

BIBLIOGRAPHY ON GRACILARIA –

Production
and Utilization
in the Bay of Bengal



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PRODUCTION AND UTILIZATION IN THE
BAY OF BENGAL

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This bibliography was prepared by BOBP for the seminar on Gracilaria . production and utilization in the Bay of Bengal, which was held 23-27 October, 1989 in Songkhla, Thailand. The literature mentioned in this bibliography deals with biology, resources, culture, processing and marketing of Gracilaria spp. It may help serve as a source of information to farmers, researchers and officials concerned with Gracifaria farming, processing and marketing.

The Bay of Bengal Programme is a regional fisheries programme that covers seven countries bordering the Bay of Bengal -- Bangladesh, India, Indonesia, Malaysia, Maldives, Sri Lanka and Thailand. It is small-scale fisheries oriented and strives for the socio-economic betterment of fisherfolk communities of the region by developing and demonstrating new ideas or techniques, new technologies, methodologies or systems to help small-scale fisherfolk.

BOBP supported farming trials for Gracilaria in Malaysia and provided assistance for open sea farming trials in India and Sri Lanka. A post-harvest project extends support and training in post-harvest technology of agarophytic seaweeds in participating countries,

This paper is an information document and has not been officially cleared by the Governments or agencies concerned.

GRACILARIA : BIBLIOGRAPHY

BIOLOGY

- ABBOT, I.A. (1983). Some species of *Gracilaria* (Rhodophyta) from California. *Taxon.* 32 (4). 561-564.
- _____ and NORRIS, J.N. (eds) (1985). Taxonomy of economic seaweeds. California Sea Grant College Program California. 15-20 June, 1984. 167 p.
- ARAKI, S., SAKURAI, T., OOHUSA, T. and KAYAMA, M. (1986). Component fatty acid of lipid from *Gracilaria verrucosa*. *Bull. Jap. Soc. Fish/Nissuishi* 52 (10), 1871.
- BEER, S. and LEVY, I. (1983). Effects of photon fluence rate and light spectrum composition on growth, photosynthesis and pigment relations in *Gracilaria* spp. *J. Phycol.* 19 (4), 516-522.
- BIRD, C.J., MEER, J.P. van der and McLACHLAN, J. (1982). A comment on *Gracilaria verrucosa* (Hudson) Papenfuss. (Rhodophyta: Gigartinales). *J.Mar.Biol.Assoc.UK* 62 (2), 453-459.
- _____ and DE OLIVEIRA, F.E.C. (1986). *Gracilaria tenuifrons* sp. nov. (Gigartinales, Rhodophyta), a species from the tropical western Atlantic with superficial spermatangia. *Phycologia* 25 (3), 313-320.
- BIRD, K.T., DAWES, C.J. and ROMEO, J.T. (1981). Light quality effects on carbon metabolism and allocation in *Gracilaria verrucosa*. *Mar.Biol.* 64 (2), 219-223.
- _____ HABIG, C. and DEBUSK, T. (1982). Nitrogen allocation and storage patterns in *Gracilaria tikvahiae* (Rhodophyta). *J. Phycol.* 18. (3), 344-348.
- BIRD, K.T. (1984). Seasonal variation in protein: carbohydrate ratios in a subtropical estuarine alga, *Gracilaria verrucosa*, and the determination of nitrogen limitation status using these ratios. *Bot.Mar.* 27 (3), 111-115.
- BROWN, L.M. and McLACHLAN, J. (1982). A typical carotenoids for the Rhodophyceae in the Genus *Gracilaria* (Gigartinales). *Phycologia* 21 (1), 9-16.
- BURKILL, H.M., GREENWOOD-BARTON, L.H. and CROWTHER, P.C. (1968). Some studies of Malaysian agarophytic and alginophytic seaweeds. *Gard.Bul. Singapore.* 22, 429-441.
- CANCINO, J.M., MUNOZ, M. and ORELLANA, M.C. (1987). Effects of epifauna on algal growth and quality of the agar produced by *Gracilaria verrucosa* (Hudson) Papenfuss. *Hydrobiol.*, 151/152, 233-237.
- CHANG, C.F. and MEI, X.B. (1976). Studies on Chinese species of *Gracilaria*. *Marina Sinica* 11. 91-165.
- CHEN, M.Q. and REN, G.Z. (1985). The development process of sporelings of *Gracilaria verrucosa* (Hudson) Papenfuss. *Oceanol.* (3) : 180-186. (Chinese)
- _____ (1987). The effect of temperature on the early growth and development of sporelings of *Gracilaria asiatica* Zhang and Xia. *Oceanol. Limnol. Sin./Haiyang Yu Huzhao* 18 (3), 301-308. (Chinese)

- CHENEY, D.P., MAR, E., SAGA, N. and MEER, J. P. van der (1986). Protoplast isolation and cell division in the agar producing seaweed *Gracilaria* (Rhodophyta). *J. Phycol.* 22 (2), 238-243.
- DAWES, C.J., CHEN, C.P., JEWETT-SMITH, J., MARSH, A. and WATTS, S.A. (1984). Effects of phosphates and ammonium levels on photosynthetic and respiratory responses of the red algae *Gracilaria verrucosa*: *Mar' Biol.* 78, 325-381.
- DAWSON, Y. (ed). (1966). Seaweed life histories. In: *Marine Botany*. Holt Rinehart Winston. pp. 220-229.
- DeBOER, J.A. (1979). Effects of nitrogen enrichment on growth rate and phyco-colloid content in *Gracilaria foliifera* and *Neogurdiellia buileyi* (Florideophyceae). In: *Proceedings of international seaweed symposium* 9, 263-271.
- DELIVOPOULOS, S.G. and TSEKOS, I. (1986). Ultrastructure of carposporogenesis in the red alga *Gracilaria verrucosa* (Gigartinales, Gracilariaceae). *Bot. Mar.* 29 (1), 27-35.
- DELLAROSSA, V., ROMO, H. and ALVEAL, K. (1980). Advances in the ecological knowledge on *Gracilaria verrucosa* from the Concepcion area, Chile. *Bol. Inst. Oceanogr. Sao Paulo.* 29 (2), 149-155. (Spanish).
- DURAIRATNAM, M. (1961). Contribution to the study of marine algae of Ceylon. *Bull. Fish. Res. Stn. Ceylon* 10, 5-117.
- _____ (1962). Some marine algae. *Ceylon Bul. Fish. Res. Sm. Ceylon* 15, 3-16.
- _____ (1965). The ecology of *Gracilaria verrucosa* (Hudson) Papenfuss in Koddiyar Bay, Trincomalee. *Bull. Fish. Res. Stn, Ceylon* 18 (1), 29-34.
- EDELSTEIN, T., BIRD, C.J. and McLACHLAN, J. (1976). Studies on *Gracilaria*. 2. Growth under greenhouse conditions. *Can. J. Bot.* 54 (19), 2275-2290.
- EDELSTEIN, T., BIRD, C. and McLACHLAN, J. (1981). Preliminary field studies on *Gracilaria* spp. from the lower Gulf of St. Lawrence, Canada. In: *Proceedings International Seaweed Symposium*. 8, 320-322.
- EVANS, L.V., CALLOW, M.E. and CALLOW, J.A. (1981). Host/parasite relationships in seaweeds. In: *Proceedings International Seaweed Symposium*. 8, 167-171.
- FRIEDLANDER, M. and DAWES, C.J. (1984). Studies on spore release and sporulating growth from carpospores of *Gracilaria foliifera* (Forsskal, Borgesen var. *angustissima* (Harvey) Taylor I. Growth responses. *Aquatic Bot.* 19, 221-232.
- _____ (1984). Studies on spore release and sporulating growth from carpospores of *Gracilaria foliifera* (Forsskal) Borgesen var. *angustissima* (Harvey) Taylor II. Photosynthetic and respiratory responses. *Aquatic Bot.* 19, (3-4) 233-242.
- _____ and LIPKIN, Y. (1982). Rearing of agarophytes and carrageenophytes under field conditions in the Eastern Mediterranean. *Bot. Mar.* 25 (2), 101-105.
- FUJITA, R.M. (1985). The role of nitrogen status in regulating transient ammonium uptake and nitrogen storage by macroalgae. *J. Exp. Mar. Biol. Ecol.* 92 (2-3), 283-301.

- GARGIULO, G.M., DE MASI, F. and TRIPODI, G. (1985). A study on *Gracilaria dendroides* sp. nov. (Gigartinales, Rhodophyta) from the Bay of Naples. *Br. Phycol. J.* 20 (4), 357-364.
- GOFF, L.J. and COLEMAN, A.W. (1988). Red algal plasmids : Potential genetic engineering tools. Paper presented at First International Symposium on Marine Molecular Biology, Baltimore, Maryland. 9-11 October 1988.
- _____ (1988). The use of plastid DNA restriction endonuclease patterns in delineating red algal species and populations. *J. Phycol.* 3, 357-368.
- GOMEZ, E.D., BIRKELAND, C.E., BUDDEMEIER, R.W., JOHANNES, R.E., MARCH, J.A. JR and TSUDA, R.T. (eds). (1981). Interspecific variability within the genus *Gracilaria* (Rhodophyta) on Guam. In: *The Reef and Man. Proceedings of the Fourth International Coral Reef Symposium* 2, 415-418.
- _____ (1981). Browsing by herbivorous reef-fishes on the agarophyte *Gracilaria edulis* (Rhodophyta) at Guam, Mariana Islands. In: *The Reef and Man. Proceedings of the Fourth International Coral Reef Symposium* 2, 503-506.
- HABIG, C., DEBUSK, D.A. and RYTHER, J.H. (1984). The effect of nitrogen content on methane production by the marine algae *Gracilaria tikvahiae* and *Ulva* spp. *Biomass.* 4 (4), 239-251.
- HIEU, L.N. and MINH, P.P. (1980). Studies on the effect of the high temperature (35 degree C) and different salinity on the photosynthesis and activity of the catalase in *Gracilaria verrucosa* (Hudson) Papenfuss. *Tuyen Tap Nghien Cuu Bien.* 2 (I), 7-17.
- HODGSON, L.M. (1984). Dessication tolerance of *Gracilaria tikvahiae* (Rhodophyta). *J. Phycol.* 20 (3), 444-446.
- _____ (1985). Photosynthesis and pigment content of strains of *Gracilaria tikvahiae* in continuous outdoor cultivation. *J. Phycol.* 21, 15. (abstract).
- HWANG, S.P.L., WILLIAMS, S.L. and BRINKHUIS, B.H. (1987). Changes in internal dissolved nitrogen pools as related to nitrate uptake and assimilation in *Gracilaria tikvahiae* McLachlan (Rhodophyta). *Bot. Mar.* 30 (1), 11-19.
- JONES, W. E. (1959). The growth and fruiting of *Gracilaria verrucosa* (Hudson) Papenfuss. *J. Mar. Biol. Ass. UK.* 38, 47-56.
- KIM, C. S. and HUMM, H.J. (1965). The red algae *Gracilaria foliifera* with special reference to the cell wall polysaccharides. *Bull. Mar. Sci.* 15, 10361050.
- KINOSHITA, K., TAKAHASHI, K. and ZAMA, K. (1986). Triarachidonin and diarachidonoyl-phosphatidylcholine in "ogonori" *Gracilaria verrucosa*. *Bull. Jap. Soc. Sci. Fish/ Nissuishi.* 52 (4), 757.
- KOCH, E.W. and LAWRENCE, J. (1987). Photosynthetic and respiratory responses to salinity changes in the red algae *Gracilaria verrucosa*. *Bot. Mar.* 30 (4), 327-329.
- KRISHNAMURTHY, V.S., KALIAPERUMAL, N., RAMALINGAM, J.R. and KALIMUTHU, S. (1986). Growth, reproduction and spore output in *Gracilaria foliifera* (Forsk.) Boergesen around Mandapam. *Ind. J. Fish.* 33 (1), 76-84.

- KULKARNI, A.H. and NIMBALKAR, J.H. (1983). Initial products of photosynthetic carbon assimilation and some photosynthetic enzymes in *Gracilaria corticata* J.Ag. Photosynthetica. 17 (2), 189-192.
- _____ (1983). 3-Phosphoglycerate and glucose formation from super (14)C aspartate in *Gracilaria corticata* J.Ag. Photosynthetica 17 (4), 605-606.
- KUNG-CHU, F., WEI-HSIN, L., YUNG-CHUAN, W. and YUN-PING, F. (1974). Studies on the agarophytes I. The optimum growth temperature of carpospore-germlings of *Gracilariopsis sjoestedtii* and the seasonal growth of the sporelings. Acta Botanica Sinica 16, 30-39.
- KURSAR, T.A., MEER, J.P. van der and ALBERTE, R.S. (1983). Light harvesting system of the red alga *Gracilaria tikvahiae*. Phycobilisome characteristics of pigment mutants. Plant Physiol. 73 (2), 361-369.
- _____ (1983). Light harvesting system of the red alga *Gracilaria tikvahiae*. Biochemical analyses of pigment mutations. Plant Physiol. 73 (2), 353-360.
- LAPOINTE, B.E. (1981). The effects of light and nitrogen on growth pigment content and biochemical composition of *Gracilaria foliifera* v. *angustissima* (Gigartinales, Rhodophyta). J. Phycol. 17, 90-95.
- _____ (1982). Interactions between light intensity, temperature and nitrogen on growth rate. physiological processes and chemical composition of *Gracilaria tikvahiae* (Rhodophyta, Gigartinales). Diss.Abst.Int.Pt.B-Sci.& Engg. 43 (12), 186. (Abstract).
- _____ (1985). Strategies for pulsed nutrients supply to *Gracilaria* culture in the Florida Keys: interactions between concentration and frequency of nutrient pulses. J.exp.mar.Biol.Ecol. 93, 211-222.
- _____ and DUKE, C.S. (1984). Biochemical strategies for growth of *Gracilaria tikvahiae* (Rhodophyta) in relation to light intensity and nitrogen availability. J. Phycol. 20, 488-495.
- _____ and RYTHER, J.H. (1979). The effects of nitrogen and seawater flow rate on the growth and biochemical composition of *Gracilaria foliifera* v. *angustissima* in mass outdoor culture. Bot.mar. 22, 529-537.
- _____ RICE, D.L. and LAWRENCE, J.M. (1984). Responses of photosynthesis, respiration, growth and cellular constituents to hypo-osmotic shock in the red alga *Gracilaria tikvahiae*. Comp.Biochem.Physiol.A. 77A (1), 127-132.
- _____ TEORE, K.R. and DAWES, C.J. (1984). Interactions between light and temperature on the physiological ecology of *Gracilaria tikvahiae* (Gigartinales, Rhodophyta). Mar.Biol. 80, 171-178.
- LEVRING, T. (ed). (1981). Effects of environmental factors on the diurnal periodicity of tetraspores of some *Gigartinales* (Rhodophyta). In: Proceedings of 10th International Seaweed Symposium. pp. 209-214.
- _____ (1981). Seasonal variation of the chlorophyll contents of *Gracilaria* cultivated in Taiwan. In: Proceedings of 10th International Seaweed symposium. pp. 455-460.

- LIM, B.L., HORI, H. and OSAWA, S. (1983). The nucleotide sequences from two red algae, *Gracilaria compressa* and *Porphyra tenera*. *Nucleic Acids Res.* 11 (15), 5185-5222.
- LIN, M.N., and LIN, K.Y. (1981). The toxicity of radapon (sodium dichloropropionate) and curpic sulfate to *Gracilaria*, *Chaetomorpha*, and some fishes. *China Fish.Mon.* 343, 3-9.
- LIU, S.J. and ZENG, S.F. (1982). Rate of photosynthesis and growth of *Gracilaria verrucosa* in different layers of seawaters. *J Fish. China.* 6 (1), 59-64.
- _____ LIN, B.S., ZENG, S.F., CHEN, B.O. and ZHANG, Y .H. (1984). Experiments on spore germination of *Gracilaria tenuistipitata*. *J.Fish.China.* 8 (2), 179-184. (Chinese).
- _____ XIANG, S.G., LIN, B.S. and ZENG, S.F. (1985). Study on photosynthesis of *Gracilaria*. 1. Effect of various light intensity photosynthesis. *J.Fish.China/Shuichan Xuebao.* 9 (1), 29-35.
- MEER, J.P. van der. (1977). Genetics of *Gracilaria* spp. (Rhodophyceae, Gigartinales) II. The life history and genetic implications of cytokinetic failure during tetrasporoc formation. *Phycologia* 16, 367-371.
- _____ (1981). Genetics of *Gracilaria tikvahiae* (Rhodophyceae). VII. Further observations on Mitotic Recombination and the Constriction of Polyploids.
- _____ and SIMPSON, F.J. (1984). Cryopreservation of *Gracilaria tikvahiae* (Rhodophyta) and other macrophytic marine algae. *Phycologia* 23 (2), 195-202.
- _____ (1986). Genetics of *Gracilaria tikvahiae* (Rhodophyceae). 11. Further characterization of a ubisexual mutant. *J.Phycol.* 22 (2), 151-158.
- _____ and ZHANG-XUECHENG. (1988). Similar unstable mutations in three species of *Gracilaria* (Rhodophyta). *J.Phycol.* 2, 198-202.
- MENESES, I. and ABBOT, I.A. (1987). *Gracilaria* and *Polycavemosa* (Rhodophyta) from Micronesia. *Micronesica* (1-2), 187-200.
- NELSON, W.A. (1987). The New Zealand species of *Gracilaria* Greville (Rhodophyta, Gigartinales). *N.Z.J.Bot.* 25 (1), 87-98.
- NURIWATI, D. and HARTATI, S.T. (1985). Influence of mercury on growth of seaweed *Gracilaria lichenoides* in Jakarta Bay. *J.Pen.Perikanan Laut/J.Mar.Fish.Res.* 33, 2 1-26.
- OLIVEIRA, E.C. de, BIRD, C.J. and McLACHLAN, J. (1983). The genus *Gracilaria* (Rhodophyta, Gigartinales) in the Western Atlantic. *Gracilaria domingensis*, *Gracilaria cervicornis* and *Gracilaria ferox*. *Can.J.Bot.* 61 (12), 2999-3008.
- OZA, R.M. (1971). Studies on ecology, morphology and life-history of *Gracilaria corticata*. Ph. D thesis, Gujarat University, Ahmedabad, India. (unpublished).
- PARKER, H.S., (1982). Effects of simulated current on the growth rate and nitrogen metabolism of *Gracilaria tikvahiae* (Rhodophyta). *Mar.Biol.* 69, 137-145.
- PATWARY, M.U. and MEER, J.P. van der. (1983). Growth experiments on morphological mutants of *Gracilaria tikvahiae* (Rhodophyceae). *Can.J.Bot.* 61 (6), 1654-1659.

- PENNIMAN, C.A. and MATHIESON, A.C. (1985). Photosynthesis of *Gracilaria tikvahiae* McLachlan (Gigartinales, Rhodophyta) from the Great Bay Estuary, New Hampshire. Bot.Mar. 28 (10). 427-435.
- _____ (1987). Variation in chemical composition of *Gracilaria tikvahiae* McLachlan (Gigartinales, Rhodophyta) in the Great Bay Estuary, New Hampshire. Bot. Mar. 6, 525-534.
- _____ and PENNIMAN, C.E. (1986). Reproductive phenology and growth of *Gracilaria tikvahiae* McLachlan (Gigartinales, Rhodophyta) in the Great Bay Estuary, New Hampshire. Bot. Mar. 29 (2). 147-154.
- PINHEIRO, J.F. and FROTA BEZERRA, C.L. (1980). Biological studies of *Gracilaria domingensis* Sonder (Rhodophyta, Gracilariaceae). Phenology and regeneration. Arq.Cienc.Mar. 20 (1-2), 3341. (Portuguese).
- RANGAIAH, G.S. (1984). Growth, reproduction and spore shedding in *Gracilaria textorii* (Sur.) J.Ag. along the Visakhapatnam coast. Phycos. 23 (1-2). 246-253.
- _____ (1984). Effect of environmental factors on germination and growth in *Gracilaria corticata* J.Ag. Ind.J.Bot. 7 (2), 234-239.
- RAO, K.R. and THOMAS, P.S. (1974). Shedding of carpospores in *Gracilaria edulis* (Geml) Silva. Phycos 13, 54-59.
- RAO, U.M. (1975). Studies on the growth and reproduction of *Gracilaria corticata* near Mandapam, the Gulf of Mannar. J.Mar.Biol.Assoc.India. 17 (3), 646-652.
- _____ (1976). Spore liberation in *Gracilaria corticata* J. Ag. growing at Mandapam. J.Exp.Mar.Biol.Ecol. 21, 91-98.
- _____ MURTHY, S.B.K. and MOHAN CHAND, V. (1984). Growth and survival of *Gracilaria corticata* in zinc smelter effluent. Ind.J.Bot. 7(1), 50-53.
- READING, R.P. and SCHNEIDER, C.W. (1986). On the male conceptacles of two terete species of *Gracilaria* (Rhodophyta, Gigartinales) from North Carolina. J. Phycol. 22 (3). 395-398.
- REN, G.Z. and CHEN, M.Q. (1986). The effect of temperature on the growth and development of *Gracilaria asiatica* Oceanol. Limnol. Sin./Haiyang Yu Huzhao. 17 (4), 283-293. (Chinese).
- _____ (1986). On the "coalescence" phenomena during the disc stage of young sporelings in *Gracilaria*. Mar. Sci./Haiyang Kexue. 10 (1), 49-50. (Chinese).
- RHYTER, J.H., CORWIN, N., DEBUSK, T.A. and WILLIAMS, L.D. (1981). Nitrogen uptake and storage by the red algae *Gracilaria tikvahiae* (McLachlan). Aquaculture 26, 107-115.
- ROSENBERG, G. and RAMUS, J. (1981). Ecological growth strategies in the seaweeds *Gracilaria foliifera* (Rhodophyceae) and *Ulva* spp. (Chlorophyceae): The rate and timing of growth. Bot.Mar. 24 (11), 583-589.
- _____ (1982). Ecological growth strategies in the seaweeds *Gracilaria foliifera* (Rhodophyceae) and *Ulva* spp. (Chlorophyceae) : Soluble Nitrogen and Reserve Carbohydrates. Mar. Biol. 66 (3), 251-259.

- _____ (1982). Ecological growth strategies in the seaweeds *Gracilaria foliifera* (Rhodophyceae) and *Ulva* spp. (Chlorophyceae): Photosynthesis and antenna composition. *Mar.Ecol.(Prog.Ser.)* 8 (3), 233-241.
- _____ (1984). Uptake of inorganic nitrogen and seaweed surface area: volume ratios. *Aquatic Bot.* 19 (1-2), 65-72.
- ROYLE, M.D. (1978). Reproductive phenology and *growth* rates in two species of *Gracilaria* from Hawaii. *J.Exp.Mar.Biol.Ecol.* 35, 273-283.
- SANTELICES, B. and UGARTE, R. (1987). Production of Chilean *Gracilaria* : problems and perspectives. *Hydrobiol.*, 151/152, 295-299.
- TAMBAIAH, M.S. and PUSHPARAJAH, M. (1966). Studies on the regeneration of the thallus of *Gracilaria corticata*. In: *Proceedings Annual 22nd Session CAAS, Pt 1*, p. 42.
- THOMAS, T.L., and HARRISON, P.J. (1987). Rapid ammonium uptake and nitrogen interactions in five intertidal seaweeds grown under field conditions. *J. Exp. Mar.Biol.Ecol.* 107 (1), 1-8.
- THOMAS, T.E., TURPIN, D.H. and HARRISON, P.J. (1987). Desiccation enhanced nitrogen uptake rates in intertidal seaweeds. *Mar. Biol.* 94 (2), 293-298.
- _____ HARRISON, P.J. and TURPIN, D.H., (1987). Adaptations of *Gracilaria pacifica* (Rhodophyta) to nitrogen procurement at different intertidal locations. *Mar. Biol.* 93(4) : 569-580.
- THORHAUG, A. and MARCUS, J.H. (1981). The effects of temperature and light on attached forms of tropical and semi-tropical Macroalgae potentially associated with OTEC (Ocean Thermal Energy Conversion) Machine Operation. *Bot.Mar.* 24 (7), 393-398.
- TRONO, G.C., JR, AZANZA CORRALES, R. (1983). The genus *Gracilaria* (Gigartinales, Rhodophyta) in the Philippines. *Kalikasan.* 12 (1-2), 15-41.
- _____ and GANZON-FORTES, E.T. (1981). Report on the Training Course on *Gracilaria* Algae. Manila, Philippines, 1-30 April, 1981. SCSP.SCS/GEN/81/29.
- VON WACHENFELDT, T. (1984). Growth rate of some Baltic macroalgae. *Limnologica.* 15 (2), 311-317.
- WANG, S. and ZHANG, Y. (1981). Observation on the growth and reproductive cycle of *Gracilaria verrucosu* (Hudson) Papenfuss. *Mar.Fish.Res.* 2, 17-26.
- WANG, S.J. and XU, Z.D. (1986). A study on the multinucleate phenomenon in several species of *Gracilaria* (Rhodophyta). *Oceanol. Limnol.Sin/Haiyang Yu Huzhao.* 17 (6), 527-529. (Chinese).
- WANG, Y.C., PAN, G.Y., and CHEN, L.C.M. (1984). Studies on agarophytes 2. Field observations and growth of *Gracilaria* cf. *verrucosu* (Rhodophyta) in Shantou district, Guangdong, P.R.C. *Bot. Mar.* 27. 265-268.
- _____ and HUANG, L.M. (1985). Effects of temperature and salinity on photosynthesis and productivity of *Gracilaria tenuistipitutu* C F Chang et Xia (Rhodophyta). *J.Fish. China.* 9 (2). 155-163.(Chinese)

- WESTERM EIER, R. (1982). Ecology and energetic content of *Gracilaria verrucosa* (Hudson) Papenfuss from Southern Chile. *Atlantica* 5 (2). 129.(Spanish).
- WETHERBEE, R. and QUIRK, H.M. (1982). The fine structure and cytology of the association between the parasitic red alga *Holmsella australis* and its red algal host *Gracilaria furcelluta*. *Protoplasma*. 110 (3), 153-165.
- _____ (1982). The fine structure of secondary pit connection formation between the red alga alloparasite *Holmsella australis* and its red algal host *Gracilaria furcelluta*. *Protoplasma*. 110 (3), 166-176.
- YAMAMOTO, H. and SASAKI, J. (1987). Crossing experiments between populations of so-called localities, Shinori and Kikonai in Hokkaido. *Bull. Fac. Fish. Hokkaido Univ.* 4, 335-338.
- ZHANG, J.F. and XIA, B.M. (1985). On *Gracilaria asiatica* sp. nov. and *Gracilaria verrucosa* (Hudson) Papenfuss. *Oceanol.Limnol.Sin.* 16 (3), 174-179.(Chinese).
- ZHANG, X.C. and MEER van der, J.P. (1987). A study on heterosis in diploid gametophytes of the Marine red algae *Gracilaria tikvahiae*. *Bot.Mar.* 30 (4), 309-314.

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- BOROSO, A. (1986). Seaweed exploitation in Argentina. *INFOFISH Mark. Digest.* 86 (5), 47-48.
- DOTY, M.S. (1977). Seaweed resources and their culture in the South China Sea region. Manila, SCSP. *SCS/77/WP/60*.
- DURAIRATNAM, M. and MEDCOF, J.C. (1954). Ceylon's seaweed resources. *Ceylon Trade J.* 19 (4), 1-6.
- _____ (1980). Studies on agar producing seaweeds and their distribution in Northeast Brazil. *Cienc. Cult.* 32 (10), 1358-1372.
- EDWARDS, P., BOROMTHANARAT, S. and TAM D.M. (1982). Seaweeds of economic importance in Thailand. Part 1 Field Survey, Thai government statistics and future prospects. *Bot.Mar.* 25 (5), 237-246.
- JAYASURIYA, P.M.A. (1987). The socioeconomic aspects of the people traditionally involved in the harvesting of wild *Gracilaria lichenoides* (seaweeds) from Puttalam Lagoon. In: *Proceedings 42nd Annual Session SLAAS*.
- KALIAPERUMAL, N., CHENNUBHOTLA, V.S.K. and KALIMUTHU, S. (1987). Seaweed resources of India. *CMFRI Bul.* 41. 51-54.
- KIM, D.H. (1970). Economically important seaweeds in Chile. Pt. 1, *Gracilaria*. *Bot.Mar.* 13, 140-162.
- KRISHNAMURTHY, V.S. and CHENNUBHOTLA, V.S.K. (1988). Present status of seaweed resources of Tamil Nadu and scope for future exploitation. Paper presented at the Workshop on Marine Fisheries Research and Development in Tamil Nadu, Madras, India. 13-14 September 1985.

- LEVRING, T. (ed) (1981) Experimental harvesting of *Gracilaria* in New Zealand. In: Proceedings of 10th International Seaweed Symposium. pp 693-698.
- _____ (ed) (1981). Studies on *Gracilaria* sp. in Bahia Arredondo, Chubut Province, Argentina. In: Proceedings of 10th International Seaweed Symposium. pp 705-710.
- _____ (ed) (1981). On the vegetation dynamics of *Gracilaria* sp. in Playa Changa, Coquimbo, Chile. In: Proceedings of 10th International Seaweed Symposium. pp 223-228.
- _____ (ed) (1981). The seasonal variation in the biomass and reproductive states of *Gracilaria* in Manila Bay. In: Proceedings of 10th International Seaweed Symposium. pp 743-748.
- LIPKIN, Y., BEER, S., BEST, E.P.H., KAIRESAALO, T. and SALONEN, K. (1986). Primary production of macrophytes: Terminology, approaches and comparison of methods. *Aquat. Bot.* 1-2, 129-142.
- LUXTON, D.M. (1981). Experimental harvesting of *Gracilaria* in New Zealand. In: Proceedings of 10th International Seaweed Symposium. pp 693-698.
- MICHANEK, G. (1975). Seaweed resources of the Ocean. FAO Fish. Tech. Pap. (138), 127 p.
- _____ (1979). Phytogeographical provinces and seaweed distribution. *Bot. Mar.* 22, 375-391.
- _____ (1983). World resources of marine plants 4.1. Benthic plants. In Kinne, O (ed) *Marine Ecology*, 5 (2), 795-837.
- _____ (1984). Resources algues pour cosmetologie et phytoterapie. In: Roeck-Holzhaues, Y de (ed) *Plantes et Algues en Cosmetologie et en Phytotherapie*, 261-273.
- _____ (1988). Seaweed resources of the Mediterranean and of the world. In: *Atti del Convegno International "Conversione delle saline in acquacultura" Trapani* 9-11 Maggio 1986, 75-81.
- OTTWAY, B. and MACDONNACHA, C. (1980). *Gracilaria bursapastoris* in Connemara. *Ir.Nat.J.* 20 (2), 74.
- PHANG, S.M. (1984). Seaweed resources of Malaysia. *Walaecana* W38, 3-8.
- RAMACHANDRAN, S., RAJENDRAN, N., NANDAKUMAR, R. and VENUGOPALAN, V.K. (1982). Effect of pesticides on marine macrophytes in a South India estuary (Vellar-Portonovo, Lat 11 degree 31' N, Long 79 degree 26' E). *Atlantica*. 5 (2), 101.
- RAMIREZ, C., RIVERA, P., STEGMAIER, E. and CONTRERAS, D. (1981). Prospection of *Gracilaria verrucosa* in the Coral Bay and San Juan Inlet (Valdivia, Chile). *Rev.Biol.Mar.* 17 (3), 389-404. (Spanish).

- RAO, U.M. (1971). The seaweed potential of the seas around India. Reprint from the Proceedings of the Symposium on Living Resources of the seas around India. Cochin, CMFRI.
- _____ (1974). On the cultivation of *Gracilaria edulis* in the near shore areas around Mandapam. *Current Sci.* 43 (20), 660-661.
- ROTHMANN, K.W.G. (1987). The collection, utilization and potential farming of red seaweeds in Namibia (*Gracilaria*). *Hydrobiol.*, 151/152, 301-305.
- TRONO, G.C. JR, RABANAL, H.R. and SANTIKA, I. (1980). Seaweed farming. Manila, SCSP SCS/80/WP/91.

CULTURE

- ABBOTT, I.A., FOSTER, M.S. and EKLUND, L.F. (Eds.) Pacific Seaweed Aquaculture. Pacific Sea Grant College Program, Univ of California, 228 pp.
- BIRD, C.J. and McLACHLAN, J. (1986). The effect of salinity on distribution of species of *Gracilaria* Grev. (Rhodophyta, Gigartinales). An experimental assessment. *Bot.Mar.* 29 (3), 231-238.
- BRAWLEY and FEI, (1987). Studies of mesoherbivory in aquaria and in an unbaricaded mariculture farm on the Chinese coast. *J. Phycol.* 23, 614-623.
- CASTRO, M.P.T. and PINHEIRO, J.F. (1972). Preliminary report on cultivation of marine algae in Ceara State, Brazil. *Arq.Cienc.Mar.* 22 (1/2), 83-85.(Portuguese).
- CHEN, T.P. (1975). Culture of *Gracilaria* (Unpub?)
- CHENNUBHOTLA, V.S.K., KALIAPERUMAL, N. and KALIMUTHU, S. (1978). Culture of *Gracilaria edulis* in the inshore waters of Gulf of Mannar (Mandapam). *Ind.J.Fish.* 25 (1-2), 228-229.
- RAMALINGAM, J.R., SELVARAY, M. and NAJMUDDI, M. (1987). Seaweed culture, CMFRI Bul. 41, 60-74.
- CHIANG, Y.M. (1981). Cultivation of *Gracilaria* (Rhodophyta, Gigartinales) in Taiwan. In: LEVERING, T. (ed) Proceedings 10th International Seaweed Symposium. pp. 569-574.
- CMFRI. (1983). Seaweed culture project. Proven technology 7. Technology of cultured seaweed production. *Mar.Fish.Inf. Serv.* 54, 19-20.
- COASSINI, L. (1980). Culture and exploitation of algae in brackishwaters. in: Proceedings of the Congress on Problems and Prospects of Brackishwater Aquaculture. Grado, 18-19 April 1980. pp. 163-182.
- CONNORS, D. and RYTHER, J. (1985). Morphology and color variation in outdoor cultures of *Gracilaria* spp *J. Phycol.* 21, 13. (abstract).
- DEBUSK, T.A. and RYTHER, J.H. (1984). Effects of seawater exchange, pH and carbon supply on the growth of *Gracilaria tikvahiae* (Rhodophyceae) in large-scale cultures. *Bot.Mar.* 27 (8), 357-362.

- _____ HANISAK, M.D., LAPOINTE, B.E., and RYTHER, J. H. (1985). Cultivation of unattached macroalgae in Florida. *J.Phycol.* 21, 15.
- DOTY, M.S. and FISHER, J. (1987). Experimental culture of seaweeds (*Gracilaria* spp) in Penang, Malaysia. BOBP/WP/52. Madras. 41 p.
- DRAGO, D., GENCHI, G. and SORTINO, M. (1980). Cultivation of *Cracilariu verrucosa* (Hudson) Papenfuss in outskirts of Taipani. *Mem. Bibl. Mar.Oceanogr.* 10 (6), 163-167. (Italian).
- EDWARDS, P., SAMSUK, B. and TAM, D.M.(1982). Seaweeds of economic importance in Thailand. *Bot.Mar.* 25, 237-246.
- _____ and TAM, D.M. (1984). The potential for *Gracilaria* farming in Thailand. *Hydrobiol.* 116/1 17, 246-248.
- FAZAAZ, A.L. (1981). The possibilities of seaweed production development in West Malaysia. Fisheries Department, Kuala Lumpur, Malaysia. 25 p.
- FRALICK, R.A., HUGUENIN, J.E. and LAPOINTE, B.E. (1981). The growth of commercially useful seaweeds in a nutrient enriched multi-purpose aquaculture system. In: *Proceedings International Seaweed Symposium.* pp. 692-698.
- FRIEDLANDER, M. and LIPKIN, Y. (1982). Rearing of agarophytes and carrageenophytes under field conditions in the eastern Mediterranean. *Bot.Mar.* 25 (2), 101-105.
- FUJITA, R.M. and GOLDMAN, J.C. (1985). Nutrient flux and growth of the red alga *Gracilaria tikvahiae* McLachlan (Rhodophyta). *Bot.Mar.* 28 (6), 265-268.
- FURTADO, J.I. (ed) (1980). Experimental cultivation of red algal genera *Eucheuma* and *Cracilariu* in the lagoon of Pari Island, Indonesia. *Tropical Ecology and Development.* In: *Proceedings of the 5th International Symposium of Tropical Ecology.* Kuala Lumpur, Malaysia, 16-21 April 1979, pp. 1121-1126.
- GIACCONE, G., PRINCI, M., FEOLI, E., COASSINI, L., RIZZI LONGO L. and TORTUL, V. (1979). Evaluation of the lagunar vegetation resources of the Tyrrhenian Sea and experiments on the controlled cultivation of the red alga *Gracifaria verrucosa* and of other agarophytes in Sicily. In: *Proceedings of the National Scientific Meeting, Rome, Italy, 5-7 March 1979.* pp. 423-435.
- GOLDSTEIN, M.E. (1981). Field and laboratory studies on *Gracilaria* from Prince Edward Island, Canada. In: *Proceedings International Seaweed Symposium.* pp. 331-335.
- GUERIN, J.M. and BITF, K.T. (1987). Effects of aeration period on the productivity and agar quality of *Gracilaria* spp. *Aquaculture* 64 (2), 105-110.
- HANISAK, M.D. (1987). Cultivation of *Gracilaria* and other macroalgae in Florida for energy production. In (Bird, K.T. and Benson, P.H.) *Seaweed cultivation for renewable resources.* Elsevier, Amsterdam, The Netherlands.
- _____ (1978). Cultivation and bioenergetics of the agarophyte *Gracilaria rikvahiae*. *International Council for the Exploration of the Sea, C.M.* 1979/F, 24.
- _____ and SAMUEL, M.A. (1983). The influence of major environmental factors on the growth of *Gracilaria tikvahiae* (Rhodophyceae) in culture. *J.Phycol.* 19 (2). 6.

- _____ and RYTHER, J.H. (1984). Cultivation biology of *Gracilaria tikvahiae* in the United States. *Hydrobiol.* 116/117, 295-298.
- _____ and RYTHER, J.H. (1986). The experimental cultivation of the red seaweed *Gracilaria tikvahiae* as an energy crop; an overview. *Nova Hedwigia* 83, 212-217.
- HANSEN, J.E., PACKARD, J.E. and DOYLE, W.T. (1981). Mariculture of red seaweeds. California Sea Grant College Program Publ. Univ of California, La Jolla, CA, 42 pp.
- _____ (1983). A physiological approach to mariculture of red algae. *J. World Maricult. Soc.* 14, 380-391.
- KALIAPERUMAL, N. (1988). Seaweed culture. Paper presented at the Workshop on Marine Fisheries Research and Development in Tamil Nadu. Madras, 13-14 September 1989.
- KALKMAN, B.A., KARUNAKARAN, R. and VIMALA, S. (1989). Seaweed farming of *Gracilaria edulis* for small-scale fisherfolk of Tamil Nadu. Proceedings, National Symposium on Aquaculture Productivity. New Delhi, 15-18 December 1988. (unpublished).
- KAUSAR, R. and ALI, A. (1986). Prospects of seaweed culture. *Prog. Farming* 5, 42-47.
- KRISHNAMURTHY, VS., CHENNUBHOTLA, V.S.K., RAJU, P.V. and THOMAS, P.C. (1972). Project report on cultivation of *Gracilaria edulis*, an agarophyte. CSMCRI, Bhavnagar. (unpublished).
- _____ KALIAPERUMAL, N. and KALIMUTHU, S. (1978). Culture of *Gracilaria edulis* in the inshore waters of Gulf of Mannar (Mandapam). *Indian J. Fish.* 25 (1+2), 228-229.
- LATIFF, A.F. (1986). Preliminary results of the experimental culture of the red seaweed, *Gracilaria* sp. in Malaysia. *Fish. Bull. Dep. Fish. (Malaysia)/Bulletin Perikanan Jabatan Perikanan (Malays.)* 40, 9p.
- LAPOINTE, B.E. (1985). Strategies for pulsed nutrients supply to *Gracilaria* cultures in the Florida Keys : interactions between concentration and frequency of nutrient pulses. *J. exp. mar. Biol. Ecol.* 93 (3), 211-222.
- _____ WILLIAMS, L.D., GOLDMAN, J.C. and RYTHER, J. H. (1976). The mass outdoor culture of macroscopic marine algae. *Aquaculture* 8, 9-21.
- LEVRING, T. (cd) (1981). Preliminary studies on mass culture of *Gracilaria* spp using different nutrient media. In: Proceedings of 10th International Seaweed Symposium. pp. 643-648.
- _____ (cd) (1981). Marine phyoculture in China. in: Proceedings of 10th International Seaweed Symposium. pp. 123-152.
- LIAO, I.C. and HIRANO, R. (cds) (1984). Seaweed aquaculture and its associated problems in the Republic of China. In: Proceedings of Rot-Japan Symposium on Mariculture. Taipei, Taiwan, 14-15 December 1981. pp. 99-109.
- LIGNELL, A. (1988). Physiology and cultivation of marine seaweeds with emphasis on *Gracilaria subsequnta* (Rhodophyta, Gigartinales). Acta Univ. Ups., Comprehensive Summaries of Uppsala Dissertations from the Faculty of Science 120. Uppsala. 48 pp.

- EKMAN, P. and PEDERSEN, M. (1987). Cultivation technique for marine seaweeds allowing controlled and optimized conditions in the laboratory and on a pilot scale. *Bot.Mar.* 30 (5), 417-424.
- LIU, C. Y., WANG, C.Y. and YANG, S.S. (1981). Seasonal variation of the chlorophyll contents of *Gracilaria* cultivated in Taiwan. *Proc. Int. Seaweed Symp.* 10. Walter de Gruyter & Co. Berlin, 455-460.
- LIU, D. and TIAN, S. (1986). Studies on the raft cultivation of *Gracilaria asiatica*. *J.Mar.Drugs/Haiyang Yaowu.* (Chinese).
- MADHU, S.R. (1983). How to farm seaweeds: Lessons from a pilot project in western Malaysia. *Bay of Bengal News* 12, 19-23.
- MEER van der, J.P. and PATWARY, M.U. (1983). Genetic modification of *Gracilaria tikvahiae* (Rhodophyceae). The production and evaluation of polyploids. *Aquaculture* 33 (1-4), 311-316.
- MOORE, M.N. (ed) (1985). Uptake of Cd, Zn, Cu and Pb by marine macrophyceae under culture conditions. *Mar.Environ.Res.* 17 (2-4), 198-199.
- NELSON, S.G., TSUTSUI, R.N. and BEST, B.R. (1980). Evaluation of seaweed mariculture potential on Guam: 1. Ammonium uptake by, and growth of two species of *Gracilaria* (Rhodophyta). *Tech.Rep.Guam Univ.Mar.Lab.Ugml.Agana Gu USA.* 26 p.
- NHO, N.T. (1980). The influence of temperature, radiative energy and time excite the infraviolet-rays upon photosynthesis intensity of *Gracilaria verrucosa* (Hudson) Papenfuss. *Tuyen Tap Nghien Cuu Bien* 2 (1), 19-30.
- PARAMASIVAN, N. and DEVADOSS, G.G. (1985). Effect of growth regulators in the field cultivation of *Gracilaria edulis* (Gmelin) Silva. *Ind.J.Mar.Sci.* 14, 230-231.
- PATWARY, M.U. and MEER, J.P. van der. (1983). Improvement of *Gracilaria tikvahiae* (Rhodophyceae) by genetic modification of thallus morphology. *Aquaculture.* 33 (1-4), 207-214.
- (1984). Growth experiments on autoploids of *Gracilaria tikvahiae* (Rhodophyceae). *Phycologia* 23 (1), 21-27.
- PETERSON, J.E. and DEBUSK, T.A. (1985). Effect of salinity, temperature, light intensity and nitrogen availability on the growth and proximate composition of *Gracilaria tikvahiae*. *J.Phycol.* 21, 15. (abstract).
- PIZARRO, A. and BARRALES, H. (1986). Field assessment of two methods for planting the agar-containing seaweed, *Gracilaria*, in northern Chile. *Aquaculture* 59 (1), 3 1-43.
- RAJU, P.V. and THOMAS, P.C. (1971). Experimental field cultivation of *Gracilaria edulis* (Gmel) Silva. *Bot.Mar.* 14, 71-75.
- RAO, U.M. (1974). On cultivation of *Gracilaria edulis* in the near-shore areas around Mandapam. *Cur.Sci.* 43 (20), 660-661.
- RIVERA, P. and WESTERMEIER, R. (1982). Preliminary growth studies of *Gracilaria verrucosa* (Hudson) Papenfuss from the Maullin and Quenuir River estuaries (Llanquihuc, Chile). *Atlantica* 5 (2), 103-104 (Spanish).

- RYTHER, J.H. and LOWENSTEIN, M.Z. (1986). Technology for the commercial production of macroalgae. In: Energy Applications of Biomass. pp 177-188.
- RAO, U.M. (1974). On the cultivation of *Gracilaria edulis* in the nearshore areas around Mandapam. *Cur.Sci.* 43 (20), 660-661.
- SARATAN, C.S. (1981). *Gracilaria* culture at Bacoor Bay, Philippines. Report on the training course on *Gracilaria* algae. SCS/GEN/81/29. South China Sea Fisheries Development and Coordinating Programme, Manila, Philippines. pp 171-175.
- SHANG, Y.C. (1976). Economic aspects of *Gracilaria* culture Taiwan. *Aquaculture* 8, 1-7.
- SILVA, R.L., PEREIRA, S.M.B, DE OLIVERIA, F.O.and ESTON, V. R. (1987). Structure of a bed of *Gracilaria* sp. (Rhodophyta) in northeastern Brazil. *Bot. Mar.* 30 (6), 517-523.
- SIVAPALAN, A. (1975). Cultivation of *Gracilaria lichenoides* in Puttalam lagoon. *Bull.Fish.Res.Stn. Sri Lanka* 26 (1-2), 1-4.
- _____ and THEIVENDIRARAJAH, K. (1983). Experimental field cultivation of *Gracilaria edulis*. In: Proceedings Annual Session SLAAS, pt 1.
- SHANG, Y.C. (1976). Economic aspects of *Gracilaria* culture in Taiwan. *Aquaculture* 8, 1-7.
- SMITH, I.R. (1987). The economics of small-scale seaweed production in the South China Sea region. *FAO Fish. Circ.* 806, 26 p.
- SUBBARAMIAH, K. (1988). Current status of seaweed cultivation in India. *Seaw.Res.Utiln.* 11 (1), 39-41.
- TOOKWINAS, S., TECHANARAWONG, S. and JAESOE, S. (1986). Traditional *Gracilaria* culture at Pattani Bay. *Thai Fisheries Gazette* 39 (2), 145-150.
- TRONO, G.C. Jr. (1982). Development of seaweed farming in Indonesia. Jakarta, Scafarming Project. SFP/82/WP/3.
- _____ (1986). Seaweed culture in the Asia Pacific region. RAPA, FAO, Bangkok. RAPA Publication 1987%
- VE, E.Z and VILLAMIL, S.M. (1982). The cultivation of *Gracilaria domingensis* (Kuetzing) Sonder ex Dickie. Puerto Rico Univ., Mayaguez (Puerto Rico). Dep. of Marine Sciences.(Spanish).
- WANG, Y.C., PAN, G.Y. and CHEN, C.M. (1984). Studies on agarophytes 2. Field observations on the growth of *Gracilaria verrucosa* (Rhodophyta) in Shantou Dt, Guangdong, P.R.C. *Bot.Mar* 27 (6), 265-268.
- YANG, S.S. and WANG, Y.C. (1983). Effect of environmental factors on *Gracilaria* cultivated in Taiwan. *Bull.Mar.Sci.* 33 (3), 759-766.

PROCESSING AND PRODUCTS

- ANON. (1970). Indian Standard Specification for agar, food grade. Indian Standards Institution, New Delhi, India. 7 p.

- _____ (1973). Indian Standard Specification for agar, microbiological grade. Indian Standards Institution, New Delhi, India. 6 p.
- _____ (1988). Final Report (executive summary) of the Agricultural Technology Transfer Project/Seaweed Production and Processing Sub-Project. Department of Fisheries, Ministry of Agriculture, Cooperatives and Fisheries, Bangkok, Thailand. 20 p.
- ARMISEN, R. and GALATAS, F. (1987). Production, properties and uses of agar. In: Production and Utilization of Products from Commercial Seaweeds. FAO Fisheries Technical Paper 288, ed. McHugh, D.J., pp 1-57.
- BIRT, K.T., HANISAK, M.D. and RYTHER, J.H. (1981). Chemical quality and production of agar extracted from *Gracilaria tikvahiae* grown in different nitrogen enrichment conditions. *Bot.Mar.* 24 (8), 441-444.
- BLASCO, S. R., FERRADA, C.J., KARSTELG, V.H. and RENTAMALES, A.L. (1983). Production of agar from *Gracilaria* algae. *Contrib.Cient.Technol.* 13 (59),43-54.
- BODARD, M. and CHRISTIAEN, D. (1978). Attempt of extraction and analysis of agar-agar from *Gracilaria verrucosa* (Hudson) Papenfuss. *Bull.Soc. Phycol.Fr.* 23, 1 1- 17. (French).
- _____ STAEDLER, T. (1984). L'agar, phycolloïde des algues rouges. In: Roeck-Holtzhauer (ed) (French) *Plantes et Algues en Cosmétique et en Phytothérapie*. (Edited by Y. de Roeck-Holtzhauer) Nantes, 57-69.
- _____ VERDUS, M.V. (1983). Mise au point sur les phycocolloïdes. *Bull. Soc Bot. N. France*, 36 (1-2), 1-14 (French).
- BOSE, J., KARIMULLAH, L. and SIDDIQUE, S. (1943). Manufacture of agar in India. *J.Sci.Industr.Res.* India. 1, 98-101.
- BRASCH, D.J., CHUAH, C.T. and MELTON, L.D. (1983). The agar type polysaccharide from the red algae *Gracilaria secundata*. *Carbohydr.Res.* 115, 191-198.
- _____ (1984). Formolysis studies on some polysaccharides from red seaweeds. *Aust.J.Chem.* 37 (7), 1539-1544.
- CHAKRABORTY, D. (1945). Manufacture of agar agar from *Gracilaria confervoides*. *J.Proc.Inst.Chem.* India. 17: 188-192.
- CHALITANAVIN, N. and SUPASIRI, T. (1987). Isolation of R Phycoerythrin and R Phycocyanin from *Gracilaria* spp in Trad Province. In: Proceedings Conference Science and Technology Thailand 13, 466-467.
- CHANDRKRACHANG, S. (1989). New approach to seaweed production and processing in Thailand. In: Seminar and Workshop on "From Seaweed to Bio-technology." Bangkok, Thailand, 19-20 January 1989.
- _____ and CHINADIT, U. (1988). Seaweed production and processing: a new approach. *INFOFISH Inter.* 4, 22-25.
- CHEN, C.H. (1974). Cultivation of *Gracilaria* and manufacture of agar in Taiwan. *China.Fish.Month.* 26, 7-13.

- CHEN, G.C. (1987). Agar agar manufacturing. In: CHUANG, B.S.? and CHEN, G.C. (eds). Fishery products of Taiwan. JCRR Fisheries Series. 1977, Taipei, Taiwan. pp. 56-67.
- CHINADIT, U. and CHANDRAKRACHANG, S. (1986). Simplified method for agar extraction from some agarophytes in Thailand. *Pharmacognosy Soc., Thailand* 2, 1-13.
- CHRISTIAEN, D. (1981). Biochemical study of *Gracilaria verrucosa* (Gracilariaceae-Gigartinales) agar (Biological and physicochemical factors influencing its quality and its industrial production). Universite de Sciences et Techniques de Lille, Lille (Franceo.1981) 103 p. (French).
- _____ and BODARD, M. (1983). Infrared spectroscopy of agar films from *Gracilaria verrucosa* (Hudson) Papenfuss. *Bot.Mar.* 26 (9), 425-427.
- CHOU, K.C. (1973). Studies on the extraction of agar from *Gracilaria*. *J.Fish.Soc.Taiwan.* 2, 40-43.
- CHRISTIAEN, D. and BODARD, M. (1983). Infrared spectroscopy of agar films from *Gracilaria verrucosa* (Hudson) Papenfuss. *Bot.Mar.* 26 (9), 425-427. (French)
- CHUEH, C.F. and CHEN, C.C. (1982). Seaweed economics in Taiwan. In Proc. Republic of China - United States Cooperative Science Seminar on Cultivation and Utilization of Economic Algae. Univ. of Guam, 9-16.
- COTE, G.L. and HANISAK, M.D. (1986). Production and properties of native agars from *Gracilaria tikvahiae* and other red algae. *Bot.Mar.* 29, 359-366.
- CRAIGIE, J.S. and WEN, Z.C. (1984). Effects of temperature and tissue age on gel strength and composition of agar from *Gracilaria tikvahiae*. *Can.J.Bot.* 62 (8), 1665-1670.
- _____ (1984). Factors affecting the composition and quality of agars from *Gracilaria tikvahiae*. *Phycol.* 20, 2 1, (abstract).
- _____ and MEER, J.P. van der. (1984). Interspecific, intraspecific and nutritionally determined variations in the composition of agars from *Gracilaria* spp. *Bot.Mar.* 27 (2), 55-61.
- DANTANARAYANA, A.P., KUMAR, N.S. and SULTANBAWA, M.U.S. (1981). Carbohydrate constituents of the marine algae of Sri Lanka. Pt. I. Some physico-chemical properties of phycocolloids from eight species of red algae. *J.Natn.Sci.Coun.Sri Lanka.* 9, 9-15.
- DOI, S., SAITO, T. and TOZAKI, S. (1975). Agar from red alga. US Pat. 3 901 873
- DOTY, M.S., SANTOS, G.A. and ONG, K.S. (1983). Agar from *Gracilaria cylindrica*. *Aquat.Bot.* 15 (3), 299-306.
- DUCKWORTH, M. HONG, K.C. and YAPHE, W. (1970). The agar polysaccharides of *Gracilaria* species. *Carbohydr. Res.* 18, 1-9.
- DURAIRATNAM, M. (1956). Methods of collection, cost of production and bleaching of *Gracilaria lichenoides*. *Fish.Res.Stn. Sri Lanka. Prog.Rep.* 2, 54-56.
- _____ GRERO, J. and WIMALASIRI, P. (1972). Agar from *Gracilaria confertifera* and *Gracilaria lichenoides*. *Ceylon Bull.Fish.Res.Stn. Sri Lanka* 23 (1&2), 29-36.

- _____ (1987). Studies of the yield of agar, gel strength and quality of agar of *Gracilaria edulis* from Brazil. *Hydrobiol.* 151/152, 509-512.
- _____ DE QUEIROZ SANTOS, N. (1981). Agar from *Gracilaria verrucosa* and *Gracilaria sjoestedtii* from northeast Brazil. In: *Proceedings 10th International Seaweed Symposium*. pp. 669-674.
- FRIEDLANDER, M., LIPKIN, Y. and YAPHE, W. (1981). Composition of agars from *Gracilaria verrucosa* and *Pterocladia cupillucea*. *Bot.Mar.*, 24 (11). 595-598.
- _____ and ZELIKOVITCH, N. 1984. Growth rates, phycolloid yields and quality of the red seaweeds *Gracilaria* spp., *Pterocladia cupillucea*, *Hypnea musiformis* and *Hypnea cornuta* in field studies in Israel. *Aquaculture* 40 (1). 57-66.
- GAMAGE, S.K.T., SILVA, S.S.M., DE KUMAR, N.S. and BALASUBRAMANIAM, S. (1981). Alkali treated agar gels from some species of *Gracilaria*. In: *Proceedings 37th Annual Session SLAAS, Sec. E* (1), 61.
- GIN-CHEN CHEN (1987). Agar-agar manufacturing (*Gracilaria*). In: *Fishery Products of Taiwan*, publ. Joint Commission on Rural Reconstruction, Taipei, pp 56-67.
- GUANGXING, Z. (1987). A study on the effects of dehydration by pressure on the yield and quality of agar. *Mar.Sci./Haiyang Kexue*. 4, 65-66.
- GUNASEKARA, G. (1963). Small scale manufacture of crude agar from *Gracilaria* seaweeds. *Bull.Fish.Res.Stn. Ceylon* 16 (1), 49-52.
- HANSOTI, S.C. (1968). Agar-agar from seaweeds. *Indian Pat.* 103 555.
- HEINICHEN, E. and SEIPOLD, E.D. (1971). The preparation of agar and agarose from South African seaweed. Report, Chem.Eng.Group, CSIR, Pretoria.
- HOYLE, M.D. (1978). Agar studies in two *Gracilaria* species, *Gracilaria bursupustoris* (Gmelin) Silva and *Gracilaria coronopifolia*. *J. Ag. from Hawaii I: Yield and gel strength in the gametophyte and tetrasporophyte generations*. *Bot.Mar.* 21 (6), 343-345.
- _____ (1978). Agar studies: Seasonal aspects. *Bot.Mar.* 21 (6), 347-352.
- HURTADO-PONCE, A.Q. and UMEZAK, I. (1988). Physical properties of agar gel from *Gracilaria* (Rhodophyta) of the Philippines. *Bot.Mar.* 31, 133-138.
- JI, M.H. (1986). Structural feature of agar from Chinese *Gracilaria* spp. *Oceanol. Limnol.Sin/Haiyang Yu Huzhao* 17 (1), 72-83.
- _____ LAHAYE, M., YAPHE W. 1985. Structure of agar from *Gracilaria* spp. collected in the People's Republic of China. *Bot.Mar.* 28 (12), 521-528.
- KAPPANA, A.N. and RAO, V.A. (1963). Preparation and properties of agar agar from Indian seaweeds. *Ind.J.Tech.* 1. 222-224.
- KARUNAKAR, P.D., RAJU, MS. and VARADARAJAN, S. (1948). Manufacture of agar agar from seaweed *Gracilaria lichenoides*. *Ind.Vet.J.* 24, 274-282.
- KRISHNAMURTHY, V.S. (1977). Food from the sea - Food from the seaweed. *Seafood Exp.J.* 9 (3), 1-5.

- _____ and CHENNUBHOLTA, V.S.K. (1981). Status of seaweed industry in India. In: TRONO, G.C. (ed), Report on the training course on Gracilaria algae. South China Sea Fisheries Development and Coordinating Programme, Manila, Philippines. pp 139-144.
- _____ KALIAPERUMAL, N. and KALIMUTHU, S. (1981). Seaweed recipes and other practical uses of seaweeds. *Seafood Exp.J.* 10, 9-16.
- _____ NAJMUDDIN, M. and NAYAK, B. (1987). A comparative study of the yield and physical properties of agar-agar from different blends of seaweeds. *Seaweed Res.Utiln.* 2.
- LAHAYE, M., and YAPHE, W. (1983). Effects of seasons on the chemical structure and gel strength of *Gracilaria pseudo-verrucosa* agar (Gracilariaceae, Rhodophyta). *Carbohydr. Polym.* 8, 285301.
- _____ ROCHAS, C. (1986). A new procedure for determining the heterogeneity of agar polymers in the cell walls of *Gracilaria* spp. *Can.J.Bot.* 64 (3), 579-585.
- LEVRING, T. (ed) (1981). Agar from *Gracilaria verrucosa* (Hudson) Papenfuss and *Gracilaria sjoestedtii* Kylin from northeast Brazil. In: Proceedings of 10th International Seaweed Symposium. pp. 669-674.
- _____ (1981). Seasonal variation of agar-agar produced in the Taiwan area. In: Proceedings of 10th International Seaweed Symposium. pp. 737-742.
- LIMA DOS SANTOS, CA., ROESSINK, G.L., RICHARDS-RAJADURAI, P.N., TAYLOR, C.T. and KANO, I. (1988). Seaweed processing and marketing in Asia/Pacific. Paper prepared by Infotech for 7th Session of IPFC Working Party of Experts on Aquaculture, Bangkok, Thailand, 1-6 August 1988.
- LIGNELL, A. and PEDERSEN, M. (1989). Agar composition as a function of morphology and growth rate. Studies on some morphological strains of *Gracilaria secundata* and *Gracilaria verrucosa* (Rhodophyta). *Bot. Mar.* 32, 219-227.
- MATSUHASHI, T. (1971). Effects of polyphosphates on extractability of agar in the cooking process of seaweeds I : Relationship between variety of poly-phosphates and extractability of agar; II : Effects of concentration of polyphosphates and cooking period on extractability of agar and gel properties. *Bull.Jap.Soc.Sci.Fish.* 37,441-448,449-454.
- _____ and HAYASHI, K. (1972). Agar processed from *Gracilaria foliifera*. *Agr. Biol. Chem.* 36, 1543-1552.
- _____ (1977). Acid pretreatment of agarophytes provides improvement in agar extraction. *J.Food Sci.* 42. 1396-1400.
- _____ (1977). Effect of acid treatment on air dried agar. *Bull.Jap.Soc.Sci.Fish.* 43 (7), 831-835.
- MEER, W. (1980). Agar. In: Davidson, R.L. (ed) Handbook of water-soluble gums and resins. McGraw-Hill. pp. 7.1-7.19.
- MJCHANEK, G. (1979). Seaweed resources for pharmaceutical use. In : *Marine Algae in Pharmaceutical Science*, de Gruyter, Berlin, 203-235.

- MILLER, L.J. and FURNEAUX, R.H. (1987). Chemical characteristics of the galactans from the forms of *Gracilaria secundara* from New Zealand. *Bot Mar.* 30 (6), 427-435.
- MRAZE, K.C. (1979). Agar, algin and carrageenan. *Oceans.* 12 (2), 24-26.
- MUANGTHAI, P. and CHANPUNUA, P. (1987). Determination of calcium in seaweed *Gracilaria* spp. and extracted agar from seaweed by titrimetry. In: Proceedings Conference of Science and Technology. Thailand. 13 pp. 320-321.
- _____ SUKRONPRADIT, W. and LEESAIWONG, W. (1986). Determination of lead and arsenic in seaweed *Gracilaria* spp. and extracted agar from seaweed. In: Proceedings Conference Science and Technology. Thailand. 12 pp. 228-229.
- NELSON, S.G., YANG, S.S., WANG, C.Y. and CHIANG, Y.M. (1983). Yield and quality of agar from species of *Gracilaria* (Rhodophyta) collected from Taiwan and Micronesia. *Bot.Mar.* 26, 361-366.
- OKAZAKI, A. (1971). Agar-agar industry. In: *Seaweeds and their uses.* Tokai University Press, Japan. pp. 98-165.
- OSAV, A.I., IVANOVA, E.G. MAKEINKO, V.F. (1979). Polysaccharides of algae: agar composition of different generations of *Gracilaria verrucosa* (Hudson) Papenfuss. *Bioorg.Khim.* 5 (11), 1647-1653.
- OZA, R.M. (1978). Studies on Indian *Gracilaria* 5: seasonal variation in agar and gel strength of *Gracilaria corticara* occurring on the coast of Veraval. *Bot.Mar.* 21 (3), 165-167.
- PAREKH, K.S. and PAREKH, H.H. and RAO, P.S. (1984). Antibacterial activity of Indian seaweeds. *Phykos.* 23 (1-2), 216-221.
- PATWARY, M.U. and MEER, J.P. van der. (1983). Genetics of *Gracilaria tikvahiae* (Rhodophyceae). 9: Some properties of agars extracted from morphological mutants. *Bot. Mar.* 26 (6), 295-300.
- RAO, R.K. (1977). Species of *Gracilaria* and *Hypnea* as potential sources of agar. Paper presented at the Seminar on Marine Algae. Mandapam, Tamil Nadu, India (unpublished).
- _____ RAO, S.P.V., and SUBBARAMIAH, K. (1977). Screening of certain red seaweed for phycocolloids. *Seaweed Res. Utiln.* 2, 82-86.
- RUNGRUENGTUCH, S., NETSUWAN, S. and SUPASIRI, T. (1986). Extraction of agarose from *Gracilaria* spp in Thailand. In: Proceedings Conference Science and Technology. Thailand. 12 pp. 432-433.
- SAND, R.E. and GLICKSMAN, M. (1973). Seaweed extracts of potential economic importance. In: Whistler, R.L. (ed) *Industrial gums.* Academic Press.
- SANTOS, G.A. and DOTY, M.S. (1978). *Gracilaria* for the manufacture of agar. *Fish.Res.J.Philipp.* 3 (2), 29-34.
- _____ (1983). Agarose from *Gracilaria cyfindrica*. *Bot.Mar.* 26 (1), 31-34.
- _____ (1983). Agar from some Hawaiian red algae. *Aquatic Bot.* 16 (4), 385-389.
- SARVAIYA, R.T. (1989). Prospects of Indian seaweeds. *Seafood Export J.* 21 (1/2) 23-28.

- SHANG-SHYNG YANG (1982). Seasonal variation of the quality of agar-agar produced in Taiwan (*Gracilaria*). In: Proceedings of Republic of China-United States Seminar on Cultivation and Utilization of Economic Algae, June 1978, eds. Tsuda, T.T. and Chiang, Y.M., pp.65-80.
- SHI, S.Y. and TANG, Z.X. (1982). Studies on the agar from *Gracilaria* 2: Effect of alkali treatment on the yield and gel strength of *Gracilaria* agar. J. Fish.China 6 (1), 5 1-58. (Chinese).
- SIVAPALAN, A. and RAJAH, T.K. (1985). Studies on the agarophyte *Gracilaria edulis*; experimental field cultivation and methods of improving yield and quality of agar. J.Natn.Sci.Coun. Sri Lanka 13, 197- 212.
- SRINIVASAN, R. and SANTHARAJ, J. (1967). Studies on extraction and properties of agar-agar from *the* seaweed *Gracilaria* in Madras state. Madras J.Fish. 2, 146-151.
- STEINMETZ, C.P., Gunther, V. and Hinterwaldner, R. (1969). Treating marine algae. Br.Pat. 1,154,137.
- STRUMSKI, M.A. and RYTHER, J.H. (1985). Qualitative and quantitative characterization of agar from outdoor cultures of *Gracilaria* spp. J.Phycol. 21, 7. (abstract).
- SU, H.M. and YOUNG, K.S. (1977) An investigation of agars prepared from some Taiwan red seaweeds. J.Fish.Soc.Taiwan. 6 (1), 1-11.
- TAGAWA, S. and KOJIMA, Y. (1972). The alkali treatment of the mucilage of *Gracilaria verrucosa*. In: Proceedings 7th International Seaweed Symposium. pp. 447-450.
- TAM, D.M. and EDWARDS, P. (1982). Seaweeds of economic importance in Thailand. Pt.2 : analysis of agar from *Gruciluriu*. Bot.Mar. 25 (10), 455-465.
- TANGSOMCHAI, S.K., OVATHUPAT, K., CHANDRAKRACHANG, S., CHINADIT, U. and SUPASIRI, T. (1988). Isolation of R-Phycoerythrin from *Gracilaria* spp. In: Proceedings 7th Federation of Asian and Oceania Biochemists Symposium, POS-D-13.
- THOMAS, P.C. (1977). Seasonal variation in the yield and physical properties of agar-agar from *Gracilaria verrucosa* (Hudson) Papenfuss. Seaweed Res.Utiln. 2, 78-81.
- _____ and KRISHNAMURTHY, V.S. (1976). Agar from cultured *Gracilaria edulis* (Gmel) Silva. Bot.Mar. 19, 115-117.
- TSUDA, R.T. and CHIANG, Y.M. (1982). Seasonal variation of the quality of agar-agar produced in Taiwan. In: Proceedings ROC.US Cooperative Science Seminar on Cultivation and Utilization of Economic Algae. pp. 65-80.e
- USOV, A.I., IVANOVA, E.G. and PRZHEMENETSKAYA, V.F. (1985). Polysaccharides of algae. 36. Composition and properties of agar from the far eastern *Gracilaria* sp. Bioorg. Khim. 11 (8), 1119-1 124. (Russian).
- UUSITALO, J. (1986). Commercial seaweed collection and agar/alginate industries in Tamil Nadu, India. NSBF, Stockholm. Fisheries Development Series 23.
- VORRARUXEREE, P., CHINADIT, U., SUPASIRI, T., CHANDRKRACHANG, S. (1986). Effects of alkali treatment on yield and gel strength of agar from *Gracilaria* spp. In: Proceedings 4th Fed.Asian Oceania Biochemistry Congress. 6. 500-501.

- _____ and SANTOS, G.A. (1986). Suitable conditions for extraction of agar from *Gracilaria* spp. from the east coast of Thailand. In: Proceedings Conference of Science and Technology, Thailand. 12, 434-435.
- _____ CHINADIT, U., and CHANDRAKRACHANG, S. (1987). Extraction of agar from *Gracilaria* spp. in Thailand. Srinakarinwirot University Sci.J. 3 (1)
- WANG, Y.G., PAN, G.Y., CHEN, L.C.M. (1984). Studies on agarophytes II: Field observations and growth of *Gracilaria verrucosa* in Shantou Dt, Guangdong, P.R.C. Bot.Mar. 27, 265-268.
- WANG-MINGHE. (1986). Studies on a new method in production of *Gracilaria* agar with dilute alkali treatment. J. Fish China/Shuichan Xuebao. 10 (4), 373-382. (Chinese).
- WEN,Z.C. and CRAIGIE, J.S. (1984). Composition and properties of agar-type polysaccharides from *Gracilaria sjoestedtii* Kylin. Chin.J.Oceanol.Limnol. 2 (I), 88-91.
- WHYTE, J.N.C. and ENGLAR, J.R. (1979). Agar elaborated by *Gracilaria* sp. from the coast of British Columbia. Pt.1 : Properties of agars isolated from algae collected at Bambfield Inlet, Wisemans Bay and Nuttal Bay. Vancouver B.C., Fisheries and Marine Services. Technical Report No 860.
- _____ (1979). Agar elaborated by *Gracilaria* spp. from the coast of British Columbia. Pt.2 : Variations in agar quality with season and reproductive conditions of the algae from Haines Island. Vancouver B.C., Fisheries and Marine Services. Technical Report 864.
- _____ (1980). Chemical composition and quality of agars in the morphotypes of *Gracilaria* from British Columbia. Bot.Mar. 23 (5), 277-283.
- _____ LEVRING, T. (1981). Agar from the intertidal population of *Cruciluria* spp. In: Proceedings of 10th International Seaweed Symposium. pp. 537-542.
- WU, L.C., FU, P. and ZHENG, C.S. (1985). The technology of acidifying and bleaching in processing of *Gracilaria* agar. J.Fish.China 9, 331-337.
- YANG, S.S. (1982). Seasonal variation of the quality of agar produced in Taiwan. In: Tsuda, R.T. and Chiang, Y.M. (eds.) Proceedings Republic China-U.S. Seminar Cultivation and Utilization of Economic Algae. Published University Guam Marine Lab., pp. 65-80.
- YAPHE, W. (1984). Properties of *Gracilaria* agars. Hydrobiol. 116/117, 171-186.
- _____ DUCKWORTH, M. (1972). The relationship between structures and biological properties of agars. In: Proc. Int. Seaweed Symp. 7. Univ. of Tokyo Press, 15-22.
- YOUNG, K.S. (1974). An investigation of the agar from *Gracilaria* spp. Fish.Res.Bd.Can. Tech.Rep. 454.

MARKETING AND TRADE

- INFOFISH. (1983). Seaweeds: products and markets. INFOFISH. Mark.Dig. 83 (4), 23-26.
- McHUGH, D.J. and LANIER, B.V. (1983). The world seaweed industry and trade: developing Asian producers and prospects for greater participation. Kuala Lumpur, Infofish. ADB/FAO Itifofish Marketing Study 6.
- McHUGH, D.G. and LANIER, B.V. (1984). Korea's edible seaweed trade. INFOFISH. Mark.Dig. 84 (3), 17-19.
- MICHANEK, G. (1981). Getting seaweed to where it is needed. Ceres, FAO, Rome, 41-44.
- NAMBIAR, P. (1988). Cultured seaweeds: What is the marketing potential in India? Bay of Bengal News 31, 16-18.
- NAYLOR, J. (1976). Production trade and utilization of seaweeds and seaweed products FAO Fish.Tech.Pap. (159), 73 p.

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A list of publications since 1984 follows.

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26. Report of the Tenth Meeting of the Advisory Committee, Male, Maldives, 17-18 February 1986. Madras, India, April 1986.
27. Activating Fishcrwomen for Development through Trained Link Workers in Tamil Nadu, India. E. Drcwes. Madras, India, May 1986.

28. Small-Scale Aquaculture Development through Trained Link Workers in Tamil Nadu, India. E. Drewes. Madras, India, May 1986.
29. Towards Shared Learning : An Approach to Non-Formal Adult Education for Marine Fisherfolk of Tamil Nadu, India. L.S. Saraswathi and P. Natpracha. Madras, India, July 1986.
30. Summary Report of Fishing Trials with Large-Mesh Driftnets in Bangladesh. Madras, India, May 1986.
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42. Report of the Twelfth Meeting of the Advisory Committee. Bhubaneswar, India, 15-18 January 1988. Madras, India, April 1988.
43. Report of the Thirteenth Meeting of the Advisory Committee. Penang, Malaysia, 26-29 January, 1989. Madras, India, April 1989.
44. Report of the Fourteenth Meeting of the Advisory Committee, Medan, Indonesia, 22-25 January, 1990. Madras, India, April 1990.

Working Papers (BOBP/WP/.....)

24. Traditional Marine Fishing Craft and Gear of Orissa. P. Mohapatra. Madras, India, April 1986.
25. Fishing Craft Development in Kerala : Evaluation Report. O. Gulbrandsen. Madras, India, June 1984.

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59. Pen Culture of Shrimp in Chilaw, Sri Lanka. D. Reyntjens. Madras, India, April 1989.

Manuals and Guides (BOBP/MAG/.....)

1. Towards Shared Learning : Nonformal Adult Education for marine Fisherfolk. Trainers' Manual. Madras, India, June 1985.
2. Towards Shared Learning : Non-formal Adult Education for Marine Fisherfolk. Animators' Guide. Madras, India, June 1985.
3. Fishery Statistics on the Microcomputer : A BASIC Version of Hasselblad's NORMSEP Program. D. Pauly, N. David, J.Hertel-Wulff. Colombo, Sri Lanka, June 1986.
4. Separating Mixtures of Normal Distributions : Basic Programs for Bhattacharya's Method and Their Application for Fish Population Analysis. H. Goonetilleke, K. Sivasubramaniam. Madras, India, November 1987.
5. Bay of Bengal Fisheries Information System (BOBFINS) : User's Manual. Madras, India, September 1987.

Miscellaneous Papers (BOBP/MIS/.....)

2. Consultation on Social Feasibility of Coastal Aquaculture. Madras, India, 26 November - 1 December 1984. Madras, India, November 1985.
3. Studies on Mesh Selectivity and Performance : The New Fish-cum-Prawn Trawl at Pesalai, Sri Lanka. M. S.M. Siddeek. Madras, India, September 1986.
4. Motorization of Dinghy Boats in Kasafal, Orissa. S. Johansen and O. Gulbrandson. Madras, India, November 1986.

Information Documents (BOBP/INF/.....)

6. Marine Small-Scale Fisheries of Sri Lanka : A General Description. Madras, India, November 1984.
7. Marine Small-Scale Fisheries of Orissa : A General Description. Madras, India, December 1984.
8. Marine Small-Scale Fisheries of Bangladesh : A General Description. Madras, India, September 1985.
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