# A Comparative Study on the Prevalence of Antibiotic Residue in Export Grade and Local Grade Shrimp (*Penaeus monodon)* of Chattogram, Bangladesh.

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**Roll No: 0117/01**

**Registration No: 404**

**Session: 2017-2018 (January-June)**

**A thesis submitted in the partial fulfillment of the requirements for the degree of Master of Science in Food Chemistry and Quality Assurance**

**Department of Applied Chemistry and Chemical Technology**

**Faculty of Food Science and Technology**

**Chattogram Veterinary and Animal Sciences University**

**Khulshi, Chattogram-4225, Bangladesh.**

**June 2019**

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**Sharjil Mahmood**

The Author
June 2019

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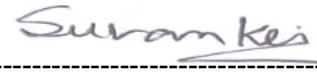
**This is to certify that we have examined the above master's thesis and have found that is complete and satisfactory in all respects, and that all revisions required by the thesis examination committee have been made.**



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***DEDICATED TO MY RESPECTEDANDBELOVED PARENTS, TEACHERS,AND BROTHERS***

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# Abstract

Incommensurate use of antibiotics in the production of local and export quality shrimps can facilitate the infiltration of antibiotic residues into human bodies when shrimps are consumed. The antibiotic residues are toxic enough to pose a risk and can cause serious health hazards. The present study was investigated by the ELISA technique to determine the antibiotic residues found in both local market and export quality shrimp and shrimp feeds. Local-grade samples and export-grade samples of Black tiger shrimps (*Penaeus monodon*) and feeds from four different companies were taken for the completion of this study. The permissible residual limit for the shrimp samples was 0.3(µg/kg) for Chloramphenicol and 1 (µg/kg) for AHD, AMOZ, SEM, and AOZ. Black tiger shrimp from zone 1 had a high concentration of Chloramphenicol (0.35 µg/kg) and SEM (1.2 µg/kg) antibiotic residue whereas zone 2 showed maximum antibiotic residue in AMOZ (1.2 µg/kg) and SEM (1.1 µg/kg). However, in export-grade shrimp antibiotic residue was found under the maximum residual limit. Also, out of four feeds tested, two of them were found positive and the prevalence was 50%. The level of significance was 0.05 in all three tests. The repercussions can be serious when these antibiotic residues get inside human bodies. So, legal actions should be taken against the farmers and the farms that overuse antibiotics in shrimp. Also, people should be made aware of the harmful effects of antibiotics so that the impact can be minimized.



**Keyword:** Antibiotic Residues, CAP, AOZ, AMOZ SEM.

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# List of Abbreviation

| Abbreviation | Elaboration |
|---|---|
| AOZ | 3- Amino- 2- oxazolidinone |
| AMOZ | 3- Amino- 5- morpholinomethyl-2- oxazolidinone |
| SEM | Semicarbazide |
| AHD | 1-Aminohydantoin |
| CAP | Chloramphenicol |
| FDA | Food and Drug Administration |
| EU | European Union |
| BFFEA | Bangladesh Frozen Food Exporters Association |
| DoF | Department of Fisheries |
| BBS | Bangladesh Bureau of Statistics |
| RPM | Rotation per Minute |
| ng | Nanogram |
| Mt | Metric ton |
| FAO | Food and Agriculture Organization |
| EFSA | European Food Safety Authority |
| RASFF | Rapid Alert System for Food and Feed |