



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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Authorization

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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
RESPECTED AND BELOVED
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($\mu\text{g}/\text{kg}$) for Chloramphenicol and 1 ($\mu\text{g}/\text{kg}$) for AHD, AMOZ, SEM, and AOZ. Black tiger shrimp from zone 1 had a high concentration of Chloramphenicol (0.35 $\mu\text{g}/\text{kg}$) and SEM (1.2 $\mu\text{g}/\text{kg}$) antibiotic residue whereas zone 2 showed maximum antibiotic residue in AMOZ (1.2 $\mu\text{g}/\text{kg}$) and SEM (1.1 $\mu\text{g}/\text{kg}$). 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