Accredited Fish Farm Scheme in Hong Kong

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Hong Kong Fisheries Profile 2006

- Tonne: 9,174, 1,488, 1,943, 131, 145,362
- HK$Mn: 255, 89, 29, 6, 1,338

- Captured Marine Fish
- Captured Shellfish
- Cultured Marine Fish
- Cultured Freshwater Fish
- Oyster
### Production in 2006

<table>
<thead>
<tr>
<th>Aquaculture Product</th>
<th>Amount</th>
<th>Value (HK$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine Fish</td>
<td>1,500 t</td>
<td>90 Mn</td>
</tr>
<tr>
<td>Pond Fish</td>
<td>1,900 t</td>
<td>29 Mn</td>
</tr>
<tr>
<td>Oyster</td>
<td>130 t</td>
<td>6 Mn</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,530 t</strong></td>
<td><strong>125 Mn</strong></td>
</tr>
</tbody>
</table>
Aquaculture in Hong Kong

Fish Ponds
Marine Fish Culture Zones
Oyster Beds

Aquaculture in Hong Kong
## Common Cultured Species - Marine Fish

<table>
<thead>
<tr>
<th>Seabreams</th>
<th>Gold-lined seabream</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yellow-finned seabream</td>
</tr>
<tr>
<td>Snapper</td>
<td>Mangrove snapper</td>
</tr>
<tr>
<td></td>
<td>Russell’s snapper</td>
</tr>
<tr>
<td></td>
<td>Red snapper</td>
</tr>
<tr>
<td>Groupers</td>
<td>Green grouper</td>
</tr>
<tr>
<td></td>
<td>Spotted grouper</td>
</tr>
<tr>
<td>Others</td>
<td>Purple amberjack</td>
</tr>
<tr>
<td></td>
<td>Cobia</td>
</tr>
<tr>
<td></td>
<td>Pompano</td>
</tr>
</tbody>
</table>
# Common Cultured Species - Pond Fish

<table>
<thead>
<tr>
<th>Carps</th>
<th>Grass Carp</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Big-head Carp</td>
</tr>
<tr>
<td></td>
<td>Common Carp</td>
</tr>
<tr>
<td></td>
<td>Edible Goldfish</td>
</tr>
<tr>
<td>Others</td>
<td>Grey mullet</td>
</tr>
<tr>
<td></td>
<td>Tilapia</td>
</tr>
<tr>
<td></td>
<td>Spotted Scat</td>
</tr>
</tbody>
</table>
The local aquaculture industry is facing two major challenges:

- competition with imported aquatic food products
- Increasing public concerns about the food safety of aquaculture products
Accredited Fish Farm Scheme

- voluntary scheme launched in June 2005
- aimed to assist local fish farmers
  - to increase the competitiveness of their aquaculture products and
  - to provide quality and safe aquaculture products to the public
Objectives:

- To enhance the quality of local aquaculture products by introducing "Good Aquaculture Practices" to local fish farms.

- To increase transparency of production process by standardization of processes in order to gain consumer confidence in local aquaculture products.
Objectives (Cont’):

- To highlight the safety of local aquaculture products by introducing pre-marketing product tests
- To make local aquaculture products stand out by branding
Accredited Fish Farm Scheme

- Farm Registration System
- Fry Registration System
- Quality Assurance System
Accredited Fish Farm Scheme

Farm Registration

Interested fish farmers apply for the scheme

Check the culture environment and management method of the fish farm

Passed

Registration accepted

Provide technical support to improve fish farm conditions, culture environment and

Failed
Accredited Fish Farm Scheme

Basic requirements for farm registration:

- Regular monitoring of fish health & water quality
- Regular disinfection of tools
- Quarantine for newly acquired stocks
- Separation / proper treatment of sick fish
- Proper disposal of fish carcass
- Controlled use of minced fish
- Appropriate use of feed additives & drugs
- Maintenance of fish farm management records
Fry Registration

- register fish stock at the beginning of culture cycle
- maintain records of the quantity and culturing period of each stock of fish fry
- sample fry for inspections & laboratory testing
- prevent the abuse of the scheme by "fish hotels"
Accredited Fish Farm Scheme

Quality Assurance

Regular inspection & monitoring

- Farm hygiene, facilities & equipment, management records, water quality, feed quality, etc.
- Heavy metal content in fish
- Drug residues in fish & microbiology tests on water samples
Accredited Fish Farm Scheme

Quality Assurance

Pre-harvest Monitoring

Water Sample

E. coli

V. cholerae

Fish Sample

Heavy metals

Malachite Green/Leuco MG

1° Drug Residue Screening

2° Drug Residue Screening
Quality Assurance

Pre-harvest monitoring

- Drug residues
- *E. coli* & *V. cholerae*
- Issue Certificate of Accredited Fish
  - fish farm, fish species, quantity of fish stock and quality tests passed
Automatic Microbial Identification System (VITEK)

- rapid and fully automated identification and susceptibility system
- automatically scanned by the photometric sensors under controlled chamber once every hour
- detecting the change in color and turbidity for identification of groups of bacteria
Testing:

- Gram-negative bacteria (GNI+)
- Gram-positive bacteria (GPI)
- Gram-negative non-fermenting bacteria (NFC)
- Anaerobic bacteria (ANI)
- Yeast (YBC)
- Bacillus species (BAC)
- Neisseria and Haemophilus species (NHI)
- Bioburden (BIO)
- Susceptibility tests of Gram-negative bacteria (GNS)
- Susceptibility tests of Gram-positive bacteria (GPS)
Primary Drug Residues Screening: Premi ® Test

- *Bacillus stearothermophilus* – very sensitive to many antibiotics & sulphonamide residues

- Meat fluid is added to Premi®Test and incubated at 64°C. If antimicrobials residues are present in sufficient amount, no growth of *Bacillus stearothermophilus*. This will be visible by no color change.

- Advantage: screen a broad spectrum of antibiotic at very short time.
Drug residues detected by Premi ® Test:

**β-lactam**
- Amoxicillin
- Ampicillin
- Penicillin

**Tetracyclines**
- Chlortetracycline
- Oxytetracycline
- Tetracycline
- doxycycline

**Sulphonamides**
- Sulfapyridine
- Sulfamethoxypyridine
- Sulfathiazole
- Sulfadiazine
- Sulfamerazine
- Sulfadimethoxinepyridine
- Sulfamethoxypyridine
- Sulfadimethoxinepyridine

**Cephalosporins**
- Cefquinome
- Ceftiofur

**Aminoglycosides**
- Gentamicin
- Streptomycin
- Neomycin

**Macrolides**
- Tylosin
- Lincomycin
- Spiramycin
- Erythromycin

**Quinolones**
- Oxolinis acid
- Sarafloxacin

**Other**
- Florphenicol
- Chloramphenicol
CHARM II 7600

Drugs Residue Analyzer

- single sample LSC/LUM counting chamber
- competitive immuno-assay
- rapid detection of antibiotics and pesticides in foods (4 – 6 hr)
- rapid detection of drugs, such as amphenicols, tetracyclines and spectinomycin
- confirm by LC-MS
Registered fish farm may sell the accredited fish stock under the brand name of Accredited Fish Farm Scheme.

Registered fish farm may also sell the accredited fish through the Fish Marketing Organization in Hong Kong.
Accredited Fish Farm Scheme

Fish Tag

- fish tags with serial control number & counterfeit technology
Accredited Fish Farm Scheme

Progress

- 65 registered fish farms
  (18 pond fish & 47 marine fish)

- Registered fish farms represent over 11% of the total area of fish farms in Hong Kong

- Registered farm list available on website (http://www.hkaffs.org)
Accredited Fish Farm Scheme
Enhance the Quality of Locally Cultured Fish

Background

The local aquaculture industry is facing two major challenges: competition with imported aquatic food products and the lack of consumer confidence in fish and seafood.

Due to the high production costs locally, competition with imported aquatic food products by price is impossible. Improving the quality of local aquatic products is therefore necessary to maintain competitive advantages.
Accredited Fish Farm Scheme

Progress

- Total sales of accredited fish stock above 77,000 catties (47,000 Kg)
- Retail points at supermarkets, wet markets, accredited fish specialty store & on-line sales and deliver service
- 23 fish species registered in Accredited Fish Farm Scheme (18 marine & 5 pond fish)
Accredited Fish Farm Scheme

Publicity & Promotion

- Local agricultural and fisheries products Fair (December 2005 & Jan 2007)
Accredited Fish Farm Scheme

Publicity & Promotion

- News & TV coverage
Accredited Fish Farm Scheme

Publicity & Promotion

- Promotion in supermarkets
- Accredited Fish Specialty Store
Accredited Fish Farm Scheme

Publicity & Promotion

Press coverage
Accredited Fish Farm Scheme

Publicity & Promotion

• Press coverage

Fishermen hope local brand will catch on

Amy Ling

A new brand of quality controlled fish will appear in markets in three to six months, as part of efforts to help local producers compete with imported fish.

The scheme that meets the standards of the Accredited Fish Farming Scheme will be able to sell new technology that means "we aim to help fish farms stay in business, raise the competitiveness of local fish producers and increase public confidence in local fish," said executive director Calvin Yong (right).

The process will be governed by the Fish Marketing Organization (FMO), registered under the scheme, which will have to ensure producers meet requirements such as water, feeds and processing equipment.

Fish being sold under the new brand will be inspected using tests that identify species, identify water and feed quality and test for residues.

"We believe the cost of feeding fish will increase by 10% per year because we have sustainable facilities," said Yong, adding that with regulations in place, the price will be lower,

The government has promised to ensure technical assistance for small-scale companies that want to produce quality fish.

"The program is to be developed in conjunction with the Chinese government because it's more secure," he said.

Tags offer peace of mind – at a price

Fish from accredited farms go on sale with security badges declaring them safe

"We have been trying to give a twist to the quality of fish," he said. "It is not only about making fish safer, it is also about making them more secure."

Fish farmers abroad have been demanding tags similar to those used in Australia and New Zealand.

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Accredited Fish Farm Scheme

Marketed Fish Products: green grouper, pompano, brown-spotted grouper, red seabream, red snapper, white blotched snapper, sweetlip, cobia, red drum, black croaker, mangrove snapper, Russell’s snapper, emperor red snapper, purple amberjack, head grunt, goldlined seabream, giant grouper, grey mullet & jade perch
Accredited Fish Farm Scheme

Way Forward

- Continue to promote Accredited Fish Farm Scheme to local fish farmers
- Organize technical seminars, e.g., good aquaculture practices, proper use of drugs, etc.
- Explore with the industry to expand the sales channels, e.g., direct sales method and accredited fish specialty wholesale market