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News

Abstracts of Research Articles Published in Chinese Journals

China's Total Aquatic Product Output Ranking the 1st in the World for 18 Consecutive Years

It is calculated that since 1989, China's total aquatic product output has been ranking the 1st in the world for 18 consecutive years. As the only country where the output from aquaculture exceeds that from capture fisheries, China's aquaculture output accounts for 70% of the world total.

Source: Peopledaily, Oct.15, 2008

Ministry: ROK toxic fish feed not from China

China on Tuesday said that a preliminary investigation found that fish feed made from contaminated squid powder, which was reportedly found in the Republic of Korea (ROK), was not made with Chinese export products.

"Relevant Chinese departments have carried out investigations on the country's export of powdered squid innards since reports of this issue were revealed on September 19 and found that those claimed products were not from Chinese companies," Foreign Ministry spokeswoman Jiang Yu told a regular press briefing in Beijing.

According to ROK media reports, locally distributed fish feed had been found to be contaminated with the chemical melamine, known to cause kidney-related problems in humans.

The ROK government said it had found traces of the chemical in feed made by a domestic company that produced the feed from powdered squid intestines, which reportedly came from both the ROK and China, and were supplied to 16 fish farms beginning in March.

Of the 619 tons of feed produced by the company, 583 tons were sold while 29 tons were recalled.

"The ROK authorities are investigating how the industrial chemical got into the fish feed," Jiang said.

Since May 15, 2007, China has listed all phytalbumin products in an inspection catalog, registered feed and feed additive export companies and strengthened examination of export feed products, Jiang said.

"Qualified feed products exported to other countries have not drawn claims about safety concerns," she said.

"Chinese related departments will closely follow the development of this issue and [we] hope the ROK will inform us about investigations in a timely manner," she added.

Melamine is a byproduct of plastic that can also be used to increase the apparent protein content of food. If taken in very large amounts, it can cause death in animals and humans. China hasbeen rocked in recent weeks by the discovery of the chemical in baby formula and dairy products.

Discussing the exported formula, Jiang said the Chinese departments in charge of the issue have reported relevant information from their investigations to the World Health Organization and all countries concerned.

"The Chinese government has paid great attention to the issue, and is ready to strengthen cooperation with the food security departments of the countries and regions concerned," said Jiang.

She said China understands the concerns of those countries and regions and will properly handle the issue based on an objective, practical and scientific attitude and principle.

She added that China attaches great importance to the work on imported and exported products' quality and food security and has built a series of supervision mechanisms and systems. She said China will further improve those mechanisms and systems.

"The governments of all countries face the common challenges offood security, and we are ready to strengthen cooperation with theinternational community to jointly safeguard the interests of consumers and the property and life safety of the people," said Jiang.

Source: GOV.cn Tuesday, September 23, 2008

A Top-Class Seafood

"With the rapid development of Zhangzidao Fishery, high-quality seafood is supplied to the world's discerning dinners from a small island in northeast China," said Wu Hougang, president of Dalian Zhangzidao Fishery Group Co Ltd.

In the evening of July 23, when Japanese aquaculture companies hosted a banquet at the Tokyo Kaikan for their Chinese counterparts during the 10th Japan International Seafood and Technology Expo, raw seafood served at the banquet was sea urchins imported from Dalian-based Zhangzidao.

"We did not arrange a Chinese brand on purpose. It is because the Zhangzidao sea urchin is so famous in Japan that it is a required choice on the menu," said Hiroyasu Itoh, president of Japan's Chuo Gyorui Co Ltd.

Takanoshin Nagamochi, the 94-year-old leader of Japanese aquaculture and honorary chairman of Riken Vitamin Co Ltd, also praised Zhangzidao at the banquet.

"Zhangzidao Island is to China's fisheries what Hokkaido is to Japan. It is the Chinese (equivalent of) Maruha," he said, referring to the Japanese company ranked No 1 globally in the sector.

"Our sales network of seafood covers all China and also extends to 18 countries and regions like Japan, the United States and Australia, where our products are well received by consumers," said company President Wu.

Established in 1958, Zhangzidao has grown into a large-scale company with multiple businesses covering seafood breeding, processing, domestic and foreign trade, and ocean transportation.

The company that begun on a small island went public on the Shenzhen Stock Exchange in September 2006 after developing over half a century.

Last October, it became the only Chinese fishery approved by the World Economic Forum as a founding member of its Global Growth Companies community.

Zhangzidao Island, called the "Pearl of the Yellow Sea", offers distinct advantages in developing aquatic products. Totaling less than 15 sq km, it is 56 nautical miles from Dalian at 39 degrees north latitude, the most suitable for the growth of marine creatures. Abalone, trepang and other seafood grown near the island are rich in nutrition and taste good.

As the best domestic seafood, Zhangzidao abalone was chosen by former Premier Zhou Enlai to serve at the State banquet for US President Richard Nixon in 1972.

Fishermen of the island were proud and it was the initial power for them to forge the brand Zhangzidao, which in 2006 became China's first well-known trademark in aquaculture.

"Using the sea area and protecting it for 10,000 years," is the company motto, reflecting its development through protecting the natural environment, making technical innovation, and studying advanced overseas cultivation techniques.

Yoichi Imamura, president of Japan's Daito Gyorui Co Ltd, presents a letter of thanks to Wu Hougang.

Becoming competitive

Wu noted China is a big but not significant country in growing and harvesting aquatic products. The nation's aquaculture needs more influential brands to be competitive in the global market, he said.

In a bid to be competitive, Zhangzidao promoted standardized procedures in breeding, processing and transporting aquatic products. Its exports have received US Food and Drug Administration (FDA) approval and meet British Retail Consortium food standards.

In 2007 when the US FDA officials visited the 40,000-hectare cultivation area, they noted the clean water, advanced cultivation technology, system-wide quality and the advanced testing equipment. They gave it their valuable stamp of approval.

The quality of its products forged competitive power for the Zhangzidao brand. Its seafood entered markets in the US and Australia in 2000. Its Yezo scallops now have a market share of about 60 percent in Australia.

Its trademark has been registered in 30 regions. Its export volume has increased to reach $17.5 million in value last year.

In Wu's opinion, a company can share in the global market only by going out and marketing. Zhangzidao began subsidiaries in Boston and Hong Kong this year to accelerate the company's internationalization.

With operations in Boston, the North American market is within reach. Its subsidiary in Hong Kong can radiate out to Southeast Asia using the island's international trade and finance connections, Wu said.

Zhangzidao, located at the 39 degrees north latitude

Source: China Daily, 2008-09-27

Xiangshan Recognized as Home of Chinese Fish Culture

Local officials of Xiangshan display the plaque, the Home of the Chinese Fish Culture, at a ceremony in Xiangshan on September 14.

Xiangshan county of Zhejiang Province was honored as the home of Chinese fish culture by Chinese Folk Literature and Art Society and China Federation of Literary and Art Circles.

Surrounded by sea on three sides, Xiangshan has 608 islands and a coastline of 800 kilometers. The fish culture of Xiangshan dated back to more than 6,000 years ago. Cultural and historical sites spread all over the county, such as Tashan culture site, sea defense sites in Ming and Qing Dynasties, ancient pottery kilns and ancient sunk ships. The folk culture passes from generation to generation, featuring Xiangshan fishing drum, dragon light, fish light, bamboo root sculpture, fish song, paper cutting and so on

After Xiangshan's Shipu port made into the list of the state-level historical and culture sites, the legend of Xu Fu traveling to the East, salt drying craft, the festivals of setting sail and sacrifice to the sea and Fugang's wish belief custom were all listed as state-level non-material cultural heritage. So far, Xiangshan has collected 105 items non-material cultural heritage.

Meanwhile, Xiangshan has paid much attention to research and protection of fish culture. It published books such as Documents on Xiangshan's Mazu Culture, No.1 Village of China's Fish Industry: Dongmen Island of Xiangshan Shipu Port,

Xiangshan Fishing Folktale, and Collection of Thesis at Chinese Fish Culture, started Fish Culture, the first of its kind in China, launched a fish culture website, and introduced the fish culture research into school education, which highlighted the promotion of fish culture in the local area.

In addition, Xiangshan organized a lot of activities, including China's Fish Culture Symposium, Fish Culture Art Exhibition, Fish Culture Calligraphy and Photography contest. It built a number of tourist destinations and attractions featured with strong fish culture. Moreover, Xiangshan developed many local art and craft specialties and food culture highlighted by sea food.

Source: chinadaily, 2008-09-28

Fish 'Should Be Rebranded as Sea Kittens'

Fish should be renamed “sea kittens” to boost public concern for their welfare, according to animal rights campaigners.

Peta's campaign includes a series of sea kitten bedtime stories. [Agencies]

Sea kitten and chips, filet-o-sea kitten and sea kitten fingers would replace fishier dish names on restaurant menus, under proposals from the People for the Ethical Treatment of Animals.

The rebranding is aimed at altering the “slithery and slimy” public image of fish, by highlighting their similarities to cuter, more popular animals.

Like cats and dogs, fish are capable of showing physical affection, feel pain, and grieve when their companions die, Peta claims.

"If everyone started calling fish 'sea kittens,' they'd be a lot less likely to violently kill them for food, painfully hook them for 'sport,' or cruelly confine them to aquariums," a spokeswoman said.

“When your name can also be used as a verb that means driving a hook through your head, it's time for a serious image makeover,” Peta said in a statement.

The campaign, which is aimed primarily at children, includes a series of sea kitten bedtime stories, and computer software that allows young people to design their own sea kittens.

Peta has also launched a petition calling for the US Fish and Wildlife Service to abandon its backing for sea kitten hunting – or fishing, as it is more commonly known.

The animal rights group is known for its attention-grabbing and frequently controversial campaigns. Its supermodel-fronted anti-fur protests have been widely hailed, but it has been criticised for comparing factory farming to the Holocaust.

Source: Chinadaily, 2008-10-24

Evaluation of selective breeding effect of *Oreochromis mossambicus* and *O. hornorum* at fourth generation

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Abstract: Selective breeding were performed on the base populations of *Oreochromis mossambicus* and *O. hornorum* respectively, and F4 generations were produced and evaluated. Compared with control group, the daily growth rate of F_4 of *O. mossambicus* and *O. hornorum* was improved by 27.96% and 36.73% ($P<0.05$), and the average selection response per generation was 6.99% and 9.18%, while variation coefficient of body weight was reduced by 24.83% and 36.33% over the control group, respectively. At the first sex maturity, the mean body weight of the selected group F_4

was increased more than two times of the control group respectively, and their hybrids had high and stable male rate. All these results showed that selection response of the two kinds of tilapia is remarkable, and the individual growth rate was turned to be consistent in the selected population. It also indicated that there are still some selection potentials in F_4 generations, and it is feasible to proceed with selective breeding for growth of the two kinds of tilapia.

Key words: *Oreochromis mossambicus; O. hornorum*; tilapia; selective breeding; growth rate; selection response

Source: South China Fisheries Science Vol. 4, No.3, June, 2008-11-14

Statistical optimization of fermentation media for nitrite oxidizing bacteria

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Abstract: The statistical experimental design (Plackett-Burman and Box-Behnken design) was applied to optimize the culture medium of nitrite oxidizing bacteria for improving the nitrite

oxidizing rate. Estimated optimum medium composition of the nitrite oxidizing rate was as follows: $NaHCO_3$ 2.0 g ·L^{-1}; $NaNO_2$ 2.36 g ·L^{-1}; Na_2CO_3 0.37 g ·L^{-1}; NaCl 0.34 g ·L^{-1}; KH_2PO_4 0.05 g · L-1;$MgSO_4$ · $7H_20$ 0.05 g · L^{-1}; and $FeSO_4$ · $7H_2O$ 0.03 g · L^{-1}. The nitrite oxidizing rate reached a maximum at 905.0 mg NO2-N (g MLSS ·d)$^{-1}$(mixed liquor suspended solids, MLSS). In the field trial, 50 L of nitrite oxidizing bacteria concentrate (1.99 g VSS · L^{-1})(volatile solid, VSS) with 850 mg NO2-N · (g MLSS · d)$^{-1}$ were added to 0.6 hectares of the aquaculture water. Nitrite level in all treated ponds remained very low compared to the steady increase observed in all of the control ponds during 7 days.

Key words: nitrifying bacteria; nitrite oxidizing bacteria (NOB); optimization;Plackett-Burman design; response surface method; Box-Behnken design

Source: South China Fisheries Science Vol. 4, No.3, June, 2008-11-14

Applied research of *Bacillus licheniformis* De in grass carp (*Ctenopharyngodon idellus*) culture

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Abstract: Effects of *Bacillus licheniformis* De on grass carp (*Ctenopharyngodon idellus*) culture were analyzed with indexes including fish survival rate, pH, water transparency, dissolve oxygen, ammonia nitrogen and nitrite nitrogen. The results showed that the survival rate, pH and water dissolve oxygen of test groups increased 3.2%, 3.9%, 25.5%, respectively, but water transparency, ammonia nitrogen and nitrite nitrogen decreased 38.5%, 74.6%, 69.3%. In conclusion, the productive efficiency, assessment indexes and environmental quality in test groups all optimized in a certain extent.

Key words: *Bacillus licheniformis*; grass carp culture; *Ctenopharyngodon idellus*; water quality improvement

Source: South China Fisheries Science Vol. 4, No.3, June, 2008-11-14

Advance in research on artificial breeding technique of groupers

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Abstract: Groupers are one of important aquaculture species. Due to lack of natural seedling, the technique of artificial breeding is critical and important. This paper reviewed the advances in research on artificial breeding technique, reproductive biology, early stage of development, larval rearing in groupers as well as current problems faced. The prospect for the future study was also presented..

Key words: groupers; artificial breeding technique

Source: South China Fisheries Science Vol. 4, No.3, June, 2008-11-14

Studies on immunotoxicity of phenol and SDBS to hybrid tilapia

(Tilapia nilotica×T.aurea)

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Abstract: The main immune indexes of hybrid tilapia were measured every two weeks. The 0.05 and 0.10 mg · L^{-1} sodium dodecyl benzene sulfonic (SDBS) had not affected the numbers of NBT-positive cells and content of IgM. The 0.40 mg · L^{-1} SDBS significantly reduced the numbers of NBT-positive cells and content of IgM in eight week. The 0.70 mg · L^{-1} SDBS significantly reduced the number of NBT-positive cells and content of IgM in six week. The 0.10 mg · L^{-1} SDBS significantly reduced
The numbers of NBT-positive cells and content of IgM in four week. Mortality of hybrid tilapia after injection of *Aeromonas hydrophila* (0.40, 0.70, and 1.00 SDBS) was higher than the control. These results indicated that low concentration of SDBS (0.05 and 0.10 mg · L^{-1}) did not affect the immune function of hybrid tilapia, but the higher concentrations of SDBS (0.40, 0.70 and 1.00 mg · L^{-1}) will apparently reduce the immune functions of hybrid along with time changed.

Key words: sodium dodecyl benzene sulfonic (SDBS); hybrid tilapia; immune index; NBT-positive cell; IgM

Source: South China Fisheries Science Vol. 4, No.3, June, 2008-11-14

Analysis on Competitive Power of Chinese Prawn Products Export

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Abstract: Since the current century, the Chinese prawn products share has been gradually increased in international market, but its export market are becoming decentralized. According to the international trade theory, this paper has analyzed competitive advantages and restrictive factors of Chinese prawn products export. In combining with international comparative advantages and prawn products trade status of the global major prawn trade countries, it expatiated international prawn market outlook and opportunities. And it also made some suggestions on improving the competitive power of Chinese export.

Key words: prawn products; export trade; competitive power of export; Comparative advantage

Source: Chinese Fisheries Economics, Issue 3, 2008

Construction Technology of Factory Aquaculture Water Cycle Treatment System and Its Market Prospects

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Abstract: Factory aquaculture is a modernization aquaculture manner. It relies on aquaculture engineer and water treatment equipment. It exercises mechanism, electric, chemistry, biology and automatization in its production. It practices whole manual control system in water quality, water temperature, water stream, illumination and feed. It provides suitable environment condition for aquaculture biology. This paper has introduced technique of system construction, experimental results and economic foreground.

Key words: factory aquaculture; water cycle system; system construction; economic foreground

Source: Chinese Fisheries Economics, Issue 3, 2008

Effect of Phytase on Growth, Apparent Digestibility and Activity of Digestive Enzyme of Tilapia

Abstract: A total of 600 tilapia (Oreochromis niloticus×O.aureus) were randomly allotted into 5 groups. The control group was fed with basal diet, the other treated groups were fed with basal diet supplemented with 500, 1000, 1500, 2000 U/kg phytase for 70 days, respectively. The weight of the tilapia and activity of digestive enzyme were determined. The results showed that 1000-1500 U/kg phytase significantly increased growth gain rates, apparent digestibility of dry matter and phosphorus. Adding 1000 U/kg phytase significantly increased activity of protease and amylase of chime compared to the control group.

Key words: phytase; activity of digestive enzyme; apparent digestibility of nutrition; weight gain rate; tilapia

Source: China Feed, Issue 17, 2008