

Aquatic Animal Diseases and Biological Standards
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Impact and consequences of fish translocations are reflected in the criteria for Aquatic Animal Disease listing

- Significant production losses nationally or multi-nationally
- Likely to negatively affect wild aquatic animals worth protecting for economic or ecological reasons
- Public health concern
- Infectious cause
- Potential for international spread via live animals, their products or fomites
- Countries or zones within countries may be declared free of the disease
- Repeatable and robust means of diagnosis exist

OIE Aquatic Animal Health Code-criteria for listing

Infectious haematopoietic necrosis (IHN)

- Rhabdovirus
- Widely prevalent amongst free living salmonid fishes along the west coast of North America
- Introduced with devastating effect into major trout growing areas in Europe in 1987.



Crayfish plague

- Oomycete or water mould – *Aphanomyces astaci*
- Native North American signal crayfish is resistant to crayfish plague
- Crayfish plague was introduced to Europe from 1870 – 1940 devastating European fresh water crayfish populations. From 1960's to 2000 active stocking of signal crayfish was the main route of spread of crayfish plague
- devastation of remaining indigenous European crayfish populations

Withering disease of abalone

- Occurs naturally on the west coast of California and Mexico
- Spread to a wide geographic range with transportation of California red abalone
- Infection has spread to local species of wild and farmed abalone



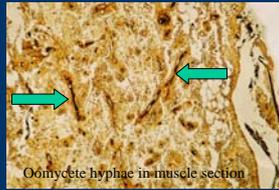
White spot disease of shrimp

- One of a number of serious viral diseases of shrimps or prawns
- Wide host range affecting almost any decapod crustacean in marine, brackish and fresh water.
- Many invertebrate vectors
- China, Japan, Korea, South-East Asia, India, Mediterranean, Middle –East and Americas



EUS

- *Aphanomyces invadans*
- Serious pathogenic oomycete
- Initial red areas on surface of fish
- Later ulceration and liquefaction of muscle tissues
- **Little host specificity**
- Affecting both fresh and estuarine warm water fish.



Salmonid viruses

- The serious notifiable salmonid viruses, viral haemorrhagic septicaemia (VHS), infectious haematopoietic necrosis (IHN), infectious salmon anaemia (ISA) and epizootic haematopoietic necrosis (EHN) have never been diagnosed in RSA.



International movement of salmonid fish is tightly regulated based on OIE listed diseases

- Adherence to strict import regulations and disease surveillance testing has in the case of RSA kept feared salmonid diseases out of the country
- Effective diagnostic and regulatory capacity has enabled RSA to export certified disease free salmonid ova to lucrative northern hemisphere markets



Ichthyophthirius

Trichodina



Exotic fishes have been introduced into Africa since the days of early settlers

- Many parasitic diseases were introduced with these imports.
- Many of these impact on wild and farmed populations of fish.
- Most of these parasites are nowadays regarded as ubiquitous. Hence no international control.



Argulus

Lernaea



Transport of fish Ambiguous ↓ legislation Transfer of disease



KHV



- Koi herpes virus (KHV) is a recently emerged viral disease of carp (*Cyprinus carpio*) in all of its varieties
- First officially identified in 1998.
- Examination of archive material indicates KHV presence as early as 1996
- Worldwide distribution including Africa
- Unregulated international trade of ornamental carp (Koi)

KHV

- Within the optimal temperature range of 18 – 25°C the virus causes
- Up to 100% morbidity and 90% mortality
- Necrosis of gill and kidney tissues
- Major losses in food carp fisheries



KHV - need for certified disease free fish

- Difficulty of identifying carrier fish
- Unquantifiable risk associated with:- naturally resistant fish survivor fish 'vaccinated fish'
- Access to export markets



Internationally there is increasing pressure on aquaculture to meet rising demand for fish.

For fish farming to be viable aquaculture products must be able to access lucrative markets.

Export markets place stringent demands for disease status and food safety certification.



Mariculture development is gaining potential in southern Africa – kob, shellfish crayfish, prawns

- Regulatory support for mariculture development will need to provide internationally accepted assurances once production exceeds local consumption
- Particularly in the case of exports of high value animals such as shellfish



Crocodiles

Significant diseases of Crocodiles

- *Mycoplasma crocodyli* and *M. alligatoris*
- Adenoviral hepatitis
- Crocodilian chlamydiosis
- *Trichinella zimbabwensis* and *T. papuae*
- *Trichinella* in Zimbabwe crocodile meat resulted in ban on crocodile meat imports to EU

To protect indigenous fish stocks and to sustain aquaculture development countries need:

- capacity to meet legislative requirements of importing countries
- capacity and infrastructure to prevent introduction of unwanted aquatic diseases
- diagnostic capacity in order to provide surveillance data on aquatic animal diseases



Facilitation of international trade

- Uniform approach to health control in aquatic animals and their products
- Standardised methods of diagnosis
- Certification is a prerequisite for control and prevention of spread of aquatic animals diseases through international trade
- Inappropriate aquatic animal health requirements and/or inability to provide certification will create unjustified trade restrictions



Further export guarantees

- Compliance with feed and food law
- Animal health and welfare
- Veterinary drug usage
- Residue testing

OIE and Codex Alimentarius Commission
“Food safety throughout the food chain”



Pro-active regulatory bodies, with the capacity to implement sensible regulations based on OIE guidelines, will do much to protect indigenous fish stocks and to further sustainable development of aquaculture and associated economic growth in Africa

“It is unlikely that EUS will ever be eradicated from the upper Zambezi. EUS will remain a threat to other sensitive aquatic systems throughout Africa”

THANK YOU

