

產學合作專利

- 水食系：
1. Ho, C-T., Li, S., **Pan, M-H.**, LO, C-Y., Dushendov, S. Polymethoxylated flavones and use thereof, US provisional patent, filed on March 16, 2006.（潘敏雄老師）

2. 中華民國專利證書。發明第 I243646 號。新穎之乳酸菌及其細菌素、利用該類乳酸菌之魚肉食品加工方法與產品以及豆類食品加工方法與產品。專利權期限：自 2005/11/21~2023/4/17（殷儷容老師）。
3. 中華民國專利證書。發明第 I259207 號。亞硫酸鹽還原酵素之純化方法。專利權期限：自 2006/8/1~2023/3/23（殷儷容老師）。

4. Shann-Tzong Jiang and Li-Jung Yin. 2007. Sulfite Reductase, The Process for Producing the same and the use thereof。美國專利 02/27/2007 核准通過（美國專利第 US7183091B2; Feb. 27, 2007）（殷儷容老師）。



教學設備更新

- 漁管系：
- 系上承接行政院農業委員會遠洋漁業開發中心承接漁業訓練組之漁船船員訓練開班，故將系上原 6203 室「魚類標本室」將改為「航儀實習室」。
- 水食系：
- 楠梓實習工廠-抽油煙機（1 式）、連續式固液分離機、臥式冷凍櫃、立式冷凍櫃、封瓶機、封蓋機各 1 台。

●食品微生物研究室-高效能液相層析儀。

●精密儀器室- Photodiode array detector 光二極體陣檢出器。

●細胞生物研究室-核糖核酸分析系統(Roche Light Cycler 1.5 System Real time PCR)。

●本系楠梓實習工廠、水產化學實驗室及有機分析實驗室皆已全部加裝冷氣。
- 養殖系：
- 教學實驗用蒸餾水製造機及製冰機進水前置過濾用淨水器組 1 組。
- 病原生物顯微照相及錄影，應用於教學， 提升教學效果--USB 數位攜帶型顯微影像攝影系統 1 部。

●分子生物實驗用平板式迷你電用槽組。

●水質分析實驗用分光光度計。

●鼓風機。

●水質學實驗用四位數電子天平。

●養殖生物蓄養用 1800 公升方形 FRP 桶。

●養殖場教學實驗用淡水水供應系統。
- 海生系：
- 96 年度教學實驗研究設備補助經費增購水浴槽、搖擺器、微量濃縮機、分光光度計、核酸電泳槽、細胞培養箱。

●96 年度教育部「生物及醫學科技人才培育先導型計畫」經費增購細胞培養箱、微生物培養箱、離心冷凍乾燥機、低溫水浴槽、水浴槽、超低溫櫃、桌上型微量離心機、分光光譜儀。

學生獲獎情形與比賽

水食系：

本系學生邱建緯等人獲九十六年度全國技專校院「家政餐旅群組」學生專題製作競賽優良獎。

水圈學院

技術 新穎 創造未來

研究計畫及成果

編號	年度	期刊論文	參與教師
90	95	Li-Jung Yin , Pei-Chien Wu, Hsiu-Ho Cheng, and Shann-Tzong Jiang. 2006. Conditions for induction of some selective enzymes from Bacillus subtilis and their hydrolysis ability against mackerel and asparagus. Proceedings of the IUFOST 13th World Congress of Food Science&Technology Program. No. 1336, p. 31, 2006 the IUFOST Congress 'Food is Life', Sep. 17-21st , Nantes, French.	殷儷容
91	95	Li-Jung Yin , Chien-Li Chen, Shann-Tzong Jiang. 2006. Screening of mannanase-producing bacteria and medium effect on mannanase. Proceedings of the 36th Annual Meeting of the Chinese Institute of Food Science and Technology, p. 244, Nov. 24 , 2006, Keelung, Taiwan.	殷儷容
92	95	Li-Jung Yin , Gen-Hung Chen, Hsin-Hon Lin, Jein-Hwa Lee and Shann-Tzong Jiang. Isolation of a Keratinase-Producing Bacterium and Purification of its Keratinase. Proceedings of the 36th Annual Meeting of the Chinese Institute of Food Science and Technology, p. 278, Nov. 24, 2006 , Keelung, Taiwan.	殷儷容
93	95	Hsiu-Ho Cheng, Li-Jung Yin and Shann-Tzong Jiang. Medium Effect on the Expression of Enzyme Activities of Bacillus subtilis and Hydrolysis of Waste of Shrimp Head. Proceedings of the 36th Annual Meeting of the Chinese Institute of Food Science and Technology, p. 281, Nov. 24, 2006 , Keelung, Taiwan.	殷儷容
94	95	Y-S Huang, W-L Huang, W-F Lin, M-C Chen, and S-R Jeng, (2006) An endothelial- cell-enriched primary culture system to study vascular endothelial growth factor (VEGF A) expression in a teleost, the Japanese eel (Anguilla japonica), Comp. Biochem. Physiol. (A), 145: 33-46.	陳鳴泉
95	95	S. P. Chen, H-L Yang, H-Y Lin, M-C Chen, J-L Wu, and J-R Hong, (2006) Enhanced viability of a nervous necrosis virus-infected stable cell line over-expressing a fusion product of the zfBcl-xL and green fluorescent protein genes, J. Fish Diseases 29: 347-354.	陳鳴泉
96	95	YiJu Chou, ShihYi Sheu, DerShyan Sheu, JihTerng Wang, WenMing Chen. 2006. <i>Schlegelella aquatica</i> sp. nov., a novel thermophilic bacterium isolated from a hot spring. <i>International Journal of Systematic and Evolutionary Microbiology</i> 56, 2793-2797 [SCI].	許世宜
97	96	Geoffrey N. Elliott, WenMing Chen, JuiHsing Chou, HuiChun Wang, ShihYi Sheu, Liamara Perin, Veronica M. Reis, Lionel Moulin, Marcelo F. Simon, Joan M. Sutherland, Rosana Bessi, Sergio M. de Faria, Michael J. Trinick, Alan R. Prescott, Janet I. Sprent, Euan K. James. 2007. <i>Burkholderia phymatum</i> is a highly effective nitrogen fixing symbiont of <i>Mimosa</i> spp. and fixes nitrogen <i>ex planta</i> . <i>New Phytol.</i> 173, 168-180 [SCI].	許世宜
98	96	ShihYi Sheu, WenMing Chen, GuangHuey Lin. 2007. Characterization and application of a rolling-circle-type plasmid from <i>Cupriavidus taiwanensis</i> . <i>Plasmid</i> 57, 275-285 [SCI].	許世宜
99	96	YiJu Chou, Geoffrey N. Elliott, Euan K. James, KuanYin Lin, JuiHsing Chou, ShihYi Sheu, DerShyan Sheu, Janet I. Sprent, WenMing Chen. 2007. <i>Labrys neptuniae</i> sp. nov., isolated from the root nodules of the aquatic legume <i>Neptunia oleracea</i> . <i>International Journal of Systematic and Evolutionary Microbiology</i> 57, 577-581 [SCI].	許世宜
100	96	JuiHsing Chou, ShihYi Sheu, KuanYin Lin, WenMing Chen, A. B. Arun and ChiuChung Young. 2007. <i>Comamonas odontenteritis</i> sp. nov., isolated from gut of the termite <i>Odontotermes formosanus</i> . <i>International Journal of Systematic and Evolutionary Microbiology</i> 57, 887-891 [SCI].	許世宜
101	96	WenMing Chen, Sergio M. de Faria, Euan K. James, Geoffrey N. Elliott, KuanYin Lin, JuiHsing Chou, ShihYi Sheu, M. Cnockaert, Janet I. Sprent, Peter Vandamme. 2007. <i>Burkholderia nodosa</i> sp. nov., isolated from root nodules of the woody Brazilian legumes <i>Mimosa bimucronata</i> and <i>Mimosa scabrella</i> . <i>International Journal of Systematic and Evolutionary Microbiology</i> 57, 1055-1059 [SCI].	許世宜
102	96	ShihYi Sheu, KuanYin Lin, JuiHsing Chou, PohShing Chang, A. B. Arun, ChiuChung Young, WenMing Chen. 2007. <i>Tenacibaculum litopenaei</i> sp. nov., isolated from a shrimp mariculture pond. <i>International Journal of Systematic and Evolutionary Microbiology</i> 57, 1148-1153 [SCI].	許世宜
103	96	JuiHsing Chou , YiJu Chou , KuanYin Lin, ShihYi Sheu, DerShyan Sheu, AB Arun , ChiuChung Young , WenMing Chen. 2007. <i>Paenibacillus fonticola</i> sp. nov., a novel bacterium isolated from a warm spring. <i>International Journal of Systematic and Evolutionary Microbiology</i> 57, 1346-1350 [SCI].	許世宜
104	96	KuanYin Lin, ShihYi Sheu, PohShing Chang, JangCheon Cho , WenMing Chen. 2007. <i>Oceanicola marinus</i> sp. nov., a marine alphaproteobacterium isolated from seawater collected off Taiwan. <i>International Journal of Systematic and Evolutionary Microbiology</i> 57, In press [SCI].	許世宜

研究計畫及成果

編號	年度	期刊論文	參與教師
105	95	Huang, Y. T., Huang, Y. H., Hour, T. C., Pan, B. S., Liu, Y. C. and Pan, M. H. (2006) Apoptosis-inducing active components from Corbicula fluminea through activation of caspase-2 and production of reactive oxygen species in human leukemia HL-60 cells. Food Chem. Toxicol. 44:1261-1272.	黃胤唐
106	95	Cheng, A. C., Huang, T. C., Lai, C. S., Kuo, J. M., Huang, Y. T., Lo, C. Y., Ho, C. T. and Pan, M. H. (2006) Pyrrolidine dithiocarbamate inhibition of luteolin-induced apoptosis through up-regulated phosphorylation of Akt and caspase-9 in human leukemia HL-60 cells. J Agric Food Chem. 54:4215-4221.	黃胤唐
107	95	Chou, Y.-J., Sheu, S.-Y., Sheu, D.-S., Wang, J.-T., and Chen, W.-M. (2006). Schlegelella aquatica sp. nov., a novel thermophilic bacterium isolated from a hot spring. Int. J. System. Evol. Microbiol. 56: 2793-2797. [SCI / IF: 2.744].	許德賢
108	96	Chou, J.-H., Chou, Y.-J., Lin, K.-Y., Sheu, S.-Y., Sheu, D.-S., Arun, A. B., Young, C.-C., and Chen, W.-M. (2007). Paenibacillus fonticola sp. nov., isolated from a warm spring. Int. J. Syst. Evol. Microbiol. 57, 1346-1350. (SCI IF: 2.74, Rank: 27/86 Microbiology).	許德賢
109	96	Chou, Y.-J., Elliott, G.N., James, E.K, Lin, K.-Y., Chou, J.-H., Sheu, S.-Y., Sheu, D.-S., Sprent, J.-I., and Chen, W.-M. (2007). Labrys neptuniae sp. nov., isolated from the root nodules of the aquatic legume Neptunia oleracea . Int. J. Syst. Evol. Microbiol. 57, 577-581. (SCI IF: 2.74, Rank: 27/86 Microbiology).	許德賢
110	96	Chen S.D., Sheu, D.-S., Chen, W.-M., Lo, Y.C., Huang, T.I., Lin, C.Y., and Chang, J.S. (2007). Dark Hydrogen Fermentation from Hydrolyzed Starch Treated with Recombinant Amylase Originating from Caldimonas taiwanensis On1. Biotechnol. Prog. (in press)	許德賢
111	95	Identification of the unclescapsid, tegument and envelope proteins of the shrimp white spot syndrome virus virion. J. Virol. 80:3021-9(2006)	蔡志明
112	95	White spot syndrome virus (Nimaviridae). In “Encyclopedia of Virology.”(Mahy,B.and Regenmortel,M. V. eds)Third ed. Published by Elsevier Ltd.,UK.(submitted)(2006)	蔡志明
113	95	CY Cheng , CH Chang, YJ Wu, and YK Li (2006) Exploration of Glycosyl Hydrolase Family 75, a Chitosanase from Aspergillus fumigatus. J. Biol. Chem. 281:3137-3144.	鄭至玉
114	96	KY Lin, SY Sheu , PS Chang , JC Cho , WM Chen*(2007). Oceanicola marinus sp. nov., a marine alphaproteobacterium isolated from seawater collected off Taiwan(in press) . International Journal of Systematic and Evolutionary Microbiology.	張朴性
115	96	SY Sheu, KY Lin, JH Chou, PS Chang , AB Arun , CC Young , WM Chen*(2007). Tenacibaculum litopenaei sp. nov., isolated from a shrimp mariculture pond(in press). International Journal of Systematic and Evolutionary Microbiology.	張朴性
116	96	J. J. Hwang , T. Yamakawa and I. Aoki (2007). Growth of wild pearl oysters Pinctada fucata, Pinctada margaritifera and Pinctada sugillata (Bivalvia: Pteriidae) in Taiwan. Fisheries Science. 73:132-141.	黃娟娟
117	96	J. J. Hwang (2007). Reproductive cycles of the pearl oysters Pinctada fucata (GOULD) and Pinctada margaritifera (LINNAEUS) (BIVALVIA: PTERIIDAE) in Southwestern Taiwan waters. Journal of Marine Science and Technology. 15 (2) :67-75.	黃娟娟
118	96	Twan, W. H., Lee, Y. H., Wu, H. F., Yueh, W. S. , Jeng, S. R., Hwang, J. S., and Chang, C. F. (2007) . Conserved roles of hormones in the reproduction of the Scleractinian Coral, Euphyllia ancora. J. Fish. Soc. Taiwan, 34 (1): 1-9.	岳文勛
119	96	Wu, G. C., X. Y. Lee, J. L. Du, Y. H. Lee, W. S. Yueh , and C. F. Chang (2007) . Temporal and spatial expression of the sex-related genes during sex differentiation and sex change in the Protandrous Black Porgy, Acanthopagrus schlegelii, The 8th International Symposium on Reproductive Physiology of Fish. O-26.	岳文勛
120	96	Jeng, S. R., W. S. Yueh , S. Dufour, and C. F. Chang (2007) . Differential expression and regulation of gonadotropins and their receptors in the Japanese eel, Anguilla japonica, The 8th International Symposium on Reproductive Physiology of Fish. p. P-156.	岳文勛
121	96	Yueh, W. S. , S. R. Jeng, H. F. Yen, and C. F. Chang (2007) . 17,20 ,21-Trihydroxy-4- pregnen-3- one is an oocyte maturation-inducing steroids in protandrous yellowfin porgy, Acanthopagrus latus. The 8th International Symposium on Reproductive Physiology of Fish. The 8th International Symposium on Reproductive Physiology of Fish. p. P-185.	岳文勛
122	96	Jeng, S. R. , Yueh, W. S., Chen, G. R., Lee, Y. H., Dufour, S. and Chang, C. F. (2007). Differential expression and regulation of gonadotropins and their receptors in the Japanese eel, Anguilla japonica. General and Comparative Endocrinology 154, 161-173. (SCI期刊)	鄭綯如

教師研究成果分享

The effects of dietary supplementation of alga Haematococcus pluvialis, synthetic astaxanthin and beta-carotene on survival, growth, and pigment distribution of red devil, Cichlasoma citrinellum

Chih-Hung Pan and Yew-Hu Chien

abstract

Natural carotenoids (CD) from astaxanthin (AX) containing alga Haematococcus pluvialis (H) and a synthetic AX CAROPHYLL® Pink (A), and a synthetic beta-carotene (BC) CAROPHYLL® Yellow (B) were supplemented in formulated diets at two concentrations, 80 (I) and 160 (II) mg/kg, resulting in six pigmented diets HI, AI, BI, HII, AII, and BII. Formulated diet without CD supplementation served as a control (C). These diets were fed to an ornamental fish red devil, Cichlasoma citrinellum, for 8 weeks. Systematic comparisons were made on various pigment sources: AX versus BC; natural AX versus synthetic AX; and levels in diets, for their effects on survival, growth, and body AX and BC distribution of the fish. No difference in survival rate and weight gain was found among all fish. The deposition of BC was much poorer than AX so that the dominant CD presented was AX. Average AX/BC ranged from 1 to 100 in all tissue investigated. Dietary BC hardly had contribution to body BC and AX content. Esterified AX and free AX were deposited with equal efficiency in all tissues except in gonad. A-fish had higher AX content in gonad than H-fish. The efficiency of AX deposition in skin was (AII=HII) > (AI=HI) > (BII=BI=C). Disregarding the treatment effects, the overall average AX content in tissue in descending order was gonad > fin ≥ (intestine = skin) > liver > muscle.

The effect of dietary protein levels on growth, survival and feed efficiency of the turtle, Ocadid sinesis.

Chih-Hung Pan and Yew-Hu Chien

abstract

Growth performance of turtle was significantly affected by dietary protein. The WG of turtle fed diet containing 15% protein was the lowest among all dietary groups. It was significantly less(p<0.05) than those from turtle fed diets containing more than 21% protein. FER and PER showed similar trends as WG.. Increasing of protein retention with increasing dietary protein was observed. At dietary protein supplement level of 33% had highest FER. The FER of turtle fed with 15% protein were lowest than those of the turtle fed with 21, 27, 33, 39, and 45%, respectively. PER at dietary protein supplement level of 33, 39, and 45% were significantly higher than those that at dietary protein supplement levels of 15, 21, and 27%. PPV at dietary protein levels were not significant between groups. At dietary protein supplement level of 21, 27, and 33%, protein retention increased significantly (p<0.05). Crude protein content of whole body also increased linearly when dietary protein supplementation from 15% up to 33%. WG exhibited an increasing phase until the dietary protein supplementation level reached a plateau phase between 39% and 45 %. When analyzed by broken-line regression, the break-points based on WG was 38.1%. Survival was significantly affected by dietary protein. The survival of turtle fed diet containing 45% protein was the lowest among all dietary groups and was significantly less(p<0.05) than those from turtle fed diets containing less than 39% protein. Proximate composition of turtle body was 60.0-62.7% moisture, 20.5-23.5% crude protein, 10.3-10.8 % crude lipid, and 8.2-8.9 % ash .

Effects of Dietary Supplementation of Carotenoids on Survival, Growth, Pigmentation, and Physico-Chemical Stress Resistance of Characins Hyphessobrycon callistus

Chih-Hung Pan and Yew-Hu Chien

Abstract

This study was aimed at determining if the increase of body astaxanthin and b-carotene content through dietary carotenoid supplementation in Characins Hyphessobrycon callistus could enhance its antioxidant defense capability and resistance to various stresses. Dietary carotenoid supplement was composed of the combinations of 3 sources of carotenoid: astaxanthin (A), b-carotene (B), and mix of the two (M), and 3 concentrations for each source: 10, 20, and 40 mg kg⁻¹. No differences in growth and survival of the fish among treatments were found after 8 weeks' rearing. Disregarding the source of dietary carotenoid, astaxanthin dominated highly (>98%) the body carotenoid indicating that this fish converted most dietary β-carotene into body astaxanthin for storage. Astaxanthin in B-fed fish was lower than that in A-fed fish and M-fed fish, between which were of no difference. A-fed fish, B-fed fish, and M-fed fish had no differences in body b-carotene. Body astaxanthin and β-carotene content increased with increasing dietary carotenoid concentration. The resulting fish were then exposed to hypothermal stress (28 °C to 15 °C for 3 h), hyperthermal stress (28 °C to 33 °C for 3 h), hypoxia stress (6.5 mg O₂ l⁻¹ to 1.0 mg O₂ l⁻¹ for 2.5 h), ammonia stress (total ammonia-N 15 mg l⁻¹ for 72 h), and low pH stress (pH 8.0 to pH5.6 for 72 h).