Division Food and Associated Industries NRCS

CANNED FISH & FISHERY PRODUCTS

Kobus van der Merwe
CONTENTS

• PRODUCTION STATISTICS
  - TRENDS
  - 2009 PRODUCTION STATISTICS

• INSPECTION STATISTICS
  - QUALITY
  - FOOD SAFETY

• CONCLUSION
Compulsory Specifications

- Canned Fish, Canned Marine Molluscs and Canned Crustaceans
- Frozen Fish and Frozen Marine Molluscs
- Frozen Shrimps, Langoustines and Crabs
- Frozen Rock Lobster
- Smoked Snoek
- Canned Meat products
LOCAL CANNED FISH PRODUCTIONS & CANNED FISH IMPORTS 2000-2009
# TOTAL CANNED PRODUCTS IMPORTED FROM 2007-2009

<table>
<thead>
<tr>
<th>Year</th>
<th>Total cartons</th>
<th>Total Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>2,744,131</td>
<td>14,438,006.7</td>
</tr>
<tr>
<td>2008</td>
<td>7,110,745</td>
<td>35,819,701.52</td>
</tr>
<tr>
<td>2009</td>
<td>8,221,179</td>
<td>41,487,500.45</td>
</tr>
</tbody>
</table>
TOTAL CANNED PILCHARDS & TUNA PRODUCTS IMPORTED FROM 2007-2009

- Total
- Pilchards
- Tuna
- Other
# Canned Products Import Statistics

Canned products excluding Tuna products

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total codes imported</td>
<td>1689</td>
<td>5344</td>
<td>8092</td>
</tr>
<tr>
<td>Total net mass</td>
<td>8 053282Kg</td>
<td>27 345360Kg</td>
<td>32 434385Kg</td>
</tr>
</tbody>
</table>
Canned products excluding Tuna products

Total net mass imported

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5000000</td>
<td>250000000</td>
<td>300000000</td>
</tr>
</tbody>
</table>

[Graph showing the total net mass imported from 2007 to 2009]
LOCAL CANNED FISH PRODUCTIONS & CANNED FISH IMPORTS 2000-September 2010

![Graph showing local canned fish productions and canned fish imports from 2000 to September 2010. The graph includes data for Canned Imports, Local Canned Meat, and Local Canned Fish.]
**CANNED PRODUCTS IMPORTED**

**CHALLENGES**

- **Sampling**
  - Containers per month
- **Evaluation of pre-importation samples**
  - July 2009 – 58 pre-importation samples
  - Business companies not traditionally related to fishing industry
- **Label evaluations – product descriptions**
  - Various fish species presented as “Pilchards”
- **Illegal & undeclared imports**
- **Product withdrawals from retail market**
  - +- 96 000 cans
<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common name</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Sardina pilchardus</em></td>
<td>Pilchard / Sardine</td>
<td>Atlantic - Europe</td>
</tr>
<tr>
<td><em>Sardinops caerulea</em></td>
<td>Californian Pilchard</td>
<td>Pacific</td>
</tr>
<tr>
<td><em>Sardinops sagax</em></td>
<td>Chilean Pilchard</td>
<td>Pacific - S. America</td>
</tr>
<tr>
<td><em>Sardinops melanosticta</em></td>
<td>Japanese Pilchard</td>
<td>Japan</td>
</tr>
<tr>
<td><em>Sardinops ocellata</em></td>
<td>South African Pilchard</td>
<td>Atlantic - W. Africa</td>
</tr>
<tr>
<td><em>Sardinops neopilchardus</em></td>
<td>Pilchard / Picton herring</td>
<td>Australia / New Zealand</td>
</tr>
</tbody>
</table>
PILCHARDS DISTRIBUTION

- Sardina pilchardus
- Sardinops melanosticta
- Sardinops caerulea
- Sardinops sagax
- Sardinops ocellata
- Sardinops neopilchardus
### CANNED PRODUCTS INSPECTED 2009

<table>
<thead>
<tr>
<th>Origin</th>
<th>Productions</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSA canned Fish</td>
<td>2941</td>
</tr>
<tr>
<td>Namibia canned Fish</td>
<td>275</td>
</tr>
<tr>
<td>Imported canned Fish</td>
<td>12124</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15340</strong></td>
</tr>
</tbody>
</table>

- **RSA canned Fish**: 19% of the total productions
- **Namibia canned Fish**: 2% of the total productions
- **Imported canned Fish**: 79% of the total productions
### IMPORTED CANNED PRODUCTS INSPECTED 2009

<table>
<thead>
<tr>
<th>Product</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilchards</td>
<td>66.77</td>
</tr>
<tr>
<td>Tuna</td>
<td>20.60</td>
</tr>
<tr>
<td>Mackerel</td>
<td>4.47</td>
</tr>
<tr>
<td>Sardines</td>
<td>3.69</td>
</tr>
<tr>
<td>Mussels</td>
<td>1.45</td>
</tr>
<tr>
<td>Oysters</td>
<td>0.78</td>
</tr>
<tr>
<td>Salmon</td>
<td>0.74</td>
</tr>
<tr>
<td>Other</td>
<td>0.59</td>
</tr>
<tr>
<td>Skipper</td>
<td>0.37</td>
</tr>
<tr>
<td>Caviar</td>
<td>0.35</td>
</tr>
<tr>
<td>Anchovies</td>
<td>0.06</td>
</tr>
<tr>
<td>Herring</td>
<td>0.05</td>
</tr>
<tr>
<td>Crustaceans</td>
<td>0.04</td>
</tr>
<tr>
<td>Fish paste</td>
<td>0.00</td>
</tr>
</tbody>
</table>
IMPORTED CANNED PRODUCT INSPECTED 2009

Productions

- Pilchards
- Tuna
- Mackerel
- Sardines
- Mussels
- Oysters
- Salmon
- Other
- Skipper
- Caviar
- Anchovies
- Herring
- Crustaceans

NRCS national regulator for compulsory specifications
### LOCAL CANNED PRODUCT INSPECTED 2009

<table>
<thead>
<tr>
<th>Country</th>
<th>Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSA</td>
<td>2941</td>
</tr>
<tr>
<td>Namibia</td>
<td>275</td>
</tr>
<tr>
<td>Total</td>
<td>3216</td>
</tr>
<tr>
<td>Product</td>
<td>Percentage</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Pilchards in Tomato</td>
<td>38.7</td>
</tr>
<tr>
<td>Pilchards in Chilli</td>
<td>21.8</td>
</tr>
<tr>
<td>Abalone</td>
<td>9.5</td>
</tr>
<tr>
<td>Fish Paste</td>
<td>9.0</td>
</tr>
<tr>
<td>SA Sardines Vegetable Oil added</td>
<td>4.1</td>
</tr>
<tr>
<td>Pilchards Mince</td>
<td>4.0</td>
</tr>
<tr>
<td>Pickled Fish</td>
<td>2.9</td>
</tr>
<tr>
<td>Curry Fish</td>
<td>2.9</td>
</tr>
<tr>
<td>Pilchards in Brine</td>
<td>2.6</td>
</tr>
<tr>
<td>Pilchards in Smoked Vegetable Oil</td>
<td>2.5</td>
</tr>
<tr>
<td>Pilchards in water salt added</td>
<td>0.7</td>
</tr>
<tr>
<td>Smoor Snoek</td>
<td>0.5</td>
</tr>
<tr>
<td>SA Herring in Tomato</td>
<td>0.3</td>
</tr>
<tr>
<td>Mackerel in Brine</td>
<td>0.2</td>
</tr>
<tr>
<td>Mackerel in Tomato</td>
<td>0.1</td>
</tr>
<tr>
<td>Curried Pilchards</td>
<td>0.1</td>
</tr>
<tr>
<td>SA Herring in Chilli</td>
<td>0.0</td>
</tr>
<tr>
<td>Local produced Trail samples</td>
<td>0.0</td>
</tr>
</tbody>
</table>
### INSPECTION RESULTS – LOCAL

<table>
<thead>
<tr>
<th>Grading</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complies</td>
<td>28.0</td>
</tr>
<tr>
<td>Complies for non-critical market</td>
<td>2.0</td>
</tr>
<tr>
<td>Borderline Quality</td>
<td>67.8</td>
</tr>
<tr>
<td>Substandard</td>
<td>1.8</td>
</tr>
<tr>
<td>Not for sale</td>
<td>0.4</td>
</tr>
</tbody>
</table>

- **Not for sale**
- **Substandard**
- **Borderline Quality**
- **Complies for non-critical market**
- **Complies**

![Bar chart showing percentage distribution of grades](chart.png)
QUALITY CONCERNS

Canned Pilchards

• Reasons for down grading:
  – General appearance
  – Torn bellies
  – Damaged units
  – Sediment in sauce
  – Low drained masses
  – Broken up units
  – Poor thin & watery sauce

Most likely courses:
  – Quality of raw material
  – Processing
CANNED PILCHARDS
CANNED ABALONE
PILCHARDS - MOROCCO
PILCHARDS - MOROCCO
QUALITY IMPORTS
<table>
<thead>
<tr>
<th>Result</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complies</td>
<td>65.04</td>
</tr>
<tr>
<td>Borderline Quality</td>
<td>0.42</td>
</tr>
<tr>
<td>Substandard</td>
<td>32.63</td>
</tr>
<tr>
<td>Not for sale</td>
<td>1.91</td>
</tr>
</tbody>
</table>
CANNED PRODUCTS INSPECTION

Canned products excluding Tuna products

[Bar chart showing inspection data for 2007, 2008, and 2009, with categories: Total inspected, Complies, Substandard, Not for sale]
CANNED PRODUCTS INSPECTION

Canned products excluding Tuna products

- Total inspected
- Complies
- Substandard
- Not for sale

Graph showing inspected canned products from 2007 to 2009.
QUALITY CONCERNS

Canned Pilchards

• General decline in product quality:
  – General appearance
  – Torn bellies
  – Damaged units
  – Sediment in sauce
  – Low drained masses
  – Disintegrated units

Most likely courses:
  – Quality of raw material
  – Huge increase in production volumes
CONTROL SAMPLE
CANNED PILCHARDS
CANNED PILCHARDS
CANNED PILCHARDS
CANNED PILCHARDS
CANNED PILCHARDS
CANNED PILCHARDS
CANNED PILCHARDS
CANNED TUNA
FOOD SAFETY RELATED ISSUES

Products adjudged to be “not for sale”

- Physical contamination
- Presence of Parasites
- Extremely poor quality
- Incorrect labelling (fraudulent practices)
  - Products removed from trade – 96 000 cans
- Damaged cans
- Seam defects
CANNED PILCHARDS
CANNED PILCHARDS
CANNED PILCHARDS
CANNED PILCHARDS
CANNED PILCHARDS
CANNED PILCHARDS
Parasitic nematode
Parasitic nematode
CANNED MACKEREL

Parasitic isopod
CANNED MACKEREL

Parasitic isopod
SMOKED MUSSELS – FOREIGN MATERIAL
FOREIGN MATERIAL

Headspace: P/FULL

S8 - Piece of hard black rubber
INCORRECT LABELLING
LOW DRAINED MASSES
INCORRECT LABELLING & POOR QUALITY
INCORRECT LABELLING & POOR QUALITY
INCORRECT LABELLING & POOR QUALITY
INCORRECT LABELLING & POOR QUALITY
FOOD SAFETY

-LOCAL PRODUCED-
FOOD SAFETY RELATED ISSUES

Products adjudged to be “not for sale”
  – Can and seam defects
Damaged 1m empty cans resulting in serious seam defects

- 17 April 2009 empty cans were damaged at factory during operations
- Damaged cans removed but not properly sorted
- Remainder of cans utilized in different productions
- Damaged cans resulted in serious seam defects & leaking cans
- Productions identified – 6 productions isolated
- Screening process
- +/- 48 000 cans destroyed of the specific can manufacturers code
SERIOUS SEAM DEFECTS
FOOD SAFETY

Side seam failure – Jitney cans

- On 2009-05-22 NRCS inspector discovered leaking cans in warehouse
- Embargo placed on the distribution and sale of all Jitney cans
- Investigation by can manufacturer
- Defect identified & isolated
- Cans produced by can manufacturer on 31 May, 1-2 April 2009
- 3 Factories affected
- Product recalled from trade – 13200 cans
- Cans destroyed – 344 927
Side seam failure – Jitney cans

Investigation

THE DEFECT

- Cold weld seams

THE ROOT CAUSE

- Two different metal plates from different sources used during can manufacturing
- The apparently trouble free changeover from the one plate type to the other challenged the welding process latitude and resulted on a cold welding process on the side seams
SIDE SEAM SPLIT
DESTRUCTION OF JITNEY CANS
DESTRUCTION OF JITNEY CANS
DESTRUCTION OF JITNEY CANS
CHAFED CANS - SEAMS
DAMAGED SEAMS
conclusion
CHALLENGES

- WORLD ECONOMIC CRISIS AND DEPLETION OF RESOURCES AFFECTING PROFITABILITY AND GENERAL STATE OF FISHING INDUSTRY
- OPERATIONAL CHANGES DUE TO CHANGING INDUSTRY NEEDS - INCREASE IN IMPORTED CANNED PRODUCTS
- TO MINIMIZE THE CHANCES OF UNINSPECTED PRODUCTS ENTERING THE TRADE, ESPECIALLY HIGH RISK PRODUCTS
FOOD SAFETY

UNITED KINGDOM

Food Poisoning Facts – By Dr Yunes Teinaz Acting Head of Environmental Health  London Borough of Hackney

• “The World Health Organization (WHO) reports that each year two billion illnesses are caused by unsafe food; globally this number is growing. In Asia 700,000 people die each year as a result of food poisoning illnesses. Each year in the developing world, diarrhea illness from contaminated food and water causes 2 million deaths in young children.”

• “In Britain the incidence of food poisoning has been increasing for many years and it is now a major public health problem. According to the Food Standards Agency (FSA), it is estimated that up to 5.5 million people in the UK are affected from food poisoning each year “
USA
Centers for Disease Control and Prevention, Atlanta, Georgia, USA

• “We estimate that foodborne diseases cause approximately 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths in the United States each year “

CANADA
Ottowa Citizen

• “Up to 13 million Canadians, more than 40 per cent of the population, will suffer from food-borne illnesses this year, an epidemic that medical experts say costs up to $1.3 billion annually in lost productivity and medical expenses. “
FOOD SAFETY

AUSTRALIA

Australian Academy of Science – 2005

• “In 2003, the Food Safety Information Council estimated that there are approximately 5 million Australians affected by food-poisoning every year. “

• “A 2005 report found that approximately 120 people die from foodborne illnesses in Australia every year “
FOOD SAFETY

• GLOBAL CONCERN
• INCREASING CONCERN
• JOINT RESPONSIBILITY OF FOOD PRODUCERS, FOOD PROCESSORS, DISTRIBUTORS, GOVERNMENT & CONSUMERS
We strive to ensure food safety and the protection of human health by implementing the farm to fork principle as our ultimate objective.

“Our aim is 100% Coverage”
The End

Thank You