FARMING NOVEL FINFISH SPECIES

The three finfish categories of commercial importance to Irish aquaculture are salmon, sea-farmed rainbow trout and fresh water farmed rainbow trout. The techniques for successful culture of these species have been mastered and markets have been developed. The challenge facing aquaculture is to diversify into new species which can create and supply specialist niche markets. Experience has shown that sound research and development is required if a species is to be farmed and marketed successfully. With this in mind BIM's Aquaculuture and Planning Division has been assisting with the development of the commercial potential of new species and techniques, with a view to creating jobs in commercially viable enterprises and diversifying the product base of these firms. A number of species have been identified as being suitable for trials, these have high market value as well as tolerance to culture conditions.

Irish farmed Turbot at 600 gm size

Turbot

Turbot is a highly priced fish and in many wholesale markets it is the most expensive fish available. It is known by two different scientific names - *Psetta maxima* (the more correct scientific name) and *Scophthalmus maximus* (the older and more commonly used one). The fish are found mainly in the cooler waters of the north-eastern Atlantic, the southern North Sea, the English Channel and the Baltic Sea. They are also found in small quantities in certain locations in the Mediterranean, and off the coast of Morocco. The entire European catch has not exceeded 7,000 tonnes for many years. It is anticipated that farmed supply will probably equal or exceed the wild catch by 1996. The bulk of world farmed production of turbot comes from Spain. There are three experimental projects currently operating in Ireland off the south west coast. Juveniles are imported and ongrown in land based pump ashore units. Based on current prices, turbot farming will be very attractive in Irish conditions.

Onshore recirculation tanks containing young turbot from the south west of Ireland.

Gullspangs Salmon

Gullspangs salmon may be distinguished by the dark spots on their gills and dorsal region. This is a variety of the Atlantic salmon, *Salmo salar* which originates in Sweden. It was through work carried out in Germany and Sweden that it was identified as a possible candidate for farming. The fish exhibits a high tolerance to adverse environmental conditions such as temperature fluctuations, acidity, low oxygen levels and high stocking densities. The broodstock can be retained at the hatchery. No disease problems have been associated with the fresh water phase of their lifecycle. The inherant tolerance of this strain to higher temperatures may also offer some protection to high summer sea temperatures. Gullspangs salmon have been cultured on a trial basis in both freshwater and saltwater in Ireland since 1991. The strain appears to grow faster than other Atlantic salmon. They are strong non agressive feeders.

Gullspangs salmon

Native Brown Trout

Native Brown Trout

Native Brown trout can be successfully transferred to sea to "silver up" for market as the true sea trout. In nature certain strains of the native trout *Salmon trutta* smoltify and migrate to sea to grow to maturity and then return to their native streams to breed in a manner not dissimilar to salmon. Other strains remain in freshwater, do not smoltify and reach adulthood as somewhat smaller, non migratory brown trout.

Wild native brown trout, *Salmon trutta* of the Roscrea strain are able to tolerate high temperatures and stocking densities. The strain is disease resistant, fast growing and well adapted to the farming environment. After maturation at sea this species is harvested as the true sea trout, commanding a comparatively higher market price. Trials have been ongoing with native brown trout in the sea at a number of Irish marine sites since 1991.

Arctic Char

Juvenile Arctic Char

The Arctic char is a particularly attractive fish with tight silvery scales and a distinctive red underbelly. The flesh is tight and pink and compares well with salmon.

The Arctic char,*Salvelinus alpinus* has a northern circumpolar distribution. In nature, both migratory and non migratory strains exist. Farming of char strains is ongoing in Iceland, Norway and Canada. Experimental farming of Arctic char began in Ireland in 1991. The strain used is fast growing and adaptable to brackish water. The fish feed at low temperatures and the broodstock can be maintained at the hatchery. Trials are currently underway to examine the potential of a strain found in fresh water locations in Ireland.

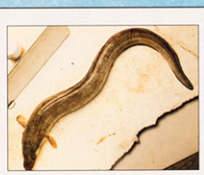
Arctic char eggs are extremely tiny, and the hatching period is longer than for other salmonids. Eggs hatch within a period of 15 - 20 days. The first feeding can be difficult due to the small size of the alevin. Char maintain good growth rates at comparatively low temperatures. The temperature optimum for growth is said to be 12 - 15°C. In contrast to other salmonids, densities between 40 - 60 kgs/m promote good growth and result in little fin erosion.

Male and female Arctic char.
The male can be recognised by its characteristic red fins

The European Eel

The eel is a common species in most of the coastal and inland waters of Europe. The good demand and the dropping catches make the eel a high priced fish.

Intensive eel farming is a young technology in Europe. The possibility of growing eels in recirculation systems has been developed over the last two decades with varying success. The optimum culture of eels occurs in warm water recirculatory systems in freshwater and seawater. In these systems eels can be up to marketable size after one year plus, whereas in the wild this can take 6 - 10 years. Glass eels or elvers are caught as they migrate up the rivers on the final leg of their migration from the Sargasso Sea to the estuaries and rivers. These young eels can form the basis of a stock for ongrowing. at elevated temperature.



The European eel
" Anguilla anguilla "

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Bord Iascaigh Mhara is the development agency for the Irish seafood industry. The Aquaculture and Planning Division offers financial technical and economic services to finfish farming such as; pilot and commercial scale grants, technical information, new culture techniques and market research and industry studies.

The Market Development Division including B.I.M.'s European Office, helps to develop markets for Irish finfish and other seafood at home and abroad. It also produces promotional brochures and recipe leaflets for both export and home markets, aimed at all levels of the distribution and marketing chain.

Aquaculture training courses are also provided by B.I.M's Marine Services Division.

B.I.M wishes to develop aquaculture in harmony with the environment and in cooperation with coastal communities.

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