

**Government of the Union of Myanmar**  
**Ministry of Livestock and Fisheries**  
**DEPARTMENT OF FISHERIES**

**DIRECTIVE No. (3/98)**

August 3, 1998

In exercise of the powers conferred by Section 23 of the Myanmar Marine Fisheries Law 1990, the Director General of the Department of Fisheries hereby issues the following Directive for cooked crustacean and molluscan shellfish.

**The microbiological criteria for production of cooked crustaceans and molluscan shellfish**

- 1.1 This directive applies to crustacean and molluscan shellfish which has been cooked and presented as suitable for consumption without further cooking, although the crustacean and molluscan shellfish may be intended to be heated before consumption.
- 1.2 The microbiological standard applicable to the products of cooked crustacean and molluscan shellfish are laid down in the Annex here to.
- 2.1 The microbiological standards shall be checked by the manufacturer during the manufacturing process and before the crustacean and mollus shellfish products cooked in the processing plant that approved in accordance with the MDFS1 system.
- 3.1 Sampling programmes shall be established by the managerial staff of the processing plant in relation to the nature of products (whole, shelled or shucked) the temperature and time of cooking and risk evaluation,

and shall meet the requirements of clause 1.1, 5 & 6 of DOF Directive ( 12 / 96 )

- 3.2 The programmes referred to in sub-clause 3.1. shall contain, in the event of failure to comply with the standards laid down under heading 1 and 2 of the Annex here to, an undertaking.
- (i) to notify the competent authorities of the findings made and the action taken with regard to unsatisfactory batches, as well as the measures provided for in the clause 3.2 (ii) below.
  - (ii) to review the methods of supervising and checking the critical points so as to identify the contamination source, and to carry out analyses more frequently.
  - (iii) not to market for human consumption batches found to be unsatisfactory on account of the discovery of pathogens or where the M value for *Staphylococcus* provided for under heading 2 of the Annex is exceeded.
- 4.4 The methods of microbiological analysis used to verify the microbiological standards laid down in the Annex here to shall be scientifically recognized at international level and tested in practice. The method of analysis used must be recorded with the corresponding results.

#### **Rejection of lot for export**

- 5.1 If an authorized officer inspects fish and fishery product that does not meet the requirements of this Directive, officer shall reject the food for export or placing on the market as fit for human consumption.

- 6.1 Any licence-holder for the processing of fish and fishery products shall abide by this Directive as one of the conditions of the licence.
- 6.2 On violation of the any terms or conditions of the Directive, criminal action may be taken under Section 45 of the Myanmar Marine Fisheries Law 1990 and the licence-holder may also be liable to suspension, revocation, termination and cancellation of the licence under Section 24 of the said Law.

Sd xx Soe Win

Director General  
Department of Fisheries

**ANNEX**

**1. Pathogens**

Type of pathogen	Standard
Salmonella spp	Absent in 25 g n = 5                      c = 0

In addition, pathogens and toxins thereof which are to be sought according to the risk evaluation, must not be present in quantities such as to affect the health of consumers.

**2. Organismus indicating poor hygiene (shelled or shucked products)**

Type of organism	Standard (pet g)
<i>Staphylococcus aureus</i>	m = 100 M = 1000 n = 5 c = 2
either : Thermotolerant coliform (44° C on solid medium)	m = 10 M = 100 n = 5 c = 2
or : <i>Escherichia coli</i> (on solid medium)	m = 10 M = 100 n = 5 c = 1

Where parameters n, m, M and c are defined as follows :

n = number of units comprising the sample

m = limit below which all results are considered satisfactory .

M = acceptability limit beyond which the results are considered unsatisfactory

$c$  = number of sampling units giving bacterial counts of between  $m$  and  $M$ .

The quality of a batch is considered to be:

- (a) satisfactory where all the values observed are  $3m$  or less;
- (b) acceptable where the values observed are between  $3m$  and  $10m$  ( $=M$ ) and where  $c/n$  is  $2/5$  or less.

The quality of a batch is considered to be unsatisfactory :

- in all cases where the values are above  $M$ .
- where  $c/n$  is greater than  $2/5$ .

### 3. Indicator organisms (Guidelines)

Type of organism	Standard (per g)
Mesophilic aerobic bacteria (30° C)	
(a) Whole products	$m = 10000$ $M = 100000$ $n = 5$ $c = 2$
(b) Shelled or shucked products with the exception of crabmeat	$m = 50000$ $M = 500000$ $n = 5$ $c = 2$
(c) Crabmeat	$m = 100000$ $M = 1000000$ $n = 5$ $c = 2$

These guidelines are to help manufacturers decide whether their plants are operating satisfactorily and to assist them in implementing the production monitoring procedures.