INFORMATION OF INTEREST

- Interesting paper on "Responsible Approach to Marine Stock Enhancement: An Update" by Lorenzen et al., 2010: see pdf copy
- EU project AquaFuels document on taxonomy of algae that have arisen an interest for biofuel production
- Aquafeed.com: eMagazine Advances in Processing & Formulation
- 2009 Strategy for an Environmentally Sustainable Norwegian Aquaculture Industry: see pdf copy
- World Press Conference on Aquaculture at the Shanghai World Expo 2010: see website
- EuroParliament TV reports about aquaculture: see video clip
- In memoriam Magda Vanhooren, ARC secretary: see website
- Food security: feeding the world in 2050
- Phil. Trans. R. Soc. B, 2010, vol 365: special theme issue compiled and edited by H. Charles, J. Godfray, J. R. Beddington, I. R. Crute, L. Haddad, D. Lawrence, J. F. Muir, J. Pretty, S. Robinson and C. Toulmin; see website
- Aquaculture: global status and trends: Bostock et al., 2010. Phil. Trans. R. Soc. B, 365:2897-2912; see article
- Will the Oceans Help Feed Humanity? Duarte et al., 2009. BioScience 59: 967–976; see article
- New FAO publication: "Impact of rising feed ingredient prices on aquafeeds and aquaculture production" by Rana, K.J.; Siriwardena, S.; Hasan, M.R., 2009, FAO Fisheries and Aquaculture Technical Paper. No. 541, 63p. See website
- International Network for the Availability of Scientific Publications (INASP): website for INASP Newsletters
- Throwing Stones. Making Ripples or Waves? The Future for African aquaculture?
- Summary of June 2010 discussions from the SARNISSA email forum: see website
- New book: "New technologies in aquaculture: Improving production efficiency, quality and environmental management" (Burnell, G. and G Allan G., 2010): see contents
- FAO Aquaculture Publications 1999–2008 available on USB stick: see website
- Web site showing the locations of aquaculture sites and their characteristics, using "Google Maps and Google Earth" technology is now available on the FAO website
- New FAO Technical Papers:
    - Measuring the contribution of small-scale aquaculture: an assessment. Bondad-Reantaso M.G.; Prein, M. (eds). Measuring the contribution of small-scale aquaculture:

an assessment. *FAO Fisheries and Aquaculture Technical Paper*. No. 534. Rome, FAO. 2009. 180p. Website for downloading

- Strengthening aquaculture health management in Bosnia and Herzegovina Bondad-Reantaso, M.G.; Arthur, J.R.; Subasinghe, R.P. (eds). Strengthening aquaculture health management in Bosnia and Herzegovina. *FAO Fisheries and AquacultureTechnical Paper*; No. 524. Rome, FAO. 2009. 83p. Website for downloading
- Understanding and applying risk analysis in aquaculture: a manual for decision-makers. Arthur, J.R.; Bondad-Reantaso, M.G.; Campbell, M.L.; Hewitt, C.L.; Phillips, M.J.; Subasinghe, R.P. Understanding and applying risk analysis in aquaculture: a manual for decision-makers.
  FAO Fisheries and AquacultureTechnical Paper; No. 519/1. Rome, FAO. 2009. 113p. Website for downloading

- LIFECYCLE – EU research project to boost European fish farming: see website

- New Journal: Aquaculture Environment Interactions: see website

- American Fisheries Society: Journal of Aquatic Animal Health Volume: 22, Number: 3 (September) is now available online

- American Fisheries Society: North American Journal of Aquaculture Volume: 72, Number: 4 (October) is now available online

- FAO Global Conference on Aquaculture 2010 (Phuket, Thailand, 22-25 September 2010).

- Audio recordings of the keynote addresses, plenary lectures, invited guest lectures and presentations of the thematic sessions and the discussions thereof are now available for download / online streaming from this link

- Well-documented publication on Kenyan and more generally on tropical aquaculture with very good pictures and figures: see website

- In memoriam Magda Vanhooren: our beloved ARC secretary who took care of our foreign students ever since 1978, and who was responsible for the BibMail initiative, passed away last June 20 after a short disease. See our website for more information

VLIZ Library Acquisitions no

- 481 September 24, 2010
- 482 October 1, 2010
- 483 October 15, 2010
- 484 October 22, 2010
- 485 October 29, 2010

INTENSIVE CULTURE OF ARTEMIA URMIANA IN SEMI-FLOW THROUGH SYSTEM FEEDING ON ALGAE DUNALIELLA AND WHEAT BRAN

Behrooz Atashbar, Naser Agh, Ehsan Kmerani-2010

Int. J. Aqu. Sci. 1(1): 3-9

Abstract:
Artemia is a tiny crustacean that lives in salty lakes. Artemia urmiana is one of the important species of it. Its high nutritional values and various forms with many applications have caused this creature to be considered as the most valuable live food for the cultured aquatic animals. Current research was carried out in order to find out the bio-technique for intensive culture of Artemia with semi-flow through

system using unicellular algae (Dunaliella) and wheat bran as food source. The tanks inoculated with 5000 newly hatched Artemia larvae/liter. Artemia were harvested for 14 days. The average production of live Artemia in each three tanks reached to 7116.7 g. The mean length of Artemia in the last day of culture period was 4.09 mm and mean survival rate 42 percent. It was concluded that partial removal of waste material from culture medium helps in higher production rate of live biomass.
(Artemia and Aquatic Animals Research Institute, Urmia University, Urmia, Iran; email of Behrooz Atashbar: atashbarb@yahoo.com)

SHORT COMMUNICATION
DIFFERENT SALINITIES EFFECT ON BIOMETRY OF NAUPLII AND META-NAUPLII OF TWO ARTEMIA (CRUSTACEA; ANOSTRACA) POPULATIONS FROM URMIA LAKE BASIN
Alireza Asem, Nasrullah Rastegar-Pouyani-2010
Int. J. Aqu. Sci. 1(1): 10-13
(Protectors of Urmia Lake National Park Society (NGO), Urmia, Iran; email of Alireza Asem: alireza_1218@yahoo.com

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SHORT COMMUNICATION
A 200,000-YEAR RECORD OF THE BRINE SHRIMP ARTEMIA (CRUSTACEA: ANOSTRACA) REMAINS IN LAKE URMIA, NW IRAN
Morteza Djamali, Philippe Ponel, Thomas Delille, Alain Thiéry, Alireza Asem, Valérie Andrieu-Ponel, Jacques-Louis de Beaulieu, Hamid Lahijani, Majid Shah-Hosseini, Abdolhossein Amini, Lora Stevens-2010
Int. J. Aqu. Sci. 1(1): 14-18
(Institut Méditerranéen d'Ecologie et de Paléoécologie UMR CNRS 6116 - Europôle Méditerranéen de l'Arbois - PavillonVillemin - BP 80, 13545 Aix-en-Provence Cedex 04, France ; email of Morteza Djamali : morteza_djamali@yahoo.com)

NOTE
THE STATUS KNOWLEDGE OF CHILEAN ARTEMIA POPULATIONS: FUTURE TRENDS FOR STUDIES AND MANAGEMENT
Patricio De los Rios-2010
Int. J. Aqu. Sci. 1(1): 28-30
(Universidad Católica de Temuco, Facultad de Recursos Naturales, Escuela de Ciencias Ambientales, Casilla 15-D, Temuco,Chile ; email prios@uct.cl

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EFFECTS OF DIETARY ESSENTIAL FATTY ACID LEVELS ON BROODSTOCK SPAWNING PERFORMANCE AND EGG FATTY ACID COMPOSITION OF COBIA, RACHYCENTRON CANADUM
Huy Quang Nguyen, Thien Mai Tran, Helge Reinertsen, Elin Kjørsvik-2010
Journal of the World Aquaculture Society 41(5): 687–699
Abstract:
Broodstocks of cobia, Rachycentron canadum, were fed raw fish (RF) or three formulated diets of similar proximate composition but different n-3 highly unsaturated fatty acid (HUFA) levels: 0.94% (D1), 1.31% (D2), or 1.72% (D3) of the dry weight (dw). Egg fatty acid composition was significantly different between dietary groups and reflected that of the diets. The total n-3 HUFA and especially docosahexaenoic acid contents in eggs of groups fed formulated diets were significantly lower than in group fed RF, whereas the egg content of arachidonic acid (ARA) in groups fed Diets D2 and D3 were significantly higher than in groups fed Diets D1 and RF ($P < 0.05$). Although no significant differences in spawning quality were found among dietary groups ($P > 0.05$), a tendency of better spawning performance was observed in the group fed RF (1.86% n-3 HUFA of dw). A tendency of lower fertilization success was associated with groups that had higher egg content of ARA (D2 and D3).

Results of this study suggest that cobia broodstock requirements of dietary n-3 HUFA should be higher than 1.86% dw and that high dietary levels of ARA (0.42–0.60% dw) may affect cobia fertilization success negatively.
(Department of Biology, Center of Fisheries and Aquaculture, Norwegian University of Science and Technology (NTNU), 7491 Trondheim, Norway)

GROWTH AND SURVIVAL OF SIAMESE FIGHTING FISH, BETTA SPLENDENS, LARVAE AT LOW SALINITY AND WITH DIFFERENT DIETS
Ana C. Puello-Cruz, Gabriela Velasco-Blanco, Irma E. Martínez-Rodríguez, Edith Felix-Ramos, Domenico Voltolina-2010
Journal of the World Aquaculture Society 41(5): 823–828
Abstract:
We evaluated the survival and growth of 3-d post-hatch Siamese fighting fish, Betta splendens larvae, raised during 15 d in salt-free or salt-added freshwater (5 ppt using common table salt) and fed with a sequence of traditional live diets (Chlorella sp., rotifers, and Artemia) or with one formulated diet complemented with a single or daily additions of Chlorella. The highest survival were those of natural-fed larvae, at 5 and 0 ppt (100 and 96.67 ± 5.77%), and there were no significant differences in final length and weight, although these were more variable in the case of the larvae maintained at 5 ppt. The use of table salt had a negative effect on the trophonts of the external parasitic dinoflagellate Piscinoodinium sp., which colonized the body surface of the larvae raised at 0 ppt and were absent on those kept at 5 ppt.
(Centro de Investigacion en Alimentacion y Desarrollo A.C. (CIAD), Unidad en Acuicultura y Manejo Ambiental, Av. Sabalo Cerritos s/n, Mazatlan, Sinaloa 82010, Mexico)

INFLUENCE OF MICROALGAE SUPERNATANT, AND BACTERIA ISOLATED FROM MICROALGAE CULTURES, ON MICROBIOLOGY, AND DIGESTIVE CAPACITY OF LARVAL GILTHEAD SEABREAM, SPARUS AURATA, AND SENEGALESE SOLE, SOLEA SENEGALENSIS
Pavlos Makridis, Laura Libeiro, Rui Rocha, Maria Teresa Dinis-2010
Journal of the World Aquaculture Society 41(5): 780–790
Abstract:
This study aimed at investigating addition of microalgae in the rearing of marine fish larvae (green water technique). Addition of microalgae supernatant, or bacteria isolated from microalgae cultures, to the rearing tanks of larval Senegalese sole, Solea senegalensis, and gilthead seabream, Sparus aurata, had no significant ($P < 0.05$) influence on survival or growth of the larvae. Addition of four bacterial strains isolated from microalgae decreased however the numbers of presumptive Vibrio in gilthead seabream larvae and seawater were compared with the control treatment 7 d after hatching ($P < 0.05$). No such effects were shown on the numbers of presumptive Vibrio in the rearing of sole larvae. Addition of bacteria improved the digestive capacity of gilthead seabream larvae, as the total activity (U/larva) of trypsin, amylase, and alkaline phosphatase in the treatment with added bacteria were significantly higher ($P < 0.05$) than in larvae from the control treatment 10 d after hatching. No such effects were shown in the case of sole larvae. The present results indicated that bacteria associated with microalgae may play an important role for the inhibition of proliferation of Vibrio and improvement of digestive capacity during the first days of feeding of gilthead seabream larvae, but does not appear to be beneficial for larvae of Senegalese sole.
(Centro de Ciencias do Mar, Universidade do Algarve, Campus de Gambelas, Faro, Portugal)

COMPARISON OF THE EFFECTS OF HCG AND LHRHA ON THE INDUCTION OF OVULATION OF WILD AND CAPTIVE LEOPARD GROUPER, MYCTEROPERCA ROSACEA
Margarita Kiewek-Martinez, Vicente Gracia-Lopez, Manuel Carrillo-Estevez-2010
Journal of the World Aquaculture Society 41(5): 733–745
Abstract:

Between 2002 and 2007, 289 leopard groupers, Mycteroperca rosacea, were captured by hook and line to examine the use of human chorionic gonadotropin (HCG) and luteinizing hormone release hormone analog (LHRHa) to induce final oocyte maturation. During the study, 38 wild females were induced to ovulate upon arrival at the laboratory and 59 females were kept in captivity for at least 10 mo before induction trials. Females selected for hormone treatment were injected with 1500 IU/kg HCG, or 15 or 150 µg/kg LHRHa, and stripped to spawn. Gonad maturation was studied from monthly gonad samples. Ovaries developed vitellogenic oocytes from November to April. Total fecundity ranged from 3 to 571 × 103, and fertilization rate ranged from 3 to 100%. Mean fertilized egg diameter was 871 ± 14 µm. Over 9.5 × 106 eggs were produced, and captive females induced to ovulate with HCG produced the highest number of fertilized and viable eggs ($P < 0.05$). This study demonstrated that HCG induction to ovulate is the most effective tool to produce final oocyte maturation in captive and wild leopard grouper, M. rosacea broodstock.
(Centro de Investigaciones Biologicas del Noroeste (CIBNOR), Mar Bermejo 195, Col. Playa Palo de Santa Rita, La Paz, B.C.S. 23096, Mexico)

BIOENCAPSULATION OF FLORFENICOL IN BRINE SHRIMP, ARTEMIA FRANCISCANA, NAUPLII
Irja Sunde Roiha, Erling Otterlei, Ole Bent Samuelsen-2010
Journal of Bioanalysis & Biomedicine 2(3): 60-64
Abstract:
The brine shrimp Artemia franciscana is one of the most common live-feed organisms for use in the larval culture of marine fi sh production. Bioencapsulation of fl orfenicol, an antibacterial agent, in Artemia nauplii was investigated as a potential carrier for this drug to marine larvae. Florfenicol was delivered directly to the organisms as particles, and the doses ranged from 100 to 2000 mg/l. Analysis of fl orfenicol concentrations in Artemia sp. nauplii were performed using high performance liquid chromatography (HPLC). The uptake of fl orfenicol in Artemia nauplii increased with particle size, dose, and exposure time, obtaining the highest concentration of 5.02 ng/nauplius, using a dose of 300 mg/l AQUAFLOR premix and 10 min exposure time. However, to obtain reproducible results, an enrichment time of at least 60 min is recommended.
(Institute of Marine Research, P.O. Box 1870 Nordnes, N-5817 Bergen, Norway)

AUSTRALIA OPENS BRINE SHRIMP FARM, KEY COMPONENT IN AQUACULTURE FOOD CHAIN
Australian Fisheries Minister Norman Moore embraced the aquaculture potential of Western Australia with the opening of a cutting edge-design commercial brine shrimp farm at Port Gregory, near Geraldton.
MercoPress, South Atlantic News Agency, April 29, 2010
http://en.mercopress.com/2010/04/29/australia-opens-brine-shrimp-farm-key-component-in-aquaculture-food-chain

http://www.cognis.com/company/Media+Center/Press+Releases/2010/100413_EN_FP.htm

Brine shrimp, also known as Artemia or ‘sea monkeys’ are a key component of the food used in the commercial aquaculture of fish and prawns.

Norman Moore said an expert team led by Department of Fisheries’ scientist Sagiv Kolkovski, had developed the technologically-advanced facility to cultivate the minute Artemia, in partnership with Cognis Australia, the world’s biggest producer of the naturally occurring red pigment, beta-carotene. The farm is located at Cognis Australia’s Hutt Lagoon, Port Gregory plant, where the company farms micro-algae from which beta-carotene is extracted.

“This new facility has potential to create a new multi-million dollar industry in rural Western Australia and will help lead to more sustainable fish farming practices both domestically and internationally,”

Moore said. “The development of this project marks the culmination of seven years’ research work, providing a much-needed source of high quality, sustainable fish-feed for Australian and international fish-farms [...] The project embodies the State Government’s goal of promoting sustainable fishing and aquaculture practices and ensuring there are fish for future generations.”

The development is collaboration between the State Government, the aquaculture industry and the Fisheries Research and Development Corporation (FRDC).

Artemia, commonly known as ‘sea monkeys’, feed on micro-algae. They can be an unwanted pest in the production of beta-carotene. However, researchers have devised an Artemia-rearing system that can work effectively in tandem with Cognis’ large-scale commercial micro-algae plant, turning a potential threat into an opportunity.

Because it feeds on the highly nutritious algae, the Artemia produced will be of the highest-grade quality and contribute to the reduction of the reliance on imported Artemia supplies and other less sustainable fish feed sources, answering one of the main criticisms levelled at the industry. Artemia produced at the plant will also help fill the regular gaps in Artemia supply to Australia’s commercial aquaculture industry as a result of market shortfall.

GAMETE AND LARVAL COLLECTION METHODS AND HATCHERY REARING ENVIRONMENTS AFFECT LEVELS OF GENETIC DIVERSITY IN EARLY LIFE STAGES OF LAKE STURGEON (ACIPENSER FULVESCENS)

James A. Crossman, Kim T. Scribner, Duong Thuy Yen, Christin A. Davis, Patrick S. Forsythe, Edward A. Baker-2010

Aquaculture 310(3-4): 312-324

Abstract:
Hatchery supplementation is widely advocated as an important means to achieve management goals of sustainable populations of lake sturgeon (Acipenser fulvescens). Increasing evidence for negative impacts of hatchery practices has prompted research regarding the efficacy of hatchery prescriptions that have been largely adopted from other well-studied species. Using a well-studied population in the Black River, MI drainage, we evaluated the effects of different gamete and larval collection methods and hatchery rearing environments (streamside and traditional) on measures of offspring genetic diversity estimated based on known or inferred pedigree and multi-locus genotypic data. Offspring produced from direct gamete takes (DGT) were more related (higher mean coancestry (θ) and significantly higher mean relatedness (rxy)) than were offspring produced from collections of naturally produced eggs (NPE) from stream substrate and larvae collected while dispersing from spawning areas (DL). Pedigree and genotypic data also revealed that greater numbers of adults contributed to offspring (effective number of breeders) from DL and NPE collections than from DGT collections. Comparatively higher levels of inter-family variation in egg and juvenile mortality in the traditional hatchery rearing environment relative to the streamside rearing environment resulted in more pronounced increases in mean coancestry and decreases in effective number of breeders across sequential ontogenetic stages. Methods of gamete and offspring collection and rearing have demonstrable effects on levels of offspring genetic diversity which has significant implications for restoration of numerically depressed populations.

(Department of Fisheries and Wildlife, Michigan State University, 13 Natural Resources Building, East Lansing, Michigan 48824-1222, USA; email of James A. Crossman: james.crossman@bchydro.com)

MULTIPLE SPAWNING OF CAPTIVE PACIFIC BLUEFIN TUNA (*THUNNUS ORIENTALIS*) AS REVEALED BY MITOCHONDRIAL DNA ANALYSIS

Motoki Nakadate, Takashi Kusano, Hiroshi Fushimi, Hidehiro Kondo, Ikuo Hirono, Takashi Aoki-2010

Aquaculture 310(3-4): 325-328

Abstract:
Sequence analysis targeting the hypervariable mitochondrial DNA-D-loop region was performed to survey spawning patterns of captive Pacific bluefin tuna (*Thunnus orientalis*). The broodstock consisted of approximately 100 individuals. Sampling of fertilized eggs was conducted for ten days within three weeks in 2007. Among 236 eggs and 31 juveniles analyzed, 25 unique haplotypes were detected, indicating that more than 25 female parents participated in reproduction in the fish cages. Among the 25 haplotypes, 10 were found at relatively high frequencies. Some of these haplotypes were observed to occur at 2 to 3 consecutive days, indicating that the captive bluefin tuna females were capable to consecutively spawn multiple times.
Laboratory of Genome Science, Tokyo University of Marine Science and Technology, Tokyo 108-8477, Japan; email of Takashi Aoki: aoki@kaiyodai.ac.jp)

EFFECTS OF DIETARY N-3 HUFA CONCENTRATIONS ON SPAWNING PERFORMANCE AND FATTY ACIDS COMPOSITION OF BROODSTOCK, EGGS AND LARVAE IN YELLOWFIN SEA BREAM, ACANTHOPAGRUS LATUS
Mohammad Zakeri, Preeta Kochanian, Jasem G. Marammazi, Vahid Yavari, Ahmad Savari, Mahsa Haghi-2010
Aquaculture 310(3-4): 388-394
Abstract:
We conducted a study to investigate the effects of dietary n-3 highly unsaturated fatty acid (HUFA) concentrations on spawning performance and fatty acids composition of broodstock, eggs and larvae of Acanthopagrus latus. Broodstock were fed three isonitrogenous formulated diets with different ratios of fish oil (FO) and sunflower oil (SO) including FO (100% fish oil), FSO (1:1 fish oil: sunflower oil) and SO (100% sunflower oil) as lipid sources with different concentrations of n-3 HUFAs (6.67, 4.26 or 2.92%, respectively) for 132 days. Results show that the relative fecundity, percentage of buoyant eggs, hatchability, survival rate of larvae at 3 days post hatching (DPH) and starvation tolerance test were all higher in broodfish fed FO diet and significantly ($P < 0.05$) decreased in the groups fed FSO and SO diets. Fatty acids profiles of carcass, liver, eggs, hatchling and 3DPH larvae reflected profiles of the corresponding dietary treatments. In general, increasing concentrations of dietary fish oil lowered deposition of linoleic acid (LA), linolenic acid (LNA) and total n-6 PUFA in all samples and simultaneously improved deposition of docosahexaenoic acid (DHA), eicosapentaenoic acid (EPA) and arachidonic acid (AA) in all samples, which probably affected spawning performance. The best spawning performance was obtained when fish oil was used alone as the dietary lipid source with 6.6% dietary n-3 HUFA concentration. The results of this study show that the n-3 HUFA concentrations of lipid in broodstock diet has a considerable effect on the quality and fatty acids composition of egg and larval in A. latus.
(Department of Fisheries, Faculty of Marine Natural Resources, Khoramshahr Marine Science and Technology University, Iran; email of Mohammad Zakeri: Zakeri.mhd@gmail.com)

IMPACTS OF UN-IONIZED AMMONIA IN DIGESTED PIGGERY EFFLUENT ON REPRODUCTIVE PERFORMANCE AND LONGEVITY OF DAPHNIA CARINATA AND MOINA AUSTRALIENSIS
Jaime Leung, Martin Kumar, Phil Glatz, Karen Kind-2010
Aquaculture 310(3-4): 401-406
Abstract:
In effluent treatment systems, a major concern is how to maintain culture of local zooplankton species (Daphnia carinata and Moina australiensis), particularly with the impact of un-ionized ammonia on their life cycle response. Hence the impact of un-ionized ammonia present in digested piggery effluent on the reproductive physiology and survival of D. carinata and M. australiensis was evaluated in this study. Both species were cultured in diluted digested piggery effluent and supplied with algae, Chlorella vulgaris as food. The effects of different un-ionized ammonia concentrations on total fertility, number of clutches, clutch size and survival were recorded every 24 h. The lethal concentration of unionized ammonia, with 50% survival after 24 h exposure to (24 hr LC50 values) un-ionized ammonia was

determined for each species relative to total ammonia nitrogen, pH and temperature. M. australiensis had greater tolerance at higher levels of un-ionized ammonia than D. carinata. However, older neonates (< 48 h old) could survive at a higher concentration of un-ionized ammonia nitrogen (up to 2.8 mg/l D. carinata and 8.8 mg/l M. australiensis) than younger neonates (2.2 mg/l D. carinata and 7.5 mg/l M. australiensis). The net reproduction rates (R0) were derived from fertility and survival while the intrinsic rates of increases (r) were calculated with net reproduction rate and generation time. M. australiensis has a maximum R0 (189.84) and r (0.54) at 4.5 and 6.5 mg/l NH3–N, respectively, while D. carinata has a maximum R0 (100.46) and r (0.39) at 0.5 and 1.0 mg/l NH3–N. Hence, M. australiensis is a faster growing species than D. carinata when cultured in digested piggery effluent.
(School of Animal and Veterinary Sciences, The University of Adelaide, Roseworthy, South Australia, Australia, 5371)

EFFECT OF THREE DIETS ON GROWTH AND SURVIVAL RATES OF AFRICAN CATFISH HETEROBRANCHUS BIDORSALIS LARVAE

Yao Laurent Alla, Ble Melecony Célestin, Atse Boua Célestin, Kone Tidiani-2010

The Israeli Journal of Aquaculture - Bamidgeh: 63(4)

Abstract:
Investigations are underway in the Centre de Recherches Océanologiques d'Abidjan (Côte d'Ivoire) to find whether the catfish (Heterobranchus bidorsalis) could be an interesting aquaculture species. Within this framework a 28-day aquarium culture feeding trial was conducted to investigate the effects of three diets (Artemia salina nauplii, beef brain enriched with vitamins, and a compound food) on the growth and survival rates in 2-day post hatch H. bidorsalis. The feeding experiments started after the yolk sac of the larvae was absorbed (initial mean weight = 2.03±0.38 mg). Larvae fed Artemia nauplii had a higher growth rate (final mean weight = 708.60±411.61 mg] than those fed beef brain (381.81±118.88 mg) or compound food (102.72±48.09 mg). Conversely, the beef brain diet yielded a better survival rate (70.47±9.48%) than the Artemia nauplii (38.72±7.74%) or the compound diet (5.37±2.24%). Thus, beef brain can be used as a starter food for larval rearing of H. bidorsalis.
(Centre de Recherches Océanologiques, BPV 18 Abidjan, Côte d'Ivoire ; email of Yao Laurent Alla : laurentalla@yahoo.fr)

POPULATION GROWTH OF BOSMINA LONGIROSTRIS FED CHLORELLA VULGARIS AND SCENEDESMUS SUBSPICATUS IN DIFFERENT DENSITIES

Ömer Osman Ertan, Zekiye Güçlü, Ömer Erdoğan, Sevgi Savaş, İskender Gülle-2010

The Israeli Journal of Aquaculture – Bamidgeh 63(4)

Abstract:
In this study, the effects of the different densities of Chlorella vulgaris (0.05 x 106, 0.1 x 106, 0.2 x 106, 0.4 x 106, or 0.8 x 106 cells/ml) and Scenedesmus subspicatus (0.05 x 106, 0.1 x 106, 0.2 x 106, or 0.4 x 106 cells/ml) on culture of the water flea, Bosmina longirostris, were investigated. The experiment was carried out in a photoperiod of 16 h light:8 h dark at 25±1°C. At the beginning of the experiment, one B. longirostris individual (<24 h old) was put into each vessel, and the number of individuals and rate of population increase were determined for 30 days. Increasing the food density increased the number of individuals and the rate of population. The maximum number of B. longirostris individuals (7.1±2.08 ind/ml) and maximum rate of population increase (0.2±0.004/day) was in the group fed 0.2 x 106 cells/ml S. subspicatus. The effect on the number of the individuals was statistically significant ($p<0.05$).
(Faculty of Fisheries, Süleyman Demirel University, Eğirdir, Isparta, Türkiye; email of Ömer Osman Ertan: ooertan@sdu.edu.tr)

EFFECTS OF COMPRESSED SEASONALLY CHANGING DAY-LENGTH CYCLES ON SPAWNING PERFORMANCE, PRODUCTION OF VIABLE EGGS AND LEVELS OF VITELLOGENIN IN PLASMA IN FEMALE YELLOWTAIL SNAPPER LUTJANUS ARGENTIVENTRIS

D. A. Guerrero-Tortolero, R. Campos-Ramos, M. A. Burgos-Aceves, J. C. Pérez-Urbiola, G. Colado-Durán-2010
Journal of Fish Biology 77(10): 2285–2297
Abstract:
Reproduction in yellowtail snapper Lutjanus argentiventris took place after compressing the seasonally changing day length into a 3 month period applied during two consecutive winters, with the longest and shortest days in December and February, respectively. During the first winter, there was no clear peak of days of spawning and the production of viable eggs was similar from the longest and throughout the decreasing day lengths until reproduction ceased. The level of plasma vitellogenin rose abruptly to a maximum concentration during the increasing day length and then decreased dramatically before the longest day length. During the second winter, a clear peak in the number of days of spawning and the highest production of viable eggs occurred around the longest day length. These results showed that it is feasible to synchronize day length between winter-induced and natural summer and autumn reproduction to produce eggs and larvae during the year.
(Centro de Investigaciones Biologicas del Noroeste (CIBNOR), Mar Bermejo 195, Col. Playa de Santa Rita, La Paz, B.C.S. 23096, Mexico; email of D. A. Guerrero-Tortolero: daguet04@cibnor.mx