

# Marine Insurance Essential to Global Trade

## Food and Refrigeration chain

*Elements, Means of conveyance and loss prevention*  
by

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# Every one of us must eat

Our daily ration is

Man of 70 kg

Kcal 2010 - 3030

Woman of 55 kg

Kcal 1850 – 2200

Which asks for the  
continuous availability  
of alimentary products

# European Outline of Food and Refrigeration Chain



To satisfy demand, alimentary products are found in places in which it is possible to get them, then they are adequately preserved and carried where there exists a request for them.



June 1998

Boundary representation is  
not necessarily authoritative.

802599 (R00352) 6-98



# European Outline of Food and Refrigeration Chain



## TRANSPORT RISKS



## VARIATION IN TEMPERATURE RISKS



How would it be possible to  
imagine carriage of perishable  
foodstuffs without an adequate  
insurance?

June 1998

Boundary representation is  
not necessarily authoritative.

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# European Outline of Food and Refrigeration Chain



1. Definition
2. Historical background
3. The world of food and refrigeration chain



## ALIMENTARY PRODUCT

By alimentary product we indicate any substance or product, whether it be transformed, partially transformed or not transformed, meant to be ingested or which could reasonably be ingested.

art. 2 CE 178/2002



## PERISHABLE FOODSTUFFS

Perishableness of an alimentary product represents the possibility that its biochemistry may degenerate, owing to microbiological, enzymatic, chemical and physiochemical phenomena, related to the composition of the product or to the preparation, preservation and *transport* techniques.



## Historical background

- The evolution of preservation and packing methods is making available healthy alimentary resources to everybody and in any season





Freezing	Food undergoing -20° temperature with water crystallization and solidification of the product
Deep freezing	Food undergoing -40° temperature with water crystallization and solidification in a very brief lapse of time
Drying and dehydration processes	Products with highly reduced water content
Fresh	Product which has only undergone preservation by cold
Mixed methods	Joint employment of several preservation techniques

# Marine underwriting and damages

The allowance  
admitted by law  
on  
variations in  
temperature  
during  
voyage  
depends on  
products but is  
**low** .....



DEGREES CELCIUS

exceeding  
the limit  
should bring  
to **destruction**  
of the product  
or to change  
of its intended  
use



# The world of foodstuffs

## The classification of perishable foodstuffs

Alimentary  
fats

Fresh fish

Preserved  
fish

Eggs

Milk and  
by-products

Sweet  
products

Spirits

Soft  
drinks

Sweeteners  
Water Salt



Vegetables

Cereal by-  
products

Transformed  
- Fruit

Meat

Meat by-  
products

G.M.O.



# The world of foodstuffs

## Characteristics of the main perishable products

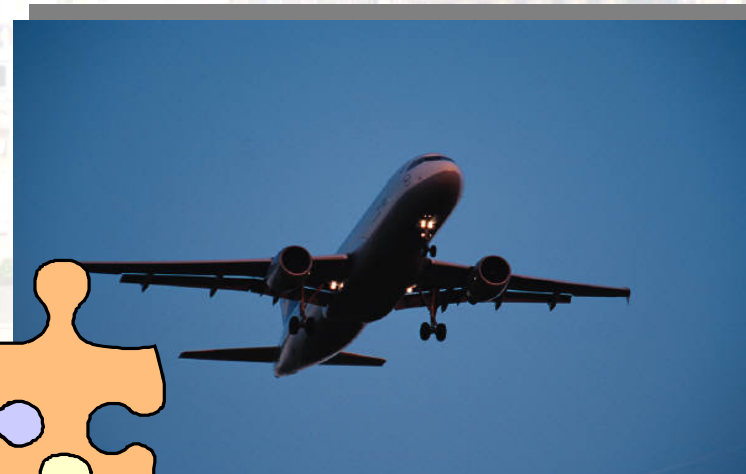


- **Organoleptic: appearance, colour, aroma, flavour and firmness.**
- **Nutritional**
- **Water Content**
- **Shelf life**



# The world of foodstuffs

## The means of transport



# The world of foodstuffs

## The means of transport

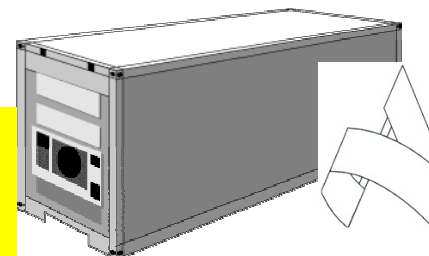
- With the present globalization of markets and the development (in quality and speed) of the means of conveyance, demand has been satisfied by an ample and not seasonal offer of alimentary products.





# The world of foodstuffs

## Container types and temperature recording systems



## Isothermal



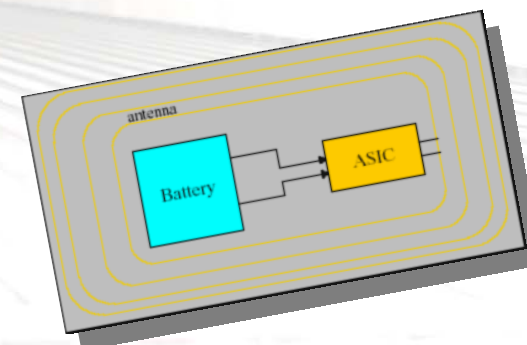
## Controlled temperature



## Controlled temperature and atmosphere



## Temperature recorder



4. Statistical records

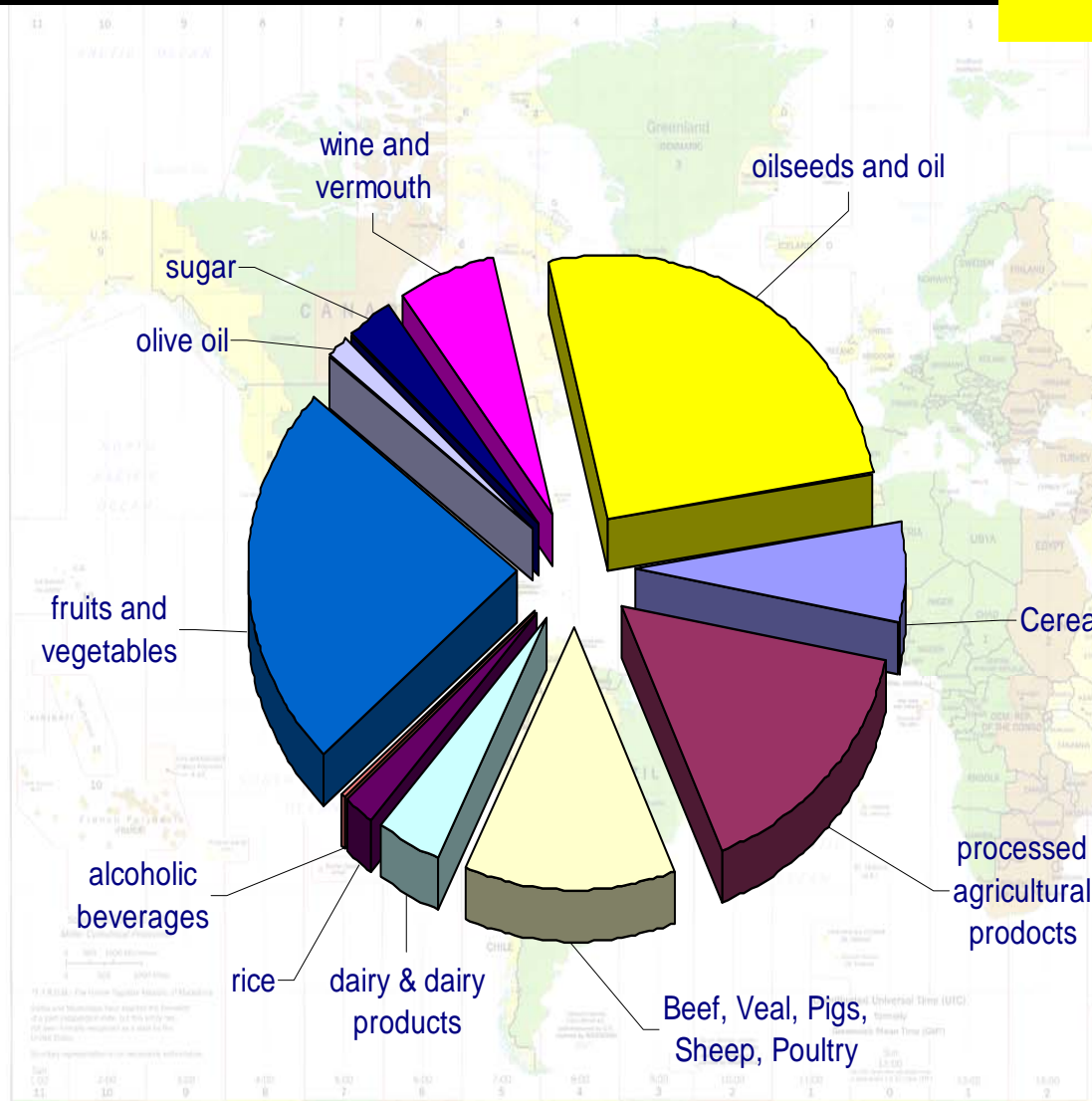
5. Marine underwriting and  
damages

6. Loss prevention

7. Conclusion

# Statistical records

## Import EU 15 - 2003

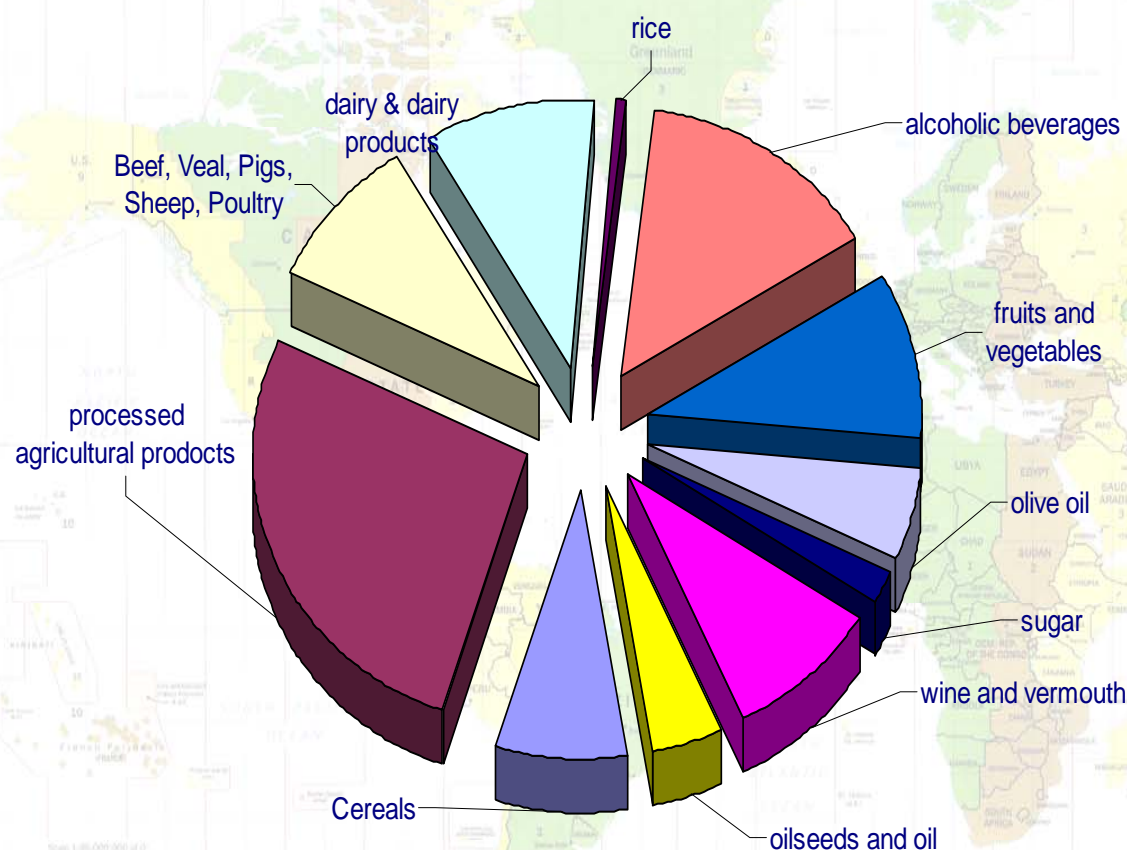


Cereals	€2.364
processed agricultural products	€6.173
Beef, Veal, Pigs, Sheep, Poultry	€5.061
dairy & dairy products	€1.550
rice	€743
alcoholic beverages	€121
fruits and vegetables	€9.325
olive oil	€620
sugar	€1.094
wine and vermouth	€2.234
oilseeds and oil	€10.254
<b>Total Million Euro</b>	<b>€41.542</b>



# Statistical records

## Export EU 15 - 2003



<b>Cereals</b>	<b>€3.961</b>
<b>processed agricultural products</b>	<b>€13.554</b>
<b>Beef, Veal, Pigs, Sheep, Poultry</b>	<b>€4.857</b>
<b>dairy &amp; dairy products</b>	<b>€4.995</b>
<b>rice</b>	<b>€248</b>
<b>alcoholic beverages</b>	<b>€7.338</b>
<b>fruits and vegetables</b>	<b>€5.077</b>
<b>olive oil</b>	<b>€2.823</b>
<b>sugar</b>	<b>€962</b>
<b>wine and vermouth</b>	<b>€4.670</b>
<b>oilseeds and oil</b>	<b>€2.046</b>
<b>Million Euro total</b>	<b>€2.534</b>

# Top 10 in Agricultural Products

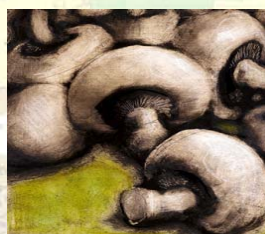


## Exporter

2003

## Importer

EU (15)	296
USA	68
Canada	32
Brazil	19
China	18
Australia	17
Argentina	12
Thailand	9
Malaysia	8
Mexico	8



EU (15)	336
USA	71
Japan	55
China	21
Canada	16
R.of Korea	13
CIS	11
Mexico	11
Hong Kong	10
Taipei	7

Billions USD - WTO Fonts



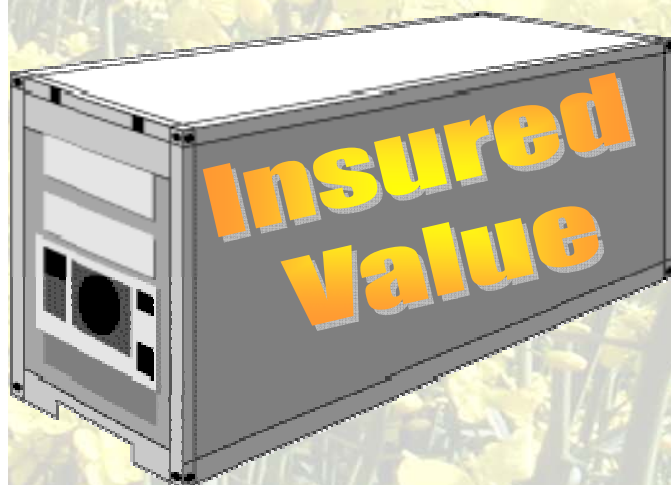
# Marine underwriting and damages

## Which risks for Insurers?

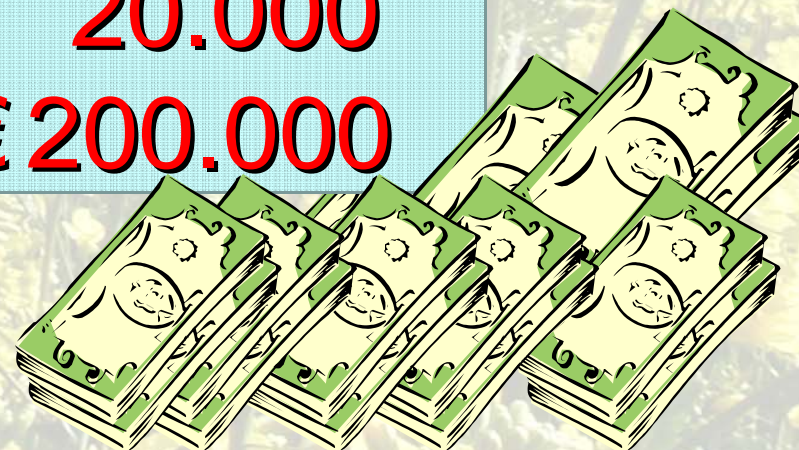
Ordinary Risks



Temperature  
and humidity  
variations



From € 20.000  
to € 200.000





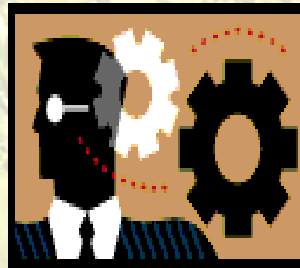
## Main elements for evaluation

Nature of  
goods

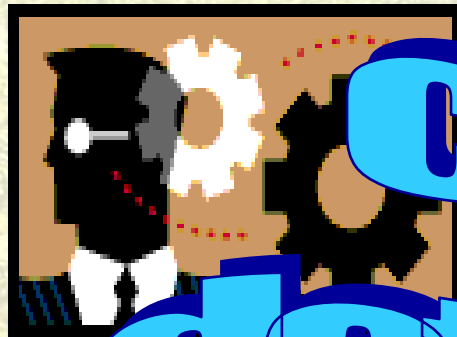
Packing  
stowage

Season  
voyage

Means of  
transport





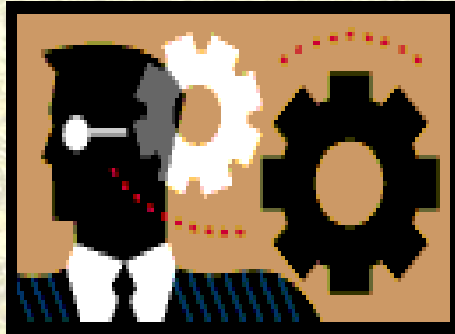


# causes of deterioration

Biological

Chemical-physical

## Cause of damages



Human error

Breakdown of plant

Inherent vice

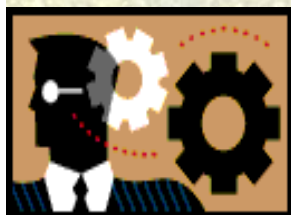
Delay



# Marine underwriting and damages

	<i>Cause of damages</i>	<i>Consequences of Damages</i>
Defrosting	<ul style="list-style-type: none"> <li>• Breakdown of plant</li> <li>• Wrong regulation</li> <li>• Bad stowage</li> <li>• Lack of feeding of the refrigerating plant</li> <li>• Obstruction of exhaust pipes</li> </ul>	Deterioration of product if length of time and variation are significant. Beginning of a degenerative process of product.
Frosting	<ul style="list-style-type: none"> <li>• Breakdown of plant</li> <li>• Wrong regulation</li> <li>• Bad stowage</li> <li>• Malfunctioning of thermostat</li> </ul>	Crystallization of water and organoleptic degeneration of product
Humidity variation	<ul style="list-style-type: none"> <li>• Formation of sweat</li> <li>• Lack of pre-refrigeration</li> </ul>	Degeneration of product according to its characteristics

## Insurance policy



breakdown of refrigerating machinery  
resulting in its stoppage for a period of not  
less than **consecutive** hours

24h

Frozen food  
excluding Meat

FROZEN FOOD **A** (Excl Froz Meat)

FROZEN FOOD **C** (Excl Froz Meat)

Frozen Meat

FROZEN MEAT **A**

FROZEN MEAT **A** 24h Breakdown

FROZEN MEAT **C** 24h Breakdown



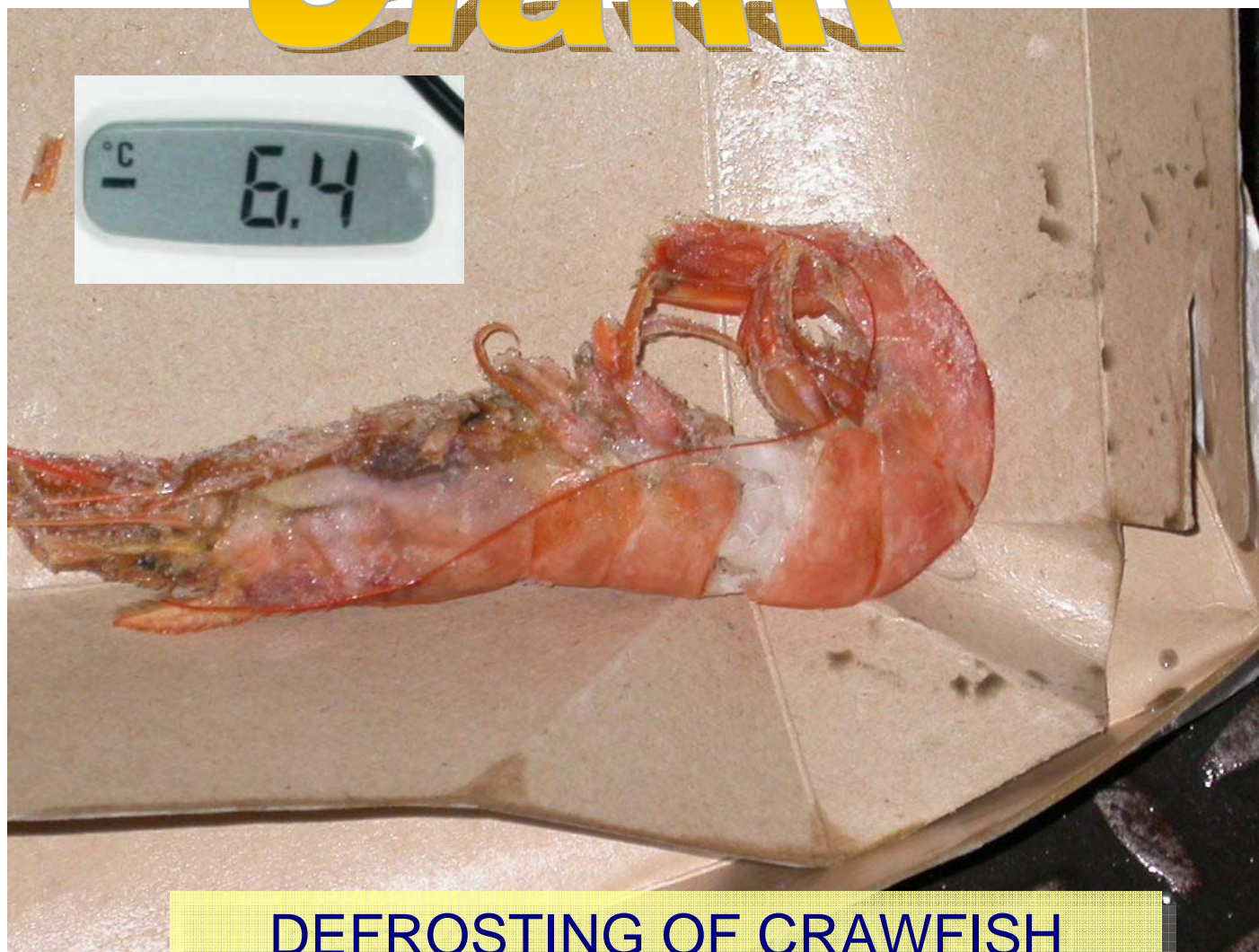
# Claim



PHYSICAL DAMAGE TO CONDENSED MILK



# Claim



DEFROSTING OF CRAWFISH



# Claim



DEFROSTING OF FISH

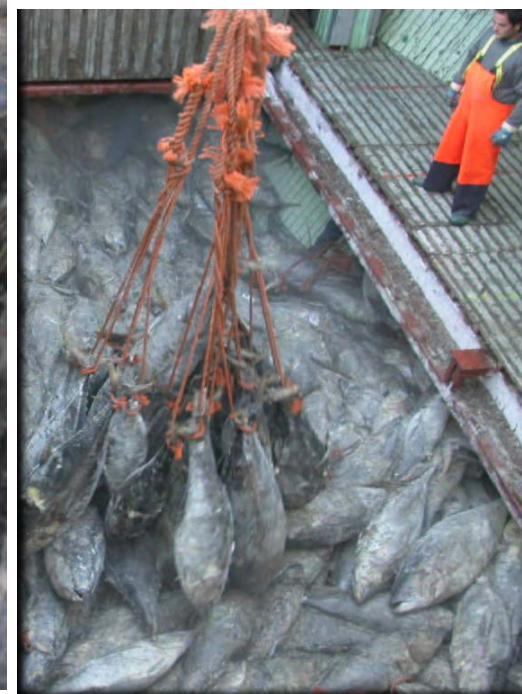


Photo by Salomone & P.



# Claim



DEFROSTING AND  
SUBSEQUENT NEW  
FREEZING OF MEAT

Photo by Salomone & P.



# Claim



MOULD ON FRENCH BEANS



Photo by Salomone & P.



# Claim



RIPENING OF BANANAS



Photo by Salomone & P.

# The Shipper

## DOCUMENTS

**Provide Carrier with all necessary instructions for safe transport, including the exact temperature which will have to be indicated on the documents of carriage**

## Preparation

**Program date and time with the Carrier**

**Adequately prepare goods for transport by pre-refrigerating them**

## Upon loading

**Verify adequacy and pre-refrigeration of the vehicle**

**Check that stowage conforms to indications relating to the vehicle and that there is sufficient air circulation**



# Loss Prevention

## The Carrier

### DOCUMENTS

- Read and conform to indications drafted on the transport documents
- Indicate who performs stowing and discharging operations
- Immediately apply due remarks on documents if goods are not in good condition or are not adequately packed/stowed
- Check the thermometric scale employed on the transport documents

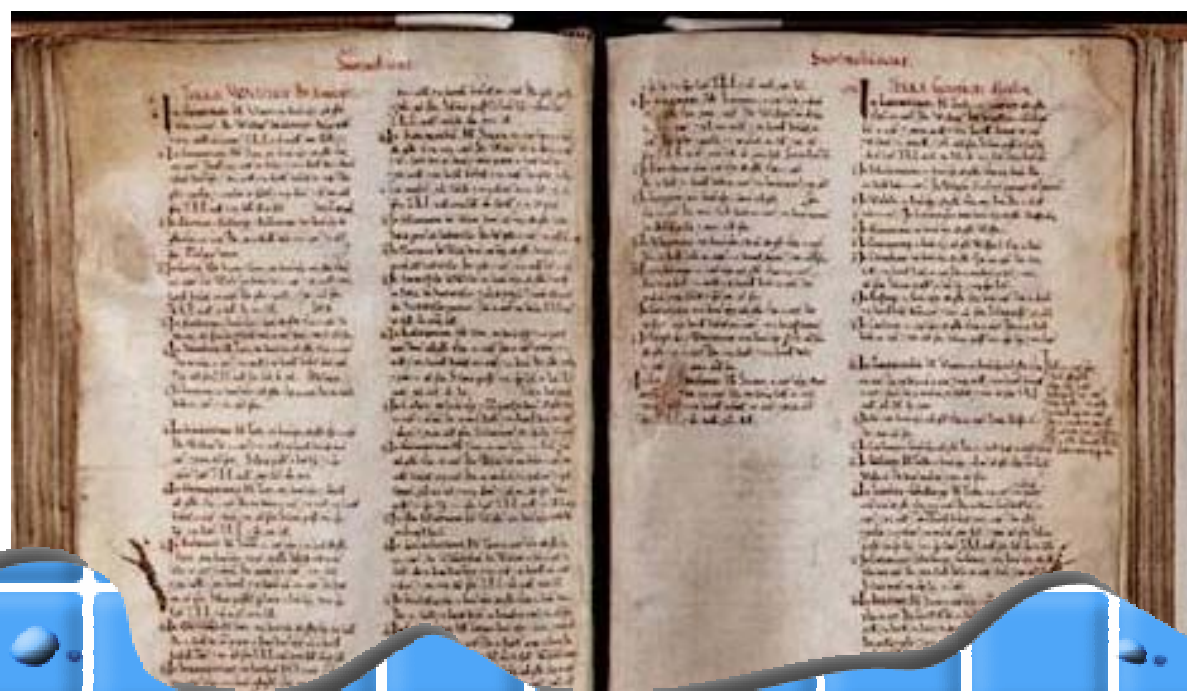
### Preparation

- Program date and time of loading with the Shipper
- Check that the loading area is perfectly clean and odourless.
- Activate the refrigerating plant before loading so as to both check its good working order and pre-refrigerate the loading area.
- Never open the loading area before loading and turn off the refrigerating plant during loading/stowing operations.
- Measure the temperature before and after loading.

### During transport

- Periodically check the working order of the refrigeration plant, the correct delivery of cold, the temperatures and the humidity.
- Periodically defrost the plant when provided for.
- Immediately intervene in case of a variation in temperature or of a breakdown of the plant by employing a previously determined set procedure.
- Continue to oversee the shipment also during stops.

## Marine handbook of perishable foodstuffs





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# Marine Insurance

is

***Essential to global trade***

*and .....*

is

***Fundamental***

**to global trade of perishable products**