
Post-Harvest Processing, Packaging and Inspection of Frozen Shrimp: A Practical Guide

Md. Abdul Hannan • Kazi Ahsan Habib •
A. M. Shahabuddin • Md. Ariful Haque •
Mohammad Bodrul Munir

Post-Harvest Processing, Packaging and Inspection of Frozen Shrimp: A Practical Guide

Md. Abdul Hannan
Faculty of Fisheries, Aquaculture
and Marine Science
Sher-e-Bangla Agricultural University
Dhaka, Bangladesh

Kazi Ahsan Habib
Faculty of Fisheries, Aquaculture
and Marine Science
Sher-e-Bangla Agricultural University
Dhaka, Bangladesh

A. M. Shahabuddin
Faculty of Fisheries, Aquaculture
and Marine Science
Sher-e-Bangla Agricultural University
Dhaka, Bangladesh

Md. Ariful Haque
Fish and Shellfish Quality Control
W & M Ventures
Khulna, Bangladesh

Mohammad Bodrul Munir
Faculty of Resource Science and Technology
Universiti Malaysia Sarawak (UNIMAS)
Kota Samarahan, Sarawak, Malaysia

ISBN 978-981-19-1565-9

ISBN 978-981-19-1566-6 (eBook)

<https://doi.org/10.1007/978-981-19-1566-6>

© The Editor(s) (if applicable) and The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd. 2022

This work is subject to copyright. All rights are solely and exclusively licensed by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Singapore Pte Ltd. The registered company address is: 152 Beach Road, #21-01/04 Gateway East, Singapore 189721, Singapore

Preface

Shrimp is a delicious as well as nutritious food item. It is very much popular around the world because of its taste and boneless characteristics. Shrimp industries play a vital role in the field of food security, nutritional requirement, employment generation, and foreign earnings. This book describes the practical situation of postharvest processing, packaging, and inspection of frozen shrimp; their quality control; scope and limitation; business policy; and future potentials of the business. The book highlights the content of receiving of raw materials, their traceability, processing technology, diversifications of products, food grade packaging of final products, value-added products, production supervision, final inspection, laboratory analysis, loading supervision, audit, certification, and payment system of business policy. The book helps to identify knowledge gap in the processing, packaging, and inspection of frozen shrimp, thus leading to minimized hazards. Experts, researchers, academicians, students, advanced learners, and other relevant persons who are engaged in this sector will be benefited using this knowledge. If we can apply this knowledge in the practical field of postharvest processing of shrimp, definitely it will help to produce top-quality products and lead to sustainable seafood business globally.

Dhaka, Bangladesh
Dhaka, Bangladesh
Dhaka, Bangladesh
Khulna, Bangladesh
Kota Samarahan, Sarawak, Malaysia

Md. Abdul Hannan
Kazi Ahsan Habib
A. M. Shahabuddin
Md. Ariful Haque
Mohammad Bodrul Munir

Contents

1	General Discussion	1
1.1	Introduction	1
1.2	Factors Affecting Seafood Business in International Seafood Market	5
1.3	Taxonomic Classification of Shrimp	5
1.4	Morphometric Identification of Shrimp	6
	References	11
2	Product Description	13
2.1	Product Specification	13
2.2	Types of Frozen Shrimp	15
2.3	Diversification of Shrimp Products	16
2.4	Freezing Methods	17
2.4.1	Individual Quick Freezing (IQF)	20
2.4.2	Block Frozen	24
2.4.3	Semi-IQF	28
2.5	Packing of Shrimp	33
2.5.1	Packing of Block Product	34
2.5.2	Packing of Semi-IQF Product	34
2.5.3	Packing of IQF Product	34
2.6	Weight Declaration	37
2.7	Brand Selection	39
2.8	Size/Grade of Shrimp	40
2.8.1	Grading Method	42
2.9	Uniformity of Shrimp	45
2.10	Count of Shrimp	48
2.10.1	Frozen Count (FC)	49
2.10.2	Real Count (RC)	50
2.11	Individual Weight of Shrimp	52
2.12	Glazing and Hardening of Shrimp	55
	References	58
3	Processing of Shrimp	59
3.1	Receiving of Raw Materials	60

3.2	Sensory Assessment	60
3.3	Color Separation	62
3.4	De-heading of Shrimp	64
3.4.1	De-heading Method	65
3.5	Peeling of Shrimp	70
3.6	Deveining of Shrimp	71
3.7	Washing of Shrimp	73
3.8	Chilled Storage of Shrimp	74
	References	77
4	Food Additives and Soaking	79
4.1	Food Additives	79
4.2	Soaking of Shrimp	80
4.2.1	Soaking Method	81
4.2.2	Determination of Soaking Gain (%)	83
4.3	Numbers or E-Numbers	86
	Reference	88
5	Defects of Shrimp	89
5.1	Defects of Shrimp	89
5.2	Description of Defects in Shrimp	90
5.3	Causes of Defects	91
5.3.1	Calculation of Defects (%)	99
6	Traceability in Shrimp	103
6.1	Traceability	103
6.1.1	Importance of Traceability	105
6.1.2	Traceability in Culture Area	105
6.1.3	Traceability in Depot	106
6.1.4	Traceability in Processing Industry	106
	References	108
7	Plant Sanitation and Hygiene	109
7.1	Sanitation	109
7.2	Sanitation Guideline for Processing Industries	110
7.3	Doses of Sanitizers	110
7.4	Guidelines for Washing Hand	111
	References	111
8	Packaging, Labeling, and Storage	113
8.1	Packaging	113
8.2	Packaging Materials of Frozen Shrimp	115
8.3	Description of Artwork/Label	115
8.4	Inner Bag/Polybag (IQF)	118
8.4.1	Properties of Inner Bag/Polybag	119
8.4.2	Rider Card	121
8.5	Inner Box (Block and Semi-IQF)	122

8.5.1	Properties of Inner Box for Block Products	122
8.5.2	Properties of Inner Box for Semi-IQF Products	123
8.6	Master Carton (MC)	126
8.6.1	Properties of Master Carton (MC)	128
8.6.2	Procedure of Master Carton Preparation	130
8.7	Pallet	133
8.7.1	Pallet Calculation	136
8.8	Barcode Scanning	140
8.9	Metal Detection	142
8.10	Frozen Storage	144
9	Inspection of Frozen Shrimp	147
9.1	Inspection	147
9.2	Importance of Inspection	148
9.3	Types of Inspection	148
9.3.1	Regular Inspection	148
9.3.2	Final Inspection	149
10	Laboratory Analysis	179
10.1	Procedure of Sample Collection	180
10.2	Testing/Analysis	183
10.2.1	Physical Test	187
10.2.2	Biological Test	187
10.2.3	Chemical Test	187
10.2.4	Pesticide Test	188
10.2.5	Heavy Metal Test	189
10.2.6	Antibiotics Test	189
	References	191
11	Shipment and Shipping Documents	193
11.1	Shipment	193
11.2	Loading and Loading Supervision	195
11.2.1	Loading Supervision at Factory Premises	195
11.2.2	Loading Supervision at Port Area	197
11.3	Loading Report	197
11.3.1	General Information	198
11.3.2	Loading Information	198
11.3.3	Loading Plan	198
11.3.4	Loading Pictures	199
11.4	Description of Shipping Documents	201
11.4.1	Technical Documents of Frozen Goods	203
11.4.2	Technical Specification/Guidance of Frozen Goods	203
11.4.3	Supplier Checklist	204
11.4.4	Packaging and Labeling Checklist	205
11.4.5	Stock Intake	206
11.4.6	Record Keeping	206

12 Audit, Certification, and Payment	209
12.1 Audit and Certification	209
12.2 Inquiry Procedure	212
12.2.1 Step 1: Sending of Requirements	213
12.2.2 Step 2: Supplier's Response	213
12.2.3 Step 3: Price Negotiation	214
12.2.4 Step 4: Confirmation of the Deal	215
12.3 Payment Terms	215
12.3.1 Cash-in-Advance	215
12.3.2 TT Payment	215
12.3.3 Letter of Credit (LC)	215
12.3.4 LC Amendment	218
13 Frozen Shrimp and Other Seafood-Based Value-Added Products	219
13.1 Introduction with Some Value-Added Products	219
13.1.1 Tempura and Torpedo Shrimp	220
13.1.2 Filo Shrimp	220
13.1.3 Marinated Butterfly Shrimp	221
13.1.4 Shushi	222
13.1.5 Value-Added Crab	222
13.2 Value-Added Fish and Fish Products	224
13.3 Other Value-Added Seafood	225
13.4 Shrimp Byproducts	225
References	226
14 Recommendation and Conclusion	227
Appendix A: A Reference Copy of Letter of Credit (Terms and Condition)	235
Appendix B: Size and Weight Table	239
Appendix C: A Model Template of Production Supervision Report/On-line Supervision Report	241
Appendix D: Pre-shipment Inspection Report/Final Inspection Report	245
Appendix E: A Model Template of Packaging and Labeling Checklist	249
Appendix F: A Model Template of Loading Report	253
Appendix G: A Sample of Purchase Order (PO)	255
Appendix H: A Sample of Packing List	257
Appendix I: A Sample of Shipment Advise	259
Appendix J: A Sample of Technical Specification	261
Appendix K: A Sample of Stock Intake	263
Appendix L: Commercial Invoice	265
Reference	267

About the Authors

Md. Abdul Hannan is now serving as an assistant professor in the Dept. of Aquatic Animal Health Management, Faculty of Fisheries, Aquaculture and Marine Science, Sher-e-Bangla Agricultural University, Dhaka-1207, Bangladesh. He is now conducting his PhD research under Dr. Mohammad Bodrul Munir at Universiti Malaysia Sarawak (UNIMAS).

Kazi Ahsan Habib is now serving as a professor and chairman of the Dept. of Fisheries Biology and Genetics, Faculty of Fisheries, Aquaculture and Marine Science, Sher-e-Bangla Agricultural University, Dhaka-1207, Bangladesh.

A. M. Shahabuddin is now serving as a professor and chairman of the Dept. of Aquaculture, Faculty of Fisheries, Aquaculture and Marine Science, Sher-e-Bangla Agricultural University, Dhaka-1207, Bangladesh.

Md. Ariful Haque is now serving as an executive at W and M Ventures (Fish and Shellfish Quality Control), Khulna in Bangladesh.

Mohammad Bodrul Munir is one of the academic faculty members (teaching and research) in the aquatic science program at the Faculty of Resource Science and Technology of Universiti Malaysia Sarawak (UNIMAS) since 2017. He obtained his PhD in aquatic animal nutrition from Universiti Sains Malaysia (USM) in 2016. He has practical experiences in developing guidelines of hazard analysis critical control point (HACCP) for frozen food products.

Abbreviations

AHD	1-Aminohydantoin
AMOZ	3-Amino-5-morpholino-methyl-1,3-oxa-zolidinone
AOZ	3-Amino-2-oxazolidinone
ASC	Aquaculture Stewardship Council
BAP	Best Aquaculture Practices
BRC	British Retail Consortium
BSCI	Business Social Compliance Initiative
BT	Black tiger
CCP	Critical control points
CTS	Cartons
DF	Double-frozen shrimp (frozen two times—frozen raw material)
EAN	European Article Numbering System
ETA	Estimated date of arrival
EU	European Union
FC	Frozen count
FAO	Food and Agriculture Organization
FTA	Foreign Trade Association
FTD	Furaltadone
FZ	Nitrofurazone
FZD	Furazolidone
GMP	Good Manufacturing Practice
GTIN	(Global Trade Item Number)
gsm	Gram per square meter
HACCP	Hazard analysis and critical control point
HDPE	High-density polyethylene
IFS	International Food Standard
INQ	Inquiry
IQF	Individual quick freezing
LC	Letter of credit
LDPE	Low-density polyethylene
LLDPE	Linear low-density polyethylene
MC	Master carton
MSC	Marine Stewardship Council

NFT	Nitrofurantoin
NP	Nitrophenyl
NPAHD	3-(2-Nitrobenzylidenamino)-2,4-imidazolidinedione)
NPAOZ	[3-(2-Nitrobenzylidenamino)-2-oxazolidinone]
NPAMOZ	5-(Morpholino methyl)-3-(2-nitrobenzylidenamino)-2-oxazolidinone)
NPSEM	3[(2-Nitrophenyl) methylene]-hydrazine carboxamide
OPP	Orientated polypropylene
Pcs	Pieces
PI	Proforma invoice
PET	Polyethylene terephthalate
RC	Real count
SEM	Semicarbazide
SF	Single frozen shrimp (frozen only one time)
TVBN	Total volatile base nitrogen
UV	Ultraviolet
WHO	World Health Organization

List of Figures

Fig. 1.1	Percentage of major crustaceans' production in world aquaculture	4
Fig. 1.2	Major divisions of shrimp's body (<i>P. monodon</i>)	8
Fig. 1.3	Morphometric characteristics of shrimp <i>P. monodon</i>	8
Fig. 1.4	Black tiger shrimp	9
Fig. 1.5	Vannamei shrimp	9
Fig. 1.6	Freshwater shrimp	9
Fig. 1.7	Harina shrimp	10
Fig. 1.8	Cat tiger shrimp	10
Fig. 1.9	Chaka shrimp	10
Fig. 2.1	HLSO shrimp	17
Fig. 2.2	Fantail round shrimp	17
Fig. 2.3	PND shrimp	18
Fig. 2.4	Butterfly shrimp	18
Fig. 2.5	HO body peeled shrimp	18
Fig. 2.6	Shushi cut shrimp	19
Fig. 2.7	HOSO shrimp	19
Fig. 2.8	P&D skewer shrimp	19
Fig. 2.9	HO-skewer shrimp	20
Fig. 2.10	Operation temperature	21
Fig. 2.11	Shrimp at conveyer belt	22
Fig. 2.12	Shrimp after freezing	22
Fig. 2.13	Glazing of shrimp	22
Fig. 2.14	Hardening chamber	23
Fig. 2.15	Shrimp after hardening	23
Fig. 2.16	IQF shrimp (BT HLSO-EP)	23
Fig. 2.17	IQF shrimp (BT P&D)	24
Fig. 2.18	IQF shrimp (FW HLSO)	24
Fig. 2.19	Blanched IQF (HLSO EP)	25
Fig. 2.20	Blanched IQF (P&D)	25
Fig. 2.21	Blanched IQF (PUD)	25
Fig. 2.22	Cooked IQF (HOSO)	26
Fig. 2.23	Cooked IQF (HLSO)	26

Fig. 2.24	Cooked IQF (PDTO)	26
Fig. 2.25	Steps of IQF shrimp	27
Fig. 2.26	Shrimp arrangement	28
Fig. 2.27	Pan with water and ice	29
Fig. 2.28	Wrapped with poly	29
Fig. 2.29	Pan with lid	30
Fig. 2.30	Freezer (inner view)	30
Fig. 2.31	Freezer (loading)	30
Fig. 2.32	Block in pan	31
Fig. 2.33	Spray to separate block	31
Fig. 2.34	Final block	31
Fig. 2.35	Steps of block frozen shrimp	32
Fig. 2.36	HOSO straight	33
Fig. 2.37	HO body-peeled-straight	33
Fig. 2.38	HOSO-flat	34
Fig. 2.39	Steps of HOSO semi-IQF shrimp	35
Fig. 2.40	Pan of block frozen shrimp	36
Fig. 2.41	Arrangement of shrimps in pan	36
Fig. 2.42	IQF packing (10 × 1 kg) in MC	36
Fig. 2.43	IQF packing (polybag)	37
Fig. 2.44	Bulk packing: 1 × 10 kg (open view)	38
Fig. 2.45	Bulk packing: 1 × 10 kg (inner view)	38
Fig. 2.46	Weighing of bulk packing (1 × 10 kg)	39
Fig. 2.47	White bag for bulk packing (1 × 10 kg)	39
Fig. 2.48	Largest and smallest grades of shrimp	42
Fig. 2.49	Manual grading	43
Fig. 2.50	Grade of 16/20 (HOSO)	44
Fig. 2.51	Grade of 6/8 (HLSO)	44
Fig. 2.52	Grading of shrimp with automatic grading machine	44
Fig. 2.53	Uniformity (HOSO)	46
Fig. 2.54	Uniformity (HLSO)	46
Fig. 2.55	Uniformity (PND)	46
Fig. 2.56	Weight of 10% smallest shrimp	48
Fig. 2.57	Weight of 10% largest shrimp	48
Fig. 2.58	Glazing	56
Fig. 2.59	Glazing	56
Fig. 2.60	Hardening	57
Fig. 3.1	Natural color of black tiger shrimp	63
Fig. 3.2	Mixed color shrimp	64
Fig. 3.3	Color variation	64
Fig. 3.4	Uniformity of color	65
Fig. 3.5	Grabbing of shrimp	66
Fig. 3.6	Twisting of shrimp	66
Fig. 3.7	Separation of head	67

Fig. 3.8	Grabbing of shrimp	67
Fig. 3.9	Removing carapace	68
Fig. 3.10	Removing of carapace	68
Fig. 3.11	Removing of organs	68
Fig. 3.12	Resulting neck meat	69
Fig. 3.13	Neck meat after washing	69
Fig. 3.14	Cutting (EZP)	72
Fig. 3.15	Cutting (EZP)	72
Fig. 3.16	Cutting (EZP)	73
Fig. 3.17	Deveining of shrimp	73
Fig. 3.18	Deveining of shrimp	74
Fig. 3.19	Shrimp after deveining	74
Fig. 3.20	Table of pressure wash	75
Fig. 3.21	Washing table	75
Fig. 3.22	Washing table	76
Fig. 3.23	Preparation of flake ice	76
Fig. 3.24	Collection of flake ice	77
Fig. 3.25	Chill storage of shrimp	77
Fig. 4.1	Preparation of additives	81
Fig. 4.2	Soaking (stirring method)	82
Fig. 4.3	Soaking (paddler method)	82
Fig. 4.4	Temp. of soaking water	84
Fig. 4.5	Temp. of soaking of shrimp	85
Fig. 4.6	Appearance of soaked shrimp	85
Fig. 4.7	Texture and smell of soaked shrimp	85
Fig. 4.8	Soaking of shrimp with additives	86
Fig. 4.9	Soaking of shrimp with additives	86
Fig. 5.1	Loose/dropping head	92
Fig. 5.2	Tail broken	92
Fig. 5.3	Black gill	92
Fig. 5.4	Broken/damage	93
Fig. 5.5	Head discoloration	93
Fig. 5.6	Uncut (PND shrimp)	93
Fig. 5.7	Vein	94
Fig. 5.8	Wrong cut	94
Fig. 5.9	Deep cut	94
Fig. 5.10	Clumps	95
Fig. 5.11	Shell broken	95
Fig. 5.12	Soft shell	95
Fig. 5.13	Necrosis	96
Fig. 5.14	Hanging meat	96
Fig. 5.15	Back broken	96
Fig. 5.16	Broken shrimp	97
Fig. 5.17	Tail broken	97

Fig. 5.18	Broken pieces	97
Fig. 5.19	Decomposed shrimp	98
Fig. 5.20	Discoloration (FW)	98
Fig. 5.21	Discoloration (BT)	98
Fig. 5.22	Improper peeling	99
Fig. 5.23	Melanosis	99
Fig. 5.24	Attached foreign matter	100
Fig. 5.25	Attached shell	100
Fig. 5.26	Attached shell	100
Fig. 5.27	Attached organ	101
Fig. 6.1	Flowchart of traceability	104
Fig. 6.2	Basket tag (depot)	107
Fig. 6.3	Basket tag (suppliers)	107
Fig. 7.1	Hand washing procedure in processing industries	112
Fig. 8.1	Primary and secondary packaging of frozen shrimp	114
Fig. 8.2	Design of a polybag	119
Fig. 8.3	Details design and dimension of a polybag	120
Fig. 8.4	Rider card (front side)	121
Fig. 8.5	Rider card (back side)	122
Fig. 8.6	Dimension and design of inner box for block products	124
Fig. 8.7	Design and dimension of inner box for semi-IQF shrimp	126
Fig. 8.8	Components of master carton	129
Fig. 8.9	3D structure of a master carton	131
Fig. 8.10	Preprinted master carton	132
Fig. 8.11	White master carton with sticker	132
Fig. 8.12	Master carton with strap	132
Fig. 8.13	Master carton sticker	133
Fig. 8.14	Specification of master carton	134
Fig. 8.15	Dirt and forest on carton	135
Fig. 8.16	Tear carton	135
Fig. 8.17	Damaged carton	135
Fig. 8.18	Imperfect sealing of bag	136
Fig. 8.19	Imperfect sealing of rider	136
Fig. 8.20	Damaged bag	137
Fig. 8.21	Wooden pallet	138
Fig. 8.22	Plastic pallet	138
Fig. 8.23	Cartons on pallet	139
Fig. 8.24	Pallet jack	139
Fig. 8.25	Pallet description	140
Fig. 8.26	Characteristics of barcode	141
Fig. 8.27	Different types of barcode	141
Fig. 8.28	Scanning of rider card	142
Fig. 8.29	Metal detector	143
Fig. 8.30	Metal detection of shrimp	143
Fig. 8.31	Metal detection of shrimp	143

Fig. 8.32	Walking over MC	145
Fig. 8.33	Excess frost on MC	145
Fig. 8.34	Protection from frost	145
Fig. 9.1	Cold storage temperature	152
Fig. 9.2	Selection of cartons	153
Fig. 9.3	Inspection of product temp	154
Fig. 9.4	Gross weight	155
Fig. 9.5	Gross weight (S.IQF)	157
Fig. 9.6	Gross weight (IQF)	157
Fig. 9.7	Gross weight (Block)	157
Fig. 9.8	BT-HLSO-Block	158
Fig. 9.9	BT-HLSO-Block	158
Fig. 9.10	BT-HOSO-S.IQF	159
Fig. 9.11	BT-HOSO-S.IQF	159
Fig. 9.12	BT-EZP-IQF	160
Fig. 9.13	FW-EZP-IQF	160
Fig. 9.14	Frozen count (pcs/lb)	161
Fig. 9.15	Removing of glaze	162
Fig. 9.16	Releasing of water	162
Fig. 9.17	Deglaze weight (HLSO)	163
Fig. 9.18	Deglaze weight (P&D)	163
Fig. 9.19	Deglaze weight (P&D)	164
Fig. 9.20	Deglaze weight (EZP)	164
Fig. 9.21	Thawing/defrosting	166
Fig. 9.22	Addition of flake ice	166
Fig. 9.23	Defrosting of IQF shrimp	167
Fig. 9.24	Checking of defrosting	167
Fig. 9.25	Thawing of S.IQF shrimp	168
Fig. 9.26	Shrimp after thawing	168
Fig. 9.27	Net weight	168
Fig. 9.28	Shortage of weight	169
Fig. 9.29	Excess of weight	169
Fig. 9.30	Uniformity (BT-HOSO)	171
Fig. 9.31	Uniformity (BT-HLSO)	171
Fig. 9.32	Uniformity (BT-PND)	172
Fig. 9.33	Checking of odor/bad smell	172
Fig. 9.34	Checking of general appearance	173
Fig. 9.35	Checking of texture, color, and taste after cooking	173
Fig. 9.36	Sample in bag with ice	174
Fig. 9.37	Sealing of sample	175
Fig. 9.38	Cooked HLSO-EZP IQF	175
Fig. 9.39	Cooked PD Tail-On IQF	175
Fig. 9.40	Cooked PD IQF shrimp	176
Fig. 9.41	Cooked HOSO shrimp	176

Fig. 10.1	Sample isolation	184
Fig. 10.2	Sample collection	184
Fig. 10.3	Weighing of sample	184
Fig. 10.4	Sample sealing	185
Fig. 10.5	Bottom layer of dry ice	185
Fig. 10.6	Layer of sample	185
Fig. 10.7	Final layer of dry ice	186
Fig. 10.8	Test sample	186
Fig. 10.9	Reference sample	186
Fig. 11.1	Dimension of standard 40 ft container. (Source: Edidiwan.blogspot.com)	194
Fig. 11.2	Dimension of standard 20 ft container. (Source: Edidiwan.blogspot.com)	194
Fig. 11.3	Container temperature	199
Fig. 11.4	Internal view	199
Fig. 11.5	Second row	200
Fig. 11.6	Seventh row	200
Fig. 11.7	Tenth row	200
Fig. 11.8	13th row	201
Fig. 11.9	Closing of container	201
Fig. 11.10	Sealing of container	201
Fig. 11.11	Container number	202
Fig. 13.1	HLSO butterfly cut	221
Fig. 13.2	Marinated with herbs	221
Fig. 13.3	Final product (IQF)	222
Fig. 13.4	Sushi in Styrofoam tray packing	223
Fig. 13.5	Color measurement with SalmoFan	223
Fig. 13.6	Cutting process of shushi	223
Fig. 13.7	Length and weight measurement	224
Fig. 14.1	Improper way (clump production)	228
Fig. 14.2	Clump shrimp in final products	229
Fig. 14.3	Hammering on clumps to remove clumps	229
Fig. 14.4	Breakdown of glaze due to hammering	229
Fig. 14.5	A good practice, resulting no clumps and no hammering and no breakdown of clumps	230
Fig. 14.6	Intervention of middlemen in supply chain	231
Fig. 14.7	Wild shrimp (raw)	233
Fig. 14.8	Wild shrimp (cooked)	233
Fig. 14.9	Farmed shrimp (raw)	233
Fig. 14.10	Farmed shrimp (cooked)	234

List of Tables

Table 1.1	Difference between <i>P. monodon</i> and <i>P. vannamei</i> shrimp	3
Table 1.2	Major crustaceans' production in world aquaculture (2010–2018)	4
Table 2.1	Calculation of average pieces and grades in shrimp	42
Table 3.1	Organoleptic quality assessment technique of raw shrimp (qualitative method)	61
Table 3.2	Organoleptic quality assessment technique of raw shrimp (grading method)	62
Table 4.1	Permitted food additives currently used in shrimp processing industries	82
Table 4.2	Estimation of soaking gain (%) at different types of frozen product (shrimp)	83
Table 4.3	Most commonly used additives in shrimp processing industries	87
Table 7.1	Doses of chlorine solution that are practiced in shrimp processing industries	111
Table 8.1	Dimension of master carton, polybag, and rider card	121
Table 8.2	Dimension (s) of the master carton, inner box, and sticker of inner box for block products	123
Table 8.3	Dimension of master carton and inner box for semi-IQF shrimp	125
Table 8.4	Flute characters of master cartons (http://www.realisticpack.com/infrastructure.php)	131
Table 9.1	The standard of gross weight in different products	156
Table 9.2	The standard of frozen weight in different products	158
Table 9.3	Individual weight measurement procedure for frozen shrimp ...	170
Table 9.4	The comparison of standard weight of different products of frozen shrimp	171
Table 10.1	Sample purchase order (PO) for a consignment	181
Table 10.2	Final sampling plan	182

Table 11.1	Dimensions of standard frozen containers	194
Table 12.1	General process of audit and certification program	210
Table 13.1	Packing of shusi	222

List of Mathematical Calculations

Sl. no. Calculation parameters

1.	Calculation of net weight for block, IQF, and semi-IQF products	38
2.	Calculation of average pieces and grades in shrimp	42
3.	Calculation of uniformity ratio	47
4.	Calculation of pieces (Pcs) for IQF shrimp (FC)	49
5.	Calculation of pieces (Pcs) for semi-IQF shrimp (FC)	50
6.	Calculation of pieces (Pcs) for IQF shrimp (RC)	51
7.	Calculation of pieces (Pcs) for block frozen shrimp (RC)	51
8.	Calculation of individual weight of frozen count (FC) shrimp	52
9.	Calculation of individual weight of real count (RC) shrimp	53
10.	Calculation of individual weight of semi-IQF shrimp (FC)	54
11.	Calculation of glazing percentage	57
12.	Calculate the percentage (%) of soaking gain	83
13.	Calculation of defects (by means of weight)	101
14.	Calculation of defects (by means of pieces)	101
15.	Calculation of pallet and air gap	136
16.	Calculation of master carton selection	153
17.	Calculation of Pcs/lb (FC)	160
18.	Calculation of deglaze count (Pcs/lb)	164

List of Appendices

Appendix	1: A reference copy of letter of credit (terms and conditions)	235
Appendix	2: Size and weight table	239
Appendix	3: A model template of production supervision report/online supervision report	241
Appendix	4: Pre-shipment inspection report/final inspection report	245
Appendix	5: A model template of packaging and labeling checklist	249
Appendix	6: A model template of loading report	253
Appendix	7: A sample of purchase order (PO)	255
Appendix	8: A sample of packing list	257
Appendix	9: A sample of shipment advise	259
Appendix	10: A sample of technical specification	261
Appendix	11: A sample of stock intake	263
Appendix	12: Commercial invoice	265

Appendix A: A Reference Copy of Letter of Credit (Terms and Condition)

Reference No.	12345
Planned ETD	Month/day/ year
40 A Form of documentary credit	Irrevocable
31 D Date and place of expiry	Port and Country name
32B Currency code and amount	\$ 300000,00
39 A % Credit amount tolerance	Tolerance of 10 percent plus or minus in quantity and amount is acceptable.
39B Maximum credit amount	Not exceeding
41 D Available with	Any bank in (name of exporting country)
41 D By	Negotiation
42 C Drafts at	45 days after shipment date/sight
42 D Drawee	Name of Buyer's bank
43 P Partial shipments	Not allowed
43 T Transshipment	Allowed
44 E Port of loading/airport of departure	Any port in (name of exporting country)
44F Port of discharge	(Name of importing country)
44C Latest date of shipment	Month/day/ year
59 Beneficiary	ABCD Foods Ltd.
45 A Description of goods	Art. No.: 33330 Black Tiger shrimps, HLSO-EZP, Raw, IQF, 75 percent net, size 13/15 FC, 10x750 g net weight and 10x1 kg gross weight, Brand: xx, 500 cartons, 5000 kg x 10,40 USD/kg for a total amount of 52000,00 USD
46 A Documents required	3 original and 1 copies of signed commercial invoice. Invoice must mention purchase order number and contact no. And full address 3 original and 1 copies of packing list Full set of original on board bill of lading indicating the name of the carrier made out to order of negotiating bank in Bangladesh and endorsed to the order of LC opening bank, marked freight prepaid and showing notify. 3 copies certificate of origin GSP form a issued by export authorities of Bangladesh. Certificate of origin GSP form a must mention Latin name. BL is to evidence stored in refrigerated container set at -18°C temperature 1 original and 1 copy of health certificate for issued by dept. Of fisheries of Bangladesh stating name and address of the packer and their factory approval number and certified merchandise are fit for human consumption Pre-shipment survey report evidencing external condition of cargo temperature, temperature of the cargo and temperature of the container prior to loading, name of the vessel, number of cartons, etc. Beneficiaries certificate with clearly mentioning sample identification Following reports are sent by email to respective buyers: -packer qc report or inspection report showing clearly readable picture of master carton and inner bag/box with production date, expiry date and lot number etc.

	<p>certificates of analysis issue by independent lab (iso-17025 accredited or equivalent) or by local competent authorities: Test results for heavy metals (arsenic, cadmium, lead and mercury), microbiological result (minimum: total plate count, salmonella, Vibrio's), antibiotics test result. Test results demonstrating negative for residues of Chloramphenicol, nitrofurans (AOZ, AMOZ, SEM, AHD), malachite green, Leuco-malachite green, tetracycline, oxytetracycline, Chlortetracycline and crystal violet.</p> <p>A full set of packaging and labelling checklist</p> <p>Email directly to buyer within 2 days of the shipment date with name of port of loading, name of the freight carrier, container reference, seal no, estimated time of arrival etc.</p>
<p>47A Special instruction</p> <p>48 Period for presentation</p> <p>50 Applicant</p> <p>57A Advise through bank</p> <p>59 Beneficiary</p> <p>71B Own charges</p>	<p>Tolerance of 10 percent plus or minus in quantity and amount is acceptable.</p> <p>Rejection clause: Payment is subject to inspection and approval of the goods by the port of health authority. The applicant will give notice of approval or rejection to the issuing bank not later than 45 (in case of 45 days LC clause) days from bill of lading date. If the goods are rejected issuing bank is not obliged to pay as per the condition of LC and applicant will arrange to ship back the goods at the cost of beneficiary. If health clearance by the port of health authority has not passed at maturity, payment will be effected as soon as approval of the health authority has been obtained</p> <p>Documents to be presented 25 days after transport document</p> <p>Name and address of buyer</p> <p>Name and address of buyer bank, country name</p> <p>Swift code: xxxxxxxxxxxx</p> <p>ABCD Foods Ltd.</p> <p>LC opening bank charges to be borne by applicant</p> <p>Advising bank charges to be borne by beneficiary</p>

Note: LC clause may change through the discussion of both parties.

Appendix B: Size and Weight Table

1. Product description: BT, IQF, 20% Glaze, RC, 10 × 1 kg

Size/grade	Minimum weight of Shrimp (g)	Maximum weight of Shrimp (g)	Minimum Pcs/Bag	Maximum Pcs/Bag
8/12	38	57	14	21
13/15	30	35	23	26
16/20	23	28	28	35
21/25	18	22	37	44
26/30	15	17	46	53
31/40	11	15	55	70
41/50	9	11	72	88
51/60	8	9	90	106
61/70	6	7	107	123
71/90	5	6	125	159

2. Product description: BT, IQF, 20% Glaze, FC, 10 × 1 kg

Size/grade	Minimum weight of Shrimp (g)	Maximum weight of Shrimp (g)	Minimum Pcs/Bag	Maximum Pcs/Bag
8/12	30	45	18	26
13/15	24	28	29	33
16/20	18	23	35	44
21/25	15	17	46	55
26/30	12	14	57	66
31/40	9	12	68	88
41/50	7	9	90	110
51/60	6	7	112	132
61/70	5	6	134	154
71/90	4	5	156	198

3. Product description: BT, Block, 20% Glaze, RC, 6 × 1.8 kg

Size/ grade	Minimum weight/ Shrimp	Maximum weight/ Shrimp	Minimum Pcs/Bag	Maximum Pcs/Bag
8/12	38	57	25	38
13/15	30	35	41	48
16/20	23	28	51	63
21/25	18	22	67	79
26/30	15	17	82	95
31/40	11	15	98	127
41/50	9	11	130	159
51/60	8	9	162	190
61/70	6	7	193	222
71/90	5	6	225	285

4. Product description: BT, Semi-IQF, 20% Glaze, FC, 10 × 1 kg

Size/ grade	Minimum weight of Shrimp	Maximum weight of Shrimp	Minimum Pcs/Bag	Maximum Pcs/Bag
8/12	67	100	8	12
13/15	53	62	13	15
16/20	40	50	16	20
21/25	32	38	21	25
26/30	27	31	26	30
31/40	20	26	31	40
41/50	16	20	41	50
51/60	13	16	51	60
61/70	11	13	61	70
71/90	9	11	71	90

Appendix C: A Model Template of Production Supervision Report/On-line Supervision Report

General Information					
Reference No./PO No.			Brand		
Name of Supplier			Packing		
Name of Importer			Produced Quantity		
Lot No./Batch No.			Ordered Quantity		
Date of Supervision			Hygienic Standard		
Product Analysis					
Parameters	Sample-1	Sample-2	Sample-3	Sample-4	Sample-5
Product Description					
Size and Count					
Glaze (%)					
Frozen Weight (g)					
Deglazed Weight (g)					
Thawed/Net Weight (g)					
Pcs per Bag/Box					
Frozen count/lb					
Deglaze count/lb					
Weight of 10% Largest (g)					
Weight of 10% Smallest (g)					
Uniformity Ratio					
General Appearance					
Freshness					
Texture					
Odor/Smell					
Cooked Test					
Defects					
Back Broken					
Black Spot					
Broken Pcs					
Clumping					
Deep Cut					
Dehydration					
Decomposition					
Discoloration					
Foreign Materials					
Hanging Meat					
Improper Peeling					
Loose/Dropping Head					
Odor					
Soft Shell					
Tail Broken					
Vein					
Other (s)					

(CONTINUED)			
Raw materials Information			
Receiving Date and Time		Mode of Transport	
Traceability Tag		Icing Ratio	
Traceability Documents		Traceability Code	
Grading, Peeling, Deveining			
Grading Method		Grading Defects	
Peeling Method		Peeling Defects	
Deveining Method		Deveining Defects	
Additives Information			
Soaking Method		Additive %	
Starting Time		Salt %	
Ending Time		Gain %	
Name of Additive		Remarks	
Origin of Additive			
Temperature Record (°c)			
Ante Room		Soaking Water	
Chill Room		Freezing	
Raw Material		Hardening	
Chill Water		Storage	
Laboratory Analysis			
Chemical		Dye	
Heavy Metal		Microbiological	
Packaging Information			
Parameters	Inner Bag/Box	Master Carton (MC)	
Dimension (mm)			
Sealing			
Labeling			
Color Specification			
Damaged			
Metal Detector	<input type="checkbox"/> Active	<input type="checkbox"/> Inactive	
Factory Personnel		Buyer Personnel	
Designation		Designation	
Signature & Stamp		Signature & Stamp	

Appendix D: Pre-shipment Inspection Report/Final Inspection Report

General Information						
Lot No./Batch No.		Reference No./PO No.				
Supplier Name & Address		Importer Name & Address				
Contact Person		Contact Person				
Contact No. & Email		Contact No. & Email				
Ordered Quantity		Inspected Quantity				
Date of Inspection		Sampling Unit				
Arrival Time		Departure Time				
Findings of Inspection						
Parameters	Sample-1	Sample-2	Sample-3	Sample-4	Sample-5	Sample-6
Product Description						
Brand						
Production Date						
Best Before Date						
Packing (kg)						
Art. No.						
Size and Count						
Weight Measurement						
Gross Weight (g)						
Deglazed Weight (g)						
Net/Thawed weight (g)						
Glaze (%)						
Pcs Count						
Total Pcs per Bag/Box						
Frozen Count (Pcs/lb.)						
Deglaze Count (Pcs/454g)						
Deglaze Count (Pcs/363g)						
Uniformity						
Weight of 10% Largest (g)						
Weight of 10% Smallest (g)						
Uniformity Ratio						
Organoleptic Observation						
General Appearance						
Freshness						
Texture						
Smell						
Cooked Condition						
Smell/Odor						
Texture						
Color						
Lab Findings						
Government/Third Party Testing Lab			Suppliers Own Lab			
Chemical			Chemical			
Heavy Metal			Heavy Metal			
Dye			Dye			
Microbiological			Microbiological			
Sampling Standard			Sampling Standard			

(CONTINUED)						
Defects						
Back broken						
Black spot on meat						
Black spot on shell						
Broken pcs						
Clumping						
Deep cut						
Dehydration						
Discoloration						
Foreign material						
Freeze burn						
Hanging meat						
Discoloration						
Improper peeling						
Dropping/loose head						
Odor						
Shell broken						
Soft Shell						
Tail Broken						
Vein						
Other (s)						
Findings of Packaging						
Parameters	Inner Bag/Box			Master Carton (MC)		
Dimension						
Thickness						
Color						
Labeling						
Sealing						
Wax Coating						
Found Damaged Unit						
Packaging as per EU Law						
Others						
Hygienic Standard			Cold Storage Temperature (°C)			
Cleanliness of factory			Product Temperature (°C)			
Calibration of equipment			Metal Detection			
Product Conformity			Rejection			
Remarks						
Factory Personnel's Name Signature & Stamp			Inspector's Name Signature & Stamp			

Appendix E: A Model Template of Packaging and Labeling Checklist

PACKAGING AND LABELING CHECKLIST (MC)			
Lot No./Batch No.		Reference No./PO No.	
Supplier Name & Address		Importer Name & Address	
Contact No. & Email		Contact No. & Email	
Date of Inspection		Name of Inspectors	
Checklist for Master Carton (MC)			
Parameters	Yes	No	
Article/Lot/Reference No.			
Name of Manufacturer			
Factory Approval No.			
Product Name			
Scientific Name			
Origin			
Product Description			
Brand			
Logo			
Master Carton with Sticker			
Pre-Printed Master Carton			
Size/Grade			
Count			
Frozen Instruction			
Gross Weight			
Net Weight			
Packing			
Aquaculture/Marine Catch			
Production date			
Best before date			
Instruction			
Do not Refreeze after Defrosting			
Barcode Scanner Ok?			
Barcode Number			
Color Specification			
Name of Importer			
Certification Marks, BRC/MSC/ASC/BAP/GMP/.....			
Condition of Master Carton (MC)			
Excellent/Good/Normal/Poor			
Carton Dimensions			
Carton Dimensions Suitable for Packing			
Strong Enough to Protect Product			
Fully Closed Top and Bottom			
Present Transparent Tape/Non-transparent Tape			
Straps on Master Carton			
Languages	English-German-French –Dutch-Swedish-Finish		

PACKAGING AND LABELING CHECKLIST (INNER BAG/BOX)		
Parameters	Yes	No
Article/Lot/Reference No.		
Name of Manufacturer		
Factory Approval No.		
Product Name		
Scientific Name		
Origin		
Product Description		
Brand		
Logo		
Inner Box with Sticker		
Inner Bag with Rider		
Pre-Printed Inner Box/Bag		
Size/Grade		
Count		
Frozen Instruction		
Gross Weight		
Net Weight		
Packing		
Aquaculture/Marine Catch		
Production Date		
Best before Date		
Special Instruction		
Frozen Instruction		
Barcode Scanner Ok?		
Barcode No.		
Color Specification		
Name of Importer		
Certification Marks-MS/ASC/BAP/GMP/.....		
Condition of Inner Box/Bag		
Excellent/Good/Normal/Poor		
Dimensions of Inner Bag/Box		
Dimensions Suitable for Packing		
Strong Enough to Protect Product		
Present Top and Bottom Part (HOSO)		
Present Window		
Shrink Wrapped		
Damaged Bag/Box present		
Languages		

Appendix F: A Model Template of Loading Report



LOADING REPORT					
General Information					
Brand	ABCD				
Packer	ABCD SEA FOOD				
Product	BT PND IQF, BT HLSO BLOCK, BT HLSO EZP IQF				
Packing	6 X 1.8 KG, 80%, 70% NET, 10 X 1 KG 75% NET				
Loading start at port	8.00 PM				
Loading finish at Port	9.00 PM				
PO No.	8600				
LOADING INFORMATION					
B/L No.	NYKSDACS02555500				
On Board Date	December 15, 2019				
Container No.	NYKU7922200				
Seal No.	BD1000033				
Invoice No.	BSFL/32/2019				
Invoice Value	\$226,600.00				
Shipping Line	NYK				
Feeder Vessel	KOTA HALUS			VOY - 0399E	
Date of Stuffing	December 6, 2021				
Departure Bangladesh	December 19, 2021				
Mother Vessel	BASLE EXPRESS			VOY - 017W57	
Departure Singapore	December 29, 2021				
ETA Antwerp	January 20, 2022				
LOADING PLAN					
Product Description	BT HLSO EZP IQF	BT HLSO BLOCK	BT PND IQF	BT HLSO BLOCK	Total
Brand, NW, Count	AB-75% FC	CD-80% RC	AB-75% FC	AB-70% RC	
Line\Grade	8/12	13/15	16/20	31/40	
1	82	0	0	0	82
2	82	0	0	0	82
3	81	0	0	0	81
4	81	0	0	0	81
5	0	0	74	0	74
6	0	0	74	0	74
7	0	0	74	0	74
8	0	0	74	0	74
9	0	0	0	69	69
10	0	0	0	66	66
11	0	0	0	66	66
12	0	66	0	0	66
13	0	61	0	0	61
Total	326	127	296	201	950

Appendix G: A Sample of Purchase Order (PO)

PURCHASE ORDER (PO)						
					DATE:	
<table border="1" style="width: 100%;"> <tr> <td> REFERENCE NO.: 002 ISSUE DATE: DD/MM/YYYY DELIVERY DATE: DD/MM/YYYY </td> </tr> </table>						REFERENCE NO.: 002 ISSUE DATE: DD/MM/YYYY DELIVERY DATE: DD/MM/YYYY
REFERENCE NO.: 002 ISSUE DATE: DD/MM/YYYY DELIVERY DATE: DD/MM/YYYY						
NAME OF PACKER: ABCD FOODS LTD. ADDRESS:			NAME OF BUYER: ADDRESS:			
INSURANCE COVERED BY THE BUYER FREIGHT PREPAID TERMS OF PAYMENT: 100% PAYMENT BY LC AT 90 DAYS AFTER SHIPMENT PORT OF DESTINATION :						
Code No.	Product Description	Cartons	Total volume (kg)	Unit price (USD)	Total value (USD)	
12345	BT, HLSO, Raw, 80% Net weight, IQF product, STPP Treated Size/Count: 13/15 RC Pcs/Bag: 23-26 Brand: xx Packing: 10x1 kg	500	5000	10.00	50000.00	
23456	BT, HLSO, Raw, 80% Net weight Block product, STPP Treated Size/Count: 16/20 RC Pcs/Box: 51-63 Brand: xx Packing: 6x1.8 kg	700	8640	9.00	68040.00	
34567	BT, HLSO, Raw, 80% Net weight, Semi-IQF product, STPP Treated Size/Count: 21/25 RC Pcs/Box: 21-25 Brand: xx Packing: 10x1 kg	600	6000	8.50	51000.00	
TOTAL					169040.00	
IN WORDS: A TOTAL OF ONE HUNDRED SIXTY NINE THOUSAND FOURTY ONLT (VALUE IN USD)						
SPECIAL INSTRUCTION: SHRIMP SHOULD BE IN FRESH, AND GOOD UNIFORMITY. FINAL PRODUCT MUST BE IN EXCELLENT QUALITY. DECOMPOSED & REDDISH COLOR SHRIMPS ARE NOT ACCEPTED.						
AUTHORISED SIGNATURE						
HEAD OFFICE: ADDRESS: TEL: FAX: EMAIL: WEB:		SALES OFFICE: ADDRESS: TEL: FAX: EMAIL: WEB:		PURCHASE OFFICE : ADDRESS: TEL: FAX: EMAIL: WEB:		

Appendix H: A Sample of Packing List

(SAMPLE COPY OF PACKING LIST)

PACKING LIST

INVOICE NO. : ABCD12/2017001 BUYER'S NAME & ADDRESS : XX SEA FOODS (ADDRESS) NAME OF MOTHER VESSEL : NAME OF FEDDER VESSEL : PORT OF LOADING : PORT OF DESTINATION : B/L NO. : CONTAINER NO. : SEAL NO. :	ABCD FOODS LTD. : ADDRESS :
---	--------------------------------

DESCRIPTN OF GOODS :

LOT NO. 1234 SSBRAND, BLACK TIGER SHRIMPS, HLSO, RAW, BLOCK FROZEN, STPP TREATED, 6 X 1.8 KG NET WEIGHT, 21/25 REAL COUNT, 100 MASTER CARTONS, 600 INNER BOXES AT 19.08 USD/BLOCK FOR A TOTAL AMOUNT OF 11,448.00 USD.

LOT NO. 2345 SSBRAND, BLACK TIGER SHRIMPS, HLSO, RAW, BLOCK FROZEN, STPP TREATED, 6 X 1.8 KG NET WEIGHT, 26/30 REAL COUNT, 200 MASTER CARTONS, 1200 INNER BOXES AT 18.18 USD/BLOCK FOR A TOTAL AMOUNT OF 21,816.00 USD.

LOT NO. 3456 SSBRAND, BLACK TIGER SHRIMPS, HLSO, RAW, BLOCK FROZEN, STPP TREATED, 6 X 1.8 KG NET WEIGHT, 31/40 REAL COUNT, 100 MASTER CARTONS, 600 INNER BOXES AT 16.74 USD/BLOCK FOR A TOTAL AMOUNT OF 10,044.00 USD.

LOT NO. 4567 SSBRAND, BLACK TIGER SHRIMPS, PDTO, RAW, IQF, STPP TREATED, 10 X 800 GR NET /DEGLAZED WEIGHT, 16/20 FROZEN COUNT, 100 MASTER CARTONS, NET WEIGHT : 800.00 KGS, 1000 BAGS AT 9.20 USD/BAG FOR A TOTAL AMOUNT OF 9,200.00 USD.

LOT NO. 5678 SSBRAND, BLACK TIGER SHRIMPS, PD, RAW, IQF, STPP TREATED, 10 X 800 GR NET /DEGLAZED WEIGHT, 8/12 FROZEN COUNT, 100 MASTER CARTONS, NET WEIGHT : 800.00 KGS, 1000 BAGS AT 14.60 USD/BAG FOR A TOTAL AMOUNT OF 14,600.00 USD.

LOT NO. 6789 SSBRAND, BLACK TIGER SHRIMPS, HEAD ON, SHELL ON, RAW, SEMI IQF, 10 X 800 GR NET WEIGHT, 8/12 FROZEN COUNT, 50 MASTER CARTONS, NET WEIGHT : 400.00 KGS, 500 BOXES AT 12.70 USD/BOX FOR A TOTAL AMOUNT OF 6,350.00 USD.

LOT NO. 7890 SSBRAND, BLACK TIGER SHRIMPS, HEAD ON, SHELL ON, RAW, SEMI IQF, 10 X 800 GR NET WEIGHT, 16/20 FROZEN COUNT, 100 MASTER CARTONS, NET WEIGHT : 800.00 KGS, 1000 BOXES AT 8.30 USD/BOX FOR A TOTAL AMOUNT OF 8,300.00 USD.

LOT NO. 8901 SSBRAND, BLACK TIGER SHRIMPS, HEAD ON, SHELL ON, RAW, SEMI IQF, 10 X 750 GR NET WEIGHT, 16/20 FROZEN COUNT, 200 MASTER CARTONS, NET WEIGHT : 1500.00 KGS, 2000 BOXES AT 7.40 USD/BOX FOR A TOTAL AMOUNT OF 14,800.00 USD.

COMMODITY	SIZE/GRADE	QUANTITY			TOTAL GROSS WEIGHT IN KGS.
		IN MC.	IN KGS.	IN BOX/BAG.	
BT HLSO BF.	21/25	100 MC.	1,080.00 KGS.	600 BOXES	11,250.00 KGS.
	26/30	200 MC.	2,160.00 KGS.	1200 BOXES	
	31/40	100 MC.	1,080.00 KGS.	600 BOXES	
BT PDTO IQF	16/20	100 MC.	800.00 KGS.	1000 BAGS	
BT PD IQF	8/12	100 MC.	800.00 KGS.	1000 BAGS	
BT HOSO S. IQF	8/12	50 MC.	400.00 KGS.	500 BOXES	
	16/20	100 MC.	800.00 KGS.	1000 BOXES	
BT HOSO S. IQF	16/20	200 MC.	1,500.00 KGS.	2000 BOXES	
TOTAL		950 MC.	8,620.00 KGS.		11,250.00 KGS.

AUTHORISED SIGNATURE


(SAMPLE COPY OF PACKING LIST)

HEAD OFFICE: ADDRESS: TEL: FAX: EMAIL: WEB:	FACTORY: ADDRESS: TEL: FAX: EMAIL: WEB:
---	---

Appendix I: A Sample of Shipment Advise

SAMPLE COPY OF COMMERCIAL INVOICE

ABCD FOODS LIMITED
EXPORTER QUALITY FROZEN SHRIMPS



DATE: **28.02.2020**

SHIPMENT ADVISE

INVOICE NO. : ABCD/12/2017/001	
INVOICE TO : 950 MC BLACK TIGER HILSO BLOCK FROZEN, PD & PDTO IQF AND HOSO SEMI-IQF SHRIMP	
APPLICANT TO : NAME OF BUYER ADDRESS: TEL: PHN: EMAIL: WEB:	NOTIFY PARTY: NAME OF NOTIFY PARTY ADDRESS: TEL: PHN: EMAIL: WEB:

INVOICE NO.	: ABCD 2338
CONSIGNEE	: ABCD SeaFoods Ltd
DOCUMENTARY CREDIT NO.	: VAO01235
TOTAL USD	: \$1236542,00
TOTAL MASTER CARTONS	: 1800 Master Cartons
CONTAINER NO.	: CCOL 12354
SEAL NO.	: OOC1254
NAME OF VESSEL	: Kota Halus
NAME OF CONNECTING VESSEL:	MV MY WARMTH
PORT OF DELIVERY	: Chattogram
PORT OF DEPARTTURE	: Antwerp
DATE OF DELIVERY	: 30.03.2020
DATE OF ARRIVAL	: 02.05.202

INSURANCE COVERED BY THE BUYER FREIGHT PREPAID : FACRORY APPROVAL : US FDA REGISTRATION NO. : EXPORT REGISTRATION NO. : PORT OF DESTINATION : ANTWERP, BELGIUM	TERMS OF PAYMENT: 100% PAYMENT BY LC AT 90 DAYS AFTER SHIPMENT BANK ADDRESS : SWIFT NO. :
---	---

AUTHORISED SIGNATURE

(SAMPLE COPY OF COMMERCIAL INVOICE)

HEAD OFFICE: ADDRESS: TEL: FAX: EMAIL: WEB:	FACTORY : ADDRESS: TEL: FAX: EMAIL: WEB:
---	--

Appendix J: A Sample of Technical Specification

TECHNICAL SHEET			
General Information			
Product Description	Black Tiger, HLSO, Raw, Block Frozen, 80% Net Weight, Real Count		
Article Code	ABCD123	Product Name	Black Tiger Shrimp
Size/Grade	8/12	Scientific Name	<i>Penaeus monodon</i>
Block/IQF/Semi-IQF	Block	Packing	6 x 1.8 kg
Brand	ABCD	Raw/blanched/frozen/cooked	Raw
Fishery/Aquaculture	Farmed Raised	Treated/Non-treated	STPP Treated
Glaze	20%	Frozen Weight	1800 g
FAO/Country	-	Net Weight	1440 g
Origin/Product of	-	Ingredients	Shrimp, Water, Salt
Intrastat code	xxxxxxx	Stabilisers	E450, E451, E452
Allergen information		Microbiological Parameters	
Cereals (gluten)	Absent	Result (colony-forming unit (cfu)/g)	
Crustaceans	Present	Parameters	Present Limit
Egg	Absent	Total aerobic bacteria	< 100,000 < 1,000,000
Fish	Absent	<i>E. coli</i>	< 10 < 100
Peanuts	Absent	Enterobacteriaceae	< 100 < 1,000
Soybeans	Absent	<i>Staphylococcus aureus</i>	< 100 < 1,000
Molluscs	Absent	Total coliform	<100 < 1,000
Milk (lactose)	Absent	<i>Salmonella spp.</i>	absent /25g absent /25g
Nuts	Absent	<i>Listeria monocytogenes</i>	absent /25g absent /25g
Celery	Absent	<i>Vibrio cholerae</i>	absent /25g absent /25g
Mustard	Absent	Yeasts	< 100 1,000
Sesame seeds	Absent	Moulds	<100 1,000
Nutritional value (per 100 g)		Hard metals (Acceptance limit)	
Energy	73 kcal/310 kJ	Lead (Pb)	0.5 mg/kg
Fat	0,8 g	Mercury (Hg)	0.5 mg/kg
Of which saturated	0,1 g	Cadmium (Cd)	0.5 mg/kg
Carbohydrates	0 g	Organoleptic Characteristics	
Of which sugars	0 g	Smell	Fresh/Typical
Fibers	0 g	Taste	Fresh/Typical
Protein	16,5 g	Texture	Firm/Typical
Salt	1,5 g	Color	Natural/Typical
Conservation & Shelf life		Packaging & Labeling	
Refrigerator	24 hours	Dimension (mm)	270x190x60 390x275x185
freezer at -6° C	1 week	E.A.N. Code	xxx6400004 xxx6400060
freezer at -12° C	1 month	Unit	1 MC 6 IC/MC
freezer at -18° C	24 months	Label specifications	Approved by the buyer

Appendix K: A Sample of Stock Intake

STOCK INTAKE									
Delivery Date	:	16/03/2021	UFISH						
Reference No.	:	1230							
Shipment Date	:	30/03/2021							
Suppliers Name	:	ABCD Fish Ltd.							
ETD Mongla	:	03/5/2021							
ETA Antwerp	:	02/05/2021							
Container No.	:	STLU 1211320							
Sl. No.	Art. No.	Product Description	Brand	Expiry Date	Packing	Purchase Quantity		Shipped Quantity	
						Cartons	kg	Cartons	kg
1	2030	BT, HLSO-BLOCK R, 8/12 RC, 80%	AB	28-03-20	6x1.8kg	100	1080	95	1026
2	2040	BT, HLSO-BLOCK R, 13/15 RC, 80%	AB	28-03-20	6x1.8kg	100	1080	100	1080
10	4050	BT, PD, R, 16/20 FC, IQF 20%,	CD	25-05-20	10x1kg	100	1000	80	800
11	4060	BT, PD, R, 21/25 FC, IQF 20%,	CD	25-05-20	10x1kg	100	1000	90	900
12	4070	BT, PD, R, 26/30 FC, IQF 25%,	EF	30-05-18	10x1kg	400	4000	430	4300
13	4051	BT, PD, R, 16/20 FC, IQF 25%,	EF	30-05-18	10x1kg	100	1000	102	1020
14	4091	BT, PD, R, 41/50 FC, IQF 25%,	EF	30-05-18	10x1kg	100	1000	113	1130
TOTAL						1000	10160	1010	10256

Appendix L: Commercial Invoice

SAMPLE COPY OF COMMERCIAL INVOICE

ABCD FOODS LIMITED

EXPORTER QUALITY FROZEN SHRIMPS

COMMERCIAL INVOICE

DATE:

INVOICE NO. : ABCD122017001 INVOICE TO : 950 MC BLACK TIGER HLSO BLOCK FROZEN, PD & PDTO IQF AND HOSO SEMI-IQF SHRIMP	NOTIFY PARTY: NAME OF NOTIFY PARTY ADDRESS: TEL: FAX: EMAIL: WEB:
APPLICANT TO : NAME OF BUYER ADDRESS: TEL: FAX: EMAIL: WEB:	

DESCRIPTION OF GOODS:

SHIPMENT TERMS : CFR ANTWERP INCOTERMS 2011 BLACK TIGER SHRIMP AS PER PURCHASE ORDER 0002

LOT NO.1234 SS BRAND, BLACK TIGER SHRIMPS, HLSO, RAW, BLOCK FROZEN, STPP TREATED, 6 X 1.8 KG NET WEIGHT, 21/25 REAL COUNT,100 MASTER CARTONS, 600 INNER BOXES AT 19.08 USD/BLOCK FOR A TOTAL AMOUNT OF 11,448.00 USD.

LOT NO.2345 SS BRAND, BLACK TIGER SHRIMPS, HLSO, RAW, BLOCK FROZEN, STPP TREATED, 6 X 1.8 KG NET WEIGHT, 26/30 REAL COUNT,200 MASTER CARTONS, 1200 INNER BOXES AT 18.18 USD/BLOCK FOR A TOTAL AMOUNT OF 21,816.00 USD.

LOT NO.3456 SS BRAND, BLACK TIGER SHRIMPS, HLSO, RAW, BLOCK FROZEN, STPP TREATED, 6 X 1.8 KG NET WEIGHT, 31/40 REAL COUNT,100 MASTER CARTONS, 600 INNER BOXES AT 16.74 USD/BLOCK FOR A TOTAL AMOUNT OF 10,044.00 USD.

LOT NO. 4567 SS BRAND, BLACK TIGER SHRIMPS, PDTO, RAW, IQF, STPP TREATED, 10 X 800 GR NET /DEGLAZED WEIGHT, 16/20 FROZEN COUNT,100 MASTER CARTONS, NET WEIGHT : 800.00 KGS, 1000 BAGS AT 9.20 USD/BAG FOR A TOTAL AMOUNT OF 9,200.00 USD.

LOT NO. 5678 SS BRAND, BLACK TIGER SHRIMPS, PD, RAW, IQF, STPP TREATED, 10 X 800 GR NET /DEGLAZED WEIGHT, 8/12 FROZEN COUNT,100 MASTER CARTONS, NET WEIGHT : 800.00 KGS, 1000 BAGS AT 14.80 USD/BAG FOR A TOTAL AMOUNT OF 14,800.00 USD.

LOT NO.6789 SS BRAND, BLACK TIGER SHRIMPS, HEAD ON, SHELL ON,RAW, SEMI IQF, 10 X 800 GR NET WEIGHT, 8/12 FROZEN COUNT,50 MASTER CARTONS, NET WEIGHT : 400.00 KGS, 500 BOXES AT 12.70 USD/BOX FOR A TOTAL AMOUNT OF 6,350.00 USD.

LOT NO. 7890 SS BRAND, BLACK TIGER SHRIMPS, HEAD ON, SHELL ON,RAW, SEMI IQF, 10 X 800 GR NET WEIGHT, 16/20 FROZEN COUNT, 100 MASTER CARTONS, NET WEIGHT : 800.00 KGS, 1000 BOXES AT 8.30 USD/BOX FOR A TOTAL AMOUNT OF 8,300.00 USD.

LOT NO. 8901 SS BRAND, BLACK TIGER SHRIMPS, HEAD ON, SHELL ON,RAW, SEMI IQF, 10 X 750 GR NET WEIGHT, 16/20 FROZEN COUNT, 200 MASTER CARTONS, NET WEIGHT : 1500.00 KGS, 2000 BOXES AT 7.40 USD/BOX FOR A TOTAL AMOUNT OF 14,800.00 USD.

COMMODITY	SIZE	QUANTITY			PRICE CFR USD.	TOTAL VALUE IN US DOLLAR.
		IN MC	IN KGS	IN BOX/BAG		
BT HLSO BLOCK FROZEN	21/25	100 MC	1,080.00 KGS.	500 BOXES	\$ 19.88/BOX	\$ 11,448.00
	26/30	200 MC	2,160.00 KGS.	1200 BOXES	\$ 18.18/BOX	\$ 21,816.00
	31/40	100 MC	1,080.00 KGS.	600 BOXES	\$ 16.74/BOX	\$ 10,044.00
BT PDTO IQF	16/20	100 MC	800.00 KGS.	1000 BAGS	\$ 9.20/BAG	\$ 9,200.00
BT PD IQF	8/12	100 MC	800.00 KGS.	1000 BAGS	\$ 14.80/BAG	\$ 14,800.00
BT HOSO S. IQF	8/12	50 MC	400.00 KGS.	500 BOXES	\$ 12.70/BOX	\$ 6,350.00
BT HOSO S. IQF	16/20	100 MC	800.00 KGS.	1000 BOXES	\$ 8.30/BOX	\$ 8,300.00
BT HOSO S. IQF	16/20	200 MC	1,600.00 KGS.	2000 BOXES	\$ 7.40/BOX	\$ 14,800.00
	TOTAL	950 MC	8,620.00 KGS.			\$ 96,858.00

IN WORDS: A TOTAL OF NINETY SIX THOUSAND FIVE HUNDRED FIFTY EIGHT ONLY (VALUE IN USD)

INSURANCE COVERED BY THE BUYER

FREIGHT PREPAID :

FACTORY APPROVAL :

US FDA REGISTRATION NO. :

EXPORT REGISTRATION NO. :

PORT OF DESTINATION : ANTWERP, BELGIUM

TERMS OF PAYMENT: 100% PAYMENT BY LC AT 90 DAYS AFTER SHIPMENT

BANK ADDRESS :

SWIFT NO. :

AUTHORISED SIGNATURE

(SAMPLE COPY OF COMMERCIAL INVOICE)

HEAD OFFICE:

ADDRESS:

TEL:

FAX:

EMAIL:

WEB:

FACTORY :

ADDRESS:

TEL:

FAX:

EMAIL:

WEB:

Reference

WHO (2009) WHO Press, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland. https://www.ncbi.nlm.nih.gov/books/NBK144035/figure/partii_ranking.f2/?report=objectonly