

A LIST OF PUBLICATIONS SENT FROM JAPANESE AQUACULTURE PANEL, UJNR, TO  
U.S. PANEL AS AN INFORMATION EXCHANGE FOR 1984.

1. R. Yoshinaka, M. Sato, H. Tanaka and S. Ikeda (1984): Purification and characterization of a new metalloproteinase with elastolytic activity from the catfish pancreas. *Biochimica et Biophysica Acta*, 798, 240-246.
2. R. Yoshinaka, H. Tanaka, M. Sato and S. Ikeda (1983): Characterization of catfish pancreatic elastase. *Bulletin of the Japanese Society of Scientific Fisheries*, 49 (4), 637-642.
3. K. Fukusho and M. Okauchi (1984): Seasonal isolation between two strains of rotifer brachionus plicatilis in an eel-culture pond. *Bulletin of the Japanese Society of Scientific Fisheries*, 50 (5), 909.
4. K. T. Wada (1982): Inter- and intraspecific electroporetic variation in three species of the pearl oysters from the nansei islands of japan. *Bull. Natl. Res. Inst. Aquaculture*. No. 3, 1-10.
5. K. T. Wada (1983): White coloration of the prismatic layer in inbred japanese pearl oyster, *pinctada fucata*. *Bull. Natl. Res. Inst. Aquaculture*, No. 4, 131-133.
6. K. Kobayashi, A. Hara, K. Takano and H. Hirai (1982): Studies on subunit components of immunoglobulin m from a bony fish, the chum salmon (*oncorhynchus keta*). *Molecular Immunology*, Vol. 19, No. 1, pp. 95-103.
7. A. Hara (1984): Purification and some physicochemical characterization of chum salmon transferrin. *Bulletin of the Japanese Society of Scientific Fisheries*, 50 (4), 713-719.
8. Y. Uekita, M. Nakamura and Y. Hideshima (1984): Observation of the upwelling causing behind the large reef in case of siomaki, yamaguchi pref. *Bulletin of National Research Institute of Fisheries Engineering*, No. 5.
9. O. Fukuhara (1984): Morphological studies of larva of red sed bream-IV, morphological development and early growth. *Bulletin of the Nansei Regional Fisheries Research Laboratory*, No. 16.
10. O. Fukuhara (1983): Effect of prey density on the swimming behaviour of larval black porgy, *acantypogrus schlegeli* (bleeker). *Bulletin of the Nansei Regional Fisheries Research Laboratory*, No. 15.
11. O. Fukuhara and T. Fushimi (1983): Development and early life history of the greenlings *hexagrammos otakii* (pices: hexagrammidae) reared in the laboratory. *Bulletin of the Japanese Society of Scientific Fisheries*. 49 (12), 1843-1848.

12. Y. Yasunaga (1984): Ethological study of rheotaxitic behaviour of juveniles of pargus major with a small circulation tank. Bullitin of National Research Institute of Fisheries Engineering. No. 5.
13. Y. Tawara and Y. Inoue (1984): Studies on fish behavior with scanning sonar around set nets II observing fish behavior in iwa fishing ground in sagami bay. Bullitin of National Research Institute of Fisheries Engineering No. 5.
14. I. Yano and H. Tanaka (1984): Effects of ultraviolet irradiated sea water on induction of spawning of kuruma prawn penaeus japonicus. Bulletin of the Japanese Society of Scientific Fisheries. 50(9), 1621.
15. T. Oshiro and T. Hibiya (1981): Water absorption of oocytes in the plaice limanda yokohamae during meiotic maturation and its role in rupturing follicles. Bulletin of the Japanese Society of Scientific Fisheries. 47(7), 835-841.
16. T. Oshiro and T. Hibiya (1982): In vitro yolk globule fusion of the oocytes in the plaice limanda yokohamae. Bulletin of the Japanese Society of Scientific Fisheries. 48(3), 391-399.
17. T. Oshiro and T. Hibiya (1981): Relationship of yolk globules fusion to oocyte water absorption in the plaice limanda yokohamae during meiotic maturation. Bulletin of the Japanese Society of Scientific Fisheries. 47(9), 1123-1130.
18. M. Okauchi and K. Fukusho (1984): Food value of a minute alga, tetraselmis tetrathele, for the rotifer brachionus plicatilis culture-I. Population growth with batch culture. Bull. Natl. Res. Inst. Aquaculture. No. 5, 13-18.
19. K. Fukusho, M. Okauchi, S. Nuraini, A. Tsujigado and T. Watanabe (1984): Food value of a rotifer brachionus plicatilis, cultured with tetraselmis tetrathele for larvar of red seabream pagrus major. Bulletin of the Japanese Society of Scientific Fesheries. 50(8), 1439-1444.
20. Y. Shimma, H. Tanaka, Y. Furuta, H. Shimma and K. Ikeda (1984): Protein, carotenoid and mineral contents and fatty acid composition of the sessile algae from chikuma river. Bulletin of the Japanese Society of Scientific Fisheries. 50(7), 1223-1227.
21. T. Murai, T. Akiyama and T. Nose (1984): Effect of amino acid balance on efficiency in utilization of diet by fingerling carp. Balletin of the Japanese Society of Scientific Fisheries. 50(5), 893-897.
22. T. Murai, T. Akiyama and T. Nose (1983): Effects of glucose chain length of various carbohydrates and frequency of feeding on their utilization by fingerling carp. Bulletin of the Japanese Society of Scientific Fisheries. 49(10), 1607-1611.

23. H. Ogata, S. Arai and T. Nose (1983): Growth responses of cherry salmon *Oncorhynchus masou* and amago salmon *O. Rhodurus* fry fed purified casein diets supplemented with amino acids. Bulletin of the Japanese Society of Scientific Fisheries. 49(9), 1381-1385.
24. T. Murai, Y. Hirasawa, T. Akiyama and T. Nose (1983): Effects of dietary pH and electrolyte concentration on utilization of crystalline amino acids by fingerling carp. Bulletin of the Japanese Society of Scientific Fisheries. 49(9), 1377-1380.
25. H. Ogata, T. Murai and T. Nose (1983): Free amino acid composition in urine of carp and channel catfish. Bulletin of the Japanese Society of Scientific Fisheries. 49(9), 1471.
26. Y. Inui and H. Ishioka (1983): Effects of insulin and glucagon on amino acid transport into the liver and opercular muscle of the eel in vitro. General and Comparative Endocrinology. 51, 213-218.
27. S. Inui and T. Matsusato (1983): Opercular muscle of the eel isolated for in vitro study. Bulletin of the Japanese Society of Scientific Fisheries. 49(3), 359-362.
28. S. Miwa and Y. Inui (1983): Effects of thyroxine and thiourea on the parr-smolt transformation of amago salmon (*Oncorhynchus rhodurus*). Bull. Natl. Res. Inst. Aquaculture. No. 4, 41-52.
29. T. Nakanishi (1983): The immune response of the rock fish, *Sebastiscus marmoratus*-II effects of temperature on the antibody production and plaque-forming cell response to srbc. Bull. Natl. Res. Inst. Aquaculture. No. 4, 121-129.
30. Y. Shimma, R. Suzuki and M. Yamaguchi (1983): Growth performance and body compositions of F<sub>1</sub> hybrid between Yamato and mirror carp reared with four kinds of practical diets. Bull. Natl. Res. Inst. Aquaculture. No. 4, 1-8.
31. M. Sorimachi and S. Egusa (1982): Characteristics and distribution of viruses isolated from pond-cultured eels. Bull. Natl. Res. Inst. Aquaculture. No. 3, 97-105.
32. K. Ikeda (1982): Gel chromatography of anti-*Aeromonas salmonicida* serum of brook trout. Bull. Natl. Res. Inst. Aquaculture. No. 3, 91-96.
33. ~~X~~<sup>T</sup> Nakanishi (1982): The immune response of the rock fish, *Sebastiscus marmoratus*-I response of antibodies and hemolysin plaque-forming cells to srbc. Bull. Natl. Res. Inst. Aquaculture. No. 3, 81-89.
34. Y. Shimma, H. Shimma and K. Ikeda (1982): Plasma constituents of 2-year-old rainbow trout raised with fish meal and SCP combined feeds. Bull. Natl. Res. Inst. Aquaculture. No. 3, 61-73.

35. T. Murai, T. Akiyama, Y. Hirasawa, T. Oshiro, M. Okauchi and T. Nose (1982): Blood constituent levels and body composition of wild and cultured bluefin tuna juveniles. Bull. Natl. Res. Inst. Aquaculture. No. 3, 51-59.
36. M. Sorimachi (1982): Susceptibility of fish cell lines to eel viruses. Fish Pathology. 17(2) 119-123.
37. M. Sorimachi and H. Sako (1982): Infectious pancreatic necrosis virus (ipnv) isolated from anadromous amago, *oncorhynchus rhodurus*. Fish Pathology. 17(2), 115-118.
38. Y. Shimma, H. Shimma and K. Ikeda (1982): Plasma constituents of 1-year-old rainbow trout raised with fish meal and scp combined feeds. Bulletin of the Japanese Society of Scientific Fisheries. 48(6), 805-810.
39. T. Murai, T. Akiyama and T. Nose (1982): Effects of casein coating on utilization of dietary amino acids by fingerling carp and channel catfish. Bulletin of the Japanese Society of Scientific Fisheries. 48(6), 787-792.
40. T. Murai, T. Akiyama, H. Ogata, Y. Hirasawa and T. Nose (1982): Effect of coating amino acids with casein supplemented to gelatin diet on plasma free amino acids of carp. Bulletin of the Japanese Society of Scientific Fisheries. 48(5), 703-710.
41. T. Oshiro and T. Hibiya (1982): Protease secretion of ovarian follicles in the loach *misgurnus anguillicaudatus*, suggesting the presence of ovulation-inducing enzymes. Bulletin of the Japanese Society of Scientific Fisheries. 48(5), 623-628.
42. T. Oshiro and T. Hibiya (1982): In vitro yolk globule fusion of the oocytes in the plaice *limanda yokohamae*. Bulletin of the Japanese Society of Scientific Fisheries. 48(3), 391-399.
43. T. Murai, H. Ogata and T. Nose (1982): Methionine coated with various materials supplemented to soybean meal diet for fingerling carp *cyprinus carpio* and channel catfish *ictalurus punctatus*. Bulletin of the Japanese Society of Scientific Fisheries. 48(1), 85-88.
45. Y. Shimma and H. Shimma (1983): Plasma constituents of adult female amago salmon, *oncorhynchus rhodurus*. Bull. Natl. Res. Inst. Aquaculture. No. 4, 21-19.
46. H. Sako and T. Hara (1984): Pathogenicity of vibrio isolated from anadromous amago salmon. Bull. Natl. Res. Inst. Aquaculture. No. 5, 71-76.
47. T. Akiyama, T. Murai and T. Nose (1984): Free ninhydrin reactive substances in plasma of cultured juvenile bluefin tuna. Bull. Natl. Res. Inst. Aquaculture. No. 5, 33-37.
48. T. Akiyama, T. Murai and T. Nose (1982): Effects of various dietary carbohydrates on growth, feed efficiency, and body composition of chum salmon fry. Bull. Natl. Res. Inst. Aquaculture. No. 3, 75-80.

49. H. Sako and M. Sorimachi (1984): *Vibrio* isolated from anadromous amago salmon. Bull. Natl. Res. Inst. Aquaculture. No. 5, 63-69.
50. S. Funakoshi, T. Suzuki and K. Wada (1983): Anatomical observation on the rete mirabile of young bluefin tuna, *thunnus thynnus*. Bull. Natl. Res. Inst. Aquaculture. No. 4, 87-97.
51. N. Tanaka and K. Ohwada (1983): The relationships between photosynthesis and light intensity in fifty-four strains of unicellular algae (diatoms, phytoflagellates and green-algae). Bull. Natl. Res. Inst. Aquaculture. No. 4, 113-120.
52. N. Tanaka (1984): The cell division rates of ten species of attaching diatoms in natural seawater. Bulletin of the Japanese Society of Scientific Fisheries. 50(6), 969-972.
53. N. Tanaka, T. Iikura, M. Sugiyama, K. Ohwada, A. Asakawa and S. Kitamura (1984): Seasonal and vertical distributions of attached micro-algae on the artificial seagrasses in ago bay. Bull. Natl. Res. Inst. Aquaculture. No. 5, 51-62.
54. K. Wada (1964): On the spiral growth of the inner surface of the calcitic shell, *chlamys nobilis*-III. Bulletin of the Japanese Society of Scientific Fisheries. Vol. 30, No. 2.
55. T. Akiyama, T. Murai, Y. Hirasawa and T. Nose (1984): Supplementation of various meals to fish meal diet for chum salmon fry. Aquaculture. 37, 217-222.
56. T. Matsusato and K. Masumura (1981): Abnormal enlargement of the ovary of oyster, *crassostrea gigas* (thunberg) by an unidentified parasite. Fish Pathology. 15(3/4) 207-212.
57. I. Yano and Y. Ogawa (1982): Effects of intensity of underwater illumination on vertical movements of larvae and juveniles of redsea bream, *chrysophrys major*. Bull. Natl. Res. Inst. Aquaculture. No. 3, 45-49.
58. R. Suzuki (1983): Multiple spawning of the cyprinid loach, *misgurnus anguillicaudatus*. Aquaculture, 31 233-243.
59. A. Hara, K. Takano and H. Hirai (1983): Immunochemical identification of female-specific serum protein, vitellogenin, in the medaka, *Oryzias latipes* (teleosts). Comp. Biochem. Physiol. Vol. 76A, No. 1, pp. 135 to 141.
60. Wataru Nunomura, A. Hara, K. Takano and H. Hirai (1983): Immunohistochemical localization of vitellogenin in Hepatic gells of some salmonid fishes. Bulletin of the Faculty of Fisheries, Hokkaido University. 34(2), 79-87.

61. T. Nakanishi and T. Nishiyama (1984): The distribution, swimming, cardiac and scaphognathite activities at daytime and those at nighttime of the pink shrimp (*pandalus borealis*) in the laboratory. Bulletin of the Japan Sea Regional Fisheries Research Laboratory, No. 34.
62. T. Akamine (1984): The basic program to analyse the polymodal frequency distribution into normal distributions with marquardt's method. Bull. Jap. Sea Reg. Fish. Res. Lab., (34): 53-60.
63. A. Hara (1976): Iron-Binding activity of female-specific serum proteins of rainbow trout (*salmo gairdneri*) and chum salmon (*oncorhynchus keta*). *Biochimica et Biophysica Acta*, 427, 549-557.
64. A. Hara (1975): Electrophoretical and immunological studies of fish serum proteins. Bulletin of the Japanese Society of Scientific Fisheries, 41(1), 105-113.
65. S. Hara, T. Matsubara, M. Saneyoshi (1984): Vitellogenin and its derivatives in egg yolk proteins of whitespotted char (*salvelinus leucomaenis*). Bulletin of the Faculty of Fisheries, Hokkaido University, Vol. 35, No. 3, pp. 144-153.
66. Y. Takashima, K. Takano and A. Hara (1979): Changes in female-specific serum proteins during the course of induced maturation of female japanese eels (*anguilla japonica*). Bulletin of the Faculty of Fisheries, Hokkaido University, 30(1). 50-61.
67. A. Hara (1987): Sexual differences in serum proteins of chum salmon and the purification of female-specific serum protein. Bulletin of the Japanese Society of Scientific Fisheries, 44(6) 689-693.
68. A. Hara and H. Hirai (1978): Comparative studies on immunochemical properties of female-specific serum protein and egg yolk proteins in rainbow trout (*salmo gairdneri*). *Comp. Biochem. Physiol.*, Vol.58B, pp.339 to 339.
69. T. Teranishi, A. Hara and H. Takahashi (1981): Changes of serum vitellogenin levels during the course of annual reproductive cycle of the loach, *misgurnus anguillicaudatus*. Bulletin of the Faculty of Fisheries, Hokkaido University, 32(4), 281-292.
70. A. Hara, K. Yamauchi and H. Hirai (1980): Studies on female-specific serum protein (vitellogenin) and egg yolk protein in japanese eel (*anguilla japonica*). *Comparative Biochemistry & Physiology Part B*, Vol. 65B, No. 2, pp. 315-320.
71. O. Fukuhara (1983): Development and growth of laboratory reared *engraulis japonica* (houttuyn) larvae. *J. Fish Biol.* 23, 641-652.
72. J. Tsukidate (1984): On the most suitable growth conditions of young thalli of *sargassum patens* c. *agardh* and *sargassum tortile* c. *agardh*. Bulletin of the Nansei Regional Fisheries Research Laboratory, No.16,

73. M. Okauchi and K. Fukusho (1984): Environmental conditions and medium required for mass culture of a minute alga, *tetraselmis tetrathele* (prasinophyceae). Bull. Natl. Res. Inst. Aquaculture, No. 5, 1-11.
74. H. Ueda, O. Hiroi, A. Hara, K. Yamauchi and Y. Nagahama (1984): Changes in serum concentrations of steroid hormones, thyroxine, and vitellogenin during spawning migration of the chum salmon, *oncorhynchus keta*. General and Comparative Endocrinology, 53, 203-211.
75. I. Yano (1984): Induction of rapid spawning in kuruma prawn, *penaeus japonicus*, through unilateral eyestalk enucleation. Aquaculture, 40, 265-368.
76. K. Fukusho (1984): A minute alga, *tetraselmis tetrathele* as a feed for rotifer *brachionus plicatilis* culture. Yoshoku, 21(6), 1-6.
77. K. Kuronuma and K. Fukusho (1984): Rearing of marine fish larvae in Japan. International Development Research Centre Canada, 47, pp.1-109.
78. Y. Tanaka (1984): On the development of *Pecten albicans* Schroter. Bull. Natl. Res. Inst. Aquaculture, 5, 19-25.
79. Y. Iruai and H. Ishioka (1983): Effects of insulin and glucagon on the incorporation of C-Glycine into the protein of the liver and opercular muscle of the eel in vitro. General and Comparative Endocrinology, 51, 208-212.
80. M. Sugiyama and Y. Tanaka (1982): Application of CO anesthetic method for the exfoliation of young abalones from collector. Bull. Natl. Res. Inst. Aquaculture, 3, 37-44.
81. Y. Tanaka (1982): On the culture of ark shell, *Anadara broughtonii* in Mikawa Bay. Bull. Meeting of Fisheries Resources, 23.
82. K. Ikehara (1984): Ecology of yellow-tail fish juvenile. Report of Research on Hokuriku Coastal Water. Jap. Sea Reg. Fish. Res. Lab.
83. J. Tsukidate (198 ): Aquaculture of seaweed. Bull. Fish. Engineering, 20, 53-55.
84. Y. Sawada (1958): Studies on the fluorescence of the pearls. Bull. Natl. Pearl Res. Lab., 4, 340-346.
85. K. Yamaguchi (1958): On the difference of color and thickness of pearl layer of cultured pearls caused by the disparity of age in mother oysters. Bull. Natl. Pearl Res. Lab., 4, 325-328.
86. K. Wada (1962): Biomineralogical studies on the mechanism of pearl formation. Bull. Natl. Pearl Res. Lab., 8, 948-1059.
87. H. Uemoto (1961): Physiological studies on the nuclear insertion operation of pearl oyster I-III. Bull. Natl. Pearl Res. Lab., 6, 619-635.
88. S. Sakaguchi (1962): Studies on a trematoda parasitic on pearl oyster. I. On the encystation of cercaria, Bucephalus margaritae. Bull. Natl. Pearl Res. Lab., 8, 1060-1063.

89. M. Hasuo, S. Sakaguchi, K. Yamaguchi and E. Murakami (1962): Studies on the qualities of the pearl and growth rate of the pearl oyster, Pinctada martensii, which cultured at culture ground in Nagasaki prefecture. Bull. Natl. Pearl Res. Lab., 8, 920-947.
90. K. Wada (1959): Microscopic observations of cultured pearls at their early formation IV. Bull. Natl. Pearl Res. Lab., 5, 373-380.
91. K. Fukusho (1981): A view on the present situation of seed production and breeding in marine fishes. Fisheries Breeding, 1, 1.
92. T. Matsuzato (1982): Variety and present situation in fish disease. in "Shipment of Live fishes" Kouseisha-Kouseikaku, Tokyo, pp.70.