

THE INDUSTRY

The world production of freshwater Anguillid eels in 2004 was estimated at more than 130,000 tonnes per year and worth over US\$1.3 billion. About 95% of eels in the food trade have been raised in captivity involving the catching and rearing of wild-caught juvenile "glass eels".

Wild eel aquaculture involves fisherman catching the the glass eel to the silver eel stage using nets. These juvenile eels are then stocked into ponds where they are 'fattened up' until they reach a commercial size of over 200g in 10 months. In wild adult eel fisheries such as New Zealand large eels are caught in specially designed baited traps and transported by road to live holding tanks at the processing factory. Depending on the quality and market demand eels are either freighted live to markets or sold as smoked or fresh product.

BIOLOGY



Eels are catadromous, which means they pass periodically at well defined stages of their life cycle, from saltwater to freshwater and vice versa. The adult eels spawn out at sea and once hatched the larvae are carried inland by currents. By the time young eels reach the continental shelf and river estuaries, they have developed into transparent, cylindrical fish, known as glass eels, which are approximately 5 cms long and weigh less than 1 gram. They continue their migration, usually to freshwater habitats, and their skins turn a darker colour. Once the eels (often called 'elvers' have reached about 10cm long they enter their immature adult or 'yellow eel' phase, which can last 5 to 9 years depending on species. The adult takes on a silvery appearance with the onset of sexual maturity. At this stage the eels, ranging in size from 0.3 to 3 kg return to the spawning grounds where they spawn and then die.

CHALLENGES: FROM CATCH TO CONSUMER

The catches for many eel industries around the globe are in or approaching decline. Continuing and improved profits for the industry can be achieved by adding value, increasing growth and reducing mortality rate. Using AQUI-S® can address the following important issues facing the eel industry:

- * **Product consistency and quality:** Providing a high quality, disease free product is a big advantage, allowing more processing options and an ability to command higher prices. Using AQUI-S® to minimise handling during the harvest, a process referred to as 'rested harvesting', results in improved product quality and consistency.
- * **Condition and mortality:** Fish losses are usually attributed to stress and disease. Careful handling with the use of certain fish sedatives ensures the immune system is more able to fight disease, improving fish condition and survivability.
- * **Market access:** Markets willing to pay higher prices may be located further afield. Sedating eels during transport to the customer conserves their energy making them more resilient allowing extended transport times.
- * **Handling efficiencies:** Eels are very difficult to handle which can slow down procedures such as pack-outs and weight checks. Immobilising fish using AQUI-S® makes eels very easy to handle enabling a more efficient operation.



Sedated eel being handled