

OBJECTIVES: To enable the students to

- Acquire skill in preparation of value-added products of fish and fishery products.
- Gain knowledge on the various fish preservation techniques.
- Follow safety and hygienic measures in sea food processing plants.

COURSE OUTCOMES: By the end of the course, students will be able to:

CO1: Indicate proper ways of handling fish with minimal stress and methods of identifying a fresh fish.

CO2: Apply the techniques of fish preservation and be able to follow suitable procedures.

CO3: Demonstrate skill in preparation of value-added products from fishes.

CO4: Evaluate the situation for following safety and hygienic procedures according to National and International standards.

CO5: Analyze the protocols of aqua processing methods.

Practical (Laboratory) Syllabus:

1. Evaluation of freshness of fish/fishery products for organoleptic, characters and microbial quality (TPC).
2. Preparation of dried, cured and fermented fish products
for detailed procedure method visit sites:
3. Determination of salt, protein, moisture in dried/ cured products in fish and shrimp muscle.
4. Examination of spoilage of dried/cured fish products, marinades, pickles, sauce.
5. Preparation of Isinglass, collagen and chitosan from shrimp and crab shell.
6. Developing flow charts and exercises in identification of hazards–preparation of hazard analysis worksheet.
7. Corrective action procedures in processing of fish-flowchart-worksheet preparation.
(**Refer the following websites for complete procedure method and estimations of above listed practicals).
8. Process flow chart for Canning.
9. Determination of freezing point and freezing curve.

References:

1. Dr.Sunitha Rai, Fish Processing Technology,2015, Random Publications.
2. https://ecourses.icar.gov.in/e-Leaarningdownload3_new.aspx?Degree_Id=03
3. <https://vikaspedia.in/agriculture/fisheries/post-harvest-and-marketing/processing-in-fisheries/fermented-products>
4. <https://krishi.icar.gov.in/jspui/bitstream/123456789/20500/1/Fermentation%20technology%20for%20fish.pdf>
5. <http://jebas.org/00200620122014/Abujam%20et%20al%20JEBAS.pdf>
6. https://krishi.icar.gov.in/jspui/bitstream/123456789/20770/1/Training%20Manual_Hygienic%20drying%20and%20packing%20of%20fish.pdf
7. https://krishi.icar.gov.in/jspui/bitstream/123456789/20770/1/Training%20Manual_Hygienic%20drying%20and%20packing%20of%20fish.pdf
8. https://agritech.tnau.ac.in/fishery/fish_byproducts.html
9. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5352841/>
10. <http://www.fao.org/3/i1136e/i1136e.pdf>
11. <http://www.fao.org/3/x5989e/X5989e01.htm#What%20is%20sensory%20assessment>

Web resources suggested by the teacher concerned and the college librarian including reading material

1. Co-Curricular Activities

a) Mandatory:(Lab/field training of students by teacher(lab10+field05):

1. For Teacher: Training of students by the teacher in laboratory /field for not less than 15hours on various steps of post-harvest techniques of fishes, on the advanced techniques in post-harvest technology – Training of students on other employability skills in the Post-harvest sector of Aquaculture Industry-like Processing, Packing, marketing of processed aqua products.
2. For Student: Students shall (individually) visit - Any fish/shrimp Processing Plant/Packing industry and make observations on post harvesting techniques and submit a brief hand written Field work/ Project work Report with pictures and data /survey in 10 pages.
3. Max marks for Field work/ Project work Report: 05.
4. Suggested Format for Fieldwork/Project work: Title page, student details, index page, details of place visited, observations made, findings and acknowledgements
5. (IE):Unit tests

b) Suggested Co-Curricular Activities

1. Observation of fish/shrimp processing plants–visit websites of processing companies and record the details of that Unit.
2. Interaction with local fishermen to know the method of preservation and details with the available traditional technology
3. Collection of web resources on the Quality assurance, quality control measures in Aqua Industries-cross checking the standards during the visit to any processing units.
4. Assignments, Seminar, Group discussion. Quiz, Collection of Material, Invited lecture, Video preparation etc.,