



Marco Saroglia

 UNIVERSITY OF INSUBRIA



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Contact data

Full Professor

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Biography

Born: Villarbasse (Torino, I), 14.07.1945

Nationality: Italian

Present position: Full Professor on Aquaculture at the University of Insubria, Varese, Italy

Education:

Degree in Biology from University of Turi in 1973, then third level completed in 1982 from University of Pavia, as Specialist in General Pathology with a thesis on Brown Blood Disease in Sea Bass.

Scientific and Academic career:

From 1970 to 1989, scientist at progressive positions, up to manager of the Biology and Biological Technologies Office, at the Centre for Thermal and Nuclear Researches, Studies and Researches Department of the National Electricity Board of Italy (ENEL). In February 1989 was named as Associate Professor from the University of Basilicata, to cover the chair of Physiology of Domestic Animals. In November 1993 was named again by the same University, as Full Professor for the chair of Aquaculture; from 1993 to 1998 was in charge as Vice-Dean of the Faculty of Agriculture. In 1999 and 2000 he was Chairman of a PhD course on "Zootechnic Sciences". On October 2001 was named by University of Insubria in Varese, to cover the chair as Professor of Ichthyology and Aquaculture.

Fields of Research:

From 1973 to 1980: Radioecology, Toxicology and Ecotoxicology. From 1976 to now: Aquaculture (fish physiology, biology of reproduction, adaptation to environment, functional genomics, and aquaculture impact assessment). Special skills of Prof. Saroglia have been developed with studies directed to a minimisation of the impact of aquaculture effluents on the receiving water bodies, technologies and husbandry aspects focused on minimisation of disease occurrences and chemicals applications. From 2002, with his newly established team at the University of Insubria, he started to study functional genomics applications on fish welfare, nutrition and physiological adaptation to the intensive farming environment. In total, his scientific

activity is documented with more than 200 publications on specialised journals and meetings reports.

Special Expertise:

He has had responsibility for large working groups, working on national and international projects related the aquatic environment and mainly on marine as well as on inland water Aquaculture. Farming of euryhaline fish, including hatchery. Environmental Impacts Assessment of Aquaculture. Lagoons exploitation, including restocking and management.

Other experiences:

Active participations in international networks as AQUA-TT; organization of international courses in Aquaculture; participation on missions in developing countries as FAO expert and as expert of the Italian Ministry of Foreign Affairs. Active participation and organization of congresses for the European Aquaculture Society and for the World Aquaculture Society.

Qualifications and awards

Degree on Biological Sciences, third University level as Specialist on General Pathology. Award for serving the European Aquaculture Society Board of Directors.

The main scientific qualification of Prof. Saroglia is Aquaculture as a Biotechnological Science. Within Aquaculture, his qualifications include technologies (hatchery, ongrowing husbandry, water recirculation technology), fish physiology (nutrition, reproduction, adaptation to different environments), assessment of Aquaculture impacts (lagoons, coastal waters, rivers, models applications), molecular sciences applications (functional genomic, molecular descriptors for fish welfare and nutrition)

Research interests

The actual research interests include the development of aquaculture, fish adaptation physiology, development of functional genomic applications in aquaculture (mainly fish welfare and nutrition), product quality, aquaculture impacts assessment.

Teaching experience and appointments

Teaching experiences include : Physiology of Domestic Animals, Zootechnic Ecology, Aquaculture, Ichthyology, Etiology. Teaching experiences in International courses and Schools.

Actual teaching appointments are:

General Aquaculture, Marine and Inland Water Aquaculture, Ichthyology and Fishery Ecology, Animal Biotechnologies, Etiology.

He is also appointed for Mediterranean Aquaculture at an International Master Course in Aquaculture at the University of Ghent (BE)

Institutional appointments: Chairman of the PhD course on:

Assessment, Management and Protection of Biodiversity.

Representative publications

1. Terova, G., Gornati, R., Rimoldi, S., Bernardini, G., Saroglia, M. 2005. Quantification of a glucocorticoid receptor in sea bass (*Dicentrarchus labrax*, L) reared at high stocking densities. *Gene*. Vol 357 Issue 2, 144-151.

2. Terova, G., Bernardini, G., Gornati, R., Saroglia, M. 2005. cDNA encoding sequences for myostatin and FGF6 in sea bass (*Dicentrarchus labrax*, L) and the effect of fasting and refeeding on their expression levels. *Dom. Anim. Endocrinol.* Available on line 12 september 2005 doi:10.1016/j.domanied.2005.08.003.
3. Terova, G., Gornati, R., Rimoldi, S., Bernardini, G., Saroglia, M. 2005. Expression patterns of insulin-like growth factors I and II in liver and muscle of sea bass (*Dicentrarchus labrax*, L) during fasting and refeeding. *Gen. Comparat. Endocrinol.* (submitted).
4. Rinaldi, L., Basso, P., Tettamanti, G., Grimaldi, A., Terova, G., Saroglia, M., DeEguileor, M. (2005). Oxygen availability causes morphological changes and a different VEGF/Fik-1/HIF-2 expression pattern in sea bass gills. *Ital. J. Zool.* 72, 103-111.
5. Gornati, R., Gualdoni, S., Cavaliere, R., Terova, G., Saroglia, M., Bernardini, G (2005) Molecular biology and fish welfare: a winning combination. *Aquaculture International.* 13, 51-55.
6. Gornati, G., Papis, E., Rimoldi, S., Chini, V., Terova, G., Prati, M., Saroglia, M., Bernardini, G. (2005) Molecular markers for animal biotechnology: sea bass (*Dicentrarchus labrax*, L) HMG-CoA reductase mRNA. *Gene.* vol. 344, pp. 299-305
7. Gornati, G., Papis, E., Rimoldi, S., Terova, G., Saroglia, M., Bernardini, G. (2004) Rearing density influences the expression of stress-related genes in sea bass (*Dicentrarchus labrax*, L). *Gene.* vol. 341, pp. 111-118.
8. Gornati R., Terova G., Vigetti D., Prati M., Saroglia M., Bernardini G. (2004) Effects of population density on seabass (*Dicentrarchus labrax*, L) gene expression. *Aquaculture* 230, 229-239
9. Rinaldi, L., Grimaldi, A., Tettamanti, G., Terova, G., Saroglia, M., Valvassori, R., DeEguileor, M. (2002). I livelli di ossigeno influenzano l'organizzazione strutturale delle branchie in *Dicentrarchus labrax*. *Biologia Marina Mediterranea.* vol. 10, pp. 1133-1135. ISSN: 1123-4245.
10. Monetti, C., Vigetti, D., Prati, M., Bernardini, G., Terova, G., Saroglia, M., and Gornati, R. (2002). I livelli di ossigeno influenzano l'espressione genica nelle branchie di *Dicentrarchus labrax*. *Biologia Marina Mediterranea.* vol. 10, pp. 468-469. ISSN: 1123-4245..
11. Saroglia, M., Terova, G., De Stradis, A., Caputo, A. (2002) Morphometric adaptations of sea bass gills to different dissolved oxygen partial pressures. *Journal of Fish Biology.* 60:1423-1420.
12. Cecchini, S., Saroglia, M., Caricato, Terova, G., Sileo, L. (2001) Effects of graded environmental hypercapnia on sea bass (*Dicentrarchus labrax*, L.) feed intake and acid-base balance. *Aquaculture Research*, 32:499-502.

13. Terova, G., Cecchini, S., Saroglia, M., Caricato, G., Jeney, Z. (2001). Live food mediated vitamin C transfer in sea bass (*Dicentrarchus labrax*, L.) during first feeding. In: Ascorbic Acid in Aquatic Organisms. Status and Perspectives (Ed. by K. Dabrowski). CRC Press Publisher, pp. 191-210.
14. Cecchini, S., Saroglia, M., Cognetti-Varriale, A.M., Terova, G., Sabino, G. (2001) Effect of low environmental temperature on embryonic development and egg hatching of *Diplectanum aequans* (Monogenea, Diplectanidae) infecting European Sea Bass, *Dicentrarchus labrax*. *Fish Pathology*, 36 (1), 33-34.
15. Cecchini, S., Saroglia, M., Terova G., Albanesi, F. (2001) Detection of antibody response against *Amyloodinium ocellatum* (Brown, 1931) in serum of naturally infected European sea bass by an enzyme-linked immunosorbent assay (ELISA). *Bulletin of the European Association of Fish Pathologists*, 21(3): 104-108
16. Saroglia, M., Cecchini, S., Terova, G., Caputo, A., De Stradis A. (2000) Influences of environmental temperature and water oxygen concentration on gas diffusion distance in sea bass (*Dicentrarchus labrax*, L.). *Fish Physiology and Biochemistry*, 23:55-58.
17. Saroglia, M., Cecchini, S., Terova, G. (2000). Review of regulations and monitoring of Italian marine aquaculture. *Journal of Applied Ichthyology*, 16:182-186.
18. Cecchini, S., Terova, G. Caricato, G. Saroglia, M. (2000) Lysozyme activity in embryos and larvae of sea bass (*Dicentrarchus labrax* L.), spawned by broodstocks fed with vitamin C enriched diets. *Bulletin of the European Association of Fish Pathologists*, 20(3):120-124.
17. Papp, Gy. Z., Saroglia, M., Jeney, Z., Jeney, G., Terova, G. (1999). Effects of dietary vitamin C on tissue ascorbate and collagen status in sturgeon hybrids (*Arcipenser ruthenus* L. x *Arcipenser baeri* Brandt.). *Journal of Applied Ichthyology*, 15:258-260.
18. Papp, Gy. Z., Saroglia, M., Terova, G. (1998). An improved method for assay of vitamin C in fish feed and tissues. *Chromatographia*. Vol 48, No. 1/2, July: 43-47.
19. Terova, G., Saroglia, G. Papp, Gy. Z., Cecchini, S. (1998). Dynamics of collagen indicating aminoacids, in embryos and larvae of sea bass (*Dicentrarchus labrax*) and gilthead sea bream (*Sparus aurata*) originating from broodstocks fed with different vitamin C content in the diet. *Comparative Biochemistry and Physiology. Part A* 121:111-118.
20. Terova, G., Saroglia, G. Papp, Gy. Z., Cecchini, S. (1998). Ascorbate dynamics in embryos and larvae of sea bass and sea bream, originating from broodstocks fed supplements of ascorbic acid. *Aquaculture International*. 6:357-367.
21. Saroglia, M., Cecchini, S., Terova, G., Caricato, A., De Stradis, A., (1998). Euryhaline fish adaptation mechanisms to water hyperoxia: useful aspects for a correct husbandry approach. (IT). *Biologia Marina Mediterranea*. vol. 5(3), pp. 1688-1698. ISSN: 1123-4245.

22. Saroglia, M., Cecchini, S., Terova, G., Alireza, A. (1998). Assessment and minimization of the environmental impact of marine and brackish water aquaculture. (IT). *Biologia Marina Mediterranea*. vol. 5(3), pp. 1675-1687. ISSN: 1123-4245.
23. Saroglia, M., Terova, G., Papp, Gy. Zs., Jeney, Z. (1996) Comparative biological availability of some commercial ester forms of ascorbate utilized in fish feed. *Animal Biology*. 5: 99-103.
24. Saroglia, M., Papp, Gy. ZS., Jeney, ZS., Jeney, G., Terova, G. (1997). Nitrite induced changes in ascorbate status of sturgeon hybrid (*Arcipenser ruthenus* L. x *Arcipenser baeri* L.) fed diets with different forms and doses of vitamin C. Booklet of abstracts. 3 rd International Symposium on Sturgeon. Piacenza, Italy, July 8-11.
25. Papp, Gy. ZS., Saroglia, M., Jeney, ZS., Jeney, G., Terova, G. (1997). Effects of vitamin C on collagen status of sturgeon hybrid (*Arcipenser ruthenus* L. x *Arcipenser baeri* L.). Booklet of abstracts. 3 rd International Symposium on Sturgeon. Piacenza, Italy, July 8-11.
26. Papp, Gy.Zs., Jeney, Zs., Jeney, G., Saroglia, M., Terova, G. (1996). Comparative studies on physiological properties of European Catfish (*Silurus glanis*, L.) to evaluate the optimal requirement of vitamin C. VII International Symposium on Fish Physiology. Department of Biology, University of Oslo. 3-6 august; pp 60.
27. Gornati, R., Terova, G., Saroglia, M., Bernardini, G. (2003) Rearing density influence sea bass (*Dicentrarchus labrax*) gene expression. International Aquaculture Conference 2003 Verona 15th-16th October 2003. Ed. Fish farming in mediterranean Europe:Quality for developing markets, pp 38.
28. Saroglia, M., Terova, G., Caricato, G., Caputo, A., De Eguileor, M. (2002) Oxygen availability and gill morphology:is hyperoxygenation an advantage on the osmo-respiratory compromise? In *Aquaculture Europe 2002 Seafarming today and tomorrow*. Eds EAS special publication n°32 august 2002. pp 462-463.
29. Rinaldi, L., Grimaldi, A., Tettamanti, G., Terova, G., Saroglia, M., Valvassori, R., De Eguileor, M. (2002) Oxygen partial pressure in water affects gills structural organization in Sea Bass *Dicentrarchus labrax*, L.:a preliminary study. In *Aquaculture Europe 2002 Seafarming today and tomorrow*. Eds EAS special publication n°32 august 2002 pp 441-442.
30. Monetti, C., Vigetti, D., Prati, M., Bernardini, G., Terova, G., Saroglia M., Gornati, R. (2002) Fish welfare and molecular markers. In *Aquaculture Europe 2002. Seafarming today and tomorrow*. Special publication n°32 Eds EAS special publication n°32 august 2002 pp 357-358.

Clinical interests

Fish as an animal model for clinical studies; fish quality for fish-based special diets designed for clinical and chronic patients