

## BIOCHEMICAL AND MICROBIAL ANALYSIS

## OF LOBSTER COLLECTED FROM FISH MARKETS OF COX’S BAZAR

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**Faculty of Fisheries**

**Chattogram Veterinary and Animal Sciences University**

**Chattogram-4225, Bangladesh**

**DECEMBER, 2022**

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**December, 2022**

**Biochemical and Microbial Analysis of Lobster Collected from Fish Markets of Cox’s Bazar**

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**This is to certify that we have examined the above Master’s thesis and have found that is complete and satisfactory in all respects and that all revisions required by the thesis examination committee have been made**

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**List of Abbreviations**

|  |  |
| --- | --- |
| Acronym | Definition |
| sp. | Species |
| ANOVA | Analysis of Variance |
| ppt | Parts Per Thousand |
| pH | Power of Hydrogen |
| % | Percentage |
| oC | Degree Celsius |
| EEZ | [Exclusive Economic Zone](https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/exclusive-economic-zone) |
| NM | Nautical Miles |
| mg | Milligram |
| *E. coli* | Escherichia coli |
| EMB | Eosin Methylene Blue |
| SS | Salmonella Shigella |
| XLD | Xylose-lysine-deoxycholate |
| ml | Milliliter |
| L | Liter |
| lbs | Pound-Mass or Pound |
| EPA | Eicosapentaenoic acid |
| DHA | docosahexaenoic acid |
| PUFAs | Polyunsaturated fatty acids |
| cfu | Colony Forming Units |
| v/v | Volume Per Volume |
| μg/g | Micro-Gram Per Gram |
| Nmol g-1 | Nano Mole Per Gram |
| e.g. | Exempli Gratia (For Example) |
| SPSS | Statistical Package for the Social Science |
| ITLOS | International Tribunal for Law of the Sea |
| GCMS | Gas Chromatography Mass Spectrophotometry |
| lbs | Pound-Mass or Pound |
| EPA | Eicosapentaenoic acid |

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**Abstract**

The study was conducted to analyze the biochemical composition (proximate composition and fatty acid content) and microbiological quality (total plate count of bacteria, presence of *E.coli,* *Salmonella*) of lobsters collected from local markets of Cox’s Bazar namely Dorianogor, Nazirar tek and Shamlapur.

Proximate compositions were performed by AOAC method and the amount of fatty acids was evaluated by using GCMS (Gas Chromatography Mass Spectrophotometry). Proximate analysis of lobster from Dorianogor yielded the following values: moisture (71.65%), ash (1.91%), fat (2.81%), protein (20.41%) and fiber (3.98%). Moisture (70.91%), ash (1.90%), lipid (2.66%), protein (22.16%) and fiber (3.97%) from Nazirartek and moisture (69.73%), ash (1.92%), lipid (2.71%), protein (21.39%) and fibre (3.97%) from Shamlapur, respectively were obtained. According to fatty acid GCMS analysis, saturated fatty acid methyl trideconate was found highest (96.12%) in lobster from Dorianogor whereas least amount of this fatty acid were found in lobster of Nazirartek (0.55%) and lobster from Shamlapur ( 0.19%). Mono unsaturated fatty acid, Methyl Eirocate was abundant in lobster from nazirartek (94.30%), lobster of shamlapur (64.54%) and lowest in amount from Dorianogor lobster (15.64%). Poly According to a microbiological analysis, the amounts of bacteria in Dorianogor, Nazirar Tek, and Shamlapur were 4.60×106, 6.23×106, 4.77×106 cfu/grespectively. The results of this study suggest that sp unsaturated fatty acid, methyl linoleate was profoundly found in lobster from Shamlapur (79.44%), comperatively lower in amount from Dorianogor (48.93%) lobster and lobster from Nazirartek (39..49%). From microbiological analysis, the amounts of bacteria from lobster of Dorianogor, Nazirartek and Shamlapur were observed 4.60×106 CFU/g, 6.23×106 CFU/g, and 4.77 × 106 CFU/g respectively. *Escherichia coli* and *Salmonella sp.* were absent in lobster from places. The results of this study suggest that spiny lobster make an excellent diet meal and eating them may help prevent future nutritional deficiencies.

**Keywords**: Lobster,Proximate analysis, Fatty acids, Microbial load.

Dedicated to

**My beloved daughter “Paridhee”**

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