

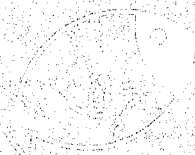
Asian Fisheries Society

6TH ASIAN FISHERIES FORUM

PROGRAM

November 25-30, 2001

Kaohsiung, Taiwan



International Organizing Committee

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Vice Chair Efren Ed. C. Flores, Vice President, Asian Fisheries Society
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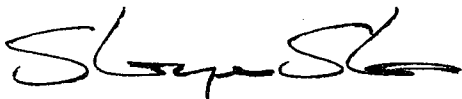
Preface

Welcome to the 6th Asian Fisheries Forum of the Asian Fisheries Society. The scientific program for this Forum is a demonstration of the Asian Fisheries Society mission: over 300 scientific papers and posters on a diversity of topics. Note that Special Sessions have been organized for interesting issues such as post-retirement careers in fisheries and aquaculture, and global symposium on women in fisheries. Concurrent sessions have been scheduled to minimize overlaps between similar topics. Nevertheless, you may find it impossible to sit on all the papers that interest you.

I first acknowledge Dr. I Chiu Liao for convincing me to serve as the Forum scientific program chair. Dr. Liao has excelled in his service to AFS, has provided valuable leadership to the society and has done an outstanding job in ensuring communication among the Forum organizers. I must admit up front that I cannot take much of the credit for the organization of what I feel is a successful AFF program. Most of the real work on the program was performed by the program committee and its members: Drs. Jiann-Chu Chen, Yew-Hu Chien, Houng-Yung Chen, Chien-Chung Hsu, Jiang-Shiou Hwang, Shann-Tzong Jiang, David S. Liao and myself. I must say frankly that the exceptional quality of the program reflects the long hours that we have committed.

I wish to express my gratitude to John and Mary Cooksey for their professionalism, drive and enthusiasm. Special mention should be made of the splendid contributions Hsiao-Mei Lin, Hung-Ta Chien, Hsiang-Yin Chen, Li-Shan Lu and Sha-Yen Cheng made to the organization.

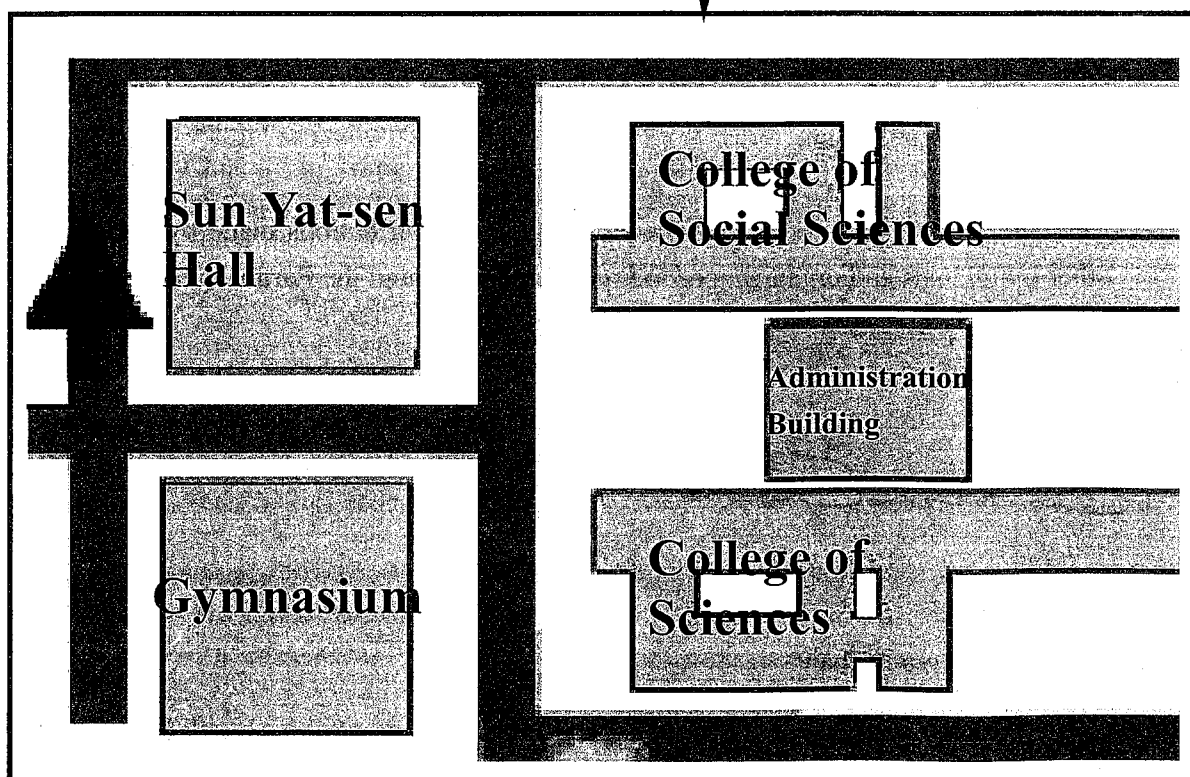
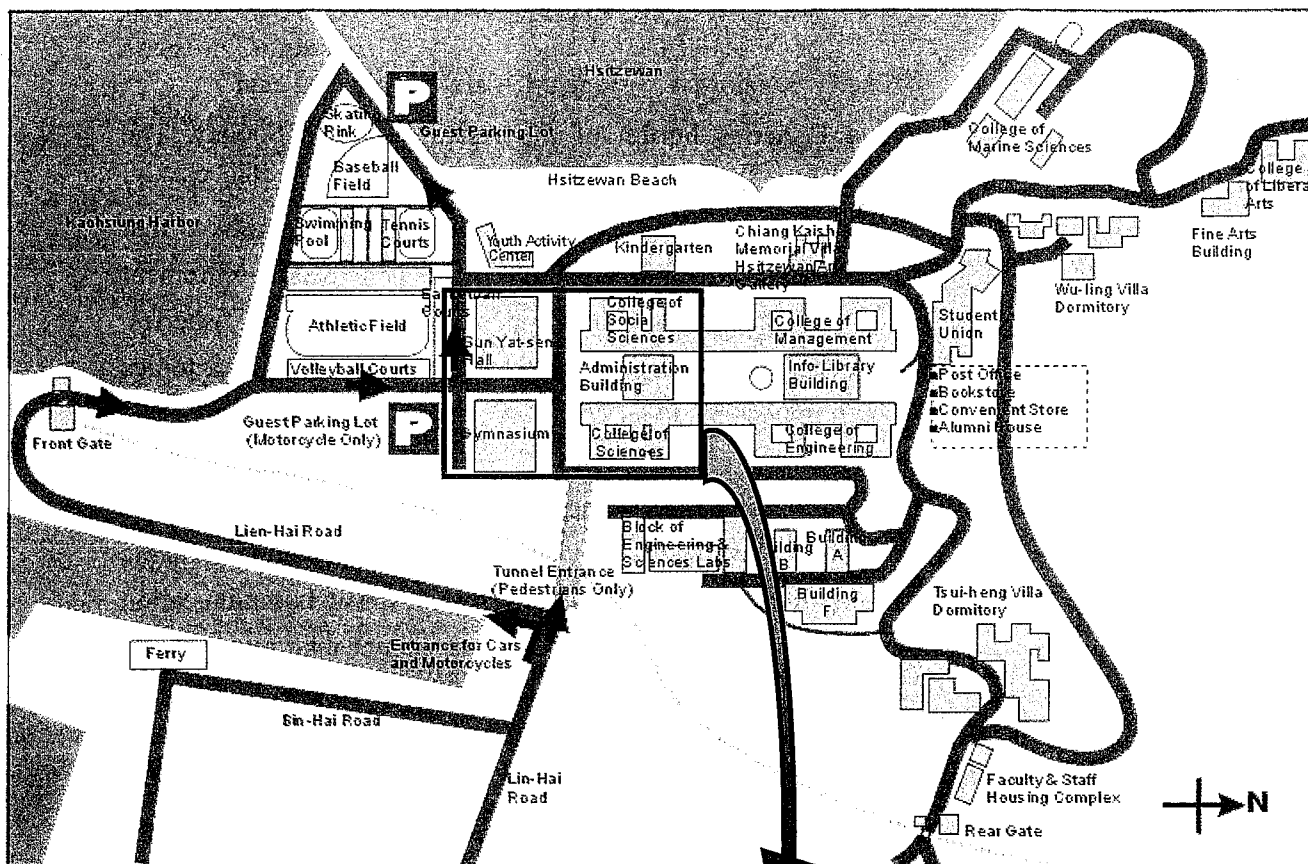
I certainly hope that you, as a participant, find the contributions made by these and other individuals and organizations are reflected throughout the Forum. Thank you.



Shi-Yen Shiao

Scientific Program Chair

National Sun Yat-sen University Campus Locations



Schedule

Date	Time	Program	Place
November 25 (Sun)	12:00 - 18:00	Registration	Sun Yat-sen Hall (Hallway)
	17:00 - 20:00	Get Together Beach Party	Hsitzewan Beach
November 26 (Mon)	09:00 - 10:30	Opening Ceremony	Sun Yat-sen Hall
	11:00 - 12:00	Keynote Speech (Dr. M. Williams)	Sun Yat-sen Hall
	12:00 - 17:00	Trade Show Open	Gymnasium
	13:30 - 18:00	Scientific Sessions	College of Social Sciences* College of Sciences [†]
November 27 (Tue)	09:00 - 09:50	Keynote Speech (Dr. C.S. Lee)	Sun Yat-sen Hall
	09:00 - 18:30	Trade Show	Gymnasium
	10:00 - 16:00	Scientific Sessions	College of Social Sciences* College of Sciences [†]
	16:30 - 17:30	AFS General Assembly (for AFS Members only)	Sun Yat-sen Hall
November 28 (Wed)	09:00 - 17:00	Trade Show Optional Tour	Gymnasium
	18:30 - 20:30	Organizers' Reception	Sun Yat-sen University
November 29 (Thur)	09:00 - 10:50	Keynote Speech (Dr. A. Kanazawa)	Sun Yat-sen Hall
	09:00 - 12:00	Trade Show	Gymnasium
	10:00 - 18:00	Scientific Sessions	College of Social Sciences* College of Sciences [†]
	13:30 - 15:00	Poster Session	Sun Yat-sen Hall (Hallway)
	19:30 - 21:30	President's Banquet	Ambassador Hotel
November 30 (Fri)	09:00 - 09:50	Keynote Speech (Dr. T.E. Chua)	Sun Yat-sen Hall
	10:00 - 16:00	Scientific Sessions	College of Social Sciences* College of Sciences [†]
	19:30 - 21:30	Farewell Dinner (Extra ticket purchased is required)	To be announced

*College of Social Sciences: *Room 1002* and *Room 4001*

[†]College of Sciences: *Room E1001* and *Meeting Hall*

Session Location

Date	Time	Sun Yat-sen Hall	Meeting Hall College of Sciences	Room E1001 College of Sciences	Room 1002 College of Social Sciences	Room 4001 College of Social Sciences
Nov. 26th (Mon)	09:00-10:30	Opening Ceremony				
	11:00-12:00	Keynote Speech				
	12:00-13:30					
	13:30-15:40		Nutrition, Feeds and Feeding Management [1]	Capture Fisheries [1]	Fish Disease [1]	SPECIAL SESSION: Socio-economics and Marketing [1]: Aquaculture in Asia
	16:00-18:20		Nutrition, Feeds and Feeding Management [1]	Capture Fisheries [1]	Fish Disease [1]	SPECIAL SESSION: Socio-economics and Marketing [1]: Aquaculture in Asia
Nov. 27th (Tue)	09:00-09:50	Keynote Speech				
	10:00-12:30		Aquaculture - Genetics and Biotechnology	Capture Fisheries [2]	Fish Disease [2] and Physiology	SPECIAL SESSION: Socio-economics and Marketing [2]: Capture Fisheries in Asia
	12:30-13:30					
	13:30-16:00		Aquaculture - Genetics and Biotechnology	Capture Fisheries [2]	Nutrition, Feeds and Feeding Management [2]	Aquatic Foods
	16:30-17:30	AFS General Assembly				
Nov. 29th (Thur)	09:00-09:50	Keynote Speech				
	10:00-12:30		Nutrition, Feeds and Feeding Management [3]	Capture Fisheries [3]	Aquatic Biology [1]	SPECIAL SESSION: Global Symposium on Women in Fisheries
	12:30-13:30					
	13:30-15:40		SPECIAL SESSION: Post-retirement Careers in Fisheries and Aquaculture	Aquatic Biology [2]	Aquaculture - Grow-out Technology	SPECIAL SESSION: Global Symposium on Women in Fisheries
	16:00-18:20		SPECIAL SESSION: Post-retirement Careers in Fisheries and Aquaculture	Aquatic Biology [2]	Aquaculture - Grow-out Technology	SPECIAL SESSION: Global Symposium on Women in Fisheries
Nov. 30th (Fri)	09:00-09:50	Keynote Speech				
	10:00-12:30		Nutrition, Feeds and Feeding Management [4]	Aquatic Biology [3] - General Physiology	Aquaculture - Environmental Management	Capture Fisheries [4]
	12:30-13:30					
	13:30-15:40		Prawn Disease	Aquaculture - Breeding and Larviculture	Aquaculture - Environmental Management and Engineering	SPECIAL SESSION: Community and Institutional Issue in Fisheries and Coastal Resources Management
	16:00-18:20		Prawn Disease	Aquaculture - Breeding and Larviculture	Aquaculture - Environmental Management and Engineering	SPECIAL SESSION: Community and Institutional Issue in Fisheries and Coastal Resources Management

Scientific Information

Scientific Desk

The scientific secretariat will be available during the Forum in room 1005, College of Social Sciences. Please direct all requests on the scientific program to the scientific secretariat.

Chairpersons and Speakers

Session chairmen and speakers are kindly requested to be available in their respective lecture room at least 15 minutes before the beginning of their session for the purpose of checking the facilities with the responsible technician and to finalize any arrangements. Chairperson should make every effort to maintain the time schedule.

Scheduled time for oral presentations is 15 min +5 min discussion.

Mobile phones must be in power-off in the lecture rooms at all times. Mobile phones in the on-mode will noticeably disturb the acoustic reproduction in the lecture room. The chairpersons are requested to check this before the beginning of the session.

Posters

The poster counter is located at the poster area in the hallway outside the Sun Yat-Sen Hall and will be open on Monday, November 26, 2001 at 8:00 am.

The poster session is scheduled on Thursday, November 29, 2001, 13:30-15:00.

Please mount your poster on Monday morning. We expect the presenting author to be present at the poster during the poster session.

Slide Center

Will be open during the registration hours. It is important that all speakers check their slides before presentation in the Slide Center (room 1005, College of Social Sciences), if you are scheduled to speak in the morning, we ask you to check and deliver your slides the afternoon before, for afternoon presentation please check and deliver your slides at least two hours prior to beginning of your session.

Please do not forget to collect your slides after the session at the Slide Center. Slides not collected by the end of the congress will be disposed.

For data projection (power point presentation) a beamer and computer (MS Windows 98, MS Powerpoint 2000) will be available at the slide center. Please check your presentation before you transfer your file to the computer in your lecture hall.

Oral Sessions

Date: November 26 (Monday)

Sun Yat-sen Hall

Keynote Speech

moderator: Dr. Modadugu Gupta (India)

- 11:00-12:00 **Asian fisheries in the 21st century: which way to prosperity?**
Dr. Meryl Williams
Director General International Center for Living Aquatic Resources and
Management, The World Fish Center, Malaysia
-

**Meeting Hall
College of Sciences**

Nutrition, Feeds and Feeding Management (1)

Chair: Dr. S. S. De Silva (Australia)

Co-chair: Dr. W. K. Ng (Malaysia)

- 13:30-13:50 **Assessment of the requirement values for essential amino acids in the prawn *Marsupenaeus japonicus***
Teshima, S.*, Alam, M.S., Koshio, S., Ishikawa, M., Kanazawa, A. (Japan)
- 13:50-14:10 **Estimation of optimal dietary methionine requirement for softshell turtle, *Pelodiscus sinensis***
Huang, C.H.*, Lin, W.Y. (Taiwan)
- 14:10-14:30 **On the nutrition of soft shell-turtle (*Trionyx sinensis*) : Protein level and P/E ratio**
Huang, Y.S.*, Guo, J.H. (Taiwan)
- 14:30-14:50 **The effect of dietary protein quality and α -starch level on the compensatory growth and body composition of soft-shell turtle (*Trionyx sinensis*) after exposure to low temperature**
Chou, S.H.*, Huang, Y.S. (Taiwan)
- 14:50-15:10 **Diet development and evaluation for juvenile abalone, *Haliotis asinina* animal and plant protein sources**
Bautista-Teruel, M.N.*, Fermin, A.C. (Philippines)
- 15:10-15:30 **Effects of feeding rates on growth and feed utilisation of murrel fingerling, *Channa striata* (Bloch) and determination of protein to energy requirement for maintenance and maximum growth**
Samantaray, K.*, Mishra, K., Mohanty, S.S. (India)
- 15:30-16:00 **Coffee Break**
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- 16:00-16:20 **Effect of dietary lipid and palm oil source on growth performance, fatty acid composition and muscle vitamin E concentration of African catfish *Clarias gariepinus***
Ng, W.K.*, Lim, P.K., Boey, P.L. (Malaysia)

Monday, 26.11.2001

- 16:20-16:40 **Fatty acid composition of whole body in different size groups of red claw crayfish (*Cherax quadricarinatus*)**
 Asgari, L.*, Saad, C.R., Alimon, A.R., Kamarudin, M.S., Jahangard, A. (Malaysia)
- 16:40-17:00 **The determination of optimal nutrient energy combination on the lipid and fatty acid contents of kuruma shrimp, *Marsupenaeus japonicus*, Juveniles**
 Gallardo-Cigarroa, F.J., Koshio, S., Ishikawa, M.*, Teshima, S. (Japan)
- 17:00-17:20 **The effects of varying dietary protein levels on growth performance of the Mekong River catfish *Pangasius Hypophthalmus* fry**
 Ngan, H.*, Saad, C.R.B., Kamarudin, M.S., Alimon, A.R., Nandeessa, M.C. (Cambodia)
- 17:20-17:40 **Effects of dietary protein on the growth performance and amino acid catabolising enzymes of an air-breathing teleost *Channa striata* (Bloch)**
 Samantaray, K.*, Mohanty, S.S., Misra, K. (India)
- 17:40-18:00 **Effects of dietary protein and carbohydrate levels on growth performance, feed utilization efficiency and nitrogen metabolism in rohu, *Labeo rohita* (Hamilton) fingerlings**
 Dalal, S., Bhattacharyai, S., Ray, A.K.* (India)
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Room E1001
College of Sciences

Capture Fisheries (1)

Chair: Dr. E. Flores (Philippines)

Co-chair: Dr. C. C. Hsu (Taiwan)

- 13:30-14:00 **Capture fisheries management and policies**
Flores, E.* (Philippines) (Invited speaker)
- 14:00-14:20 **Status of the Mekong *Pangasianodon hypophthalmus* resources with special reference to the stock shared between Cambodia and Vietnam**
van Zalinge, N.P.* (Cambodia)
- 14:20-14:40 **People, power and fishery policy.**
Fisheries management reform addressing community fisheries in Cambodia
Ly, V.*, Dara, Y., Piseth, C., Saroeun, L., Thyda, P., Degen, P. (Cambodia)
- 14:40-15:00 **Marine resources in Somali water: opportunities & challenges**
Hassan, M.G.* (Malaysia)
- 15:00-15:20 **Case study on the catch diversity of stationary trap nets**
Yamane, T.* (Japan)
- 15:20-15:40 **The inland fisheries of Cambodia**
Lieng, S.*, van Zalinge, N., Nuov, S. (Cambodia)
- 15:40-16:00 **Coffee Break**
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- 16:00-16:20 **An assessment of established marine protected areas in southern Guimaras, central Philippines**
Campos, W.L.*, Beldia III, P.D., Evano, N.P., Boglosa, J., Santillan, A., Jalandoni, P. (Philippines)
- 16:20-16:40 **A new assessment approach using fuzzy surplus production model to evaluate the albacore stock in the Indian Ocean**
Wang, S.H., Hsu, C.C., Liu, H.C.* (Taiwan)
- 16:40-17:00 **Fish, flood plains and food security in the lower Mekong Basin**
Jensen, J.G., Pongsri, C.* (Cambodia)
- 17:00-17:20 **CPUE standardization and stock assessment of south Atlantic albacore**
Wu, C.L.*, Yeh, S.Y. (Taiwan)
- 17:20-17:40 **An overview of the reservoir fisheries of Bangladesh**
Ahmed, K.K.U.* (Bangladesh)
- 17:40-18:00 **Diversified inland fishing gears of Bangladesh**
Kibria, M.G.*, Ahmed, K.K.U., Anrooy, R.V., Kumar, D. (Viet Nam)
- 18:00-18:20 **Compliance behavior of fishers in communities with different levels of participation in co-management processes**
Susilowati, I.* (Indonesia)
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Monday, 26.11.2001

Room 1002
College of Social Sciences

Fish Disease (1)

Chair: Dr. K. Tonguthai (Thailand)

Co-chair: Dr. G. H. Kou (Taiwan)

- 13:30-14:00 **Problems impact a health management for the responsible movement of live aquatic animal**
Tonguthai, K. (Thailand) (Invited speaker)
- 14:00-14:20 **Detection of *Flavobacterium psychrophilum* in ayu *Plecoglossus altivelis* by polymerase chain reaction and *in situ* hybridization**
Wakabayashi, H.*, Lzumi, S., Liu, H. (Japan)
- 14:20-14:40 **Major deformities in red sea bream *Pagrus major* seedlings**
Kumai, H., Sawada, Y.*, Hattori, M., Murata, O. (Japan)
- 14:40-15:00 **Immuno-response to killed vaccine and recombinant subunit vaccine of nervous necrosis virus in grouper**
Lin, J.H.Y.*, Kuo, T.Y., Chi, H.C., Huang, H.I., Yu, C.C., Liang, H.C., Yang, H.L. (Taiwan)
- 15:00-15:20 **Efficacy of *Streptococcus iniae* vaccine administered in Nile tilapia *Oreochromis niloticus***
Klesius, P.H.*, Shoemaker, C.A., Evans, J.J. (USA)
- 15:20-15:40 **T cell receptors and co-receptors genes of Japanese flounder**
Aoki, T.*, Nam, B.H., Hirono, I. (Japan)
- 15:40-16:00 **Coffee Break**
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- 16:00-16:20 **Bacterial diseases of cultured carp in Iran**
Akhlaghi, M.* (Iran)
- 16:20-16:40 **Cytokine genes and their expression of Japanese flounder**
Hirono, I.*, Nam, B.H., Kurobe, T., Iwahori, A., Aoki, T. (Japan)
- 16:40-17:00 **The complete sequence and structure of ribosomal RNA gene of *Heterosporis anguillarum***
Tsai, S.J., Yang, H.N., T'sui, W.H., Lo, C.F., Wang, C.H.* (Taiwan)
- 17:00-17:20 **Ulcer type of disease in the fishes of small-scale farmer's pond in Bangladesh**
Chowdhury, M.B.R.*, Zahura, U.A., Habib, K.Z.A., Khatun, M.D., Muniruzzaman, M. (Bangladesh)
- 17:20-17:40 **Production of monoclonal antibodies against scuticociliated ciliate**
Jung, S.J.*, Oh, M.J. (Korea)
- 17:40-18:00 **Occurrence of a new viral disease on cultured carp *Cyprinus carpio* in Korea**
Oh, M.J.*, Jung, S.J. (Korea)
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Monday, 26.11.2001

Room 4001
College of Social Sciences

SPECIAL SESSION**Socio-economics and Marketing (1): Aquaculture in Asia***

Chair: Dr. M. M. Dey (Malaysia)

Co-chair: Dr. D. S. Liao (Taiwan)

- 13:30-14:00 **Socioeconomic analysis of aquaculture development in Taiwan**
Liao, D.S.* , Fu, H.L. (Taiwan) (Invited speaker)
- 14:00-14:20 **The development and regulation policies of the Taiwanese eel aquaculture industry**
Chen, Y.H.* , Lee, W.C., Liao, IC. (Taiwan)
- 14:20-14:40 **Comparison of aquaculture extension impacts in Bangladesh**
Nazmul Islam, S.M.* , Thompson, P.M., Nuruzzaman, M., Firoz Khan, A.K.M., Sultana, P. (Bangladesh)
- 14:40-15:00 **Socioeconomics and technical efficiency of tilapia production in Taiwan**
Liao, D.S.* , Chen, C.W. (Taiwan)
- 15:00-15:20 **At the crossroads: tilapia aquaculture in Taiwan**
Hsu, Y.K.* , Liao, IC. (Taiwan)
- 15:20-15:40 **Price relationships in Philippine milkfish markets: univariate and causality analysis**
Salayo, N.D.* (Philippines)
- 15:40-16:00 **Coffee Break**
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- 16:00-16:20 **Economic analysis of demand for aquaculture products in Taiwan: an application of the generalized model**
Lee, J.M., Liao, D.S.* , Hwang, T.C. (Taiwan)
- 16:20-16:40 **The production analysis of milkfish hatcheries in Taiwan**
Kuo, J.C.* , Liu, F.G., Liao, IC. (Taiwan)
- 16:40-17:00 **Socioeconomics of freshwater fish farming in Asia**
Dey, M.M.* (Malaysia)
- 17:00-17:20 **Pattern of fish consumption and consumers' preference for various types of fish in Asia**
Dey, M.M.* (Malaysia)
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* This session is cosponsored by the International Association of Aquaculture Economics and Management. Papers from this session, subject to review procedures, will be published in a future special issue of Aquaculture Economics and Management.

Monday, 26.11.2001

Date: November 27 (Tuesday)

Sun Yat-sen Hall

Keynote Speech

moderator: Dr. Yew-Hu Chien (Taiwan)

- 09:00-09:50 **Feeding the world through aquaculture: Asian contributions, present and future**
Dr. Cheng-Sheng Lee
Director, Center for Tropical and Subtropical Aquaculture, The Oceanic Institute,
USA
-

Meeting Hall
College of Sciences

Aquaculture - Genetics and Biotechnology

Chair: Dr. Y. Basavaraju (India)

Co-chair: Dr. Z. Gong (Singapore)

- 10:00-10:20 **Masculinization in common carp (*Cyprinus carpio*): an approach for the indirect production of monosex female common carp**
Basavaraju, Y.*, Mair, G.C., Penman, D.J., Ahmad, S.A.S., Mohan-Kumar, H.M., Pradeep-Kumar, S. (India)
- 10:20-10:40 **Zebrafish FF1A and slow muscle differentiation**
Sundaram, G.S.*, Lin, W.W., Lee, W.C., Chung, B.C. (Taiwan)
- 10:40-11:00 **A case for indigenous common carp in traditional rice-fish aquaculture systems in northern Vietnam**
Mair, G.C.*, Tuan, P.A., Edwards, P. (Thailand)
- 11:00-11:30 **Coffee Break**
- 11:30-11:50 **Networking – a way for accelerating aquaculture genetics research**
Gupta, M.V.*, Acosta, B.O. (Malaysia)
- 11:50-12:10 **Genetic diversity of *Clarias macrocephalus* in Thailand and a putative evidence for genetic introgression**
Na-Nakorn, U.*, Ngamsiri, T., Kamonrat, W., Ngamwongchon, S., Pichitkul, P. (Thailand)
- 12:10-12:30 **Generation of rainbow trout color transgenic zebrafish**
Gong, Z.* (Singapore)
-
- 13:30-13:50 **Gene expression and structure of globin genes of carp**
Minagawa, S.*, Hirono, I., Aoki, T. (Japan)
- 13:50-14:10 **The effects of heterologous anti-microbial peptide gene transfer on the immunity of the eastern oyster *Crassostrea virginica***
Cheng, T.C.*, Lapeyre, J.L., Bucannon, J.T., Tiersch, T.R., Cooper, R.K. (Taiwan)
- 14:10-14:30 **DsRNA mediated masculinization in the zebrafish *Danio rerio***
Patil, J.G.*, Grewe, P.M., Deagle, B.E., Gurney, R.H., Thresher, R.E. (Australia)

Tuesday, 27.11.2001

- 14:30-14:50 **Production of cloned red sea bream *Pagrus major* by gynogenesis and confirmation by DNA fingerprinting**
Kato, K.*, Murata, O., Kumai, H. (Japan)
- 14:50-15:10 **Constructing GFP expression vector with iridoviral promoter**
Miyata, M.*, Chaiwud, S., Takami, M., Miyazaki, T. (Japan)
- 15:10-15:30 **Cloning and expression of two distinct CD3 genes from Japanese flounder *Paralichthys olivaceus***
Park, C.I.*, Arma, N.R., Hirono, I., Aoki, T. (Japan)
- 15:30-15:50 **Fish oral vaccine method combining bio-encapsulation and recombinant DNA technology**
Yu, C.C.*, Lin, J.H.Y., Lopez, C., Rajan, J.P.R., Yang, H.L. (Taiwan)
- 15:50-16:30 **Coffee Break**
- 16:30 **AFS General Assembly**
-

Tuesday, 27.11.2001

Room E1001
College of Sciences

Capture Fisheries (2)

Chair: Dr. M. Kato (Japan)

Co-chair: Dr. S. C. Fong (Taiwan)

- 10:00-10:20 **Opportunities and constraints to reservoir fisheries co-management in Dak Lak province, Viet Nam**
Truong, H.P.* (Viet Nam)
- 10:20-10:40 **Diamondback squid *Thysanoteuthis rhombus* fisheries off Ryukyu Islands, Japan**
Kato, M.*, Kakuma, S., Kawasaki, K. (Japan)
- 10:40-11:00 **A survey of coastal fisheries management in three different coastal region-eastern Sri Lanka**
Balasundaram, C.* (Sri Lanka)
- 11:00-11:30 **Coffee Break**
- 11:30-11:50 **Oilyspread: A spreadsheet model of oil drift along the coast of south-western Taiwan, using cellular automata**
Fong, S.C.* (Taiwan)
- 11:50-12:10 **Environmental impacts on distribution of marine fisheries using geographical information systems (GIS)**
Musse, G.H.*, Ibrahim, M.H., Ambak, M.A., Abulrashid, M.S. (Malaysia)
- 12:10-12:30 **A view from the community: The social aspects of shrimp farming in south Texas**
Rosati, R.R.*, Fuller, S.T., Williams, R.H. (USA)

Capture Fisheries (2)

Chair: Dr. H. P. Truong (Viet Nam)

Co-chair: Dr. K. T. Lee (Taiwan)

- 13:30-13:50 **Studies on the mechanisms on fishing ground formation of sergestid shrimp (*Sergia lucens*) in the coastal waters of southwest Taiwan**
Lee, K.T.*, Sheng-Hsiung, H., Su, W.C., Liao, C.H., Lu, H.J. (Taiwan)
- 13:50-14:10 **Depth wise variations in species composition and abundance of bycatch and discards of bottom trawling along Kerala (India) coast**
Premlal, P.*, Kurup, B.M. (India)
- 14:10-14:30 **Temporal and spatial variations in polychaete population in 0-50 meters along coastal waters of Kerala, S. India**
Sreedevi, C.*, Kurup, B.M. (India)

Tuesday, 27.11.2001

- 14:30-14:50 **Observations on the distribution, biology and length-weight relationship of deep sea fish *Pseneopsis cyanea* (family: centrolophidae) in the depth 250-750m along the EEZ of India**
Venu, S. *, Kurup, B.M. (India)
- 14:50-15:10 **Observations on the biology of fishes belonging to the family Chlorophthalmidae collected from 250-750m depth along the EEZ of India**
Thomas, J. *, Kurup, B.M. (India)
- 15:10-15:30 **Fisheries and agricultural values of irrigation reservoirs in Sri Lanka**
Amarasinghe, U.S. *, Nissanka, C., De Silva, S.S. (Sri Lanka)
- 15:30-15:50 **Influence of rainfall on fish yield in a Sri Lanka reservoir and its importance in fisheries management**
Jayasinghe, R.P.P.K. *, Amarasinghe, U.S. (Sri Lanka)
- 15:50-16:30 **Coffee Break**
- 16:30 **AFS General Assembly**
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Room 1002
College of Social Sciences

Fish Disease (2) and Physiology

Chair: Dr. M. Shariff (Malaysia)

Co-chair: Dr. H. L. Yang (Taiwan)

- 10:00-10:20 **Pathogenic activities of live cells and extracellular products of different bacteria from cobia, *Rachycentron canadum* L., in Taiwan**
 Lopez Ggomez, C.*, Rajan, J.P.R., Liang, H.C., Lin, J.H.Y., Yang, H.L. (Taiwan)
- 10:20-10:40 **Vibriosis in cultured cobia, *Rachycentron canadum* L., in Taiwan**
 Jesudhasan, P.*, Lopez, C., Lin, J.H.Y., Yang, H.L. (Taiwan)
- 10:40-11:00 **Antigenic characterization of a marine fish iridovirus isolated from grouper, *Epinephelus malabaricus***
 Qin, Q.*, Shen, H., Shi, C., Chang, S.F., Ngoh, G.H., Sin, Y.M., Lam, T.J. (Singapore)
- 11:00-11:20 **Regulation of release of stress hormone in the crayfish *Procambarus clarkii***
 Chen, S.C., Zou, H.S., Juan, C.C., Lee, C.Y.* (Taiwan)
- 11:20-11:30 **Coffee Break**
- 11:30-11:50 **An annual development of gonads, sex hormone profile and age determination of the Maekong giant catfish (*Pangasianodon gigas*, Chevey) in ponds**
 Meng-umpan, K.*, Manosroi, A., Manosroi, J. (Thailand)
- 11:50-12:10 **Role of T3 on egg and early development of *Labeo rohita***
 Misra, S.K.*, Mishra, N., Mishra, M. (India)
- 12:10-12:30 **Estimation of ammonia excretion rates by different weight groups of red tilapia *Oreochromis sp* and ammonia gas escape values in a water recirculating system**
 Rafiee, G.R.*, Kamarudin, M.S., Saad, C.R., Ismail, M.R., Sijan, K., Omar, H. (Malaysia)

Nutrition, Feeds and Feeding Management (2)

Chair: Dr. S. Teshima (Japan)

Co-chair: Dr. H. Y. Chen (Taiwan)

- 13:30-13:50 **Mass-culture system of *Moina macrocopa***
 Inada, Y.* (Japan)
- 13:50-14:10 **A simulation model for periphyton-based fish production in ponds**
 van Dam, A.A.*, Azim, M.E., Verdegem, M.C.J. (Netherland)
- 14:10-14:30 **Growth and survival of rohu, *Labeo rohita* (hamilton) spawn fed diets supplemented with fish intestinal microflora**
 Ghosh, K., Sen, S.K.*, Ray, A.K. (India)

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- 14:30-14:50 **Fermentation of duckweed (*Lemna polyrhiza*) by isolated fish intestinal bacteria for utilization in aquafeeds**
Bairagi, A., Ghosh, K.S., Sen, S.K., Ray, A.K.* (India)
- 14:50-15:10 **Utilization of animal by-product meals as fish meal replacer in a practical diet for juvenile grouper *Epinephelus coioides***
Millamena, O.M.* (Philippines)
- 15:10-15:30 **Evaluation of protein quality of various ingredients by protein efficiency ratio and protein digestibility in Korean rockfish *Sebastes schlegeli* (Hilgendorf)**
Bai, S.C.*, Choi, S.M. (Korea)
- 15:30-15:50 **The utilization of crude enzyme and bacterial proteolytic for the production of amino acid from lemuru fish (*Sardinella Sp.*)**
Kumalaningsih*, S. (Indonesia)
- 15:50-16:30 **Coffee Break**
- 16:30 **AFS General Assembly**
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Room 4001
College of Social Sciences

SPECIAL SESSION

Socio-economics and Marketing (2): Capture Fisheries in Asia

Chair: Dr. P. M. Thompson (Bangladesh)

Co-chair: Dr. D. S. Liao (Taiwan)

- 10:00-10:20 **Socioeconomic analysis of the marine fishing industry in Ilocos Norte, Philippines**
 Asia, F.B.*, Pascua, E.C., Grande, V.O. (Philippines)
- 10:20-10:40 **A socio-economic analysis of fresh water fisheries in Udawalawa and Chandrika wewa reservoirs in Sri Lanka**
 Chinth Perera, P.A.J.* (Sri Lanka)
- 10:40-11:00 **Impacts of community management of beel fisheries in Bangladesh**
 Thompson, P.M.*, Sultana, P. (Bangladesh)
- 11:00-11:30 **Coffee Break**
- 11:30-11:50 **Incidences of fish kills from Tungabhadra river, Karnataka, India**
 Kulkarni, G.N.*, Gupta, T.R.C. (India)

Aquatic Foods

Chair: Dr. X. Fan (China)

Co-chair: Dr. S. T. Jiang (Taiwan)

- 13:30-14:00 **Cloning, expression & glycosylation modification of chicken cystatin and its application in surimi process**
 Jiang, S.T.*, Chen, G.H., Tang, S.J., Chen, C.S. (Taiwan) (Invited speaker)
- 14:00-14:20 **Macroalgae as a source of alpha-glucosidase inhibitors**
 Fan, X.* (China)
- 14:20-14:40 **Process accounting (PA) and its application**
 Peralta, J.P.* (Philippines)
- 14:40-15:00 **Qualitative and quantitative analysis of fish and prawn maintained at different temperatures**
 Rajaratnam, S., Balasundaram, C.* (Sri Lanka)
- 15:00-15:20 **Histopathological screening of the tissues of the fish and shellfish harvested from the Valaichennai and Morgottanchennai lagoon, Sri Lanka**
 Balasundaram, C.* (Sri Lanka)
- 15:20-15:40 **Handling practices of fish, the quality and incidence of pathogenic bacteria in fish markets within central province of Sri Lanka**
 Jayasinghe, P.S.*, Rajakaruna, R.M.A.G.G., Dahanayake, T. (Sri Lanka)

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15 40-16:00 **Milkfish industry alternative: products from cultured baitsize**
 Peralta, J.P.* (Philippines)

16:00-16:30 **Coffee Break**

16:30 **AFS General Assembly**

Tuesday, 27.11.2001

Date: November 29 (Thursday)

Sun Yat-sen Hall

Keynote Speech **moderator:** Dr. Shi-Yen Shiau (Taiwan)
09:00-09:50 **Recent advances in aquatic food technology and nutrition**
Dr. Akio Kanazawa
Professor Emeritus, Kagoshima University, Japan

Meeting Hall
College of Sciences

Nutrition, Feeds and Feeding Management (3)

Chair: Dr. S. Koshio (Japan)

Co-chair: Dr. C. H. Liou (Taiwan)

10:00-10:20 **The determination of optimal nutrient energy combination on the growth of kuruma shrimp, *Marsupenaeus japonicus*, juveniles**
Koshio, S.*, Gallado-Cigarroa, F.J., Teshima, S., Ishikawa, M. (Japan)

10:20-10:40 **Studies on the growth performance, feed conversion efficiency and metabolism of an India climbing perch *Anabas testudineus* (Bloch) fed on practical, synthetic and natural diets**
Patra, B.C.* (India)

10:40-11:00 **Reduction of feed ration below satiation level in tilapia pond production**
Bolivar, R.B.*, Brown, C.L., Jimenez, E.T., Szyper, J.P., Sevilleja, R.C. (Philippines)

11:00-11:30 **Coffee Break**

11:30-11:50 **The apparent digestibility of three fishmeal for black progy (*Acanthopagrus shelgeli*)**
Cheng, A.C., Liou, C.H.*, Huang, Y.S. (Taiwan)

11:50-12:10 **Effect of feeding frequency on the growth of cage - cultured gibel carp**
Lei, W.*, Li, Z., Zhang, H., Yang, H. (China)

12:10-12:30 **Comparative studies on the nutritional energetics on several freshwater species**
Xie, S.*, Cui, Y., Yang, Y., Nie, G. (China)

SPECIAL SESSION

- Post-retirement Careers in Fisheries and Aquaculture

Chair: Mr. M. New (England)

Co-chair: Dr. I C. Liao (Taiwan)

13:30-13:40 **Welcome remarks (I.C. Liao and M. New)**

13:40-14:10 **Post-retirement experiences of a fisheries administrator**
Menasveta, D.* (Thailand)

14:10-14:40 **From shrimp to fish**
Michel, A.* (France)

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14:40-15:10	Post-retirement opportunities after a career in fisheries in south-east Asia Rabanal, H.R.* (Philippines)
15:10-15:40	The second 25 years in fish nutrition R & D (a personal view of topics, trials and travels in Asia) Halver, J.E.* (USA)
15:40-16:00	Coffee Break
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16:00-16:30	Administration-free aquaculture New, M.* (England)
16:30-17:00	Circumnavigating the small world of fisheries Pullin R.S.V.* (Philippines)
17:00-17:30	Discussion
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Room E1001
College of Sciences

Capture Fisheries (3)

Chair: Dr. T. Arimoto (Japan)

Co-chair: Dr. S. Y. Yeh (Taiwan)

- 10:00-10:30 **Capture process of set-net towards the further technical innovation**
Arimoto, T.*, Akiyama, S. (Japan) (Invited speaker)
- 10:30-10:50 **Current and peragic fish catch at fish aggregating devices off Ryukyu Islands, Japan**
Kakuma, S.* (Japan)
- 10:50-11:10 **The optimum size of the abalone, *Haliotis diversicolor supertexta* Lischke, for releasing program in the Mao Aw Gulf of Northeastern Taiwan**
Len, J.W., Lee, Y.C.* (Taiwan)
- 11:10-11:30 **Coffee Break**
- 11:30-11:50 **Review of researches on capture process in net fishing gear**
Matsuoka, T.* (Japan)
- 11:50-12:10 **Stock structure of swordfish resource in the Indian Ocean inferred by mitochondria DNA sequence characters**
Lu, C.P., Tzeng, T.D., Hui, C.F., Yeh, S.Y.* (Taiwan)
- 12:10-12:30 **The interactions between crustaceans and fishery in the Pescadores waters**
William, C.*, Yeh, S.P., Chou, L.S. (Taiwan)

Aquatic Biology (2)

Chair: Dr. S. P. Vorakul (Thailand)

Co-chair: Dr. T. Y. Chan (Taiwan)

- 13:30-14:00 **The condition of large rivers and river fisheries in Asia**
Arthington, A.H.* (Australia) (Invited speaker)
- 14:00-14:20 **Studies on the factors affecting thyrotropin gene expression in bighead carp *Aristichthys nobilis***
Chowdhury, I.*, Chatterjee, A., Huang, K.Y., Yu, J.Y.L. (Taiwan)
- 14:20-14:40 **Changes in bimodal oxygen uptake of obligate air breathing fish, *Anabas testudineus* (Bloch) exposed to pesticides**
Pandey, B.N.*, Kumar, A., Rana, A. (India)
- 14:40-15:00 **Ovary development of two commercial shrimps *Solenocera alticarinata* Kubo, 1949 and *S. melanthero* De Man, 1907 (Crustacea: Decapoda: Solenoceridae) from Taiwan**
Kao, H.C.*, Chan, T.Y., Yu, H.P. (Taiwan)
- 15:00-15:20 **Some aspects in early life stage of sand goby, *Oxyeleotris marmoratus*, larvae**
Amornsakun, T.*, Sriwatana, W., Chamnanwech, U. (Thailand)

- 15:20-15:40 **Considerations and design for developing a complete field genebanking kit for tropical fish species**
Rana, K.* , Howie, B., Gilmour, A. (Scotland)
- 15:40-16:00 **Coffee Break**
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- 16:00-16:20 **Seasonal dynamics in the occurrence and abundance of the dinoflagellate *Ceratium* in the Maheshkhali channel of the Bay of Bengal, Bangladesh**
Jewel M.A.S., Haque, M.M.* , Khan, S. (Bangladesh)
- 16:20-16:40 **Quantification of particle ingestion by filter-feeding fish using modern particle counting/sizing equipment**
Focken, U.* (Germany)
- 16:40-17:00 **Early developmental stages and ecology of two silverbellies *Secutor insidiator* and *Secutor ruconius* collected from the Bak-khali river estuary of the Bay of Bengal, Cox's Bazar, Bangladesh**
Islam, M.M., Haque, M.M.* , Hossain, M.A. (Bangladesh)
- 17:00-17:20 **The decline of native fishes and fisheries and the rise of aquaculture in lakes and rivers in the Philippines**
Bagarinao, T.* (Philippines)
- 17:20-17:40 **Population genetic analysis of the mitochondrial control region sequences in hardwichi wrass, *Thalassma hardwickii*, suggests trans-boundary management of fisheries in the South China Sea**
Chen, C.A.* , Shao, K.T., Ablan, M., MacManus, J., Cannabel, A., Tuan, V.S., Bell, J. (Taiwan)
- 17:40-18:00 **Age-markers of the two sand dollars, *Astriclypeus manni* and *Clypeaster japonica* in Cheju, Korea**
Choi, K.S.* , Kang, D.H. (Korea)
- 18:00-18:20 **Some aspects of *Oreochromis niloticus* (Linnaeus) in the Kaptai Reservoir, Bangladesh**
Ahmed, K.K.U.* (Bangladesh)
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Room 1002
College of Social Sciences

Aquatic Biology (1)

Chair: Dr. P. Menasveta (Thailand)

Co-chair: Dr. J. S. Hwang (Taiwan)

- 10:00-10:20 **Size distribution in relation to sibling cannibalism in a cohort of red drum *Sciaenops ocellatus* fingerlings**
 Liao, IC., Chang, E.Y.* (Taiwan)
- 10:20-10:40 **Occurrence and abundance of *Pseudo-nitzschia* spp. in the Maheshkhali channel of the Bay of Bengal, Cox's Bazar, Bangladesh**
 Jewel M.A.S., Haque, M.M.*, Khan, S. (Bangladesh)
- 10:40-11:00 **Can copepods differentiate prey from predator hydromechanically?**
 Hwang, J.S.* , Strickler, J.R. (Taiwan)
- 11:00-11:30 **Coffee Break**
- 11:30-11:50 **Sensory mechanisms in predation of the juvenile red drum *Sciaenops ocellatus***
 Liao, IC., Chang, E.Y.* (Taiwan)
- 11:50-12:10 **Protoplast preparation from a species of agarophytes, *Ahnfeltiopsis paradoxa*, rhodophyta**
 Ogawa, H.*, Nanba, N., Kado, R., Yagi, K. (Japan)
- 12:10-12:30 **Molecular genetic markers for enzyme differentiation in male morphotypes of *Macrobrachium rosenbergii* (de Man)**
 Ranjeet, K.* , Kurup, B.M. (India)

Aquaculture - Grow-out Technology

Chair: Dr. I. B. Kim (Korea)

Co-chair: Dr. Y. Yang (China)

- 13:30-13:50 **Effect of ferrous sulfate as fertilizer on the farmed red seaweed, *Kappaphycus alvarezii***
 Guerrero III, R.D.* , Guerrero, L.A., del Castillo, M.G. (Philippines)
- 13:50-14:10 **To develop an appropriate carp polyculture technology with small indigenous species mola (*Amblypharyngodon mola*) for rural Bangladesh**
 Roy, N.C., Wahab, M.A.* , Alim, M.A., Thilsted, S.H. (Bangladesh)
- 14:10-14:30 **A recirculating aquaculture system for marine fish culture**
 Kim, I.B.* , Jo, J.Y., Oh, S.Y. (Korea)
- 14:30-14:50 **Explore ricefish ecological economy and develop ricefish culture in west China**
 Wu, Z.* , Yang, Y., Miu, H., Chen, G., Zhang, Q. (China)
- 14:50-15:10 **Red tilapia (*Oreochromis spp.*) culture in brackishwater ponds**
 Yang, Y.* , Lin, C.K., James D.S. (Thailand)

- 15:10-15:30 **Diet and harvesting regime for the pond production of mud crab *Scylla olivacea* (Hersbt) in brackishwater pond**
Triño, A.T.*, Rodriguez, E.M., Minagawa, M. (Philippines)
- 15:30-16:00 **Coffee Break**

Aquaculture - Grow-out Technology

Chair: Dr. S. Harpaz (Israel)

Co-chair: Dr. E. M. Rodriguez (Philippines)

- 16:00-16:20 **Pen culture of mud crab *Scylla olivacea* (Hersbt) at semi-intensive production level in a reforested coastal tidal flats of New Buswang, Kalibo, Philippines**
Rodriguez, E.M.*, Triño, A.T., Minagawa, M. (Philippines)
- 16:20-16:40 **Effect of density on the growth and survival of juvenile silver perch (*Bidyanus bidyanus*, Mitchell), under intensive production conditions**
Harpaz, S.*, Hulata, G., Karplus, I., Segev, R. (Israel)
- 16:40-17:00 **Pen culture of Asian catfish *Clarias macrocephalus* fed four different diets in the Philippines**
Coniza., E.B.*, Catacutan, M.R., Tan-Fermin, J.D. (Philippines)
- 17:00-17:20 **Culture and economics of wild grouper (*Epinephelus Coioides*) using three feed types in ponds**
Tuburan, I.*, Coniza, E.B., Rodriguez, E.M., Agbayani, R.F. (Philippines)
- 17:20-17:40 **Status of cage fish culture in Nepal**
Gurung, T.B., Rai, A.K.* (Nepal)
- 17:40-18:00 **Factors influencing migration of *Penaeus indicus* (H. Milne Edwards, 1837) in the Negombo lagoon on the west coast of Sri Lanka**
Jayawardane, P.A.A.T.*, McLusky, D.S., Tytler, P. (Sri Lanka)
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Thursday, 29.11.2001

Room 4001
College of Social Sciences

SPECIAL SESSION**- Global Symposium on Women in Fisheries**

Chair: Dr. M. Williams (Australia)

Co-chair: Dr. N. H. Chao (Taiwan)

- 10:00-10:30 **Welcome remarks** (M. Williams and N.H. Chao)
- 10:30-10:50 **Women in fisheries in Asia**
 Siason, I.M.*, Nandeesh, M.C., Matics, K.L., Shariff, M., Miki, N., Chao, N.H.,
 Tech, E., Bueno, P. (Philippines)
- 10:50-11:10 **Women do fish: conceptual and empirical issues**
 Williams, S.* (Nigeria)
- 11:10-11:30 **Women in fisheries in Latin America**
 Pereira, G.* (Uruguay)
- 11:30-11:50 **Women in fisheries in North America**
 Howell, L.* (USA)
- 11:50-12:10 **A review of women's involvement in fisheries activities in Oceania**
 Lambeth, L.*, Rochers, K.D., Tuara, P., Vunisea, A., Fay-sauni, L., Hanchard, B.,
 Aslin, H., Baker, V. (New Caledonia)
- 12:10-12:30 **Role of women in fisheries in the UK and Europe**
 Rana, K.* (Scotland)
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- 12:30-14:00 **Contributed Papers**
- Women involvement in aquaculture in Bangladesh**
 Begum, A.*, D'Costa, M. (Bangladesh)
- Alternative livelihoods in a coastal village**
 Asong R.H.*, Mabunay, M.L., Aure, D., Seraspe, E., Braganza, R., Corda, D.E.
 (Philippines)
- Responding to trend of globalization in fisheries: assets of professional
 Taiwanese women**
 Chao, N.H., Chang, C.F.*, Chang, E.Y. (Taiwan)
- Sustainability evidence of 5-year implementation of Rung Sat EAMP
 (Ecologically sustainable Aquaculture Mangrove Park) from 1996 to 2001**
 Thieu Thi Tao, M.* (Viet Nam)

Thursday. 29.11.200

Microcredit and women in fishing communities: a case study from the Philippines

Villareal, L.V.* (Philippines)

Women fishing participation in Fiji

Vunisea, A.*, Verebalavu-Faletoese, J., Sivoi, W., Faletoese, P. (Fiji)

Pond aquaculture in oxbow lakes of Bangladesh with emphasis of women participation

Kibria, M.G.*, Anrooy, R.V., Kumar, D., Demaine, H. (Viet Nam)

Working wives in Philippine coastal fisheries

Bañez-Sumagaysay, M.* (Philippines)

Women-led fisheries management – a case study from Bangladesh

Sultana, P.*, Ahmed, M., Thompson, P.M. (Bangladesh)

Pacific island countries women empowerment in fisheries development

Verebalavu-Faletoese, J.*, Vunisea, A., Sivoi, W., Faletoese, P. (Fiji)

SPECIAL SESSION

- Global Symposium on Women in Fisheries

Chair: Dr. I. M. Siason (Philippines)

Co-chair: Dr. M. C. Nandeesha (India)

14:00-14:20	From women in fisheries to gender and fisheries Williams, M.* (Australia)
14:20-15:30	Discussion: Moving from women to gender and fisheries
15:30-16:00	Coffee Break
16:00-16:20	Network for women and gender in fisheries development of the Mekong river Poey, O.*, Matics, K. (Cambodia)
16:20-16:40	Impact Assessment Nandeesha, M.C.* , Tech, E. (India)
16:40-17:10	Discussion

Thursday, 29.11.2000

- 13:50-14:10 **SPF culturing strategy of *L. vannamei* on small scale, non-integrated farms: Successful cases report in Taiwan and China**
Liu, L.C., Chung, B., Su, C.* (Taiwan)
- 14:10-14:30 **Cellular and ultracellular changes of gill and hepatopancreas in pond raised *Penaeus indicus* and *Penaeus semisulcatus***
Akbari, S.*, Khalijy, H. (Iran)
- 14:30-14:50 ***Haliphthoros* spp. from spawned eggs of captive mud crab *Scylla serrata* broodstocks**
Leaño, E.M.* (Philippines)
- 14:50-15:10 **Development of shrimp culture systems for disease prevention and environmental sustainability**
Menasveta, P.* (Thailand)
- 15:10-15:30 **Seasonal changes in the infection intensity of *Perkinsus* sp. found in the manila clam, *Ruditapes philippinarum* distributed in Komsoe Bay, Korea**
Choi, K.S.*, Park, K.I., Hur, S.B., Kim, Y. (Korea)
- 15:30-16:00 **Coffee Break**
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- 16:00-16:20 **The immune response of giant freshwater prawn *Macrobrachium rosenbergii* under ambient ammonia stress**
Cheng, W., Chen, J.C.* (Taiwan)
- 16:20-16:40 **Investigations of the influence of sediment iron on calcium and iron levels in tissues of cultured *Penaeus monodon* in ponds on pyritic sediments with special reference to chronic soft-shell syndrome**
Jayasinghe, J.M.P.K.* (Sri Lanka)
- 16:40-17:00 **White gut disease of *Penaeus monodon* from culture ponds of Visakhapatnam (India) : microbiological and histopathological study**
Janakiram, P., Jayasree, L., Madhavi, R.* (India)
- 17:00-17:20 **Occurrence of concurrent infections with multiple viruses in *Penaeus monodon* from culture ponds of north coastal Andhra Pradesh (India)**
Madhavi, R.*, Janakiram, P., Jayasree, L. (India)
- 17:20-17:40 **Identification and characterization of *Vibrio* spp. isolated from diseased shrimps from culture ponds of north coastal Andhra Pradesh, India**
Jayasree, L., Janakiram, P., Madhavi, R.* (India)
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Room E1001
College of Sciences

Aquatic Biology (3) - General Physiology

Chair: Dr. P. P. Hwang (Taiwan)

Co-chair: Dr. C. F. Chang (Taiwan)

- 10:00-10:20 **A study on the effect of temperature and the species of salts on the digging ability of hard clam *Meretrix lusoria***
 Lin, Y.H., Chan, Y.P., Lee, A.C.* (Taiwan)
- 10:20-10:40 **Investigations of bighead carp (*Aristichthys nobilis*) thyroid stimulating hormone β mRNA expression during development and growth**
 Chatterjee, A.*, Chowdhury, I., Peng, H.K., Yu, J.Y.L. (Taiwan)
- 10:40-11:00 **Zinc, copper or cadmium pretreatment increase the protection against cd-induced toxicity in tilapia larvae (*Oreochromis mossambicus*)**
 Wu, S.M.*, Hwang, P.P. (Taiwan)
- 11:00-11:30 **Coffee Break**
- 11:30-11:50 **Differential suppressive effects of steroids on leukocyte phagocytosis in two teleosts, tilapia and common carp**
 Law, W.Y., Chen, W.H., Song, Y.L., Sun, L.T., Chang, C.F.* (Taiwan)
- 11:50-12:10 **In vitro inhibition of digestive enzymes in *Labeo rohita* (Ham.) fingerlings by tannin extracted from plant sources**
 Maitra, S., Ray, A.K.* (India)
- 12:10-12:30 **Respiration and filtration rates of the clam *Psammotaea elongata* (Mollusca, Pelecypoda: Psammobiidae)**
 del Norte-Campos, A.G.C.*, Piñosa, M.A. Tad-y & M. (Philippines)

Aquaculture - Breeding and Larviculture

Chair: Dr. C. Marte (Philippines)

Co-chair: Dr. T. I. Chen (Taiwan)

- 13:30-14:00 **Marine fish breeding and larviculture research at the aquaculture department Southeast Asian fisheries**
 Marte, C.L.* (Philippines) (Invited speaker)
- 14:00-14:20 **Ingestion of mud crab *Scylla olivacea* zoea and megalopa on *Brachionus* and *Artemia* nauplii**
 Baylon, J.C.*, Maningo, N. (Philippines)
- 14:20-14:40 **Survival and growth of the early stages of Asian cichlid, *Etroplus suratensis* in various salinities**
 Misra, S.K.*, Behera, R.C. (India)

- 14:40-15:00 **The spawning performance, early development and larval rearing of cobia *Rachycentron canadum***
Chang, S.L.*, Hsieh, C.S., Cheng, S.H., Cheng, C.S., Chen, T.I., Su, M.S., Liao, IC. (Taiwan)
- 15:00-15:20 **Free-living nematode *Panagrellus redivivus* as alternative live food for bighead carp *Aristichthys nobilis* and Asian catfish *Clarias macrocephalus* larvae**
Santiago, C.B.*, Gonzal, A.C. (Philippines)
- 15:20-15:40 **Testing of nematodes *Panagrellus redivivus* grown on different media as alternative live food for first feeding carp *Cyprinus carpio* larvae**
Schlechtriem, C.*, Focken, U., Ricci, M., Becker, K. (Germany)
- 15:40-16:00 **Coffee Break**
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- 16:00-16:20 **Changes in growth, survival and fatty acids compositions of silver barb (*Puntius gonionotus*, bleeker) larvae fed on different live foods organisms**
Jahangard, A.*, Kamarudin, M.S., Sijam, C.R.S.K., Razak, A.R.A. (Malaysia)
- 16:20-16:40 **Changes in growth, survival and digestive enzyme activities of Malaysian river catfish (*Mystus nemurus*) larvae fed on different diets**
Kamarudin, M.S.*, Otoi, S., Saad, C.R. (Malaysia)
- 16:40-17:00 **Larval and juvenile rearing in the portunid crab *Portunus pelagicus***
Cheng, J.H.*, Wu, H.N., Chen, T.I. (Taiwan)
- 17:00-17:20 **Effect of ozone treatment on eggs and larvae of grouper *Epinephelus coioides***
Su, H.M.*, Tseng, K.F., Su, M.S., Liao, IC. (Taiwan)
- 17:20-17:40 **Water quality monitoring using cryopreserved oyster and barnacle larvae as bio-indicator**
Chao, N.H.*, Hsu, H.W., Ho, H.M., Liao, IC. (Taiwan)
- 17:40-18:00 **Determination of breeding performances of some commercial fishes of the Bay of Bengal**
Das, N.G.* (Bangladesh)
- 18:00-18:20 **Studies on biological characteristics of early development of grey mullet *Mugil cephalus* in hatchery**
Ou, Y.J.*, Lee, J.E. (China)
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Room 1002
College of Social Sciences

Aquaculture - Environmental Management
Chair: Dr. J. Baker (Australia)

Co-chair: Dr. S. M. Liu (Taiwan)

- 10:00-10:30 **Fisheries and the environment**
Baker, J.* (Australia) (Invited speaker)
- 10:30-10:50 **Invasions of sea lice (caligidæ, copepoda) to fishes cultured in ocean cages in Japan and Taiwan**
Ho, J.S.* (USA)
- 10:50-11:10 **A basic study for coastal management in Japan; ciliary stroke of mussels for management of aquaculture, using the endoscope system technique**
Lee-Miki, C.H.H.* (Japan)
- 11:10-11:30 **Coffee Break**
- 11:30-11:50 **A cage culture sustainability index based on key physical features, aquaculture load and sediment quality**
Vaishali, P.*, Matsuda, O. (Japan)
- 11:50-12:10 **Transformation of oxolinic acid in aquaculture pond waters and sediments**
Lai, H.T.*, Dy, Y.P., Chien, Y.H., Liu, S.M. (Taiwan)
- 12:10-12:30 **Relationships among gonad weight, liver weight and body weight of major, common and some Chinese carps under composite culture system with special reference to pond fertilization**
Mahboob, S.*, Sheri, A.N. (Pakistan)

Aquaculture - Environmental Management and Engineering
Chair: Dr. M. B. Larroza (Philippines)

Co-chair: Dr. A. S. L. E. Corea (Sri Lanka)

- 13:30-13:50 **Influence of rate of nutrient loss on fish yields in shallow, irrigation reservoirs of Sri Lanka**
Nissanka, C.*, Amarasinghe, U.S., De Silva, S.S. (Sri Lanka)
- 13:50-14:10 **Inter-local government unit partnership for the coastal resource management of Banate Bay**
Larroza, M.B.* (Philippines)
- 14:10-14:30 **Investigation of the potential of using *Gracillaria edulis* to treat shrimp farm effluents in the Kalpitiya area in Sri Lanka**
Corea, A.S.L.E.*, Jayasinghe, J.M.P.K. (Sri Lanka)

- 14:30-14:50 **Effect of salinity on the growth and survival of *Meretrix meretrix* and *Crassostrea madrasensis* cultured in shrimp effluent canals in the Kalpitiya area of Sri Lanka**
Corea, A.S.L.E.*, Jayasinghe, J.M.P.K., Ekaratne, S.U.K. (Sri Lanka)
- 14:50-15:10 **Biology and management of the snail *Cerithidea cingulata*, a PEST in milkfish ponds**
Bagarinao, T.* (Philippines)
- 15:10-15:30 **Environment and the major epizootics in shrimp culture – the Sri Lankan experience**
Corea, A.S.L.E.*, Jayasinghe, J.M.P.K. (Sri Lanka)
- 15:30-16:00 **Coffee Break**
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- 16:00-16:20 **An alternative for cage aquaculture – the development of recreational fisheries and ecotourism enterprises**
Chen, Y.S.*, Chen, C.P. (Taiwan)
- 16:20-16:40 **Environmental challenges of sustainable aquaculture**
Baker, J.* , Bert, T. (Australia)
- 16:40-17:00 **A novel automatic manipulation system for chromosome manipulation in oyster, *Crassostrea gigas***
Chao, N.H.* , Chu, Y.N., Tsai, H.P., Liao, IC. (Taiwan)
- 17:00-17:20 **Application of EM (effective microorganisms) technology to minimize water pollution in fry rearing tanks at Udawalawa aquaculture development center**
Hirimuthugoda, N.Y.*, Gunawardane, A., Ekanayake, K., Sisira Kumara, H.G. (Sri Lanka)
- 17:20-17:40 **Emerging technologies for mitigation of environmental impacts associated with shrimp aquaculture pond effluents**
Browdy, C.L.* , Bratvold, D., Hopkins, J.S., Stokes, A.D., Sandifer, P.A. (USA)
- 17:40-18:00 **Phytoplankton communities and shrimp production in culture ponds with different water and sediment conditions**
Yusoff, F. M., Matias, H. B., Shariff, M.* (Malaysia)
- 18:00-18:20 **Determination of microcystins in natural waters of Bangladesh by ELISA**
Affan, A., Khan, S.* , Imokawa, M., Ueno, Y. (Bangladesh)
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Room 4001
College of Social Sciences

Capture Fisheries I4I

Chair: Dr. J. G. Jensen (Cambodia)

Co-chair: Dr. S. P. Yeh (Taiwan)

- 10:00-10:20 **A pilot study on the population structure of migratory species (notably pangasiids) in the Mekong**
Macaranas, J.M.*, Mari, G.C., Poulsen, A. (Thailand)
- 10:20-10:40 **Status and distribution of fresh water endemic ornamental fish resources of Kerala**
Radhakrishnan, K.V.*, Kurup, B.M. (India)
- 10:40-11:00 **Distribution and biodiversity assessment of freshwater fishes inhabiting rivers and streams of Kerala (S. India) with special reference to endangered and endemic fishes**
Kurup, B.M.* (India)
- 11:00-11:30 **Coffee Break**
- 11:30-11:50 **Microgeographical diversity and fish species assemblage structure in the pool-riffle habitats of the six major river systems in Kerala**
Manojkumar, T.G.*, Kurup, B.M. (India)
- 11:50-12:10 **Some aspects of colonization success of three species of exotic cichlids in a hydropower reservoir (victoria) in Sri Lanka**
Silva, E.I.L.*, Nathanael, S., Jayasinghe, R.P.P.K., Amarasinghe, U.S. (Sri Lanka)
- 12:10-12:30 **Effect of bottom trawling on the physiochemical parameters along the coastal waters of Kerala (S. India)**
Thomas, J.V.*, Kurup, B.M. (India)

SPECIAL SESSION
- Community and Institutional Issue in Fisheries and Coastal Resources Management

Chair: Dr. M. Ahmed (Malaysia)

Co-chair: Dr. K. Viswanathan (Malaysia)

- 13:30-13:50 **NGO initiatives and co-management lessons and new directions- a comparison of Bangladesh and Southeast Asian countries**
Thompson, P.M.*, Ahmed, M., Viswanathan, K.K., Sultana, P. (Bangladesh)
- 13:50-14:10 **The integrated municipal council as an institution for co-management in the coastal areas of the Philippines**
Baylon, C.C.* (Philippines)

- 14:10-14:30 **Local government unit (LGU) partnership for coastal resource management of Banate Bay, Philippines**
Larroza, M.B.* (Philippines)
- 14:30-14:50 **Community-based coastal resource management in Nasidman Island, Ajuy, Iloilo, Philippines**
Fernandez, P.R.* (Philippines)
- 14:50-15:10 **Impacts of community management of beel fisheries in Bangladesh**
Thompson, P.M.*, Sultana, P. (Bangladesh)
- 15:10-15:30 **Regional and general aspects of institutional and legal issues on fisheries and resource management and implications at local level in Southeast Asia**
Torell, M.* (Malaysia)
- 15:30-16:00 **Coffee Break**
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- 16:00-16:20 **Institutional and legal aspects of fisheries and resource management and implications at local level in Thailand**
Masae, A.*, Bussabong (Thailand)
- 16:20-16:40 **Enforcement and compliance levels in community based fisheries- the case of Indonesia**
Susilowati, I.* (Indonesia)
- 16:40-17:00 **Emerging research issues in community based fisheries and coastal resource management**
Viswanathan, K.K.*, Ahmed, M. (Malaysia)
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Poster Session

Sun Yat-sen Hall (Hallway)

Capture Fisheries

- P1 Thai river sprat *Clupeichthys aesarnensis* lift net efficiency at Sirinthorn reservoir, Thailand
Jutagate, T.*, De Silva, S.S., Mattson, N.S. (Thailand)
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Aquatic Foods

- P2 Studies on new processes intensively of waste fish from the South China Sea
Deng S.G.* (China)
- P3 Preparation of chitinous membrane from *Mictyris brevidactylus* for biosensor construction
Hsieh, B.C.*, Cheng, T.J., Chen, R.L.C. (Taiwan)
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Aquatic Biology

- P4 Effect of phthalate esters on cellular-mediated defense in prawn (*Macrobrachium rosenbergii*)
Kao, W.Y., Su, Y.T., Sung, H.H. * (Taiwan)
- P5 Productivity and phytoplankton communities in the Tapong Bay, southwest of Taiwan, during 1999 to 2000
Su, H.M.* (Taiwan)
- P6 Reproductive cycle of green mussel *Perna viridis* in Southern Taiwan
Chen, T.I.*, Cheng, J.H. Liao, IC. (Taiwan)
- P7 Physiology of salinity adaptation in the milkfish, *Chanos chanos*
Lin, Y.M.*, Chen, C.N., Lee, T.H. (Taiwan)
- P8 Gill and mantle structures of the freshwater clam, *Corbicula fluminea*
Chou, J.B.*, Huang, C.L., Lee, T.H. (Taiwan)
- P9 Na, K, 2Cl-cotransporter: a novel marker for identifying freshwater- and seawater-type mitochondria-rich cells in gills of euryhaline tilapia, *Oreochromis mossambicus*
Wu, Y.C.*, Lin, L.Y., Lee, T.H. (Taiwan)
- P10 Physiological variation during rapid adaptation to seawater of tilapia, *Oreochromis mossambicus*
Wang, P.J.*, Huang, C.L., Lee, T.H. (Taiwan)
- P11 Effects of supplementary dietary serotonin precursors on cannibalism in juvenile grouper *Epinephelus coioides*
Hseu, J.R.*, Lu, F.I., Su, H.M., Wang, L.S., Tsai, C.L., Hwang, P.P. (Taiwan)

- P12 **Role of gill mitochondria-rich cells and its possible mechanism in Cl uptake in freshwater fish**
Chang, I.C.*, Hwang, P.P. (Taiwan)
- P13 **Bycatch of the larval clupeoid fishery in the coastal waters of Taiwan**
Wang, Y.T., Shao, K.T., Tzeng, W.N.* (Taiwan)
- P14 **Migratory environmental histories of gray mullet *Mugil cephalus* L. in the coastal waters of Taiwan as revealed by their otolith Sr/Ca ratios**
Chang, C.W.*, Iizuka, Y., Tzeng, W.N. (Taiwan)
- P15 **Use of Sr/Ca ratios in otoliths to study the migratory behaviors of Japanese eel *Anguilla japonica***
Shiao, J.C.*, Iizuka, Y., Chang, C.W., Tzeng, W.N. (Taiwan)
- P16 **Comparison of the metal concentrations in the livers of 3-year old wild and aquacultured female striped mullet *Mugil cephalus***
Chen, M.N.*, Hsu, S.C., Huang, C.S., Sheen, S.S., Su, W.C., Lee, S.C. (Taiwan)
- P17 **The swimming patterns of *Acrossocheilus paradoxus***
Lin, B.J., Hsieh, K.Y.* (Taiwan)
- P18 **Body composition changes during long-term starvation of the Japanese eel *Anguilla japonica* at the glass eel stage**
Huang, Y.S.*, Lan, H.L., Wang, W.C., Liao, I.C. (Taiwan)
- P19 **The role of the hypothalamic 5-HT, GABA, and NMDA systems in the behavioral thermoregulation of the prespawning female tilapia**
Tsai, C.L.*, Wang, L.H., Tsai, C.H. (Taiwan)
- P20 **Age and energy store of the silvering Japanese eel in the Kaoping River of Southwestern Taiwan**
Han, Y.S.*, Huang, Y.S., Liao, I.C., Tzeng, W.N. (Taiwan)
- P21 ***In vitro* biosynthesis of the open-chain cyano-derivative of furazolidone and its distribution in the grouper *Epinephelus coioides***
Guo, J.J.*, Chou, H.N., Liao, I.C. (Taiwan)
- P22 **The study on larval fish community from coral reef areas in Yehliu, Suao and Kenting, Taiwan**
Chru, H.*, Shao, K.T., Chen, L.S., Wang, Y.T., Tzeng, W.N. (Taiwan)
- P23 ***In vitro* responses of water lily *Nymphaea lotus* to growth regulators 6-benzylaminopurine and indole-3-butyric acid**
Sulaiman, E.*, Kamarudin, M.S., Rashid, A.A., Aziz, M.A. (Malaysia)

- P24 **Protein phosphatase inhibition assay for screening of toxic *microcystis***
Chen, Y.M.* , Bai, J.Y., Lee, Z.H., Chou, H.N. (Taiwan)
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Aquaculture - Breeding and Larviculture

- P25 **The free-living nematode *Panagrellus redivivus* as alternative live food for first feeding larvae: a technology for mass production**
Ricci, M.* , Fifi, A.P., Ragni, A., Schlechtriem, C., Focken, U. (Italy)
- P26 **Treatment of β -1,3-glucan increases resistance of giant tiger shrimp larvae to WSSV**
Liu, K.F.* , Chen, T.I., Horng, K.L., Liu, H.M., Su, M.S. (Taiwan)
- P27 **The effect of water temperature on growth rate of cobia *Rachycentron canadum* in Penghu, Taiwan**
Ueng, P.S.* , Yu, S.L., Tzeng, J.J., Ou, C.H. (Taiwan)
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Aquaculture - Grow-out Technology

- P28 **Is there size-dependent feeding behavior of milkfish *Chanos chanos* cultured semi-intensively in the Philippines**
Lückstädt, C., Focken, U.* , Becker, K. (Germany)
- P29 **Culture of American blue shrimp *Litopenaeus stylirostris* in Taiwan**
Chen, H.C.* (Taiwan)
- P30 **Enhancement of seawater adaptability by supplemented dietary salt in rainbow trout, *Oncorhynchus mykiss***
Kim, P.K.* , Kim, Y., Jeon, J.K. (Korea)
- P31 **Comparison of rearing performance of pure tilapias *Oreochromis niloticus*, *O. aureus*, and *O. mossambicus*, and their intergenetic hybrids**
Liao, IC., Tsay, T.T.* , Chien, Y.H., Chien, R.H., Shie, J.M. (Taiwan)
- P32 **Experimental studies on polyculture of tiger shrimp *Penaeus monodon* with milk fish *Chanos chanos* in Sri Lanka**
Wanninayake, W.M.T.B.* , Kumarasinghe, H.K.M.A., Edirisinghe, U. (Sri Lanka)
- P33 **Experimental culture of tiger shrimp (*Penaeus monodon*) in low salinity environment in Sri Lanka**
Wanninayake, W.M.T.B.* , Ratnayake, R.M.T.K., Edirisinghe, U. (Sri Lanka)
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Aquaculture - Environmental Management

- P34 **Accumulation of organic matter and effect of drying on decomposing organic matter in bottom mud of eel culture ponds**
Chen, Y.H., Lin, T.J., Chen, I.M.* (Taiwan)

- P35 **Fertilization regime and application method in reservoirs**
Wu, Z.W.* (China)
- P36 **Recent development of integrated rice-fish culture in west China**
Chen, G.Z., Wu, Z.W., Miao, H.* (China)
- P37 **Studies on water quality criteria of pesticides for farming black tiger shrimp *Penaeus monodon***
Chen, H.C.* (Taiwan)
- P38 **Effect of water quality on the toxicity of copper to cobia *Rachycentron canadum* larvae in different kinds of seawater**
Hsieh, C.S.*, Chang, S.L., Chen, T.I. (Taiwan)
- P39 **Accumulation of nitrate in the tissue of *Penaeus monodon* following elevated ambient nitrate exposure**
Cheng, S.Y., Tsai, S.J., Chen, J.C.* (Taiwan)
- P40 **Effect of temperature, stocking density, and fish size on the ammonia excretion of palmetto bass *Morone saxatilis* × *M. chrysops***
Liu, F.G.*, Yang, S.D., Liao, I.C. (Taiwan)
- P41 **Effects of body weight, ration size and dietary protein level on ammonia excretion and fecal production by Nile tilapia, *Oreochromis niloticus***
Oh, S.Y., Jo, J.Y.*, Park, J., Noh, H., Kim, I.B. (Korea)
- P42 **Oxygen consumption rate of olive flounder *Paralichthys olivaceus***
Kim, Y.*, Kim, H.B., Jo, J.Y. (Korea)
- P43 **Effect of pH on the nitrogenous excretion and lethal DO of tilapia, *Oreochromis mossambica***
Chen, S.M.*, Chen, P.C., Hsiao, I.C., Chen, J.C. (Taiwan)

Aquaculture - Engineering

- P44 **The study of automatic feeding system for offshore cage culture**
Cheng, H.J.*, Chen, T.I., Su, M.S. (Taiwan)
- P45 **The development study and extension on automatic indoor recirculating shrimp culture system**
Chen, S., Liang, R.Y.* (Taiwan)

Aquaculture - Development

- P46 **Optimization of nutrient dynamics and fish for integrated agriculture-aquaculture systems**
Van Dam, A.*, Komen, H. (Netherlands)
-

Nutrition, Feeds and Feeding Management

- P47 **Study on the optimal density of mass culture in copepod *Apocyclops royi***
Cheng, S.H.*, Chen, H.C., Chang, S.L., Chen, T.I. (Taiwan)
- P48 **Dietary DHA/EPA on growth and immune responses of juvenile grouper *Epinephelus malabaricus***
Wu, F.C., Chen, H.Y.* (Taiwan)
- P49 **Effects of protein/energy ratio on growth of juvenile cobia *Rachycentron canadum***
Her, B.Y.*, Chou, R.L., Chen, T.I., Su, M.S., Liao, IC. (Taiwan)
- P50 **Culture of fish larvae with micro-particle diets**
Liou, B.S.*, Chen, T.I., Su, M.S., Liao, IC. (Taiwan)
- P51 **Apparent digestibility of selected feed ingredients in diets for grouper *Epinephelus coioides* juveniles**
Eusebio, P.S.*, Coloso, R.M., Mamauag, R.E.P. (Philippines)
- P52 **High efficient closed recirculating tube-system use for *Penaeus monodon* culture**
Piyatiratitivorakul, S.*, Rengpipat, S., Viyakarn, V., Nitithamayong, C., Menasveta, P., Mita, T., Maruyama, M. (Thailand)
- P53 **Effects of illumination on the distribution of docosahexaenoic acid (DHA) in DHA-enriched *Euglena gracilis***
Yukino, T.*, Hayashi, M. (Japan)

Fish Disease

- P54 **Effect of temperature, salinity and chemical drugs on the in vitro propagation of the dinoflagellate parasite *Amyloodinium ocellatum***
Chang, C.F.*, Yang, C.H., Shu, Y.O., Chen, T.I., Su, M.S. (Taiwan)
- P55 **Status of Epizootic ulcerative syndrome in Bangladesh fisheries**
Sarker, M.G.A.*, Chowdhury, M.B.R. (Bangladesh)
- P56 **CpG oligodeoxynucleotides enhance the non-specific immune responses on carp, *Cyprinus carpio***
Malina, A.C.*, Tassakka, A.R., Sakai, M. (Japan)
- P57 **Comparison of WSBV (white spot baculovirus) DNA using different oligonucleotide primers**
Kim, Y.J., Jung, S.J., Kim, H.R., Oh, M.J.* (Korea)
-

Socio-economics and Marketing

P58 **The economic effects analysis of Island eco-tourism: Case study on the Wang-An Island
Green Turtle Protected Area in Pescadores**

Hsu, C.H.* , Wu, T.C., Chuang, C.T., Chen, C.T., Ho, T.C. (Taiwan)

For Your Notes

The following posters are contributed from the Fisheries Society of Taiwan

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- TP1 **Design and outdoor recirculating system for the culture of white shrimp *Litopenaeus vannamei* broodstock**
Shiau, L.J., Chen, IM., Chang, M.C.
- TP2 **Physiological responses to cold shock in milkfish and grass carp**
Hsieh, S.L., Kuo, C.M.*
- TP3 **Nitrogenous excretions of *Marsupenaeus japonicus* exposed to elevated ambient nitrite-N**
Lee, W.C., Chen, J.C.*
- TP4 **The immune resistance of freshwater prawn *Macrobrachium rosenbergii* under nitrite stress**
Liu, C.H., Cheng, W., Chen, J.C.*
- TP5 **Morphological features and Na^+/K^+ -ATPase immunolocalization of gills in euryhaline milkfish, *Chanos chanos***
Chen, C.N.*, Lee, T.H.
- TP6 **Characterization of nerve cells and molt-Inhibiting hormone neurosecretory cells in the eyestalk of *Penaeus monodon***
Tsai, Y.J.*, Shih, T.W., Chang, C.F.
- TP7 **Differential stimulation of enzyme activity and protein level of Na^+/K^+ -ATPase in the organs of tilapia (*Oreochromis mossambicus*) upon acute seawater challenge**
Huang, Y.H.*, Weng, C. F., Huang, P.P.
- TP8 **Functional and structural changes of mitochondria-rich cells in tilapia larvae (*Oreochromis mossambicus*) acclimated to ambient chloride levels**
Lin, L.Y.*, Huang, P.P.
- TP9 **The chloride uptake mechanism in larval tilapia (*Oreochromis mossambicus*)**
Lin, L.J.*, Yen, C.T., Huang, P.P.
- TP10 **Expression of Soluble Thioredoxin Fused—Carp (*Cyprinus carpio*) Ovarian Cystatin with His-Tag in *Escherichia coli***
Tzeng, S.S.*, Chen, G.H, Jiang, S.T.
- TP11 **Screening hemagglutinins of freshwater microalgae with animal and human erythrocytes**
Chu, C.Y.*, Shi-Li Chen, S.L., Liao, W.R., Rang Huang, R., Lin, L.P.
- TP12 **Steroid hormones affect the expression of hepatocyte nuclear factors (HNFS) -1 α , -1 β and -3 β in the gonad of tilapia (*Oreochromis mossambicus*)**
Huang, W.T.*, Gong, H.Y., Cliff Ji-Fan Lin, Mark Hung-Chih Chen, Ching-Feng

- TP13 **Hammerhead ribozymes on the cleavage of VP5 RNA in infectious pancreatic necrosis virus (IPNV) at low temperature**
Wang, W.L.*; Weng, C.F., Hong, J.R., Gong, H.Y., Wu, J.L.
- TP14 **The isolation and culture of protoplasts from red alga, *Bangia fuscopurpurea***
Tasi, M.F., Wang, Y.F., Wu, M.Y., Shyu J.F., Chung-Sing Chen, C.S.*
- TP15 **The effect temperature on the formation of crust and initiation of erect phase from crust phase in *Endarachne binghami***
Wu, M.Y., Shyu, J.F., Tasi, M.F., Wang, Y.F., Chen, C.S.*
- TP16 **Biodegradation of S-heterocyclic compounds in anoxic sediments**
Lai, E.*, Liu, S.M.
- TP17 **Biodegradation of 3-methylquinoline and 4-methylquinoline in sediment slurries under anaerobic conditions**
Hsu, J.*, Liu, S.M.
- TP18 **Ex/in vivo immune bioactivity of the hot water extracts of *Halitotis diversicolor*, *Chanos chanos* and *Tilapia (Oreochromis nilotica × O. aureus)***
Lin, K.Y., Huang, R., Lai, C.W., Kong, Z.L.*
- TP19 **Identification of fish species and toxin in dried dressed fish fillets of *Lagocephalus lunaris*-like in mainland china**
Chen, T.Y., Hsieh, Y.W., Shui, L.M., Chen, K., Hwang, D.F.*
- TP20 **Identification of tetrodotoxin and fish species in dried dressed fish fillet implicated in food poisoning**
Hwang, D.F.*, Hsieh, Y.W., Shiu, Y.C., Chen, S.K., Cheng, C.A., Lu, Y.H.
- TP21 **Cloning and expression of estrogen receptors in the protandrous black porgy, *Acanthopagrus schlegelii*: the implication of sex change mechanism**
Huang, Y.S.*, Chang, C.F.
- TP22 **Hemagglutination, antibiotic activity and identification of *Chlorella* spp. Isolates**
Chen, S.L., Chu, C.Y., Liao, W.R., Huang, R., Lin, L.P.*
- TP23 **Agglutinating activity from marine algae of Taiwan**
Chung, C.C., Chen, K.Y., Liao, W.R., Lin, J.Y., Chiang, Y.M., Lin, L.P., Huang, R.
- TP24 **Application of Flow Cytometry to Identify Triploidy Small Abalone, an Aquaculture Option in Asia**
Tsai, F.N.*, Tsai, H.P., Chao, N.H.

- TP25 **Functional genes mediating the osmoregulation during hyperosmotic shock in tilapia (*Oreochromis mossambicus*) brain**
Wu, C.J., Gong, H.Y., Yang, M.W., Chen, L.H., Weng, C.F., Wu, J.L.
- TP26 **What are the giant flying squid (*Thysanoteuthis rhombus* Troschel, 1857) of fisheries and the fish distribution of survey in Taiwan**
Kang, W.F.*
- TP27 **Statoconia of the hagfish *Paramyxine nelsoni*, with comment on its implication in age determination**
Lee, Y.H.*, Mok, H.K., Huang, H.T.
- TP28 **Application of Geographical Information System (GIS) on site selection of artificial habitats in northwestern Taiwan**
Wang, J.H., Chen, Y.K., Huang, C.S., Liu, C.C., Lin, C.Y., Tseng, C.T.
- TP29 **The economic effects analysis of Island Eco-tourism: case study on Wang-An Island green turtle protected area in Pescadores**
Hsu, C.H.*, Wu, T.C., Chuang, C.T., Chen, C.T., Ho, T.C.
- TP30 **The ocean color research in Taiwan waters**
Tseng, W.C.*, Hsiao, Y.F., Chen, C.T., Ho, C.R., Kuo, N.J.
- TP31 **Effect of Heavy Metal Pollution on the Phytoplankton Composition in Yin-Yang Waters of northeastern Taiwan**
S Yeh, S.U., Li, Y.T., Wu, S.S., Huang, Y.Z.*, Chen, C.T.
- TP32 **A Study on Sustainable Tourism Development in terms of Potential and Value Assessment in Hsiao-Liu-Chiu Island**
Huang, H.R., Chuang, C.T.*
- TP33 **The application of algal polysaccharides and its agarases digested oligosaccharides**
Yuan, J.D., Wu, S.C., Wen, T.N., Pan, C.L.
- TP34 **Characterization of chemical composition of cage cultured cobia (*Rachycentron canadum*)**
Shiau, C.Y., Lin, R.T., Li, Y.L., Chiou, T.K.
- TP35 **Effect of dietary α -tocopherol on lipid peroxidation of hybrid tilapia (*Oreochromis niloticus* \times *O. aureus*) tissues**
Chang, R.J., Huang, S.L.*, Huang, C.H.
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