



Aquaculture Association of
Southern Africa

NEWSLETTER

OF

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



Volume 4: 01 • March 2007

Contents

A Word from the AASA Chairman and the CEO of AISA

The Editor's choice

Letters to the Editor

Sector Contributions

Abalone

Catfish

Crayfish

Ornamentals

Oyster & Mussels

Prawns

Tilapia

Trout and Salmon

Other

Feeds

Environment, Health and Disease issues

Research matters, Reviews and Training

Regulatory matters

Announcements & Upcoming events

Conferences

Employment

Aquaculture Association of Southern Africa

Tel: +27 12 807 6720

Fax: +27 12 807 4946

E-mail: info[AT]aasa-aqua.co.za

Aquaculture Institute of South Africa

Tel: +27 21 483 9106

Fax: +27 21 483 9100

E-mail: lbotes[AT]ai-sa.org.za

A Word from the AASA Chairman and the CEO of AISA

Etienne Hinrichsen chairman@aasa-aqua.co.za

My first draft of this chairman's contribution to the newsletter was less appealing as I got caught up in the old style of pleading to people to sort out their AASA memberships for 2007. I am however not going to stoop to this level and need only give you the following information to illustrate my point:

- We have more than 1 000 regional contacts on our AASA database, most of which receive the newsletter.
- Thus far (in 2007) we have set up and equipped a permanent office, represented aquaculture at various forums, continued with the newsletter, registered AASA as a non-profit organisation, sent our secretary (Natasha) on a web training program and progressed very well with the arrangements for the 2007 conference.
- We have achieved the aspects above in spite of having only a dozen or so members that have paid up for 2007.

Having raised the issue of membership with most people I come into contact with, one thing has become clear. Many people have a sincere desire to wrap up their membership, but are caught up in the mad rush we sometimes refer to as "life". If this is the case, just send an email to Natasha

info@aasa-aqua.co.za

with the word "membership" and she will sort out an invoice and get the necessary information extracted from you.

Arrangements are now virtually complete for the 2007 AASA Aquaculture Conference, which will be held at the Cape Town Convention Centre from 22 to 25 October. As many of you will already know, we are hosting the conference in concurrence and at the same venue as the Fish and Aquaculture Trade Show. International interest in the conference has been overwhelming and I urge people to submit the titles and other information for prospective presentation and papers as soon as possible – space is limited. The registration forms for the conference are also being distributed right now. For any further information on the conference, please do not hesitate to contact the AASA office.

There is not much more editorial space for me to reflect on what's new in aquaculture circles. Perhaps I should however mention that the SA Government has once more called a joint government and sector meeting later in April to discuss the amalgamation of policies and sector development plans. I hope this process leads to more fruitful aquaculture development and support in the region. Rest assured – AASA will be there and will make sure industry is represented.

Dr. Lizeth Botes lbotes@ai-sa.org.za

On 15 Feb 2007, a workshop was hosted by the South African Provincial Development Council in collaboration with the Department of Economic Development & Tourism and the Aquaculture Institute of South Africa. The workshop was well attended by government delegates from the Western Cape Premier's department and the relevant provincial and national government departments, and industry, both marine and freshwater where very valuable inputs were made into the Provincial Policy Framework and Strategy process for Aquaculture Development in the Western Cape.

Another workshop in support of the development of Aquaculture in the Western Cape was held on 26 March 2007. The workshop was hosted by the Provincial Department of Agriculture (PDoA) in collaboration with AISA with the aim to introduce the DoA project, namely Aquaculture

Development Management (Survey & Map). The workshop was once again attended by both government levels, national and provincial, and industry where fruitful discussions around the value and possible extension of such a project were discussed.

AISA also recently conducted two Western Cape based surveys with regard to downstream opportunities and skills, capacity building and training. Whilst we realise that there is a lot of pressure on industry to attend all the workshops and give inputs into all the surveys, the time that industry dedicated to assisting us is and was highly appreciated and I would like to thank each and every individual and organisations for their continued support which ultimately determines the success of all the various projects.

The Editor's choice

Adrian Piers newsletter@aasa-aqua.co.za

More seafood eaten in pregnancy shown to produce brainier babies

By Jeremy Laurance in The Independent

Research published in The Lancet attempts to settle a dispute that has divided British and US scientists over whether eating fish benefits or damages the developing brain of a foetus. Fish absorb mercury, a heavy metal, which can harm brain development. However, fish also contains omega 3 fatty acids and other nutrients essential to the developing brain. Official US Government advice is for pregnant women to limit their consumption of all seafood, including white fish, oily fish and shellfish, to no more than 340 grams a week, in order to limit their exposure to mercury.

In the UK, the Food Standards Agency takes a less stringent line advising expectant mothers to avoid shark, swordfish and marlin and to limit consumption of tuna. The new research into children's behaviour and intelligence suggests that instead of protecting the unborn baby, women who follow US advice or cut fish out of their diet altogether may miss out on nutrients that are vital to the brain's development and so unwittingly harm their children. The findings are taken from a study of almost 9,000 British families taking part in a project at the University of Bristol. Scientists compared the amount of fish eaten by pregnant mothers with the development and behaviour of their offspring up to the age of eight. Women from socially-advantaged backgrounds were more likely to include fish in their diet but even after adjusting for 28 different factors - such as social class, or whether the mother breastfed - there were significant differences apparent in the children's development. Mothers who ate more seafood than was considered to be safe according to US guidelines had children who were more advanced. They had higher IQs, better social skills, were more communicative and more physically accomplished.

Those children whose mothers had eaten no fish performed worse on all the same measures.

They found that when women had low levels of seafood consumption, the outcome is exactly the opposite of what was assumed by the United States Advisory. Unfortunately, the advice appears to have had the unintended consequence of causing harm in a specific developmental domain - verbal development - where protection was originally intended. No evidence was recorded to lend support to the warnings of the US advisory that pregnant women should limit their seafood consumption. In contrast they noted that children of mothers who ate small amounts, 340g per week, of seafood were more likely to have suboptimum neurodevelopmental outcomes than children of mothers who ate more seafood than the recommended amounts.

Full article at:- http://news.independent.co.uk/uk/health_medical/article2274488.ece

Environmentally responsible seafood consumption

An interesting webpage on seafoods and recommendations on what to eat has come to your Editors attention. Although many of the statements are disputable, the last item which is of interest to aquaculturists reads "Encourage ecological fish farming. Large fish farms currently follow the model of land-based industrial farming, raising large numbers of nearly identical species in tight, unsanitary conditions. Raising multiple species together (e.g. salmon and mussels) can reduce pollution, disease, and the need for inputs. Raising herbivorous fish (e.g. tilapia rather than salmon) can reduce aquaculture's use of fishmeal and fish oil."

A few observations need to be made here. Firstly, sanitary conditions are a prerequisite of economic fish farming – anything else entails economic losses. Secondly, aquaculture is a *net producer* of fish oils, much of which is used in livestock production, thus saving wild fish sources for other uses.

The webpage is at:- <http://www.worldwatch.org/node/4709>

Letters to the Editor

A short report on the World Aquaculture 2007 meeting

From Khalid Salie ks1@sun.ac.za

San Antonio, Texas, USA
February 26-March 2, 2007

The Aquaculture 2007 was a triennial meeting of the World Aquaculture Society, National Shellfisheries, and the Fish Culture Section of the American Fisheries Society. The theme of this year's meeting was "Science for Sustainable Aquaculture" and it follows directly from aquaculture's global growth and prosperity. It is the fastest growing food production system globally. The agenda is set in that with growth comes responsibility and the continued rise in aquaculture production demands our collective attention, concern and the recognition that development and implementation of sustainable aquaculture practices are our responsibility.

I had been invited to present a paper on our Water Research Commission Project that investigated the impact of fish farming in cage system on the ecology of irrigation dams (report due July 2007). The title of my presentation was the Impact of small-scale fish farming on the water quality of irrigation reservoirs in the Western Cape Province, South Africa: Results of the three-year Boland case study. The conference was attended by more than 3000 delegates, representing 60 countries. There were 250 poster presentations, more than 1000 academic papers delivered and 250 exhibitors who demonstrated their latest innovations in products and services. Papers were presented in 90 special sessions with 16 concurrent sessions over the 4-day meeting.

Many quality papers were presented at the conference that provided insight to numerous issues relevant to our industry. Sustainability and food safety are high on the agenda in world aquaculture. Consumers are demanding, now more than ever, information on food safety and traceability and whether seafood products are farmed under sustainable management practices. It is a dynamic environment and today's practices are tomorrow's standards. We have to ask ourselves if we are geared to adapt to changing scenarios? Any bad performing operation affects the whole industry. A nationwide USA consumer survey presented at the conference again exonerated the importance of the consumer and efficient marketing. One of the findings was that if recipes and coupons are supplied with sales, consumers would strongly consider buying the product. The Trout Producers Association of the USA presented an interesting session. Most of the farmers felt that they could not supply enough fish as to the demand. Their success is based

on diversification of markets, forging working partnerships and maintaining a leading role in niche marketing. Their philosophy is that if you follow the market you will always be behind.

The conference and exhibition of products and services available to the industry accentuated our goal of encouraging industry to take a more pro-active role in developing aquaculture in South Africa. Most aquaculture overseas is industry-driven and through levied contributions, providing the backbone for financing research and development. In view of the speed at which world aquaculture grows, South Africa has moderate progress in displaying the aquaculture development that has taken place in recent years. The time is now to step up our commitment towards aquaculture and implement projects. This has to take place at all levels from national, provincial and local governments to academic and other relevant institutions. We have to take it one step further and structure a collective strategy for development in which it is clearly spelled out what we would like to achieve within the next 10 years and more importantly who will take responsibility for delivery according to the plan. Global aquaculture development is moving at a tremendous pace and we have to stay abreast to reap the potential benefits of aquaculture. We can only achieve this through pooling our resources and expertise.

Abalone



Premier Fishing abalone now worth R10 million

By Marc Hasenfuss in Fin24

At an AGM in Cape Town shareholders of Sekunjalo Investments were treated to an impromptu pep talk by CEO and chairperson Iqbal Surve. He told a gathering of shareholders that the group was expecting core subsidiary Premier Fishing, now with a healthy allocation of long term fishing rights, especially in exportable South Coast Lobster, to generate operating profits of around R100m within the next 24 months. "Our fishing operations will deliver more profits than when the rand was trading at R10 to the dollar."

He added that Sekunjalo's assemblage of technology businesses were aiming for profits between R20m to R30m for the same period with R10m coming from abalone aquaculture operations. He told shareholders: "Don't say we didn't tell you about the potential in our businesses..."

Surve was also positive about prospects for listing 49% owned biotechnology subsidiary, Bioclones, in the next 12 months. "Bioclones has the potential to be worth more than all of Sekunjalo's businesses combined plus. At the moment the local market just does not understand biotechnology." Shareholders were also given a "High Level Strategic Update" by deputy CEO Norman Noland.

Smuggling Abalone Could Harm Infant Industry

By Wezi Tjaronda in the New Era

Smuggling of abalone (commonly known as perlemoen) into Namibia has the potential of harming the infant industry. The only abalone farmer in the country, Rassie Erasmus, and Traffic, the wildlife trade monitoring network, have warned that if this trend continues, it will cause enforcement challenges for Namibia, which has legal commercial aquaculture operations. Due to strict controls in South Africa, where abalone species are endemic, poached abalone is smuggled into neighbouring countries from where it is exported. A Senior Programme Officer of Traffic East/Southern Africa, Markus Bürgener, said in a press statement that recently, poached abalone from South Africa was smuggled into Zimbabwe, Mozambique, Swaziland and Namibia and exported to major destinations in the East. "Although no abalone species are either commercially

harvested or legally traded through these countries, Hong Kong import data has revealed imports of dried and frozen abalone from all the three countries," said Bürgener, adding: "Poached abalone is also traded through Namibia and this poses enforcement challenges since there are legal commercial aquaculture operations in Namibia producing and trading in perlemoen." Erasmus attributed this to lax controls on the part of South Africa's neighbours. "South Africa is very strict. Now they want to use Namibia as an escape route. Our harbours and airports are not tight, so they try to smuggle it here and export it out," said Erasmus. Although it would be easier for abalone to be smuggled here and exported out, Erasmus said this would cause a lot of problems for Namibia, as there is interest from some Asian countries to invest in the industry. "It is very bad for potential farmers in Namibia. I know that the Chinese want to invest in mariculture, and if these things (smuggling) continue, the business will suffer. It will harm the country," said a worried Erasmus, owner of Lüderitz Abalone. Recently, some people who were travelling in a vegetable truck were caught with smuggled abalone at Vioolsdrift, on the South African border with Namibia. A police officer at Noordoewer said it was suspected that the smugglers were bringing the perlemoen into Namibia. At the moment, wild species of abalone occur in South Africa, Australia and New Zealand but, due to the lucrative nature of the industry and the growing demand, Erasmus said there was always someone willing to pay more to have abalone on their tables. Namibia does not have wild species because its waters are too cold. Abalone needs temperatures of 18 degrees Celsius to breed. Namibia has between 13 and 15 degrees Celsius. The delicacy is so much in demand that Erasmus had received 500 e-mails from people looking for abalone when he started exports. Legal abalone costs US\$39/kg (approximately N\$280), while smuggled abalone can fetch US\$70/kg (N\$490). Traffic added that dried perlemoen could fetch as much as US\$1000/kg during the Chinese New Year, which occurs on February 18. Its meat is a highly-valued delicacy and is also considered to be an aphrodisiac in some East Asian countries, while its shells are used as ashtrays, soap holders and food receptacles. Lüderitz Abalone started three years ago, and it exports to Hong Kong, Singapore, Japan and China. The Japanese market, said Erasmus, is so huge that even full production of 80 tonnes would only satisfy one client. To curb the illegal trade, South Africa has listed its endemic species (*halotis midae*) on Appendix III of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which requires all future consignments in international trade to be accompanied by CITES documentation. "The CITES listing has the potential to reduce illegal harvest and trade in this valuable and sought-after marine mollusc, and the South African government is to be congratulated on taking this initiative," said the Traffic Senior Programme Officer. He said in South Africa, the continued illegal harvest has resulted in the total allowable catch in the legal fishery being reduced from 430 tonnes in the 2002/3 season to 125 tonnes in the 2006/7 season.

<http://allafrica.com/stories/200702130549.html>

Eco-friendly abalone aquaculture

A popular news article, with recipes, at this site:

<http://sfgate.com/cgi-bin/article.cgi?f=/c/a/2007/02/28/FDGKBO9AV31.DTL>

Catfish



No submissions

Reliable, low-cost instruments for your healthy Aquarium

Smart pH
Smart ORP
Smart DO
Smart EC
Smart TDS



Testers – Portables – Continuous Monitors – Controllers

 **Milwaukee**
We originate; others imitate...

 **SPRAYTECH**
PRECISION NOZZLES FOR YOUR SPRAYING SYSTEMS

HEAD OFFICE
34 John Murrin Street 7530
P. O. Box 231, Bellville 7535
Tel: (021) 948-2872
Fax: (021) 948-2873

E-mail: info@spraytech.co.za Website: www.spraytech.co.za

2 Year Warranty

Crayfish



Crayfish supply in the US

By Jean Prescott jtprescott@sunherald.com

Ask enough people - farmers, wholesalers, retailers - about crayfish, and you get very different perspectives on the current season. Keith Delcambre, whose family owns and operates Bozo's restaurant in Pascagoula, puts it as simply as it can be put: "It's all about supply and demand."

The 2006-2007 season which begins in December looked awful at the start and looks only slightly better now. Farmers of the pond-raised product are still plagued by the saltwater effects of Hurricane Rita. Rains have been insufficient, he said, to flush the ponds and bring back the crayfish. And the spillway - basin fishermen, the ones who catch wild crawfish on the Atchafalaya, are always at the mercy of the weather, which has been less than ideal.

Talk to the local retailers, though, and according to them, things have picked up tremendously.

As of this weekend, crawfish of varying sizes - from something called "peelers" (the little ones you get cleaned and frozen in bags) to the giant ones with claws (Nos. 1 and 2 sizes) might be variously priced live in 35-pound sacks, between 79 cents and \$1.39 a pound. If you want them cooked, expect to pay about \$2.29 a pound, slightly less if you get 10 pounds or more. "Three weeks ago we were begging them for crawfish, now they're begging us to take them," Delcambre said. Fellow retailers on the Coast have pretty much the same story to tell. "Prices have dropped almost a dollar (a pound) in the past three weeks. In a month, they could be less than \$1 a pound."

The volume has picked up, and available live and cooked - fresh every day. Cooked are about \$2.29 a pound, but you've got to remember that you cook 100 pounds, then weigh them and you've got only 75 pounds. You get weight loss with cooking.

Eels



No submissions

Ornamentals



Ornamental Fish – an environmental time bomb?

From Eco News reporting on the Australian Veterinary Association Conference

Delegates at the Australian Veterinary Association (AVA) Annual Conference have been told that imported ornamental fish are posing a serious threat to Australia's aquaculture industries and the environment. Professor Richard Whittington, Chair of Farm Animal Health at the University of Sydney warned it is unlikely that current controls over the importation of exotic fish will prevent the establishment of new pathogens and parasites with the potential to cause serious animal health problems in Australia. Despite stringent quarantine protocols, the evidence is that diseases from ornamental fish are spreading across Australia, Prof. Whittington said. In 2006, there were 22 species of alien ornamental fish with established breeding populations in the waterways of

Australia. These have the potential to become invasive and alter the environment, much like carp, or become agents for the spread of disease.

Prof. Whittington presented case studies of a number of infectious agents and parasites that have already been introduced to Australia including a virus *Gourami iridovirus* introduced by the gourami goldfish that killed 90 per cent of murray cod in an aquaculture facility in 2003, a bacterial pathogen *Aeromonas salmonicida* associated with goldfish imported from Japan and now identified in native silver perch and a bacterial pathogen *Edwardsiella tarda* isolated from siamese fighting fish which was identified as a cause of mortalities in farmed rainbow trout. Prof. Whittington said that the high number of imported species, a high prevalence of pathogens and parasites in imported fish, the lack of post-border quarantine, and the potential transmission of disease by asymptomatic carriers were all factors that led him to believe imported fish pose a continuing threat.

He stated either the international community must adopt policies that reduce the potential risk of spreading pathogens, or Australia should consider dramatically reducing the number of imported ornamental fish.

Seine netting for Koi in the Western Cape

From Danica Resoort danica.resoort@telkomsa.net

On a warm and sunny Saturday, a group of excited koi keepers, hobbyists and friends gathered at a mud dam in the Grabouw/Elgin area. The owners of the koi collection were eager to dragnet the dam and see the growth achieved over the past 3 months. They were not to be disappointed.

The outing to Elgin was the first social event this year for the Western Cape chapter and the invitation went out to South African Koi Keepers Society members as well as non-members and other interested persons. The day started with a brief welcoming from Mahmood Khatib, the Western Cape chairman, and Danica Resoort. Together with her husband, Krijn, and friends Patrick and Amanda Newton, they own the collection that happily resides in the mud dam on Culemborg farm, a working fruit & wine farm.

The netting went smoothly and a large number of koi were captured with care and placed in some bins to be checked and viewed. The crowd helped enthusiastically with the netting of the koi and it was great to experience the positive atmosphere and hear the encouraging comments of the bystanders. Some of the koi that were caught included a large Sanke female, an Asagi, Shusui, Ogon and Utsuri as well as a number of smaller metallic varieties that had exhibited good growth too. Afterwards all gathered in the wine cellar where Danica, a fish health specialist, presented an informative talk on how to look after the well-being and health of your koi collection. The talk was accompanied by a power point slide-show with lots of photos and illustrations of the different problems that can be encountered, including the common parasites and bacteria. The talk also focused on different treatments and medications that can be used safely in ponds. The day was rounded off by an informal wine tasting presented by Justin Hoy, the winemaker and owner of the farm. The tasting included a tour through the newly-built wine cellar and everyone had a chance to taste samples of the different stages in wine-making: from the juice, and fermented product through to the bottled wine that would be opened at dinner! It was agreed that informal outings such as this should be arranged more frequently and with this in mind it was proposed the next event at Elgin should happen on the weekend of the 9th of June, to allow the koi some more time to grow.



Oysters & Mussels



Safety is sometimes used as a barrier to Trade

By Sophie Preece

Shellfish safety should not be used as another barrier to trade, a Blenheim conference was told. Protection versus protectionism was just one of the many discussion topics of the sixth International Conference on Molluscan Shellfish Safety, where 200 delegates from around 25 countries were welcomed by New Zealand Food Safety Minister Annette King. With \$250 million worth of exports to 60 countries annually, the shellfish industry played an important role in the New Zealand economy, Ms King said. It concerned her that some regulatory issues could be used as non-tariff trade barriers, where countries used shellfish safety as an opportunity to protect their own market. Ms King said collaboration and cooperation within the international shellfish safety community was vital to ensure that countries worked towards common standards rather than individual countries having different requirements. That was an issue also raised by key speaker Lahsen Ababouch, chief of seafood trade at the United Nations Food and Agriculture Organisation in Rome. The industry did need to protect the consumer but not to use that as an excuse "to shield domestic producers from foreign competition", he said. For the increase in shellfish trade to continue in a sustainable manner it was important to have an international regulatory framework to ensure molluscan shellfish safety, he said.

In welcoming delegates to the conference Marlborough Shellfish Quality Programme executive officer Helen Smale said the room was filled with the "guardians" of shellfish safety. The week long conference would allow all the regulators, scientists and industry members to extend their guardianship, she said. The conference will address various issues affecting the shellfish community, including microalgae and microbial risk assessment, viral and biotoxin detection method advances, toxicology of biotoxins, post-harvest treatment and early warning systems for biotoxin and microbiological contaminants. In addition to lectures and discussions, the delegates will also have the opportunity to visit and learn about shellfish safety practices for Greenshell mussel farms in the Marlborough Sounds.

Prawns



Something's fishy about the Rufiji prawn project

By Karl Lyimo in the East African

It was recently reported that the Tanzania government has approved commercial prawn farming projects in the country. According to the report, the Tanzania Investment Centre has granted permission to a South Korean firm Alpha Crust to run a major prawn farm in Mafia, south of Dar es Salaam. Its executive director, Emmanuel ole Naiko, also explained Thailand was also planning to undertake prawn farming in Bagamoyo, north of Dar es Salaam. In 1996, then president, Benjamin Mkapa, gave the green light to one company to start prawn farming on 10,000 hectares in the Rufiji River Delta.

Full story at:-

<http://www.nationmedia.com/eastafrican/12022007/Opinion/Opinion1202074.htm>

An Australian Prawn Farming manual

This manual is available for download in PDF format at: -

[http://www.aciar.gov.au/web.nsf/att/ACIA-6XBTSP/\\$file/Australian%20prawnfarming%20manual%20final.pdf](http://www.aciar.gov.au/web.nsf/att/ACIA-6XBTSP/$file/Australian%20prawnfarming%20manual%20final.pdf)

Tilapia



Tilapia key to food security

Trinidad and Tobago's Minister of Agriculture, Land and Marine Resources, Jarette Narine, said 40,000 jobs could become available from the tilapia farming industry. "Tilapia farming represents a concrete, tangible step in the Government's thrust towards substantially developing aquaculture and tilapia farming," Narine said. He also said the Agriculture Ministry views the development of aquaculture, with particular reference to tilapia, as an extremely important undertaking.

"When one considers the ramifications of the worldwide phenomenon of declining fishery stock, the need to bolster the production of fish is obvious. Aquaculture is the avenue to achieve this endeavour that is best suited to Trinidad and Tobago," he said.

Full story at:-

<http://www.newsday.co.tt/features/0,54647.html>

India permits the import of Nile tilapia

From The Hindu

Farming tilapia, considered the 'wonder fish of the 21st century,' holds great potential for aquaculture in India. The recent decision to permit import of some of the fast-growing tilapia species is a welcome step, said a paper presented at a State-level workshop here on expanding aquaculture in Kerala.

Tilapia is now cultured along with shrimp worldwide, said the paper as it pointed out that this co-culture system helped improve water quality by clearing it of the anaerobic conditions. This in turn helped improve shrimp size, survival and production.

Tilapia culture will help Indian aquaculture in a big way because shrimp cultivation was confronting difficulties. The white spot syndrome has been putting shrimp farming through a bad patch and permitting tilapia culture could provide the much-needed relief, the paper pointed out. It said that tilapia culture was environment friendly and its high yield would help meet the country's food security needs. Export of tilapia too holds great promise, as the United States is India's largest trade partner. India can, therefore, find ready export market in the U.S. as the country already imports agriculture produce from India. The United States currently is a major importer of tilapia and the US import of the fish variety is expected to grow 20 per cent a year, said the paper.

Currently China, with an annual 15 per cent growth in production, leads the world in tilapia culture.

Supermale Tilapias arrive to boost aquaculture in Guyana

From the Stabroek News

The recent delivery of 250 breeding sets of supermale tilapias from the United Kingdom is expected to provide the boost the National Aquaculture Association of Guyana needs to make aquaculture *the leading economic sector in Guyana by 2015*. Supermales are a special breed of tilapia with two YY chromosomes, virtually guaranteeing the preferred male offspring. The offspring of this supermale shipment will be the first set of tilapia exported from Guyana.

Additionally government representatives are attending the World Aquaculture Society conference in San Antonio, Texas. The WAS conference focuses on sustainable aquaculture practices throughout the world and will feature aquaculture professionals and scientists presenting lectures on specific industry topics such as the technical aspects of production, biology, ecology, species and growing regions of the world including the Caribbean and Latin America. Some of the topics up for discussion are the market-led approach, public/private sector partnerships and rice and fish projects in Guyana. At the meeting Guyana delegates will meet investors, scientists, researchers and industry suppliers in order to further establish Guyana as a prime location for aquaculture. The National Aquaculture Association Guyana members represent all industry stakeholders: farmers, entrepreneurs, feed producers, members of the government and non-governmental organisations. The association's overall objective is to increase the production of tilapia to begin exporting this year. A recently completed feasibility and marketing study showed that Guyana has good potential for large-scale, profitable, export oriented aquaculture. The NAAG is building on those results (in addition to the knowledge that imports of tilapia to the North America market have increased ten-fold over the last ten years, making tilapia the sixth highest consumed aquatic product in the USA) as it aims to meet its 2015 goal.

Trout and Salmon



Genetically modified salmon growth stunted in trial

By Ewen Callaway in ScienceNOW

A new study shows that salmon genetically modified to grow 25 times larger than their wild relatives end up far smaller when reared in a natural-looking environment. But even if the modified fish won't grow so huge in the wild, researchers say it's too early to know whether it's safe to let them out of the lab. Scientists have engineered salmon, tilapia, and other fish to grow faster and bigger, but no transgenic fish is approved for commercial farming in the United States. Concerns linger over the risks such fish pose in the wild. Conservationists worry, for example, that escaped transgenic fish could threaten wild stocks by increasing competition for food. To gauge the validity of these worries, researchers at the Center for Aquaculture and Environmental Research in Vancouver, Canada, took a look at the transgenic coho salmon. The fish make extra growth hormone, and when raised in a hatchery they bulk up to 25 times the size of normal coho. But what if they grew up in an environment more like their natural home? The researchers designed a 5-meter-by-1-meter "stream" in their lab, complete with rocks, logs, and small rainbow trout for the salmon to devour. Coho grown in this simulated environment grew to just twice the size of their wild cousins and gorged on less prey than did their hatchery-grown counterparts, the team reports online this week in the Proceedings of the National Academy of Sciences.

Despite these seemingly reassuring findings, the researchers warn against concluding that genetically modified fish pose no threat to natural populations. "Certainly the ecosystem we created does not fully represent the wild," says Robert Devlin, a molecular biologist at the noncommercial center.

William Muir, a geneticist at Purdue University in West Lafayette, Indiana, who has developed computer models to predict how transgenic fish might fare in the wild, agrees that simulated environments are no substitute for the great outdoors. Still, he calls the study "extremely important" and notes that it provides the strongest evidence yet that "transgenic fish are less risky than we thought."

Other



Hybrid Grouper developed in Malaysia

Researchers at a Malaysian university here have successfully cross-bred two species of grouper to produce the world's first hybrid fish of its kind. The hybrid grouper was produced by fertilising the eggs of the tiger grouper *Epinephelus fuscoguttatus* with the sperm of the giant grouper *Epinephelus lanceolatus*, said Universiti Malaysia Sabah vice-chancellor Prof Datuk Dr Mohd Noh Dalimin.

"The hybrid of these two high-value species of the fish represents the first such crossing in the world. It combines the morphological features of the two parent species. The hybrids are healthy and growing well in the sea cages and will be good news for the aquaculture industry."

From an article at <http://www.bernama.com.my/bernama/v3/news.php?id=246079>

White seabass is first in marine finfish revival

Once considered a rare catch in the fishery industry, the white seabass is resurging from severe depletion thanks in part to a hatchery program at Hubbs-SeaWorld Research Institute in Southern California. The focus of the project, known as the Ocean Resources Enhancement and Hatchery Program, is to raise the white seabass for release back into the ocean.

Full story at: -

<http://www.cfbf.com/agalert/AgAlertStory.cfm?ID=773&ck=86B122D4358357D834A87CE618A55DE0>

Feeds

Asia's fish farms developing appetite for soyabean meal

From Reuters

Farmed fish in China are developing an appetite for soyabean meal, and rapid expansion of that country's aquaculture sector represents a growing market for U.S. soyabeans, a U.S. industry official said.

China is the world's top producer of farmed fish, primarily carp and tilapia. The country's aquaculture industry uses 4.5 million to 5 million metric tonnes of soyabean meal a year. "We think this market can double within a decade, easily. And that's up from zero, 10 years ago," said Brent Babb of the U.S. Soyabean Export Council. China is also the largest customer of U.S. soyabeans, which is processed into soya oil and soyabean meal. The council has been working for roughly a decade to promote soyabean meal use in China's fish farms. In the last two years, the council has expanded those efforts to India, which has the world's second-largest aquaculture industry. "We see opportunity there. Their economy is improving, and the first thing they want to do is improve

their diet," Babb said. China, India and other nations are turning to aquaculture to meet rising demand for fish as ocean-caught supplies become less sustainable. Previously, some Asian fish farms used manure as a low-cost feed. But soyabean meal, long valued by poultry and pig producers as a high-protein feed, is more efficient, Babb said. "We're going in with higher-quality feeds, and they have a much greater economic return." Some farmed fish species like tilapia can use a diet of up to 50 percent soyabean meal, well above the amounts used in poultry and pig diets. Researchers are also seeking ways to boost soyabean meal use in U.S. farms raising salmon and trout, which can tolerate a diet of only about 10 percent soyabean meal. Soyabean meal supplies are poised to increase as global demand for soya-based biodiesel fuel expands. Soyabean processors will produce more soya oil to meet biodiesel needs, leaving more supplies of co-product soyabean meal. "We see aquaculture as one of the good markets that could end up using this increased supply," Babb said.

Too much food?

By Frank Gregersen in Aquafeed.com

Research indicates that farmed cod receive too much food. A study now in progress at Fiskeriforskning shows that cod grow just as well even when the amount of feed is halved. Are farmed cod getting too much food? Measurements of the fish from hatching to three months old show that it is possible to halve the feed manufacturers' recommended amount of feed and still achieve equally good growth. In the test, cod will be followed for two years until they are ready for slaughter. If the amount of feed can be halved during the entire period, this will mean huge savings and improved profits for the farmers. The background for the research is studies of adult and slaughter-ready farmed cod. Cod normally store fat in the liver, but images taken using a microscope show that farmed cod also store fat in the muscles. "When fat is stored in the muscle, this shows that the farmed cod is unable to utilise all the food it gets", says Senior Scientist Gunn Berit Olsson at Fiskeriforskning. "We have also done studies that show changes in proteins and enzymes that are important for energy utilisation in the farmed cod's cells. When these do not function as they should, the fish cannot utilise food and energy in a normal way. The changes in the cells could mean that the farmed cod is getting too much food. Another possibility is that the feed contains too many minerals."

The scientists are also studying the effects of mineral additives, which are common in fish feed to ensure normal growth and development. The fish in the study are divided into four groups on different diets. One group gets ordinary commercial feed, another gets feed without mineral additives, a third group gets feed with mineral additives but minus zinc and copper, while the last group gets half the amount of feed, which is without minerals. So far, nothing has indicated that mineral additives provide any extra benefits.

"Cod grow equally well without mineral additives. Seawater has a natural content of minerals and perhaps this is enough to cover the cod's mineral requirements", says Senior Scientist Marie Cooper.

Environment, Health and Disease issues

Viral hemorrhagic septicemia threatens fish farms in the US

By Bob Kelleher

A deadly fish virus, responsible for wide spread fish kills in Lake Erie in the US last summer, has now been identified in Lake Huron. Experts say the disease will almost certainly hit Lake Superior. Some Minnesota conservationists are calling for new rules requiring ships to treat ballast water so exotic species like the virus will be killed rather than spread through the Great Lakes. It's a disease

known to infect salt water fish, but no one really knows how viral hemorrhagic septicemia came to be a highly contagious and often fatal disease for fresh water fish in the Great Lakes.

“But it was the fresh water fish known as *drum* that died off that gathered the most attention because we had dead fish floating everywhere, and actually forming windrows on the beaches,” says Fred Snyder, an extension specialist with Ohio Sea Grant.

The virus known as VHS was first identified in the lakes two years ago, but it might have been around much longer. It’s not always obvious. VHS can cause a distended abdomen, or sometimes red patches on a fish’s head or near its gills. The real damage is done to internal organs. Many kinds of fish are susceptible. “It has been found in 37 species,” says Snyder. That does not mean that all of them have had die offs. It simply means that when they take kidney tissue samples they do find the virus. “The virus isn’t believed harmful to humans. Beyond the dead fish on the beach, the real trouble could be to businesses that deal with live fish. *“The big concern right now is that the virus will get into fish farms - the aquaculture facilities and potentially wipe out a chunk of the nation’s aquaculture capability,”* Snyder says. Already the federal government has clamped tight restrictions on anybody moving live fish to or from Great Lakes states.

And, while it’s unclear how the disease has spread, some conservationists say a likely culprit is ship ballast water. The Environmental Protection Agency did some research in the early ’70s, to deal with disinfection of diseases, and how to remediate any negative impact from that. The chlorination process is one of the approaches that can be used to treat for this disease in any kind of ballast water that might carry it. The cost would be negligible, and the chlorine can be neutralized before the ballast water is released again into the lakes, but the shipping industry may not move on the idea quickly. The U.S. Coast Guard has spent several years drawing up ballast water rules. A Coast Guard official couldn’t say what procedures might be in the future rules, but he says there are some problems with chlorination. It’s been found that chlorine is very effective in killing most varieties of organisms, but there is some concern with the use of chlorine in ballast water tanks. The chlorine could possibly corrode the tanks.

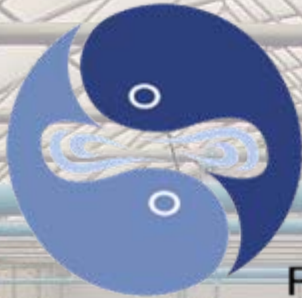
Research matters, Reviews & Training

DNA used to trace escaped farmed salmon

A fish farm in western Norway is currently under police investigation after being identified by the Institute of Marine Research as the source of a salmon escape. This is the first example of DNA methods being used to trace farmed escaped salmon to the source of origin. In September last year, the IMR was asked to assist the Norwegian Directorate of Fisheries in finding the source of an unusual amount of escaped salmon which were recaptured in a fjord on the west coast of Norway. The Directorate took samples from all fish farms in the area and delivered them to IMR in Bergen. Samples from the escapees were also collected and analysed.

Results indicated that most of the recaptured escapees originated from a specific cage, and that it was highly unlikely that the escapees came from any other fish farm. In recent years, the IMR has been testing the use of DNA methods to trace escaped salmon to farm of origin. The current investigation is considered a breakthrough, as this is the first time that such methods have been used to successfully identify the source of an escape.

The potential genetic effects of aquaculture on natural fish populations will be discussed in Bergen on 2-4 July 2007 during the *International Symposium on Genetic Impacts from Aquaculture - Meeting the Challenge in Europe*.



GLOBAL OCEAN

RECIRCULATING AQUACULTURE SOLUTIONS

**Suppliers of a complete range of equipment,
services and consulting for recirculating
aquaculture and live holding systems**

TEL: +27 28 271 5161 FAX: +27 28 271 5098 • EMAIL: info@globalocean.co.za • WEBSITE: www.globalocean.co.za
HEAD OFFICE: 35 Harbour Rd, Kleinmond, South Africa • POSTAL ADDRESS: PO Box 670, Kleinmond, 7195, South Africa



Regulatory matters

South African draft policy and sector plan for Aquaculture

From Lizeth Botes lbotes@ai-sa.org.za

The National Department of Agriculture is arranging a follow-up workshop from the previous National Aquaculture Sector Working Group (ASWG) workshop which was held in Nov 2005. The next workshop is scheduled for 25 and 26 April 2007 and the aim is to discuss the process of amalgamating existing aquaculture draft policies and sector plan development.

FAO Helps Fish Farmers Evaluate Responsible Use of Exotic Species

From AllAfrica.com

In the 1980s the Food and Agriculture Organization, with long-distance introductions of fish species into new habitats for fish farming becoming increasingly common, began tracking these movements. It recently launched an expanded version of its database which includes introductions of all taxa being produced via Aquaculture; it now contains over 5,000 records of introductions of several hundred species. The expansion was largely funded with funds from FAO's regular working budget and the FishCode Project, but vital support also came from the Netherlands via the FAO-Netherlands Partnership Programme.

Full story at: - <http://allafrica.com/stories/200702260885.html>

Workshop on EU food import standards for third country products

The first training workshop of 2007 as part of the initiative of the Directorate-General for Health and Consumer Protection on Better Training for Safer Food has taken place on 27-29 March in Agadir, Morocco. This event is part of the programme on EU food import standards for third country products, and deals specifically with fishery and aquaculture products. Participants are mainly staff of official competent authorities of Francophone African countries responsible for verifying that exports to the EU comply with EU safety standards.

The EU has comprehensive legislation to ensure the safety of food imports. Developing country products must comply with the standards set by this legislation in order to access the EU market. For this, effective safety controls in developing countries are vital. This workshop should broaden participants' knowledge of EU import standards for fishery products, thereby better enabling them to check for compliance. The first day of the course consists of a plenary session giving an overview of relevant EU food legislation, followed by discussion and group exercises. On the second and third days, participants visit fishing vessels, landing sites, markets, aquaculture farms and processing and distribution establishments. This is followed by discussion sessions on practical application of EU legislation. The tutors are experts involved in official controls, both in Morocco and various EU Member States.

This is the first of seven workshops on EU food standards for third country products within the framework of the initiative during 2007. Further workshops on fishery products take place in Mauritius, the United Arab Emirates, Chile, and Vietnam.

For further information on Better Training for Safer Food please visit:-

http://ec.europa.eu/food/training/index_en.htm

Announcements & Upcoming events

Seminar on the Culture of Warm Water Fish (Crayfish and Tilapia)

Country Life Magazine will be holding a seminar on the Culture of Warm Water Fish (Crayfish and Tilapia) on the 2, 3 and 4 May 2007 at the Oude Libertas Centre, Stellenbosch.

An impressive list of specialists, Professor Danie Brink of the Aquaculture unit of the University of Stellenbosch, Etienne Hinrichsen, the Chairman of the Aquaculture Association of Southern Africa, and Dean Impson from Nature Conservation will be presenting lectures, as well as talks from practicing fish farmers on their experiences.

For bookings contact Mandy at mandya@dbn.caxton.co.za

Or by phone on ++27 (0) 31 910 5773

Conferences

Asia-Pacific Aquaculture Conference 2007 August 5 - 8

Hanoi, Vietnam. The Annual Conference & Exposition of the Asian Pacific Chapter, World Aquaculture Society, held in conjunction with the Vietnamese Ministry of Fisheries

Contact the Conference Manager
Tel: +1-760-751-5005 Fax: +1-760-751-5003

Website: www.was.org Email: worldaqua@aol.com

Employment

WWF Aquaculture Job Announcements: E-mail received

The Packard Foundation recently approved a generous grant to WWF-US, increasing their support for aquaculture standard development. In order to ramp up the Aquaculture Dialogues and the standard development process, WWF-US will be hiring a number of new staff, including a new director for our aquaculture work, a communications officer, a research assistant, and individuals to lead species-specific Dialogues on trout, molluscs, seaweed, barramundi, and sea bream. Descriptions of these positions are attached. We have yet to officially post the positions on our website, but want to get started identifying candidates and collecting resumes. We would greatly appreciate your distributing these descriptions and welcome suggestions of candidates. Please let me know if you have any questions.

Best wishes,
Katherine

Descriptions will be sent separately. Follow the link http://www.worldwildlife.org/about/jobs_iframe.cfm for future postings.