department of ZOOLOGY to conduct Certificate Course titled “: POSTHARVEST TECHNOLOGY OF FISH AND FISHERIES” as per the convenient schedule.



Principal
R.R.D.S. Govt. Degree College
BHIMAVARAM-534 202.

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DEPARTMENT OF ZOOLOGY

Notice

All the students are here by informed that the Department of Economics is going to conduct the following certificate programme for the academic year 2019-20

- : POSTHARVEST TECHNOLOGY OF FISH AND FISHERIES

The certificate programs will enhance the knowledge and abilities in addition to your academics. Hence we inform the students to register for the certificate courses on or before 01.10.2022 at ZOOLOGY Department .

K.L. Reddy

Dept. In Charge

Circulated to

I BA

II BA

III BA

IBCOM

II BCOM

III BCOM

Circulated to Faculty members

P. S. Srinivas
S. Srinivas
G. V. Mahesh
G. V. Mahesh

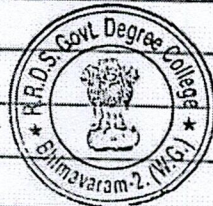
Zoology RRDS GOVT DEGREE COLLEGE

Department of Zoology

3) Certificate programme in Post Harvest Technology of Fishes
 For the Academic year 2022-2023 (6.10.22 to 10.11.22)

Students Enrolled

Sr No	Reg No	Name of Student	Signature
1	213127102002	B. Likhita	B. Likhita
2	213127102007	G.L.S.D. Bhavani	G.L.S.D. Bhavani
3	213127102007	P. Aadi Lakshmi	P. Aadi Lakshmi
4	213127102013	P. Bala Sai	P. Bala Sai
5	213127102016	T. Pandu Ranga	T. Pandu Ranga
6	213127102002	A. Venkata lakshmi	A. Venkata lakshmi
7	213127102004	A. Poojima	A. Poojima
8	213127102009	P. Sabitha	P. Sabitha
9	213127102011	V. Hema Naga Durga	V. Hema Naga Durga
10	213127110018	K. Vijay	K. Vijay
11	203128200018	M.S.N.S. Bhavani Prasad	M.S.N.S. Bhavani Prasad
12	203128200003	B. Karthik	B. Karthik
13	203128200019	P. Lalitha	P. Lalitha
14	203128200021	T. Anitha	T. Anitha
15	203128200028	T. Harshitha	T. Harshitha
16	203128200028	V. Padmarathi	V. Padmarathi
17	203128203019	V.S.S.K.N. Mallaiiah	V.S.S.K.N. Mallaiiah
18	213126203009	Kolli Pavani	Kolli Pavani
19	213126203018	P. Naga Gopi Raju	P. Naga Gopi Raju
20	213126203024	Y. Gowri Mahesh	Y. Gowri Mahesh



[Signature]
 PRINCIPAL
 R.R.D.S. Govt. Degree College
 BHIMAVARAM-534 202.

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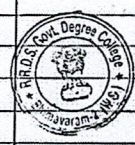
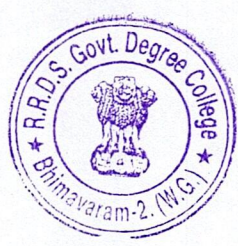
15/10/22
 2022
 Post Harvest Technology of
 Fish and Fisheries
 16

Sl. No. Roll No. Name of the Student

Sl. No.	Roll No.	Name of the Student	6/10/22 Introduction to methods and practices of fish storage and transport of fish.	7/10/22 Spoiling in marine fish and fresh water fish.	8/10/22 Principles of salt curing and its application in preservation of fish.	10/10/22 Use of salt, use of fish preservatives exposed to low oxidation of gumbo may.	11/10/22 Borax boron orange.	12/10/22 Introduction to methods of fish preservation traditional methods sun drying, salt curing.	13/10/22 Pickling and Smoking.	14/10/22 Advanced methods chilling, icing.	15/10/22 drying refrigerated, sea water freezing.
1	8151810	B. Likhita	P	Q	P						
2	8151811	G.L.S.D. Bhavanani	P	P	P	P	P	P	a	P	P
3	8151812	P. Aadi Lakshmi	P	P	P	P	a	a	P	P	P
4	8151813	P. Bala Sai	P	P	P	P	P	P	P	P	P
5	8151814	T. Pandu Ranga	P	P	P	P	P	P	P	a	P
6	8151815	A. Venkata Lakshmi	P	P	P	P	P	P	P	P	P
7	8151816	A. Poorvima	P	Q	P	P	P	P	P	P	P
8	8151817	P. Sobitha	P	P	P	P	P	P	P	P	P
9	8151818	V. Hema Naga Durga	P	P	P	P	P	P	P	P	P
10	8151819	K. Vijay	P	P	P	P	P	P	P	P	P
11	808188	M.S.N.S. Bhavanani Prasad	P	P	a	P	a	P	P	P	P
12	803189	B. Natthik	Q	P	P	P	P	P	P	P	P
13	803189	P. Lalitha	P	Q	P	P	P	P	P	a	P
14	803189	T. Anita	P	P	P	Q	P	P	P	P	P
15	803189	T. Hrushitha	P	P	P	P	P	P	P	P	P
16	803189	V. Padmavathi	P	P	P	P	P	P	P	P	P
17	803189	V. S. S. K. N. Mallaiiah	P	P	P	P	a	P	P	P	P
18	815186	Kolli Pavani	P	Q	P	a	P	P	P	P	P
19	803018	P. Naga Gopi Raju	P	P	P	P	P	P	P	P	P
20	815186	Y. Gowri Mahesh	P	P	Q	P	P	P	P	P	P
			k	le	k	k	k	P/k	Q k	P k	P k

5/11/22 Fish mass.	8/11/22 Sanitation and quality Control.	3/11/22 Sanitation in processing plants.	4/11/22 Environmental hygiene.	5/11/22 Personal hygiene in processing plants.	7/11/22 Quality control of fish/fishery products, pre-processing control.	9/11/22 Control during processing.	10/11/22 Control after processing & Examination.	Grade Obtained.	19
1	P	P	P	P	P	P	P	B	
2	P	P	P	P	P	P	P	B	
3	P	P	P	P	P	P	P	C	
4	P	P	P	P	P	P	P	A	
5	P	P	P	P	P	P	P	B+	
6	P	P	P	P	P	P	P	B+	
7	P	P	P	P	P	P	P	B	
8	P	P	P	P	P	P	P	A	
9	P	P	P	P	P	P	P	C	
10	P	P	P	P	P	P	P	B	
11	P	P	P	P	P	P	P	D	
12	P	P	P	P	P	P	P	B	
13	P	P	P	P	P	P	P	C	
14	P	P	P	P	P	P	P	B+	
15	P	P	P	P	P	P	P	B	
16	P	P	P	P	P	P	P	A	
17	P	P	P	P	P	P	P	B	
18	P	P	P	P	P	P	P	B	
19	P	P	P	P	P	P	P	A	
20	P	P	P	P	P	P	P	B	
	P	P	P	P	P	P	P	P	

K L Puro



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**RRDS GOVT DEGREE COLLEGE
BHIMAVARAM**

DEPARTMENT OF ZOOLOGY

**Summative Assessment at the end of the Certificate Programme
For the Academic Year 2022-23**

**Name of the programme: : POSTHARVEST TECHNOLOGY OF
FISH AND FISHERIES**

Time: 2hrs

Max.Marks : 50

Section-A

5*7 =35 Marks

- 1.Explain to the Handling of fresh fish, storage and transport of fresh fish**
- 2.Explain to the Principles of preservation – i)cleaning ii)lowering of temperature iii)rising of temperature,**
- 3.Discuss briefly about Traditional methods - sun drying, salt curing, pickling and smoking.**
- 4.Explain to the Accelerated Freeze drying (AFD).**
- 5.Explain the Fish products – fish minced meat, fish meal, fish oil, fish liquid**
- 6.Discuss briefly about Environmental hygiene and Personal hygiene in processing plants**
- 7. Discuss briefly about Quality Control of fish and fishery products – pre-processing control,**
- 8. Discuss briefly about control during processing and control after processing.**

Section-B

5*3 =15 Marks

- 1. write short notes on spoilage in marine fish and freshwater fish**
- 2 .write short notes on exposure to low radiation of gamma rays**
- 3 .what is pickling and smoking**
- 4 .what is pearl essence, shark fins**
- 5 .explain pet food from trash fish**

RRDS

Govt.

Degree

College

50/50

per

1. Explain to the organic farming: concept and definition, its relevance to india.

A). organic farming is a production system which avoids or largely excludes the use of synthetically compounded fertilizers, pesticides, growth regulators, genetically modified organisms and livestock food additives. To the maximum extent possible organic farming system rely upon crop rotations, use of crop residues, animal manures, legumes, green manures, off farm organic wastes, biofertilizers, mechanical cultivation, mineral bearing rocks and aspects of biological control to maintain soil productivity and tilth to supply plant nutrients and to control insect, weeds and other pests.

2. Explain to the cropping systems.

A. The term cropping system refers to the crops, crop sequences and management techniques used on a particular agricultural field over a period of years. It includes all spatial and temporal aspects of managing an agricultural system. Historically, cropping systems have been designed to maximise yield, but modern agriculture is increasingly concerned with promoting environmental sustainability in cropping systems.

Crop choice is central to any cropping system. In evaluating whether a given crop will be planted, a farmer must consider its profitability, adaptability to changing conditions, resistance to disease, and requirement for specific technologies during growth or harvesting. They must also consider the prevailing environmental conditions on their farm, and how the crop will fit in with other elements on their production system.

3. Explain the Marketing and sales.

A. Although many people use the terms sales and marketing interchangeably, there is a subtle difference between the two. Both functions intend to grow the revenue of a business, but the way they try to do this differs. Understanding the difference between sales and marketing can help you integrate them better to achieve your company's revenue goals. In this article, we discuss some important difference between sales and marketing from various aspects like goals, process and strategy. It is important to understand the difference between sales and marketing because you need to integrate both functions in your organisation. Understanding the thin line between them helps you make them work in tandem to increase the revenue of your organisation.

1. Write short notes on soil testing.

A) A soil test can determine fertility, & the expected growth potential of the soil which indicates nutrient deficiencies, potential toxicities from excessive fertility and inhibitions from the presence of non essential trace minerals. The test is used to mimic the function of roots to assimilate minerals. Soil test may refer to one of a wide variety of soil analysis conducted for one of several possible reasons, possibly the most widely conducted soil tests are those done to estimate the plant-available concentrations of plant nutrients.

2. What is planting.

A) A living thing that grows in earth, in water, or on other plants, usually has a stem, leaves, roots, and flowers, and produces seeds. This plant grows quickly and provides excellent ground cover. Emily scraped away the dead leaves to reveal the tiny shoot of a new plant. Bees pollinate the plants by carrying the pollen from one flower to another. Water the plants twice a week, preferably in the morning. The courtyard was full of exotic plants in terracotta pots.

3. Write short notes on Agro-processing.

A). Agro Processing could be defined as set of technoeconomic activities carried out for conservation and handling of agricultural produce and to make it usable as food, feed fibre, fuel or industrial raw material. Agro-processing refers to the sub-sector of the manufacturing that beneficiates primary materials and intermediate goods from agricultural, fisheries and forestry based sector. The sixth administration identified agriculture and agro-processing as one of the crucial economic sectors to transform the economy through sustainable employment creation, business opportunities, investment attraction and growing export base.

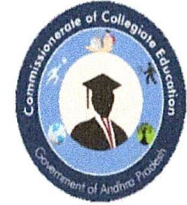
4. How to collecting appropriate organic waste.

A). Most organic materials must be shredded or ground to reduce particle size and help make them less resistant to decay. During composting, oxygen and moisture levels are critical factors in determining the degree of decomposition which take place and the length of time it takes to reach a stable product. Organic waste is defined as waste that comes from plant and animal sources and can be broken down by living organisms. Here is a list of the organic waste you may deal with. When organic waste is improperly handled, it can damage the natural environment and harm the municipal water supply.

[Signature]
Name



RRDS GOVERNMENT DEGREE COLLEGE- BHIMAVARAM
West Godavari District, Andhra Pradesh



Department of**Zoology**.....

CERTIFICATE

This is to certify that Mr./Ms.....**Kolli Pavani**.....
of.....**II BA**.....Bearing University Regd. No.....**21318620309**.....has Successfully completed
certificate programme in.....**Post Harvest Technology of Fish & Fisheries**.....conducted by Department of
.....**Zoology**..... from.....**6/10/22**.....to.....**10/10/22**.....and obtained Grade**B**.....for the Academic Year
.....**2022-2023**.....

K. L. Rao
Programme
Coordinator

P. A. D. Rao
IQAC
Coordinator

V. K. S. Rao
Principal
R.R.D.S. Govt. Degree College
BHIMAVARAM-534 202.



RRDS GOVERNMENT DEGREE COLLEGE- BHIMAVARAM
West Godavari District, Andhra Pradesh



Department of ... **Zoology**

CERTIFICATE

This is to certify that **Mr./Ms. K. Vijay**

of **II BZC** Bearing University Regd. No. **215127110018** has Successfully completed

certificate programme in **Post Harvest Technology of Fish & Fisheries** conducted by Department of

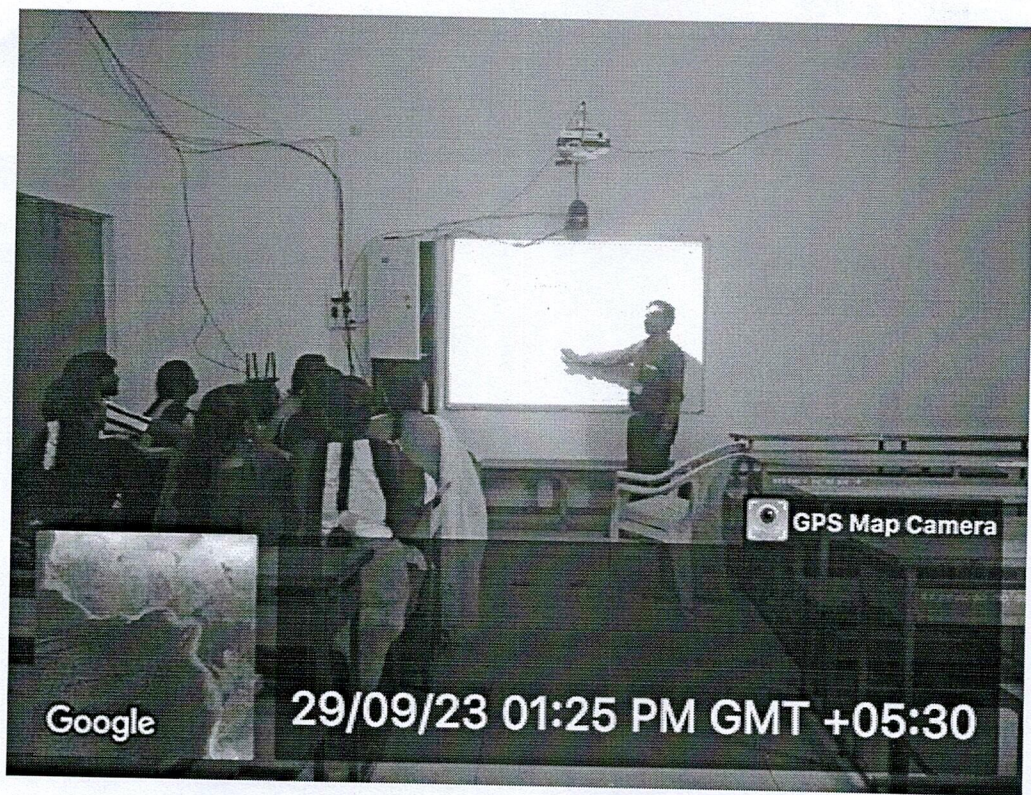
Zoology from **6/10/22** to **10/10/22** and obtained Grade **B** for the Academic Year

2022 - 2023

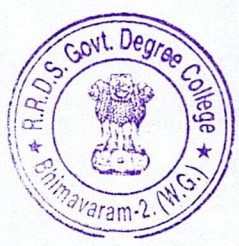
K. L. Reddy
Programme
Coordinator

P. Anand Rao
IQAC
Coordinator

V. Srinivas
PRINCIPAL
Principal
R.R.D.S. Govt. Degree College
BHIMAVARAM-534 202.



K. L. Rao



M. S. Srinivas
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