



Aquaculture Association of  
Southern Africa

## NEWSLETTER

OF

**AQUACULTURE ASSOCIATION OF SOUTHERN AFRICA &  
AQUACULTURE INSTITUTE OF SOUTH AFRICA**



Volume 4: 02 • May 2007

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## A Word from the AASA Chairman and the CEO of AISA

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**Etienne Hinrichsen** [chairman@aasa-aqua.co.za](mailto:chairman@aasa-aqua.co.za)

Just as we think aquaculture development in SA is accelerating at a feverish pace, along comes half a dozen additional initiatives to add to this development drive. Good and essential as this may be, we should all do our best to ensure that adequate planning accompanies this development drive. We still see many potentially viable projects that require redesign or termination due to poor planning.

It is becoming clear that the SA Government is working hard at creating implementation frameworks, strategies and other tools to facilitate responsible aquaculture development. Unfortunately, the implementation of these tools suffers from a lack of capacity around aquaculture development and slow deployment thereof at project level. As AASA, we are addressing this situation through liaison with Government.

### CONFERENCE!!

It is exciting to report that the draft program for the upcoming October conference is virtually in place and will be circulated shortly. I can inform you that the key note speech will be delivered by Krishen Rana, of Sterling University and Kenny McCaffrey, the Editor of Fish Farming International, will be giving a talk on the state of world aquaculture. In addition to the scheduled workshops we are in the process of adding a one day seminar on HACCP and discussions around marine finfish.

I urge all of you to finalise your conference registration ASAP as the early registration period closes at the end of June. Thereafter conferences fees will be increased by 20%. Being a world class conference, I hope that all of you with an interest in aquaculture will make use of this opportunity.

Further details can be obtained from Natasha Marshall – email: [info@aasa-aqua.co.za](mailto:info@aasa-aqua.co.za)

Lastly, I want to urge all of you in the sector to contribute to the newsletter. You would have noticed that the content is sometimes bolstered by international news (which is also important), but we would like to include as much local material as possible.

**Dr. Lizeth Botes** [lbotes@ai-sa.org.za](mailto:lbotes@ai-sa.org.za)

It is with great pleasure (and much support from the Western Cape Provincial Government) that I use this opportunity to announce that AISA has moved into its own premises and is currently operating from Table View (contact details available on the AISA website). We have also employed Mr Werner Harms to assist government with the drafting of the Western Cape policy framework, strategy and implementation plan and are currently in the process of employing a receptionist. The team look forward to continue our fruitful collaborations with government and industry.

## The Editor's choice

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Adrian Piers [newsletter@aasa-aqua.co.za](mailto:newsletter@aasa-aqua.co.za)

Many opponents of aquaculture have cited the use of fishmeal from wild caught sources as a negative aspect of the growth of aquaculture. The simple fact is that wild stocks are being harvested at the maximum sustainable level, and being of the order Clupeiformes are highly resilient to intensive exploitation, and had they not been used as food for farmed fishes, they would

most certainly be used for other livestock in any event. The article below puts this whole issue into a much fairer perspective.

More news on the opening of the Irvin & Johnson Fin-Fish Hatchery at Gansbaai and finfish developments are covered under the "other" section.

Of the countries that have witnessed dramatic production increases of farmed fish, those in Asia stand out. How have they done it? They have used the best species available. Below is a link to a very interesting paper evaluating the role and impacts of alien finfish in Asian inland aquaculture. For anyone with an interest in balancing conservation interests and economic development it is well worth reading.

<http://www.blackwell-synergy.com/doi/full/10.1111/j.1365-2109.2005.01369.x>

## **Cows and cats consuming the world's fish**

From SAPA in the Mail and Guardian

South Africa must act to stop its marine resources disappearing in a world where the biggest consumers of fish products are cows and pet cats. The Endangered Wildlife Trust said South Africa's "excellent" environmental laws should be enforced and warned that plans to develop mariculture and open up one of the country's oldest marine protected areas could have serious implications.

"The government of South Africa, faced with tremendous pressure to deliver on poverty reduction, economic development and equity in coastal areas as well as to address the ever-dwindling marine life in our waters and meet international commitments, has already entered dangerous waters," said Endangered Wildlife Trust director Nick King. He warned that marine resources are under pressure around the world, saying environmentalist Paul Watson of the Sea Shepherd Conservation Society "states that the largest marine predator on Earth is now the cow, with over half the fish catch serving as fish-meal feed for domestic livestock".

"Domestic house cats are apparently eating more fish than all the world's seals combined."

He said the country's first large-scale, fin-fish marine aquaculture ventures, the I&J Hatchery, was launched in April and while the government is promoting aquaculture as a way of meeting the increasing demand for fresh seafood and even help rebuild wild stocks, it is not a quick-fix solution. "Technological 'solutions' to existing environmental disasters are seldom sustainable solutions and invariably contribute to the problem." King said a mariculture industry should be based on sound social, ecological and economic criteria and monitored properly. He warned against plans to open the Tsitsikamma marine protected area, saying scientists have identified it as "an extremely important nursery area that sustains the entire line-fish industry of the southern Cape. Given that only two of approximately 150 line-fish species in South Africa are considered still exploitable, the rest falling into the categories of collapsed, threatened or overexploited, any protected area contributing to the regeneration of fish stocks should be assigned extra protection, not less."

## **Free copies of Fish Farmer Magazine available on the Web**

The May / June issue of this magazine is available in PDF format from the site below. 1.7Mb.

[http://www.fishfarmer-magazine.com/news/fullstory.php/aid/1104/FREE\\_SAMPLE\\_of\\_May\\_June\\_Fish\\_Farmer.html](http://www.fishfarmer-magazine.com/news/fullstory.php/aid/1104/FREE_SAMPLE_of_May_June_Fish_Farmer.html)



### *Marine Finfish Farmers Association of South Africa*

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The marine finfish farmers association was started due to a common interest among existing finfish operators to have one body which can engage with various institutions and government in coordinating the development of marine finfish in South Africa. Currently we meet approximately 4 times per year. To join MFFASA at present one would need to pay the affiliated membership fee to AASA. Once this is done you will be able to attend our association meetings and participate. As the chair person of MFFASA, I represent the association on the AASA executive committee, an organization that has over the years has done a very good job of presenting and facilitating the development of the aquaculture industry in South Africa.

MFFASA is not a consultancy business to assist in the establishing of new farms, but rather an association which gives members a chance to network with one another and address issues collectively that impact on marine finfish farming. Through the chair, MFFASA is able to interact with various institutions and the government to address issues that impact directly on its members.

Marine Finfish is culture is not new, but it does have some major challenges to face in South Africa. Other countries have been engaged in farming successfully for many years with Salmon, Cod and Sea Bream. In South Africa the first bold step was taken by Salmon Salar to pursue marine finfish farming of salmon off the coast of South Africa. Although the company faced major obstacles it's Directors still believe that they can overcome the problems and that cage farming off the coast of South Africa is viable. Two other companies I&J and Espandon marine have both had major success in producing indigenous line fish species. All three companies face major challenges in building a commercial marine finfish industry in South Africa.

Some of the issues MFFASA has addressed this year are legislative issues surrounding the new Mariculture Policy, Sector Plans and Biodiversity regulations. Guy Musson a Director in Espandon Marine has on behalf of MFFASA engaged the Government on traceability protocols which are in the process of been finalized. This year MFFASA will continue to engage the authorities on issues plaguing the development of the industry. As the elected chair person of this very young association I hope this year to fulfill the objectives of our members to promote development of our industry, by fostering an environment where members are able to network and collaborate on common issues facing our future in fish farming.

Yours,

Robert Landman, Chairperson, Marine Finfish Farmers Association of South Africa

### **Tilapia producers in South Africa and Namibia**

We are looking for tilapia produce to sell to our markets. We are based in Johannesburg and we also export to Zambia. Please assist us with contacts of Tilapia producers in South Africa and Namibia. Thankyou

Jody-Layne Surtie  
072 314 2456

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## Abalone



### Abalone Virus under control but not cured yet

From Austasia Aquaculture

The ganglioneuritis virus damaging Victoria's abalone industry has now been described as controlled but not cured. The disease caused some abalone farms to cull and restock. Speaking at the annual conference of the Australian Veterinarian Association, Dr Paul Hardy-Smith said the disease was transmitted by wild abalone. He also said farms were clear of the virus and that efforts were directed to finding a cure for the disorder.



## Catfish

### Vietnam to host major Catfish event

Ho Chi Minh City is gearing up to host CATFISH 2007, the first ever global conference for the catfish farming industry in June which will take place from June 13-15, alongside VIETFISH 2007 (Vietnam Fisheries International Exhibition), which will be held on June 12-14. The two events will offer a platform to explore business opportunities, expand business networks in a country where seafood is the fastest growing industry and learn more about the catfish industry in general and Vietnamese tra/basa industry in particular. The event's organizers said many buyers from the US and Europe had confirmed their participation. Over 150 from the Vietnamese seafood industry are expected to join this conference. Renowned speakers from Vietnam and around the world will share their knowledge and experiences on various issues. A field trip to a catfish farming center and processing plant around Ho Chi Minh City will be arranged by the Vietnam Association of Seafood Exporters and Producers to provide an opportunity for the delegates to see this dynamic industry.

### Large investments in Aquaculture in Nigeria

By Nasir Imam in the Daily Trust

About Naira 7.58 billion has been invested in the Fisheries sub-sector in Nigeria as at 2006, according to President Olusegun Obasanjo. Chief Obasanjo who disclosed this while declaring open the First International Catfish Fair, described the sector as the fastest growing in the

Agricultural sector, saying that aquaculture output had increased by 29 percent in the past one year while artisanal and industrial fisheries had also grown by 5 percent and 10 percent respectively. According to the President, who was represented at the occasion by the Minister of State for Agriculture and Water Resources, Otunba Bamidele Dada, the phenomenal growth in the fisheries sub-sector as a result of large scale investments in aquaculture, has resulted in Nigeria taking the lead in fish production in Africa.

He further disclosed that there has been an appreciable increase in the number of hatcheries for the production of fingerlings, high quality fish feed mills and remunerative prices for catfish, disclosing that Nigeria now has the capacity to produce over 40 million fingerlings annually. Saying that the total fish production from fish ponds and farms alone increased from 22,000 metric tons in 2001 to over 88,000 metric tons in 2006, President Obasanjo expressed the hope that the formation of the Catfish Farmers Association of Nigeria with him as Grand Patron, the production of catfish will witness an unprecedented boom in the nearest future.

Earlier in his welcome address, the President of the Catfish Farmers Association of Nigeria (CAFAN), Chief Tayo Akingbolagun commended the Presidential Initiative on Fisheries and Aquaculture which he said had created the opportunities for the massive investments in the sector especially in the establishment of fish feed mills, fish seed production, Integrated and Recirculatory fish culture systems, ornamental fish and shrimp production for export. He assured the government that the Association members and other stakeholders in the sector would continue to exploit the enabling environment already put in place to invest more towards ensuring that Nigeria attains the status of a major exporter of fish and fisheries products



## Crayfish and Lobsters

### Crayfish infected by White Spot Syndrome Virus

The National Veterinary Service Laboratory has confirmed the presence of white spot disease in a quarantined crawfish pond, Louisiana Commissioner of Agriculture and Forestry Bob Odom has announced. The pond was quarantined in late April after Department of Agriculture and Forestry officials and aquaculture specialists from the LSU AgCenter suspected the disease was causing crawfish in the pond to die. The disease, known as WSD, is caused by the white spot syndrome virus or the white spot virus. It can severely reduce production and has caused mortality rates of 100 percent in farmed shrimp. However, the disease is not a threat to humans and poses no known human health risk. Crawfish producers learned recently that investigators have few answers about how the White Spot Syndrome Virus infected four crawfish ponds in South Louisiana. "We haven't found a common thread yet," said Scott DeJean, a veterinarian from the U.S. Department of Agriculture. He spoke at a meeting called by the LSU AgCenter to respond to producer questions about the virus. Two ponds have been affected. All have been quarantined. Nine other ponds have suspicious signs but the virus has not been confirmed in those. Testing on crawfish samples from those ponds should be completed soon.

Greg Lutz, LSU AgCenter aquaculture specialist, said shrimp farms in Texas and overseas have been dealing with the virus for years, starting in 1992-93 in Asia, but it was only recently detected in Louisiana crawfish. It is found in Gulf of Mexico shrimp and crabs, he said. "A good portion of the imported shrimp we eat in this country carries this virus, but this is the first time the virus has been known to affect pond crawfish in Louisiana. This is all new to us, we haven't ever seen anything like this in crawfish." The virus survives freezing temperatures and a virus, unlike bacteria, cannot be treated with chemicals. Experts have agreed that humans are not affected by the virus, but it could have a serious impact on the Louisiana crawfish industry. Symptoms of the disease include crawfish that are lethargic and weak and often they cannot walk. Dead crawfish often are found in traps and on the edges of ponds. Crawfish do not develop the conspicuous white spots found in affected shrimp. The LSU AgCenter is recommending producers avoid unnecessary restocking of permanent ponds. Researchers say supplemental stocking of new crawfish is often

unnecessary. The AgCenter also recommends using only a single source of healthy crawfish for the time being instead of using several suppliers, which would normally be recommended. To prevent possibly transferring the disease to other ponds, producers should not move traps, boats or other equipment from farm to farm. If a problem is suspected, researchers have recommended keeping equipment confined to one pond. Before moving boats or traps to another pond, they are recommending washing to remove mud and debris, then spraying with a 5 percent bleach solution.

## Lobster colour morphs

While most lobsters are coloured a mottled dark greenish brown, there are cases where a lobster of a different colour (color morph) appears. According to the January edition of 'Commercial Fisheries News', exotic lobsters in shade of blue, white, yellow, black and red have been reported from time to time since the earliest lobster harvests. Perhaps the most unusual are the 'calico' lobsters which appear as marbled black and orange/yellow or 'half-and-half-lobsters with a line straight down their backs where the two colours meet. Calicos and half-and-half lobsters are hatched that way and they stay that way (until cooked !) because the basic colour pattern in lobster shells is inherited just like the colour of hair in humans and other mammals. Brandon Lambert is seen here with one of those different coloured lobsters that was caught by his father earlier this lobster season.



## Lobster price war heats up

From Nancy Willis in the The Guardian

The war between Island fishermen and processors over the price of lobster is escalating as low catches and low prices mark one of the poorest fishing seasons here in years. Sparking further outcry on the wharves across the Island this week were comments from the processing sector in Tuesday's Guardian saying the current \$5 for canner-sized fish and \$6 for markets were justified, and could go even lower if conditions warranted. Ed Frenette, managing director of the P.E.I. Fishermen's Association, said market intelligence shows clearly the United States and Upper Canada are still crying for more lobster because of the low landings in the late winter/early spring season. This follows a winter and spring where lobster pounds are all but empty and spring catches in Maine were minimal due to cold water temperatures.

"Despite what the processors say about weak markets overseas, we have garnered that there is still strong demand for frozen product in Europe, and for green tails in Japan and other locations," said Frenette. In Ontario Tuesday, one broker was offering five-pound bundles of P.E.I. lobster (four-1.5 pound lobsters) for the wholesale price of \$134 plus freight, guaranteed live shipment. That's \$33.50 per lobster.

"Also, we strongly believe that processors are shipping to the live market in the United States and Canada, but not compensating fishers accordingly, and making windfall profits," said the managing director. Frenette also commented on the processors' remarks prices can probably go even lower. "We view that as intimidation." The fishermen say what they are seeing is a concentration of large corporations in New Brunswick and P.E.I. controlling low shore prices to fishermen. Frenette also rebutted the processors' use of the nearly par Canadian and U.S. dollars. "We realize the Canadian dollar has risen four per cent over this time last year, but given existing market conditions, it is clear that would have no effect on shore prices," he said. The fishermen want buyers from outside P.E.I. to be able get onto the wharves and offer the competition that is needed for fair practice. Buyers who would come from outside and pay higher prices are unable to because of provincial regulations. "It is clear that Island fishermen have been sold out by the Pat Binns government," said Souris lobsterman Ricky Jennings.

## World's oldest lobster fossil found

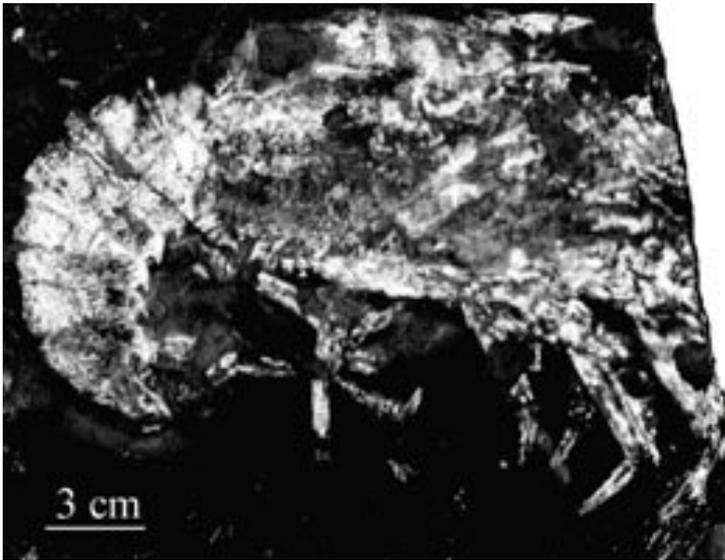


Photo from Mexico's National Autonomous University shows a fossil that Mexican scientists have identified as the world's oldest lobster fossil. The Mexican scientists said they have identified the world's oldest lobster fossil, a creature that was alive when Africa was only just breaking apart from the Americas some 120 million years ago.

The fossil is 12 cm long and its shell and legs are immaculately preserved by the mud in the southern state of Chiapas where it was found. It is dated as 120 million years old, some 20 million years older than existing lobster fossils.

This lobster that was found in Chiapas belongs to the genus that is alive in Africa today, they said.

[http://www.gulf-times.com/site/topics/article.asp?cu\\_no=2&item\\_no=147307&version=1&template\\_id=43&parent\\_id=19](http://www.gulf-times.com/site/topics/article.asp?cu_no=2&item_no=147307&version=1&template_id=43&parent_id=19)

## Eels



## WWF Looks at the status of Eels

Ahead of the world's major meeting on wildlife trade, WWF has released its top ten list of species needing urgent global action to reduce threats from trade. Delegates from 171 countries are expected to attend the Conference of the Convention on International Trade in Endangered Species (CITES), from 3-15 June in The Hague, The Netherlands. Some of the species on WWF's top ten priority list are among the most endangered. For example, the tiger and the Asian rhino have required constant and urgent action over the past decades because of ever-present, pervasive threats to their survival, including poaching and illegal trade. Others, particularly marine species, are on the list because their populations have declined massively in recent years due to global market demand.

"CITES has been addressing the trade threat to some of these species for more than 30 years, with many successes, while others are new on the agenda," said Dr Susan Lieberman, Director WWF's Global Species Programme. "For some, there are new threats, others are new on the agenda due to changing trade dynamics in the global economy, while for yet others, organized criminal elements continue to ply their trade across the globe. Whatever the problem," added Dr Lieberman, "nothing will change unless governments take this trade and its impacts on conservation and local people's livelihoods seriously."

WWF's top ten "to do" list for the world's governments includes eels.

The European eel comes from coastal and freshwater ecosystems throughout Europe, including Mediterranean countries. Stocks have declined dramatically over the past several decades due to

overfishing and poaching. There is significant international demand for this species, both for live juvenile eels (shipped from Europe to Asia) for rearing in aquaculture and for the highly valued meat of adults. WWF calls on governments to include this species in CITES Appendix II.

Species are listed on one of three Appendices according to the level of threat they face:

Appendix I bans international commercial trade in species.

Appendix II regulates international trade in species that may be threatened without regulation of the level of trade. Commercial trade is allowed on the condition that specimens are legally obtained and that the trade is not detrimental to the wild population.

Appendix III lists species that are protected in at least one country, where that country has asked other CITES Parties for assistance in controlling the species trade.

## Ornamentals



No submissions

## Oysters & Mussels



### Oyster culture a Rhode Island success story

By Peter Lord

Last year, income from the state's aquaculture products rose by 81 percent and for the first time exceeded \$1 million. It was the ninth double-digit increase in the last 11 years, according to the Coastal Resources Management Council, the state agency that regulates the industry. "In the 10 years CRMC has been pushing this industry, the turnaround has been amazing," says Timothy M. Scott, a professor at Roger Williams University. "We went from being the laughingstock of New England to the envy of New England as a model with a regulatory process that makes sense."

Not long ago, Rhode Island was considered the last-place aquaculture producer in the country. Now, according to the U.S. Department of Agriculture, it ranks ahead of Vermont, South Dakota, Wyoming, Montana, Kansas, Arizona and even Alaska. Scott and David Alves, the CRMC's aquaculture coordinator, in giving an annual report on the industry last week, said the key to making aquaculture work in Rhode Island is "inclusiveness." No leases are granted until all the interested parties agree they won't intrude on important fishing areas, eelgrass beds or boating channels. Fishermen, coastal property owners and boat operators all have a chance to comment before any decisions are made.

Full story at:-

[http://www.projo.com/news/content/aquaculture\\_05-16-07\\_AD5KQAR.3311010.html](http://www.projo.com/news/content/aquaculture_05-16-07_AD5KQAR.3311010.html)

## Hybrid scallops lead the way

By Julius Pokomandy

Scallop farming is a green industry. Scallops require clean water to grow and no food chemicals are added to the ocean. With all the controversy surrounding fish farms, I was pleased to have a positive experience talking to people at Island Scallops Ltd.

Island Scallops has been involved in aquaculture research and development since 1989, shellfish processing and marketing since 1991. The company specializes in shellfish and marine fish species new to aquaculture in British Columbia and has pioneered scallop and sablefish culture here. Its main product is the Pacific scallop. This is not just any scallop. The company has successfully bred a combination of the local weathervane and imported Japanese scallops. This distinctive scallop is one of the largest in the world, reaching 15 cm in length and 500 g in weight. These scallops (and others) are low in saturated fats and cholesterol and high in protein. The company is the largest private marine hatchery and the first fully-integrated shellfish producer in Canada. Island has been developing these unique technologies for 17 years and has worked with a number of species, including geoduck clams, mussels, abalone, and sea urchins. The scallops are produced in a hatchery complex and are cultured at ocean farms. Typically, the whole scallop cycle from hatchery to harvest takes 18 to 24 months. Twenty-five years ago, the Pacific scallop did not exist. Robert Saunders, CEO of Edgewater International Inc. and R&D director of Island Scallops (a subsidiary) successfully crossed the local slow-growing weathervane scallops with the Japanese imports. After a long research, Saunders realized he had a winner.

The scallops did not disappoint. They have a great growth rate and a proven record of disease resistance, achieving a 95% survival rate during the grow-out phase.

Today, 3,000 to 4,000 pounds of scallops are ready to be shipped each week.

## Prawns



## Shrimp certification will boost Vietnamese exports

By Neil Merrett

Vietnam's drive to boost exports of its sea-food products received a boost this week, as a number of processors have been honoured for their aquaculture practices, the country's ministry for fisheries revealed yesterday. Sao Ta Foods and Viet Hai Seafood join six other companies in the country now certified with the Global Aquaculture Alliance's (GAA) Best Aquaculture Practices (BAP) certification. Aquaculture has become increasingly important to processors in the sea food industry as populations of popular species like Cod and Tuna undergo rapid decline. With Vietnam keen to boost the reputation of its shrimp to tap demand in markets like the US, the promise of greater safety and sustainability could push demand for the country's produce.

The GAA is a non-profit trade organisation that encourages greater responsibility in fish and shell food farming. To this end, BAP certification is given to companies that meet specific hygiene and source requirements for greater sustainability. Although it is currently suffering from anti-dumping duties imposed by the US, exports are seen as the key to success for the country's shrimp industry, as well as the wider sea food market as a whole. The Fisheries Ministry has said that it wants to see double-digit annual growth in the business by 2010. The aim is to increase output to more than 2.1 million tonnes - from around 1.4 million tonnes currently - and increase export turnover to US\$2.5bn from US\$1.7bn. However, not everyone is as optimistic of Aquaculture's benefits for declining fish populations. While accepting that aquaculture could play some role in

encouraging sustainable fishing environmental group the World Wildlife Foundation (WWF) believes that fish farming alone cannot offer a long term solution to declining fish stocks.

## Tilapia



### Tilapia production in China

By Helga Josupeit

Tilapia is farmed primarily in China's warm southern provinces. In 2006, close to 50% of the total production was concentrated in Guangdong Province. The growth in tilapia output is driven by strong domestic demand as well as exports. In China, particularly the southern coastal provinces, tilapia is popular because its good taste and quality compared to other cultured fish such as carp. Tilapia is also more affordable, compared with other high-valued, cultured species. An industry survey showed that 93% of consumers like tilapia in Guangdong, 76% in Zhejiang and 65% in Shandong. Tilapia is also increasingly popular in large cities such as Beijing and Shanghai.

#### Chinese tilapia exports (in tonnes)

Country	2004	2005	2006
USA	62860	80853	104668
Mexico	15884	16343	32894
Russian Federation	19	22	5530
Israel	678	1287	3694
Germany		673	1740
Hong Kong	1016	842	1702
Belgium		1124	1371
Puerto Rico	515	852	1292
Dominican Republic	117	493	1019
Canada	1096	1103	992
Others	8171	9266	26929
<b>Total</b>	<b>90356</b>	<b>112858</b>	<b>181831</b>

In only two years, Chinese tilapia exports have doubled to exceed 180 000 tonnes in 2006. Total export value reached US\$ 400 million in 2006, which compares to US\$ 160 million in 2004. These figures give an idea about the importance of the tilapia industry for total Chinese fish exports, even though in total terms, tilapia makes up for only 5% of total import earnings.

Not surprisingly, the USA is the main importing country of tilapia from China, with 105 000 tonnes in 2006. Imports by the USA alone grew by 25 000 tonnes in 2006. Tilapia is the most important item among Chinese fish exports to the US market.

US imports and consumption of tilapia is growing, some 360 000 tonnes (liveweight equivalent) were imported in 2006, which gives a per caput supply of 1.2 kg,

US total tilapia import – by product form (in tonnes)								
Product	1999	2000	2001	2002	2003	2004	2005	2006
Whole								
frozen	27 293	27 781	38730	40 748	49 045	57 299	56524	60772
Frozen fillets	4 971	5 186	7372	12 253	23 249	36 160	55615	74381
Fresh fillets	5 310	7 502	10236	14 187	17 951	19 480	22729	23100
<b>TOTAL</b>	<b>37 575</b>	<b>40 469</b>	<b>56 337</b>	<b>67 187</b>	<b>90 246</b>	<b>112 939</b>	<b>134868</b>	<b>158253</b>

impressive when considering that only five years ago this species was almost unknown in the market. Also in Mexico, per caput consumption of tilapia is similarly high, considering 90 000 tonnes of domestic production and a unknown quantity of imports. The Mexican market is awash with cheap and good quality tilapia from China, and local producers are suffering from this presence. On the other hand, in Europe, tilapia is still quite unknown, and total imports are stable at some 10 000 tonnes.

Full articles at:-

<http://www.globefish.org/index.php?id=3620>

## Trout and Salmon



### Season update and market considerations

From the minutes of the Western Cape Trout Association meeting 31 May

Greg Stubbs reported that most trout farms experienced a difficult summer and that last year's harvesting predictions were not achieved. Greg requested that all producers present give a short report of their 2006/2007 summer season and production expectations for 2007. Dan Womersley of Fizantakraal reported that they spent most of the summer moving facilities from the old to the new raceway site. They experienced some fingerling losses but in general the season's prospects still looked good. Krijn Resoort of Molapong reported that they had their last season at the Dewdale site at Franschoek. The season ended on a low note with the previous summer's fire that caused 90% of stock losses to make the harvesting season a difficult one. They produced mainly plate size fish for the 2006 season and were still struggling to find a market for the plate size fish in cold storage. They produced only 90 tons which was only half of the expected production. They have set up site on a new location in Saron where they will produce approximately 45 tons of 1 kilo fish. He ended his report back by saying it will never be easy to produce trout in the Western Cape.

Henk Stander of the University of Stellenbosch reported that last year was a fairly good production season where the University of Stellenbosch's Jonkershoek facility produced 28 tons which was sold mainly fresh. Hands-on, the Co-Op, produced just over 100 tons with a mixture of good quality fish and B-grade fish being produced. The University experienced a very bleak summer with 90% losses of juveniles. This created a tremendous shortfall on juvenile fish for the Hands-on projects as well as for Jonkershoek. Barend Stander of Three Streams reported that Three Streams experienced a very good fingerling production season last year with approximately 1 million fry being hatched and reared. The Katse dam project is getting off the ground nicely with an expected 90 ton harvest for this season and a planned 300 tons for the next. Dylan de Jager of De Poort reported that they experienced a fairly good season with approximately 10-12 tons of fish produced.

Gerhard Compion of Lourensford Trout Farming reported that they had a very good 2006 season with approximately 55 tons produced. The summer treated them exceptionally well and that he was approximately 2 to 3 weeks ahead compared to the previous season.

Reinier van der Merwe of Lunsklip in Mpumalanga reported that rainfall for Mpumalanga's summer season was fairly normal which resulted in a fairly good production season. Lunsklip produced approximately 180 tons and the Mpumalanga region did approximately 600 tons in total. Mpumalanga's production was split 50/50 between fish produced for processing and fish produced for stocking of fisheries. The current price for live fish was between R33-R40 per kilogram. The current price for processed fish was R28 per kilo gutted.

To summarise, Greg stated that production could still not meet market demands. Three Streams still had to import Canadian/Alaskan "B-grade" fish and Norwegian and Chilean "A-grade" fish. Greg reported that they were currently paying R49 per kilo for Salmon head-on. Greg reported that they experienced most of their problems with constraints placed on them from the retailers and not from production constraints as expected. The dogfood contamination scare resulted in Woolworths cancelling a lot of the lines produced for their shelves.

<b>Farm</b>	<b>Platesize</b>	<b>Kilo</b>	<b>Total</b>
De Poort	?	?	12
Jonkershoek	0	28	28
Hands-on	0	35	35
Molapong	18	40	58
Fizantakraal	5	35	40
Lourensford	0	55	55
Lamond	0	30	30
Dyer Eiland	0?	0?	0?
Katse Dam	0	90	90
	<b>23</b>	<b>313</b>	<b>348</b>

Gary Buhrmann reported that a meeting was held at Elsenburg, which representatives of MCM, Vet Services, abalone industry, fin fish industry and WCTA attended. It was suggested that all aquaculture segments involved make a joint effort to establish a dedicated lab with a vet that was conversant with all aspects of aquaculture, rather than each sector doing their own thing. Gary also reported that Vet Services would like to help, but their lab was very busy and they did not have a vet that was dedicated specifically to aquaculture. There was still some questions if Vet Services for aquaculture industry fell under the jurisdiction of the governing body of the Animal Diseases Act. Vet Services would contact the WCTA as soon as they had clarity on the issue.

Greg stepped down as Chair of the WCTA after serving gracefully in the position for numerous years. Krijn Resoort was nominated, voted for and accepted as the new Chairman

The full minutes can be obtained from Erna Compion [erna@interneuron.co.za] or myself for those interested - Editor

## **Trout from Rhodes University makes up losses caused by high temperatures**

By Mike Loewe in the Herald

Rhodes University has come to the rescue of a Stellenbosch University-driven fish farming project in the Western Cape. Recently an eight-ton truck loaded with 5 000 10-month-old yearling rainbow trout drove through the night to the Hands-On Fish Farmers' Co-op to deliver their cargo. The Co-op is facing a bleak winter after temperatures in its Kleinplaas supply dam on the Eerste Rivier in the Jonkershoek Valley soared to between 28°C and 30°C in February, destroying 90 per cent of their trout stock. The dam is 12km from Stellenbosch University's Genetics Department, Aquaculture Division, which is providing technical and scientific support for the government and private-sector backed venture.

Martin Davies, director of the Rhodes-based Experimental Fish Farm, said Rhodes and Stellenbosch had worked together on aquaculture farming in South Africa for 20 years. He said they had slashed their price to help out a fellow university and a good project. His farm supplies trout for the fly-fishing tourism industry in the Eastern Cape. The three-year-old Co-op has 35 projects run by 300 people. Workers own 75% to 100% of each project, while big landowners can own no more than 25%. The projects are expected to grow trout in net cages in farm dams throughout winter. These trout will be sold by the Co-op, mainly to the Three Streams trout smoking plant in Franschoek. Three Streams supplies 600 tons of smoked salmon and trout to Woolworths and abroad. Twenty-five of the projects produced a crop last year, but this year only eight are expected to yield a harvest. Davies said his Grahamstown trout would keep the projects ticking over.

The project's technical manager, Gabri Steyn, said he and the fish farm's supervisor, Anvor Adams, had had to check on the fish every 30 minutes on the 16-hour journey.

[http://www.theherald.co.za/herald/news/n10\\_16052007.htm](http://www.theherald.co.za/herald/news/n10_16052007.htm)

## Arctic char steals the show

Succulent Yukon farmed fish gets rave reviews at California food event. Article and recipes at:-

<http://www.thestar.com/living/article/219001>

## Other



## South African aquaculture developments

From Chris Van Gass in Business Day

There is plenty of hope for the future of the fishing industry under certain conditions, despite suggestions to the contrary, Minister of Environmental Affairs and Tourism Marthinus van Schalkwyk said recently at the opening of the Irvin & Johnson Fin-Fish Hatchery at Gansbaai. The hatchery, the first in the country, is a serious effort to develop marine aquaculture. In 2004, "capture-fisheries" and aquaculture supplied the world with about 106-million tonnes of food fish, the highest apparent per capita supply on record. Of this total, aquaculture accounted for 43%. Preliminary estimates for 2005 suggested that total world fishery production reached almost 142-million tonnes, an increase of more than one million tonnes compared with 2004, as well as a new record level of production. There was a decrease in the contribution of capture fisheries to human consumption, but this was offset by an increase in the aquaculture contribution, he said.

"These facts tell a story: aquaculture provides almost half the world's seafood, filling a void created by the depletion of wild fish stocks." Aquaculture continues to grow more rapidly than all other animal food-producing sectors, with a global average annual growth rate of 8,8% a year since 1970, compared with only 1,2% for capture fisheries and 2,8% for meat farming on land. Van Schalkwyk said at least 15 species of line fish in South Africa have collapsed (including white steenbras, galjoen, silver cob, red steenbras, red stumpnose, dusky cob and geelbek), making alternatives, such as line-fish farming, important to consider. Of about 150 different line-fish species, only two are currently regarded as optimally exploited, yellow tail and snoek. The other species are considered to fall between collapsed, threatened and over-exploited. Developing line-fish farming, such as the fin-fish initiative, could augment the availability of line fish and assist with rebuilding wild stocks.

The pioneering R4,1million pilot plant and hatchery, which concentrates on two targeted fish species -- yellowtail and cob, is the culmination of nearly 15 years of investment by fishing company I&J and the first step in the development of a local aquaculture industry. Globally, this industry is valued at R650bn. Aquaculture is in its infancy in SA. Van Schalkwyk said it represented a tiny fraction of the global industry, but the pilot plant could be seen as a major step towards making SA's fishing industry more sustainable. He said the local fishing industry reflected a global problem caused by overfishing and illegal fishing. A recent United Nations report on global marine biodiversity concluded that if current trends continued, "we run a huge risk that fisheries will collapse worldwide by 2048", said Van Schalkwyk. In the past 10 to 15 years, the proportion of overexploited and depleted stocks had remained unchanged, after a marked rise in the 1970s and 1980s. Remaining stocks were overexploited, depleted or recovering and so yielding less than their maximum potential due to excess fishing pressure.

The I&J finfish project, expected to come on stream in 2011, would produce about 1000 tons at about R30/kg in its first year, and secure about 100 jobs. Van Schalkwyk said I&J's efforts were in line with the government's vision. His department was developing a marine aquaculture policy for SA.

Francois Kuttel of I&J said the finfish project had notched up important achievements. It led to the successful spawning of the two targeted species from wild-caught stock, resulting in the pilot project for commercial farming, which needed a fin-fish hatchery to produce enough juvenile fish to grow commercial quantities.

## Feeds

### Farmed Fish ate tainted feed but no risk to Humans

From Newswire Today

After the massive animal food recall, the Veterinary Diagnostic Center at the University of Nebraska is offering to test pet food for toxins and examine deceased animals for concerned pet owners. Although pigs, chickens and farmed fish have eaten contaminated feed, the level of contamination is expected to be too low to pose any danger to human health, according to the US Food and Drug Administration. The practice of spiking exported grain products with melamine and other nitrogen-rich substances to increase profits will be strictly prohibited in the future, according to Chinese officials. The crack-down was in response to pet deaths. Contaminated rice protein concentrate found in moist and dry pet foods earlier this month caused a new round of pet-food recalls and raised questions about the safety of the human food supply. Menu Foods recalled 20 new cat food brands and 10 new dog foods due to cross-contamination.

More than 350,000 pounds of Chinese wheat gluten went directly to a Canadian aquaculture ingredient company, the FDA reported. Three federal agencies, the Agriculture Department, the Food and Drug Administration and the Environmental Protection Agency will continue to monitor animals and food products heading to the marketplace to determine if they pose any threat to human health if eaten. The FDA was alerted to possible contamination of the human food supply when the California Department of Food and Agriculture found melamine in the urine of pigs at the American Hog Farm in Ceres, California.

Corn gluten contaminated by melamine exported from China is believed responsible for at least dozens of pet deaths in South Africa.

## Environment, Health and Disease issues

### Fish by-products

By Sandy Miller Hays

It turns out I'm not the only one around who's really been focusing on fish lately. The scientists at the Agricultural Research Service (ARS) have been thinking a lot about omega-3 as well, but also about all the other ways we can get the absolute maximum benefit out of the fish we harvest. For example, did you know that Alaska's fish-processing industry produces more than 2.2 billion pounds of fish byproducts every year? That's the weight equivalent of nearly 10,000 blue whales. While it's true that large processors typically convert these byproducts into fish meal or fish oil, smaller or at-sea processors might not be set up to do so, so they generally just toss the byproducts back into the ocean for other fish to feast on. But the ARS scientists say that could be like throwing away money, because their research shows those byproducts have market potential. For example, they say livers from different fish species all have positive nutritional

properties. But all fish livers are not created equal; different marine species have different amounts of omega-3 fatty acids. If you're looking for higher omega-3 levels, think "cold." That is because cold-water marine fish tend to have higher levels than many of the warm-water marine fish, which in turn have higher levels than freshwater fish. The ARS scientists compared liver proteins from a range of fish harvested in Alaska — walleye pollock, pink salmon, big-mouth sculpin, Pacific halibut, arrow-tooth flounder, flat-head sole, and spiny-head rockfish. Liver lipid content is a strong indicator of omega-3. All the fish livers had high levels of essential amino acids, but the walleye pollock was king of the pack, with an incredible liver lipid content of 50.3 percent!



Clockwise from upper left: a sheet of gelatin made from Alaskan pollock fish skin, pollock fish skins used for gelatin extraction, shrimp feed pellets made with dried salmon hydrolysate, and salmon hydrolysate powder.

The scientists say there's a place for every one of these fish in the grand scheme of "use it all up." Fish oil and protein supplements for humans could be made from the fish livers with the higher fat levels, while low-fat livers, such as from salmon, can be used as supplements for pets and livestock as well as humans. And protein powders made from cold-water marine byproducts could go into feed for aquaculture or livestock. Estimates are that global demand for fish protein will exceed supply by the year 2016 — a scant nine years away. That's why it's so important that we make the most of the fish we harvest, and get away from the current "grind-and-dump" approach to seafood-processing leftovers. Another intriguing possibility is making gelatin films from fish skins to keep our refrigerated or frozen foods fresh and safe. Most gelatins now are made from cattle and swine byproducts. But in ARS tests,

fish-based gelatin films proved to be a better barrier to water vapor than the mammalian-based gelatins, and offer better protection against oxidation. So, for example, covering a gel capsule-type medication with a thin coating of fish gelatin could slow down the medicine's oxidation.

It sounds like those ARS scientists are about to add a whole new level of meaning to the term "recycling"!

## Research matters, Reviews & Training

### Integration of Aquaculture with Hydroponics - Aquaponics

By Refiloe Thobejane [refiloet@elsenburg.com](mailto:refiloet@elsenburg.com)

Aquaculture in South Africa is behind due to the fact that it focused traditionally only on agriculture and livestock. Another reason why opportunities for aquaculture is often overlooked is due to the fact that South Africa is short of water because it historically can be considered a low rainfall. In addition, this leads to unsustainable approach for optimization of water resource utilization that will eventually result in water as a limiting factor in commercial fish production.

There is a need for a drastic change in paradigm to shift to sustainable aquaculture practices using newer technologies that will optimize the use of water. One approach would be to integrate the aquaculture system with other agriculture based industries. Aquaponics, which integrates hydroponics (growing plants without soil) with aquaculture (fish farming), is a good example of a successful integration. The integration of fish and plants increases diversity and thereby enhances system stability. Aquaponics can be also used to produce large quantities of food in very small spaces in an environmentally friendly way. The principle of the integrated system is to optimize the utilization of nutrients derived from aquaculture for agriculture use.

Since 1987, an integration of aquaculture and agriculture has been investigated in South Africa in order to induce people to farm with fish and vegetables in the same system. This aquaculture model has been well practiced in developed countries such as Asia, however; in South Africa it is not widely practiced but can also be well established as long as expertise will be available to phase in the project. In Saasveld (George) there is a farm that is practicing aquaponics with growing plants (hydroponically) and fish (recirculating aquaculture) in one system. The system has been operating since 2004. They farm in a closed recirculating system (fig 3) where breakdown products derived from the fish wastes have the potential to make an ideal nutrient source for the plants within the system.

Selecting the suitable candidate species for aquaponics system is very important. In aquaponics the fish and plants selected for aquaponic system should have similar needs as far as temperature and pH is concerned. Catfish and tilapia (figure 1 & 2) are selected for production in Saasveld. As a general rule, warm water fish and leafy crops such as lettuce and herbs will do best, however fruiting plants such as tomatoes and peppers will depend on the stocking density of a fish in a system.



**Fig 1.** Catfish (*Clarius garipinus*)



**Fig 2.** Tilapia (*Oreochromis mossambicus*)

Factors that make catfish and tilapia suitable candidates for aquaponics:

Tilapia is a warm-water species that grows well in a recirculating tank culture. Furthermore, tilapia is tolerant of fluctuating water conditions such as pH, temperature and dissolved oxygen. Catfish is also a suitable candidate because of tolerant to overcrowding and a poor water quality.

Plants that will do well in any aquaponics system:

- any leafy lettuce
- spinach
- basil
- mint
- chives

Plants that have higher nutritional demands and will only do well in a heavily stocked and well established aquaponic system:

- tomatoes
- peppers
- cucumbers
- beans, peas

How does Aquaponics Work?

In aquaponics, the nutrient-rich waste-water from recirculating aquaculture provides a food source for the growing plants and the hydroponic beds (fig 4) provide a natural filter for the water fish live in and gravity drains the water back to the fish dams. This creates an ecosystem where both

plants and fish can thrive. Aquaponics is the ideal answer to a fish farmer's problem of disposing of nutrient rich water and a hydroponic grower's need for nutrient rich water.



**Fig 3.** Recirculating system



**Fig 4.** Hydroponics

Based on the facilities available for trials, the Department of Agriculture in the Western Cape is willing to collaborate with producers. The main objective being to investigate the most efficient application of the integration of aquaculture with agriculture by utilizing nutrient rich water discharged from recirculating fish systems to irrigate vegetables crops.

## Regulatory matters

### Western Cape province draft Aquaculture Policy

From Lizeth Botes [lbotes@ai-sa.org.za](mailto:lbotes@ai-sa.org.za)

Following from the Western Cape policy & strategy workshop (15 Feb 2007) referred to in the previous newsletter, where it was communicated to all the stakeholders that the WC province draft aquaculture policy flowing from the workshop will be submitted to the MEC shortly after the workshop, it was decided that the appropriate formal route for the policy should be followed. A follow-up workshop later this year will focus on getting stakeholder inputs on the draft policy, which will flow into strategy discussions with the aim to draft a strategy for the province. Communications regarding this workshop will be circulated, as previously, by the Provincial Development Council (PDC), DEDT and AISA.

## Announcements & Upcoming events

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### The AASA conference and AQUACULTURE AFRICA

22 – 25 October 2007

Early Registration ends on 30 June 2007. Registration received thereafter will be subject to 20% higher conference fees.

Contact Natasha Marshall, the AASA Secretary at [info@aasa-aqua.co.za](mailto:info@aasa-aqua.co.za)

tel: +27(0)12-8076720  
fax: +27(0)12-8074946  
[www.aasa-aqua.co.za](http://www.aasa-aqua.co.za)

### CATFISH 2007 and VIETFISH 2007, the Vietnam Fisheries International Exhibition

Ho Chi Minh City from June 13<sup>th</sup> to 15<sup>th</sup> Catfish 2007

and June 12<sup>th</sup> to 14<sup>th</sup> Vietfish 2007

[hoetd@vasep.com.vn](mailto:hoetd@vasep.com.vn), [quochanh@vasep.com.vn](mailto:quochanh@vasep.com.vn), [tienloc@vasep.com.vn](mailto:tienloc@vasep.com.vn)

### 5<sup>th</sup> International Fish and Seafood trade show

Agadir, Morocco 22<sup>th</sup> to 25<sup>th</sup> November, 2007

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## Conferences

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### International Symposium on Genetic Impacts from Aquaculture

International Symposium on Genetic Impacts from Aquaculture: Meeting the Challenge in Europe

International Symposium, Bergen, Norway, 2-4 July 2007

<mailto:genimpact@imr.no>

## Employment

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No submissions