

Belgium

by

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REFERENCE CENTER

Development of substitute for live algae in bivalve hatcheries.

Characterization of the microbiological environment in marine fish hatcheries and its relation to the larval health status of seabream, seabass and turbot (in cooperation with the Laboratory of Microbiology, University of Ghent; the Laboratory for Ecology and Aquaculture, Catholic University of Leuven; Cephalonian Fisheries, Greece and Tin Menor, Spain).

Development of disinfection procedures to reduce bacterial contamination levels in live food preparations.

Application of the bioencapsulation technique for incorporating antibiotics and vaccines in Artemia to treat bacterial infections in the larval stages of fish and shrimp (in cooperation with the Laboratory of Medical Biochemistry and Analytical Chemistry, University of Ghent; School of Biological Sciences, University of Thessaloniki, Greece).

Screening for and evaluation of probiotic bacteria for application in marine larviculture.

Effect of processing and storage conditions and diapause termination techniques on hatching quality of Artemia franciscana, A. urmiana and A. sinica cysts.

Development of an off-the-shelf diet for controlled rearing of the brine shrimp Artemia on a laboratory scale.

Study of (phospho-) lipid requirements of marine fish from weaning onwards and postlarval shrimp using a semi-purified artificial diet.

Development of enrichment products containing high HUFA and/or DHA/EPA ratio's and Vit C and their effect on production characteristics survival and pigmentation of turbot, seabass, Macrobrachium and Penaeid larvae.

Development of a culture technique for the super intensive culture of the rotifer Brachionus plicatilis fed on an artificial diet.

Broodstock nutrition studies on seabream (in cooperation with

I.E.O., Murcia, Spain) and Macrobrachium, and its effect on larval quality.

Further developments and dietary testing of live (Brachionus and Artemia) and formulated (enrichment and substitution) diets for use in the larviculture of freshwater and marine fish, marine shrimp and freshwater prawn, and molluscs (in cooperation with different research laboratories and private hatcheries in Belgium, France, Greece, Japan, Norway, Singapore, Spain, Thailand, UK and USA).

Fatty acid and Vit C composition of turbot larvae reared in different culture systems (in cooperation with the Danish Institute for Marine Research and the Instituto Oceanografico, Vigo, Spain).

Consultancy missions regarding Artemia and/or larviculture applications for different official organizations and private companies to Egypt, Norway, Thailand, Singapore, Taiwan, PR China, Vietnam, Philippines, Iran, S-Korea, Ecuador and the USA.

ARTEMIA SYSTEMS *NV/SA*

Development (contract research with the Laboratory of Aquaculture of the State University of Ghent) and marketing of new diets for use in larviculture of marine fish and shrimp.

CATHOLIC UNIVERSITY OF LEUVEN, LABORATORY FOR ECOLOGY AND AQUACULTURE

Continuation of research in the farming of European seabass *Dicentrarchus labrax* and eel *Anguilla anguilla*, and initiation of studies dealing with sex-differentiation, controlled reproduction and molecular genetics of marine fish.

Characterization of the bacterial flora in diseased fish (cooperation study with University of Ghent, see above).

The population biology of the recently introduced swimbladder nematode *Anguillicola crassus* is studied in the final host (eel) and in the paratenic hosts (various freshwater fish species). No clear seasonal fluctuations of *A. crassus* have been found in a heavily infected different families have been found infected with third stage larvae of *A. crassus*. All experimental infections in the laboratory were positive.

The role of multicellular parasites in marine and estuarine ecosystems has been studied since 1990. Firstly attention has been paid to the population dynamics of ecto- and endoparasites of fish. The infection dynamics and the dispersion patterns of parasites of the genus *Lernaeocera* (Crustacea) are studied in the North Sea and the Western Scheldt. These parasites show variable degrees of specificity towards intermediate (flatfish) and final hosts (gadoids). In a next step the effect of parasite-induced host mortality on the fish population structure will be estimated. Secondly, the parasite faunas of two sympatric goby

species are studied. Significant quantitative and qualitative differences in their respective parasites were found. This may be due to the pronounced niche segregation which has been documented for these species.

Finally, parasites of marine fish have been collected at the Kenian coast : Several new species were described and their life cycles and intermediate hosts studied.