

# SINGAPORE

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## INTRODUCTION

The application of HACCP concept to the fish processing industry has gained increasing popularity in many developed countries as the system of choice for enhancing food safety and quality. Many of these countries have integrated this system into their food inspection programme and national legislation. Some have gone one step further by also requiring their domestic industry as well as those that export fish and fishery products into their markets to adopt the same concept in their production and operations.

In Singapore, the Food and Veterinary Administration (FVA) of the Agri-food and Veterinary Authority of Singapore (AVA) is the competent agency responsible for the inspection and licensing control of all fish processing establishments in Singapore. AVA's primary concern is to ensure wholesomeness and public health safety of fish and fishery products for human consumption as well as to meet with the health and

sanitary requirements of the importing countries in respect of the plants' exports and premises.

The concept of HACCP has been introduced in Singapore in the mid 1990s after it was incorporated into the food legislation in the EU, after the adoption of the EU Food Hygiene Directives in Jun 1993. Since then AVA has been actively communicating the basic principles and necessary information required for its effective implementation to the fish processing industry. In Dec 1999, The Wholesome Meat and Fish Act was enacted. One of the key features of this act is the requirement for all fish processing establishments in Singapore to develop and implement a food safety programme at their premises. In addition to numerous benefits arising from the implementation of HACCP and in view of the need to align with international food safety requirements, AVA has mandated HACCP requirements for all types of fish processing.

## FISH PROCESSING INDUSTRY IN SINGAPORE

The fish processing industry in Singapore consists of two broad categories, that is, export-oriented processing establishments and local processing establishments. These establishments produce a wide range of fish products such as comminuted fish

products, e.g. fish ball and fish cake; Chinese delicacies, e.g. dried shark fin; and frozen and chilled seafood, e.g. prawn, fish fillet and mollusc. The majority of the fish processing establishments produce for domestic market while others produce mainly for export.

## Export-oriented fish processing establishments

Singapore, though being a net importer of fish and fishery products, also export a significant amount of fresh, frozen and other processed fish and fishery

products. The quantity and value of seafood export from year 2000 to 2002 is shown in Table 1.

**Table 1. Export of seafood from 2000 – 2002**

Export	2000		2001		2002	
	Quantity (tonnes)	Value (S\$)	Quantity (tonnes)	Value (S\$)	Quantity (tonnes)	Value (S\$)
Fresh, chilled and frozen fish	98,328	566,342	78,308	469,038	60,859	324,880
Processed fish (including dried, canned and preserved fish)	13,835	167,670	16,826	153,936	20,663	189,882
<b>Total</b>	<b>112,163</b>	<b>734,012</b>	<b>95,134</b>	<b>622,974</b>	<b>81,522</b>	<b>514,762</b>

Some of the importing countries for Singapore fish and fish products are EU, Australia, US, Japan, Hong Kong, China, Canada and Taiwan. In order to facilitate the industry's export abroad, AVA provides health certification for them. Processing of the products destined for export are monitored closely to ensure that they comply not only with the requirements imposed by importing countries but also that sanitary and hygiene standards are maintained at the highest level at all time. Samples of the products are collected for the relevant laboratory tests, i.e. microbiological tests,

heavy metals, antibiotics, etc. Health certificates are then issued upon satisfactory laboratory results. Some of these export-oriented fish processing establishments also process their products for the local market.

Many of export-oriented establishments, especially those exporting to EU, are HACCP-certified and have readily adopted Good Manufacturing Practices (GMP) to meet the requirements of the importing countries.

## Local fish processing establishments

Local processing fish establishments make up the majority of the fish processing establishments in Singapore. They consist of small to medium-sized enterprises, many of them are family-owned business. Most of their processing is still done manually and are labour-intensive. The floor areas for these establishments are relatively small, typically around 90 - 120 square

meters. This physical space constraint can give rise to poor housekeeping and increase the possibility of cross contamination between cooked food and raw materials. Moreover, unlike their export-oriented counterparts, many of the workers of local establishments have inadequate knowledge of hygiene and sanitation.

## Status of fish processing industry in Singapore from year 2000 – 2003

The number of fish processing establishments in Singapore has been declining from 99 in 2000, 95 in 2001 and 88 in 2002. To date, there are 90 fish processing

establishments in Singapore in 2003. The number of establishments according to each category is shown in Table 2.

**Table 2. Fish processing establishments in Singapore from 2000 – Jun 2003**

Product type	2000	2001	2002	As in Jun 2003
Comminuted fish products (e.g. fish ball, fish cake, <i>otah</i> )	49	48	46	46
Frozen fish products (e.g. tuna, swordfish)	25	24	22	24
Dried seafood products	0	0	0	0
Chinese delicacies (e.g. shark fin, sea cucumber)	23	19	17	17
Crustaceans, mollusc	2	4	3	3
<b>Total</b>	<b>99</b>	<b>95</b>	<b>88</b>	<b>90</b>

## AVA'S APPROACH TO THE HACCP IMPLEMENTATION IN FISH PROCESSING INDUSTRY

Since The Wholesome Meat and Fish Act was enacted in Dec 1999, it has been mandatory for all fish processing establishments to submit HACCP plans to

AVA upon licence application or renewal. However, the implementation of HACCP is still on voluntary basis.

**Table 3. HACCP implementation in fish processing industry**

	2000	2001	2002	As in Jun 2003
No. of licensed fish processing establishments	9	95	88	90
No. of EU-approved fish establishments	11	14	15	12
No. of HACCP-certified (3 <sup>rd</sup> party) fish establishments	3	5	9	9

From Table 3, it can be seen that although the number of licensed fish processing establishments have decreased but the number of EU-approved establishments and HACCP-certified establishments have steadily increased. The decline as of Jun 2003 was due to closure of 3 plants due to the economic downturn.

Some fish processing establishments have enlisted third party-accreditation organisations to audit

their HACCP plans and system. Following successful auditing of the system, processing establishment would be awarded certifications under various HACCP schemes. Audit checks would then performed regularly to ensure that the HACCP plans were correctly administered and the system was working effectively. To ensure that the auditing party are competent to perform certification of HACCP, AVA is in the process of developing HACCP audit and certification procedures and auditor approval criteria to accredit

organisations that are competent to perform this scheme on behalf of AVA. To date, there was one workshop organised by AVA in Oct 2002 to train its staff in HACCP auditing procedures and techniques.

Another scheme to encourage small fish processing establishments to implement HACCP was proposed by Marine Fisheries Research Department (MFRD) and Standards, Productivity, and Innovation Board (SPRING, formerly known as PSB). This scheme proposed cost sharing among the plants to reduce the

cost of implementing HACCP. This scheme, proposed in 2002, currently has yet to be implemented due to economic downturn.

As incentive for the local industry, the Government has provided financial assistance for consultancy cost under the Local Enterprise Technical Assistance Scheme (LETAS). Processing establishments can apply for grants up to 70%, maximum of S\$ 14,000 for consultancy costs and up to 50%, maximum of S\$ 5,000 for certification costs.

## PROBLEMS/ DIFFICULTIES ENCOUNTERED

The implementation of HACCP in local establishments is noticeably slower than its export-oriented counterparts. Some of the possible reasons are:

- **Misconceptions about HACCP**

Small-medium enterprises often associate the implementation of HACCP as criteria that need to be complied only by those who intend to export the products overseas. In actual fact, HACCP has to be implemented by all processing establishments, to ensure product safety and

quality and to prevent potential food hazards. In addition, there is a misconception that HACCP is difficult to apply in small processing establishments, as there is a large cost involved and expert needed.

- **Economic downturn**

Due to the recent economic downturn, many establishments are affected and delaying HACCP implementation as it is still on a voluntary basis

## CONCLUSION

Although HACCP has been mandated as the system of choice to ensure food safety by AVA, the driving force lies heavily on the industry's eagerness and commitment to develop and implement it to in order to make this initiative a success. Even though many fish processors recognised the usefulness and importance of HACCP to ensure product safety and quality but the implementation of HACCP has generally been quite

slow, especially in small establishments. This is due largely to the lack of resources (technical, financial and manpower) and the limited understanding of HACCP principles and application. In view of this, the government through AVA has and will continue to assist the industry, by providing training and incentives for HACCP implementation.