

# Assessment of the Socio- economic Condition of Different Stakeholders and Quality Aspects of Three Non Conventional Dry Fish Species available in the Market of Cox’s Bazar, Asadgonj and Rangamati, Bangladesh

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**A thesis submitted in the partial fulfillment of the requirements for the degree of Master of Science in Fishing and Post-Harvest Technology**

**Department of Fishing and Post-Harvest Technology, Faculty of Fisheries**

**Chattogram Veterinary and Animal Sciences University Khulshi, Chattogram-4225, Bangladesh**

**December, 2023**

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|  | **List of abbreviations** |
| **Short Form** | **Abbreviation** |
| **%** | Percent |
| **°C** | Degree Celcius |
| **ANOVA** | One-way Analysis of Variance |
| **AOAC** | Association of Official Analytical Chemists |
| **Cm** | Centimeter |
| **CVASU** | Chattogram Veterinary and AnimalSciencesUniversity |
| **et al.** | And his associates |
| **G** | Gram |
| **SD** | Standard Deviation |
| **-ve** | Negative |
| **+ve** | Positive |
| **SPSS** | Statistical Package for the Social Sciences |
| **SSC** | Secondary School Certificate |
| **PRA** | Participatory Rural Apprisal |
| **RMA** | Rapid Market Apprisal |

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**ABSTRACT**

Fish drying is a traditional method of producing nutrient-dense food for humans. The goal of the current study was to examine the socio economic condition of different stakeholder and to assess the organoleptic quality, biochemical and microbiological composition of three non conventional dry fish available in the market of Cox’s Bazar, Asadgonj and Rangamati. This data was collected through questionnaires, Participatory Rural Appraisals (PRA), and cross-check interviews, and subsequently analyzed using Microsoft Excel and SPSS software. The greater percentages of participants were male in Cox’s Bazar (80%), Asadganj (90%), and Rangamati (70%) with 20%, 10%, and 30% females only. In Cox’s Bazar, Asadgonj and Rangamati respectively 30%, 40%, 30% of the participants reported having adequate storage facilities, 25%, 40%, 40% reported absence of storage facilities and 45%, 20%, 30% had no idea about proper storage and handling of dry fish. The study further identified the available dried species, including Bombay duct, Churi, Milk shark, Sting ray, Kukurjib, Surma. The sun dried non conventional dried fish were of highly acceptable and fit for human consumption in terms of organoleptic quality. The percentages of protein, ash, moisture, and lipid were calculated in accordance with AOAC protocol (AOAC, 2005). Protein content ranged from 37.96±4.40% to 57.77± 4.68%, the highest found in Kukurjib from Rangamati and lowest found in Stingray from Asadgonj. Lipid content ranged from 1.63±0.33% (Hangor from Cox’s Bazar) to

8.33± 2.92% (Kukurjib from Cox’s Bazar). Ash content ranged from 8.14± 1.51% to 14.66±3.79%, the highest found in Hangor from Asadgonj and lowest found in Kukurjib from Cox’s Bazar. Moisture content ranged from 20.33 ±0.88% to 30.05±1.75%, the highest found in Hangor from Asadgonj and lowest found in Kukurjib from Asadgonj. The TPC was highest in the dried Kukurjib collected from Cox’s Bazar (4.58×107 CFU/mL) and lowest in Rangamati (3.63×107 CFU/ mL). Among the tested bacterial strains of *Salmonella p., Shigella sp., V. cholerae, V. vulnificus, V. parahaemolyticus, E. coli.* the highest presence was found in the products of Cox’s Bazar area. The quality and safety attributes, along with their biochemical compositions suggest that these dried fish could be a viable and secure food option for human consumption.

**Keywords:** Non conventional dry fish, Survey, Organoleptic Quality, Nutritional composition, Microbiology.