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NEWS

Conference on Construction of National Technology System of Shrimp Industry Held in Guangzhou

Recently, the Conference of Construction of National Technology System of Shrimp Industry was held in Sun Yat-Sen University in Guangzhou, with more than 80 participants including government officers and scientists from Department of Science and Education and Department of the Fisheries Bureau of Ministry of Agriculture, Chinese Academy of Fishery Sciences (CAFS), National Fishery Technical Extension Center, Guangdong Provincial Department of Science and Technology, Guangdong Provincial Oceanic and Fishery Administration, as well as all fisheries experimental stations in Guangzhou.

At the conference, scientists and directors of experimental stations introduced their research progress and ideas of constructing the technology system of shrimp industry, and discussed the technology system with participants. Prof. Li Zhuojia, the head of healthy culture section of the national technology system of shrimp industry, presented the report on healthy shrimp culture, briefed the progress and plan of research on healthy shrimp culture in South China Sea Fisheries Research Institute of CAFS, and organized the scientists of the healthy culture section and relevant experts to discuss the issues concerning the research on key technologies of healthy shrimp culture.

Prof. Jiang Shigui, the deputy director of South China Sea Fisheries Research Institute, delivered the report on the breeding and selection of tiger shrimp and suggested the research direction of breeding and selection of tiger shrimp in China.

Source: China Fishery News, Mar.17, 2009

China Adopts Food Safety Law

China's top legislature approved the Food Safety Law on Saturday, providing a legal basis for the government to strengthen food safety control "from the production line to the dining table."

The law, which goes into effect on June 1, 2009, will enhance monitoring and supervision, toughen-up safety standards, recall substandard products and severely punish offenders.

The National People's Congress (NPC) Standing Committee gave the green light to the intensively-debated draft law at a four-day session, following a spate of food scandals which triggered vehement calls for overhauling China's current monitoring system.

Winning 158 out of the 165 votes, the law said the State Council, or Cabinet, would set up a state-level food safety commission to oversee the entire food monitoring system, whose lack of efficiency has long been blamed for repeated scandals.

Source: Xinhua News Agency, February 28, 2009

Govts Urged to Thoroughly Enforce Food Safety Law

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BEIJING -- China's cabinet Tuesday ordered local governments and central governmental departments to carefully prepare for the implementation of newly-adopted Food Safety Law, with special focus on the safety of dairy products.

General Office of the State Council, or the Cabinet, said in a circular to the departments and local governments that the law, which goes into effect on June 1, must be enforced in a "down-to-earth" manner in order to ensure food products safe to consume.

The law, adopted by the national legislature on February 28, has been widely seen as a new push to improve food safety in the country through stricter monitoring and supervision, tougher safety standards, recall of substandard products and severe punishment on offenders.

"Governments and relevant departments should take all responsibilities stipulated by the law to enhance supervision and monitoring, and to seriously deal with officials if they fail to perform the duty," said the circular.

The Ministry of Health was asked to create a new set of unified national standards on food safety, as stipulated by the law, by coordinating and revising current standards.

The revision of safety standards on dairy products should be done as soon as possible, said the circular.

Standards should also be made or revised to tighten the control of bacteria, pesticide residue, heavy metal and polluting materials in food products, as well as the use of food additives.

"All safety standards should be available for the public for further consultation," said the circular.

Governments at various levels were also ordered to give "necessary" support to the monitoring and supervision work, and mass media are encouraged to help raise public awareness of the law.

"The implementation of the law is of great significance because food safety directly matters the people's health and safety, the nation's economic growth and social stability," it said.

The law was adopted following some food scandals that triggered vehement calls for overhauling China's current monitoring system.

Although the country had certain food quality control systems in place for many years, lots of loopholes emerged in past years, mainly due to varied standards, lack of sense of social responsibility among

some business people, lenient punishment for violators and weaknesses in testing and monitoring work.

Source: Xinhua News Agency, 2009-03-10

Farm Product Exports Decline

Exports of high-end farm products from China slowed last year, as more and more people juggled their food budgets and cut down on costly food items due to the economic crisis.

Fruit juice exports fell 7.4 percent last year, the first ever decline, while exports of other farm products saw less growth momentum.

The growth rate for vegetables and fruits fell by 10.8 percent and 38.6 percent year-on-year respectively, Wei Chao'an, vice-minister of agriculture said yesterday at a press briefing during the annual parliament meeting.

"Many small- and medium-sized producers and processors of farm products in rural areas are facing a bleak business climate," Wei said. "Many are facing money shortages and their farms are running below capacity," he said.

Garden products and aquatic products are the only farm products that managed to survive the negative impact of financial crisis, Wei said. Aquatic products had the biggest share in farm produce exports and accounted for 26.2 percent, according to a statement by the Ministry of Agriculture (MOA).

Weak exports and strong imports deepened China's trade deficit in farm products last year to \$18.16 billion, the MOA said in statement on its website yesterday.

Farm products exported to neighboring countries like Japan and South Korea, accounting for one-third of China's exports, declined by the largest margins of 8.1 percent and 12.1 percent respectively, as the two countries were among the worst hit in the global economic downturn, the statement said. In contrast, farm products exported to the EU, US and ASEAN countries remained static with a 16 percent growth rate like last year.

"The appreciation of the Chinese yuan against the Japanese yen and Korean won also led to the export decline," Zhang Yongjun, senior economist with the State Information Office, told China Daily yesterday.

China has raised export tax rebates on some agricultural products, and revoked or canceled export duty for some grains to protect farmers and promote exports.

Analysts said the downtrend may not be reversed in the short term, as falling international prices for farm produce trim the competitiveness of Chinese goods.

Domestic farm products' prices, pressured by a record grain harvest and a fall-off in demand, have been declining, in line with global commodity prices, Zhang said

Source: Chi na Dai ly, 2009-03-13

Abstracts of Research Articles Published in Chinese Journals

Effect of Serotonin on Ovarian Maturation in *Penaeus monodon*

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Abstract : Eyestalk-ablation is used usually to induce ovarian maturation in *Penaeus monodon*. Wild *P.monodon* females were obtained from the sea around Sanya, weighted 149.5 ± 25.8 g. Serotonin solution was injected into broodstock at $50 \mu\text{g} \cdot \text{g}^{-1}$ body weight on the 1st, 5th, 10th day. Survival and hatching rate were significantly higher in serotonin-injected females than unilateral eyestalk-ablated shrimp. But the time to the first spawning event from the beginning of treatment was shorter for eyestalk-ablated females. Gonad somatic index (GSI) in serotonin-injected and eyestalk-ablated groups were both significantly higher than the control. The results suggested that stimulation of serotonin can enhance the ovarian maturation of *P.monodon*.

Key words : serotonin ; eyestalk-ablation; *Penaeus monodon* ; maturation

Source: South China Fisheries Science, 2009, Vol.5, Issue 1

Acute Toxicity of Three Drugs Acting on Nymph of *Sipunculus nudus*

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Abstract : With a view to provide some useful information for the control or kill the harmful micro-organism in the cultivation of *Sipunculus nudus*, the acute toxicity experiment of trichlorfon, fenpropathin and phoxim-fenvalerate mix on 2~3 cm body length nymph of *S.nudus* was performed in still water at the conditions of water temperature of 29.1~30.7 °C, pH 8.0~8.2 and salinity of 29.5. The results indicated that the 24 h LC₅₀, 48 h LC₅₀ and SC (safe concentration) of trichlorfon were 1.03, 0.67 and 0.09 mg·L⁻¹. The 24 h LC₅₀, 48 h LC₅₀ and SC of fenpropathin were 0.70, 0.54 and 0.10 mg·L⁻¹. The 24 h LC₅₀, 48 h LC₅₀ and SC of phoxim-fenvalerate mix were 0.72, 0.48 and 0.06 mg·L⁻¹.

Key words : *Sipunculus nudus* ; nymph ; trichlorfon ; fenpropathin ; phoxim-fenvalerate mix ; acute toxicity

Source: South China Fisheries Science, 2009, Vol.5, Issue 1

Comparison of Growth Performance of F6, F7 and F8 of GIFT Strain *Oreochromis niloticus*

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Abstract : Tilapia is one of the major fish species cultured in the world; genetic improvement of tilapia is very important. Growth performance of GIFT strain of Nile tilapia *Oreochromis niloticus* was checked by communal testing in concrete ponds. F₆, F₇ and F₈ were compared from seedling in 2004. The averages of daily body weight gain of F₆, F₇ and F₈ were 1.07, 1.12 and 1.47 g·d⁻¹, respectively, after raised for 114 days. After correcting the bias (which may caused by the weight because F₈ was bigger in weight than F₇ and F₆ at the beginning), the body weight gain rate of F₆, F₇ and F₈ was 1.13, 1.18 and 1.36 g·d⁻¹, respectively. Variation coefficient of body weight of F₈ was lower than F₇ by 6.29%, and lower than F₆ by 7.95%. Growth equation of F₈ was: $y=40.313x - 61.670$ ($R^2=0.8783$, $R=0.9513$).

Key words : tilapia (*Oreochromis niloticus*); selection ; growth performance

Source: South China Fisheries Science, 2009, Vol.5, Issue 1

Growth, Feed Utilization and Whole-body Composition of Six *Penaeus monodon* Families

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Abstract : The growth, feed utilization and whole-body composition of six *Penaeus monodon* families (hsy5-5, hsy7-7, hsy8-5, hsy10-10, hsy12-13 and hsy15-15) were studied. These families were established using wild broodstock from Sanya Bay by the method of artificial insemination. In the feed utilization and growth experiment, the weight gain and feed conversion ratio (FCR) of hsy10-10 were superior to the others. The survival rates of hsy8-5, hsy10-10 and hsy12-13 were higher than the others but not significant ($P>0.05$). When cultured in concrete tank in mix, the survival rate of hsy10-10 was as high as 90 percent, higher than other five families (hsy8-5, hsy12-13, hsy7-7, hsy15-15 and hsy5-5) by 13.3%, 13.3%, 20.0%, 23.3% and 30.0%, respectively. The total month weight gain of hsy10-10 and hsy8-5 was higher than other four families. When cultured in earth pond, the final body weight of hsy10-10 was higher than the average of the six families by 13.1%. It was concluded that the survival rate, weight gain and FCR of family hsy10-10 were superior to the other families, and the whole shrimp of hsy10-10 had the highest contents of crude protein and lipid and the lowest of moisture among six families.

Key words : *Penaeus monodon* ; family ; growth ; feed utilization ; nutritional composition

Source: South China Fisheries Science, 2009, Vol.5, Issue 1

A Preliminary Research on Artificial Breeding of the Asian Moon Scallops *Amusium pleuronectes*

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Abstract : This paper reported for the first time on the induced spawning, larvae and spat rearing of the Asian moon scallop *Amusium pleuronectes*. The results showed that stimuli of drying in the shadow and water flow was efficient for inducing the scallops to release sperm and eggs. Fertilized eggs developed to straight-hinged veligers (D-veligers) in 20 hours or so. At the temperature of 22.0~24.0 , pediveligers were observed in 11 days after D-veliger stage. Spat grew to (2.0±0.18) mm in next 30 days. Four hundred and ninety six thousand spat in shell length (2.93±1.15) mm were obtained in this experiment.

Key words : Asian moon scallop (*Amusium pleuronectes*) ;ontogenesis; induced spawning ;artificial breeding ; spat

Source: South China Fisheries Science, 2009, Vol.5, Issue 1

Common Species Composition, Quantity Variation and Dominant Species of Planktonic Microalgae in Low Salinity Culture Ponds

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Abstract : In order to understand the variation of planktonic microalgae in low salinity culture ponds of *Litopenaeus vannamei*, investigations on the planktonic microalgae species and quantity were conducted from September 2007 to January 2008. The results showed that a total of 49 species of microalgae was identified in the culture ponds, belonging to 7 phyla and 62 genera, respectively. They included 22 Chlorophyta species, 16 Cyanophyta species, 8 Bacillariophyta species, 2 Euglenophyta species, and 1 Cryptophyta species. Many of the 13 dominant species belonged to the Cyanophyta, including *Microcystis aeruginosa*, *Coelosphaerium naegelianum*, *Oscillatoria chlorine*, *Pseudoanabaena* sp., *Spirulina spirulinoides*, *O. subbrevis*, *Chroococcus cohaerens*, *Merismopedia punctata* and *Dactylococcopsis aciculari*. The other dominant species belonged to Chlorophyta and Bacillariophyta, including *Chlorella pyrenoidosa*, *Chlamydomonas. multigranulis*, *Chaetoceros* sp. and *Nitzschia closterium*. In low salinity culture ponds, the quantity of planktonic microalage ranged from $0.1 \times 10^7 \sim 209.2 \times 10^7$ ind·L⁻¹, and diversity index averages were at 2.5~3.2. The species numbers, quantity and diversity index were low in early culture period and high in post culture period.

Key words : *Litopenaeus vannamei* ; low salinity culture ponds ; microalgae ; dominant specie ; diversity

Source: South China Fisheries Science, 2009, Vol.5, Issue 1

Effects of Illumination on the Chlorophyll Fluorescence Parameters and Astaxanthin Content of *Haematococcus pluvialis*

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Abstract : In this paper, the effects of different illumination on the chlorophyll fluorescence parameters and astaxanthin content of *Haematococcus pluvialis* were examined. The main parameters determined in the present study including the maximal photochemical efficiency of PSII (Fv/Fm), the potential activity of PSII (Fv/Fo), the actual photochemical efficiency of PSII in the light (Φ_{PS}), the electron transport rate (ETR), the photochemical quenching (qP), the non-photochemical quenching (NPQ), cell density, relative chlorophyll content and astaxanthin content. One-way analysis of variance showed that illumination had significant effects on the fluorescence parameters, relative chlorophyll content, cell density and astaxanthin content of

H. pluvialis during the entire experimental period ($P < 0.05$). Multiple comparisons show that the optimal growth illumination of *H. pluvialis* under the experimental conditions was $50 \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$. The astaxanthin content ($\mu\text{g}\cdot\text{cell}^{-1}$) at $300 \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$ were significantly higher than that in other treatments. But the astaxanthin content ($\mu\text{g}\cdot\text{mL}^{-1}$) at $50 \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$ was highest in all treatments. The analysis of correlations showed that there were significant positive correlations between relative chlorophyll content and cell density during the entire experimental period. Moreover, some fluorescence parameters (F_v/F_m , F_v/F_0 , Φ_{PS} , ETR, qP , NPQ), relative chlorophyll content and cell density all showed significant correlations with illumination, the pattern and strength of the correlations varied with culture days.

Key words : *Haematococcus pluvialis* ; illumination ; chlorophyll fluorescence parameters ; astaxanthin content

Source: South China Fisheries Science, 2009, Vol.5, Issue 1

Distribution Characteristics of Macrobenthos in the Shoal-water Area Along the Northern Coast of Jiangsu Province

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Abstract : A detail species composition and quantity distribution of macrobenthos community in the shoal-water area along the northern coast of Jiangsu Province were first reported. A total of 105 species of macrobenthos was identified and most of them were mollusk, crustacean and fish (93.33%). The average macrobenthos biomass was $0.3285 \text{g}\cdot\text{m}^{-2}$ and the average individual density was $0.5460 \text{ind}\cdot\text{m}^{-2}$ and most of them were mollusk and crustacean. Biomass and density were higher in summer than in spring, and higher in the north area than in the south area. Macrobenthos in this area can be defined into five types by ecological character, dominant key species of each group are presented.

Key words : shoal-water area along the northern coast of Jiangsu Province ; macrobenthos ; biomass ; community

Source: South China Fisheries Science, 2009, Vol.5, Issue 1

Analysis of Heavy Metal Contents in Marine Organisms from Daya Bay

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Abstract : The variation feature and biological concentration factors of heavy metal element in commercial marine organisms from Daya Bay were discussed in this paper. It showed that the heavy metal contents in crustacean samples were the highest and the heavy metal contents in fish samples were the lowest among the three kinds of organisms. The order of heavy metal contents in the organisms was zinc (Zn) > copper (Cu) > lead (Pb) \approx arsenic (As) > cadmium (Cd) > mercury (Hg). The biological concentration factors of Cu and Zn were higher than the other elements, while the factors of As was the lowest among the elements. The marine organism heavy metal contents were lower than the threshold values of "non-environmental pollution food, the limit for the deleterious matters in the aquatic product". According to the result of potential risk factors, there were some potential risk of Cd, Pb and Hg, while the potential risk of Cu was low.

Key words : Daya Bay ; marine organisms ; heavy metal ; biological concentration

Source: South China Fisheries Science, 2009, Vol.5, Issue 1

Relationship between Phytoplankton Quantity and Its Environmental Factors in Wetland of Cold Regions in Spring and Summer Based on the Grey Association Analysis

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Abstract : The purpose of this paper was to provide basic information for management and a foundation for the future study in ecosystem dynamics and eutrophication on cold regions wetland based on studying the correlation of phytoplankton quantity and its environmental factors. An investigation on the phytoplankton quantity and environmental factors on Anbanghe wetland, a type of cold region swamp in northeast of China, was conducted during July (summer) 2005 and May (spring) 2006. There were 92 common species occurred in both seasons, among which 37 taxa and 82 taxa were identified in spring and summer, respectively. In spring the average abundance was $268.45 \times 10^4 \text{ ind} \cdot \text{L}^{-1}$, and in summer was $268.45 \times 10^4 \text{ ind} \cdot \text{L}^{-1}$. The temporal distribution of amount was summer > spring, and spatial distribution was upstream region > downstream region, and edge area > core area. The temporal and spatial variation of environmental factors among sampling station and seasons was regular except the diaphaneity and pH. The biggest difference in distribution of environmental factors was $\text{PO}_4\text{-P}$. The result of grey association analysis showed that the highest value of grey association degree is in $\text{PO}_4\text{-P}$ both in spring and summer. All of these indicated the factor which seriously influenced phytoplankton quantity was phosphate. Thus, it is important to control the phosphate input to maintain ecosystem health of Anbanghe wetland.

Key words : phytoplankton ; environmental factors ; grey relational analysis ; Anbanghe wetland ; cold regions ; spring and summer

Source: South China Fisheries Science, 2009, Vol.5, Issue 1

Study of Proper Supplementation Level of Chitosan from Insect Resource in the Feed of Crucian Carp

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Abstract : The proper supplementation level of chitosan from insect resource in the feed of crucian carp (*Carassius auratus*) was investigated. Two hundred and twenty-five crucian carp with average weight 25.2 ± 1.7 g were randomly divided into five treatments, each with three replicates, 15 fish per replicate. The test fish were fed five diets with different levels of insect chitosan (0%, 0.25%, 0.50%, 0.75% and 1.00%), respectively. Compared to 0% chitosan treatment, relative growth rates of other chitosan supplementation treatments were improved by addition of chitosan, and feed coefficients were significantly decreased ($P < 0.05$), the growth performance of 0.5% chitosan supplementation treatment was the best among all treatments. By calculating the optimal level of insect chitosan to achieve the best relative growth rate and feed coefficient and considering the results of present study, 0.50%-0.60% insect chitosan was recommended to supplement in the feed of crucian carp.

Key words : chitosan from insect resource ; crucian carp (*Carassius auratus*) ; growth

Source: South China Fisheries Science, 2009, Vol.5, Issue 1