

# Aquarium Fishes

## [General Topics](#)

## [Ornamentals & Web Resources](#)

## [Dealers and Pet Shops & Web Resources](#)

## General Topics

Deutsche Veterinarmedizinische Gesellschaft (1994) *Tagung der Fachgruppen "Tierschutzrecht und gerichtliche Veterinarmedizin" und "Fischkrankheiten", Stuttgart-Hohenheim, 10.-11. März 1994. [Proceedings of a meeting of the Expert Groups on animal protection law, veterinary jurisprudence and fish diseases, German Veterinary Medical Society, Stuttgart-Hohenheim, 10-11 March 1994].* Frankfurter Strasse 89, D-6300 Giessen, Germany. 111 pp. (In German with English Subtitles)

NAL Call No. SF605 T33 1994

The meeting discussed the welfare of fish kept in aquaria and of aviary birds.

*Descriptors:* animal welfare, aquarium fishes, aviary birds

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Manz D (1988) **Tierschutzrelevante Gesichtspunkte bei der Haltung von Aquarienfischen.** [Animal welfare aspects of the keeping of aquarium fish.] *Tagung der Fachgruppe "Fischkrankheiten" und der Fachgruppe "Zootierkrankheiten" im Tierpark "Hellabrunn", Munchen, 22./23. November 1988.* Deutsche Veterinarmedizinische Gesellschaft Giessen, German Federal Republic. p.20-26 (In German)

NAL Call No. SF458.5 T3

*Descriptors:* animal welfare, aquarium fishes, fishes, aquatic animals

Weins J (1997) *Untersuchungen uber die Susswasserzierfischhaltung im Zoofachhandel unter tierhygienischen und tierschutzrechtlichen Aspekten mit Vorschlagen fur die Tatigkeit der bewachungsbehorden [Welfare aspects of the trade in freshwater aquarium fishes.]* Fachbereich Veterinarmedizin, Justus-Liebig-Universitat, Giessen Germany. 173 pp. (In German with English summary)

*Descriptors:* animal welfare, pets, aquarium fishes

Wildgoose W (2001) **Taking the plunge: treating pet fish.** *In Practice.* 23 (4):220-227  
NAL Call No. SF601.I4

*Descriptors:* animal welfare, aquarium fishes, aquatic animals, fish diseases, nitrogen cycle, ornamental fishes, veterinarians, water filters, water quality, goldfish

Wilhelm W (1991) **The art of keeping aquarium fishes.** *Tijdschrift voor Diergeneeskunde (Netherlands).* 116 Suppl 1 p. 57S-63S.

NAL Call No. 41.8 T431

*Descriptors:* animal welfare, fishes, physiology, animal feed, animal nutrition, housing, standard, water

Return to: [Top of Document](#)

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## Ornamentals

Biffar M (2002) **Recent developments in ornamental fish: market, health management and general trends.** *Bulletin of the European Association of Fish Pathologists.* 22 (2):66-71 ISSN: 0108-0288

*Descriptors:* animal health, animal welfare, aquarium fishes, hobbies, import controls, international trade, ornamental fishes, regulations

Ferraz E, Araujo MGL (1999) **Ornamental fish from the Rio Negro Basin: Overcoming disease related mortalities.** (Eds:) Nelson J, MacKinley D. *Special Adaptations of Tropical Fish.* pp. 11-16

Brazil is a major exporter of aquarium fish. The main source for ornamental fish for export is the Rio Negro basin. The techniques for fish capture and transportation are, basically, the same as those used at the beginning of exploitation. Though some improvements have been made in fish husbandry management post-capture, diseases and mortalities are still a problem. A variety of approaches were used to assess the health problems: 1) interviews with fishermen, middlemen and exporters; 2) recording the condition of the fish on their arrival at the exporters' holding facilities; and 3) routine disease screening of 7 species of fish. Results indicate: 1) that the seasonal fluctuations of the water level play an important role in determining fish health; fish captured from areas with low water levels during the long dry season are often found to be in a debilitated condition; 2) in the chain of events

linking capture to export the most critical phases influencing the health and survival of the fish are the storage of fish by fishermen and the transport to the local reception areas of the exporters in Barcelos. The transport from Barcelos to the principal fish holding facilities in Manaus was previously considered a critical phase, but the recent provision of new boats for fish transport, and improvements in fish husbandry prior to transport, have contributed to reduced mortalities during this period; 3) the most common diseases diagnosed are related to the series of handling stressors and sub-optimal conditions which fish are exposed to prior to delivery at the exporters' holding facilities. The negative effects of handling stress on the condition of the fish can be reduced if more attention is paid to the welfare of the fish following the arrival of the consignments at the reception areas in Barcelos. Another problem concerning the Brazilian ornamental fish industry concerns the legislation controlling the export of ornamental species. Problems related to the export of non-permissible species possessing similar external characteristics to and recorded under the same Latin or common name as a permissible species, are still present.

*Descriptors:* ornamental fish, tropical fish, diseases, mortality, trade, fish handling, transportation, live storage, river basins, *Paracheirodon axelrodi*, *Hyphessobrycon erythrostigma*, *Symphysodon discus*, *Ancistrus*, *Corydoras robinae*, *Corydoras adolfoi*, *Corydoras burguessi*, Brazil

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Ford, DM (1991) **Ornamental fish**. Eds: Anderson RS, Edney ATB. *Practical Animal Handling*. Pergamon Press plc Oxford, UK. p.171-176

NAL Call No. SF61 P73 1991

Topics discussed are the inspection tank, the fresh water tank, salt water tank, maintenance, examination, the home aquarium, the pond fish and capture and transporting of fish.

*Descriptors:* fish diseases, transport of animals, restraint of animals, animal welfare

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Hignette M (1984) **The use of cyanide to catch tropical marine fish for aquariums and its diagnosis**. *Comptes Rendus des Journees Aquariologiques de l'Institut Oceanographique, 16 Dec 198 (Proceedings of Marine Aquariology of the Oceanographical Institute, 16 Dec 1983.)*. *Oceanis. Serie de documents oceanographiques. Paris*. 10(5):585-591 ISSN: 0182-0745

Marine tropical fish for the pet industry are nowadays very often caught with cyanide sodium, which is used for its "anaesthetic" effect. This method however can be responsible for fish dying as much as several weeks after transport, and must be avoided. In order to stop exporters having recourse to this practice, fish importers and aquariologists must know how to measure cyanide themselves in fish or obtain analyses from reliable laboratories.

*Descriptors:* cyanides, aquaria, tropical fish, catching methods, fish poisoning, stupefying methods, mortality causes

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Wyllie S (1994) **The international ornamental fish trade.** *State Veterinary Journal.* 4 (1):11-13

NAL Call No. SF601 S8

*Descriptors:* ornamental fishes, transport of animals, animal welfare, regulations, aquaria, trade, collections, transport

## **Web Resources:**

### **Marine Aquarium Council**

<http://www.aquariumcouncil.org/default.asp>

### **Ornamental Fish**

<http://www.ornamentalfish.org/association/code/conduct/conduct.php>

Provides code of conduct that addresses all aspects of ornamentals.

Return to: [Top of Document](#)

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## **Dealers and Pet Shops**

Chan TTC, Sadovy Y (1998) **Profile of the marine aquarium fish trade in Hong Kong.** *Aquarium Sciences and Conservation.* 2(4):197-213

A market survey and review of government statistics were carried out to establish imports and exports of marine ornamental fishes into and out of Hong Kong, and to examine the local trade in terms of volume, value and species composition. Official government import figures for marine aquarium fishes were available from 1984 to 1991 and from 1997 and 1998. When compared with net imports, export and re export volumes over the 15 year period were small, indicating that most imports entered the local market, or were exported unrecorded. The market survey of marine aquarium shops in Hong Kong was carried out between August 1996 and January 1997. From this survey, an annual estimate of 957,563 coral reef fish was calculated for the local trade, valued at HK\$57,453,780, with a mean retail price of HK\$60 per fish. These figures account for an estimated 2-3% of the global value and volume of marine aquarium fish trade, according to 1992 figures and, compared with government figures, indicate that official declarations of imports are underreported by at least 2-3 fold. A total of 342 marine aquarium fish species, from 49 families, were recorded

with about 60% belonging to the families Labridae, Chaetodontidae, Pomacanthidae and Pomacentridae. It was estimated that a large proportion of the trade was in juvenile fishes and almost all fish were less than 10 cm in standard length. It was common to see fishes in poor condition, species hard to maintain in captivity, or those listed for conservation concern, on sale. There are no regulations for local traders of live marine fishes other than those relating to either protected species or animal welfare. Licensing of traders in marine fishes could be introduced under existing Hong Kong legislation if fishes were to be reclassified as animals. This is strongly recommended as a step towards regulating and managing the trade in Hong Kong.

*Descriptors:* aquarium culture, ornamental fish, aquaculture economics, marine fish, resource conservation, ISEW, Hong Kong  
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Etscheidt J (1995) **Kriterien zur beurteilung der haltung von suesswasseraquarienfischen im zoohandel [Critical aspects of the welfare of freshwater fish in pet shops].** *Tieraerztliche Umschau.* 50(3):196-199 (In German)  
NAL Call No. 41.8 T445

It is possible with the aid of key parameters to assess the welfare of freshwater fish kept in petshops. The most important factors are water quality, stocking density, social behaviour, inter-species interactions, the decoration and structure of the fish tanks, the technical devices and the expertise of the owner in terms of feeding and the management of water changes and filtering.

*Descriptors:* freshwater fish, ornamental fish, stocking density, water quality control, aquariology, fish, animal welfare  
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Nowak, D. (1993) **Tierschutzrelevante Probleme bei der Kontrolle von Zoofachgeschäften aus amtstierärztlicher Sicht [Problems of animal welfare during official veterinary surveillance of pet shops].** *Deutsche Tierärztliche Wochenschrift* 100 (2):76-78 (In German with English Summary)  
NAL Call No. 41.8 D482

From a survey of all official veterinarians in Berlin. Typical problems of keeping fishes, birds, rodents and reptiles are listed. Many of the vets reported the lack of practical guidance, manuals or expert opinions.

*Descriptors:* pets, aviary birds, animal welfare, veterinary services  
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Winter M (1993) *Tierschutzgerechte Haltung von Zierfischen im Zoohandel - eine Studie. [Humane handling of aquarium fish by animal dealers.]* Tierärztliche Fakultät, Ludwig-Maximilians-Universität, München. 190 pp. (In German with English summary). Thesis.  
*Descriptors:* zootechny, animal welfare, aquarium fishes, fishes  
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## *Web Resources:*

### **APHIS Animal Care Publications**

<http://www.aphis.usda.gov/ac/publications.html>

Links to the Animal Welfare Act, Regulations, and Standards and other related publications.

Return to: [Contents](#) OR [Top of Document](#)