



Aquaculture Association of
Southern Africa

NEWSLETTER

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A Word from the AASA Chairman and the CEO of AISA

Etienne Hinrichsen chairman@aasa-aqua.co.za

Increasingly, we are seeing more coverage for aquaculture development in our region. In the past weeks, aquaculture has been featured regularly in the media and I know of various features that are being lined up for the near future. The interest in aquaculture is still growing exponentially.

On the back of this growth I can proudly report that arrangements for the upcoming AASA conference are progressing well and I look forward to this event at the end of October. Various workshops and training sessions have been aligned with the conference and the Fish and Aquaculture Trade Show will be running in parallel with the conference. Other highlights include the social opening of the conference that will take place at the Two Oceans Aquarium, the field days and the conference banquet. If you have not yet registered for the conference, please ensure that you contact the AASA office as soon as possible.

Insofar as aquaculture news is concerned, it would be difficult for me to highlight all of the relevant newsworthy material in this short contribution. I would however like to highlight the recent marine aquaculture workshop that was held in Port Alfred (3 – 4 July). The workshop was well attended and many interesting and important aspects and development issues were discussed. The aquaculture industry however remains concerned about the fact that the workshop did not address the development of the marine aquaculture policy. This policy has been gazetted and industry feels strongly that the amalgamation process of Government policies on aquaculture has derailed.

I would like to conclude this short piece with something that I have discussed and written about a number of times in the past. Aquaculture is flying high in terms of Government and public interest, development aid is starting to flow and I believe the opportunities for a successful aquaculture sector are presenting themselves. Nevertheless, we must remember that aquaculture is still about entrepreneurship and money, policies and strategies will not be the only requirements. In this regard the people that are involved in established aquaculture believe Government should focus on the development of skilled people, some of which will hopefully become the aquaculture entrepreneurs of tomorrow.

Enjoy our young aquaculture sector and see you at the October conference!

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

It is again the middle of the year and a good exercise to start planning our diaries for the second half of the year. Events that are being planned include:

The next Southern Aquaculture Working Group (SAWG) meeting for September 2007,

Hands-On Coop short course training for September 2007,

The draft Western Cape Aquaculture Policy will be released for comment within the next month or so and will be followed up with a workshop tentatively scheduled for the week before the AASA Conference in October 2007. The workshop will be aimed at getting stakeholder inputs on the draft policy, which will flow into strategy discussions with the aim to draft a strategy for the province.

Looking forward to seeing everyone again.

The Editor's choice

The first item is a subject of great interest to your Editor because of the enormous effect it will have on the sustainability of us humans to provide enough food for ourselves now, and much more importantly, in the future. All food production, both animal and plant, is *fundamentally* based on the genetic resources available to the producer. This is an acknowledged fact and the world has many "Gene Banks" dedicated to the preservation of this most basic seed material to cope with contingencies, both seen and unforeseen, that may arise. With Aquaculture, many species have only just recently been put on the path to domestication, and our Gene Bank has been the simple recourse of obtaining fresh genetic material from the wild populations of the various species.

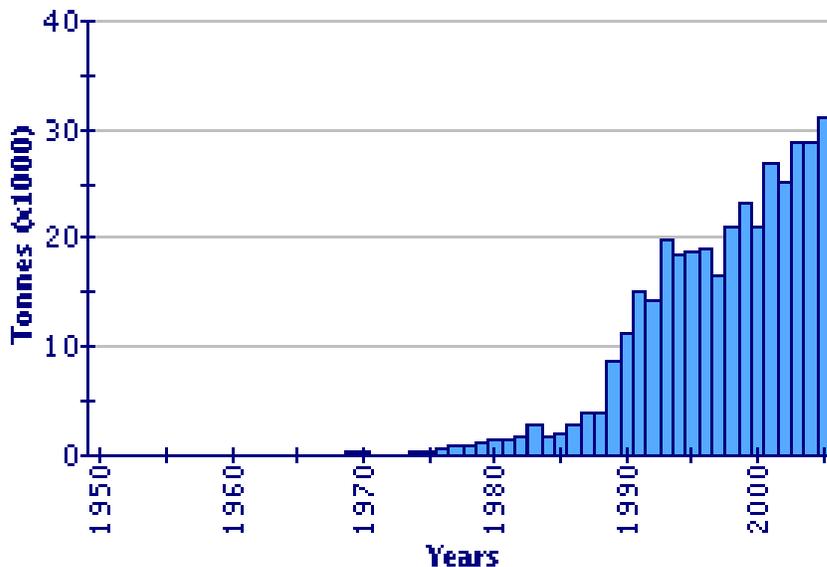
Unfortunately, this situation will not continue. The scientific literature abounds with proof that this genetic endowment is fast dissolving and it is a bleak picture, with the genetic base of cultured fish shrinking to a few strains with very little variation, Salmon being a good example.

The United Nations Food and Agriculture Organisation has called for better policies to conserve fish genetic resources in a paper just published on the proceedings of a meeting of the FAO Commission on Genetic Resources for Food and Agriculture.

For more, see under "Research matters, Reviews & Training" below.

The second matter is of even more direct relevance to us Africans, and that is the phenomenon of the Nile Perch. Here I would like to make a comparison with another species, the Barramundi, and the relevance of this is that these two species are closely genetically related.

Aquaculture of the Barramundi goes from strength to strength, while on the other hand, after establishing a phenomenal market in Europe our African species, the Nile Perch, is on the decline. Almost certainly, the two species are very similar genetically and in culture characteristics with the major exception that the Nile perch should be spawned in fresh water whereas the Barramundi need seawater. We have not developed the aquaculture of the Nile perch as the Australians have with the Barramundi to build on the initial success of Nile Perch in the European market. *Development of aquaculture of this species is long overdue!*



Global aquaculture production of *Lates calcarifer* (FAO Fishery Statistics)

Species: *Lates niloticus* (Linnaeus, 1758) The Nile Perch



Species: *Lates calcarifer* (Bloch, 1790) The Barramundi



See articles under “Other” species below

The Promise of the Blue Revolution

An interesting and well balanced article in Scientific American magazine on aquaculture titled “The Promise of the Blue Revolution” came to my notice. The article can be found at:-

<http://www.sciam.com/article.cfm?chanID=sa006&articleID=2B10ECE2-E7F2-99DF-3BF2F9EFA6D656DC>

Letters to the Editor

The Australians are coming!

From Austasia Aquaculture, the fish “e” news newsletter.

A study tour of commercial aquaculture operations in South Africa is being organised from 15-26th October 2007.

The tour will include visits to a broad range of commercial aquaculture production facilities including abalone, trout, mussels, oysters, tilapia and ornamentals including koi, and associated

processing facilities in the Southern Cape region of South Africa. The tour will also include attendance at the 8th Conference of the Aquaculture Association of Southern Africa in Cape Town.

This tour provides a unique opportunity to experience commercial aquaculture operations in South Africa, establish industry and business contacts, and see a bit of the beautiful South African landscape.

For further details contact: Lachlan McKinnon, Audentes Investments Pty Ltd. AUSTRALIA.
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Abalone



Philippines launches five year National Abalone Breeding Program

The program is expected to provide tropical breeding and culture technology in suitable provinces in the country, introduce and demonstrate abalone farming as an alternative means of livelihood for coastal communities, and increase production and export earnings from the tropical abalone. Agriculture Secretary Arthur Yap launched a five-year program spearheaded by the Southeast Asian Fisheries Development Center (SEAFDEC) and Bureau of Fisheries and Agriculture Research (BFAR) to address shortage of abalone in the world market. At present, there is an estimated shortage of about 4,000-6,000 metric tons of abalone in the world market.

Full story at:-

<http://www.bayanihan.org/html/article.php/20070713093354174>

See also:-

http://www.philippinenews.com/news/view_article.html?article_id=827eccde005c17d0e8294b9c0536c6a0

New Australian Premier challenged on Abalone viral epidemic

From The Age

The first Australians ate abalone but for more than 150 years of white settlement, fishermen dismissed the shellfish as bait. It is only in living memory that the potential of south-eastern Australia's wild abalone fishery began to be tapped. As Asian markets looked to Australia when their overfished (and diseased) stocks were exhausted, abalone licences that had cost \$2 in the 1960s were suddenly worth \$200, then tens of thousands. By the 1990s, licences were trading for millions of dollars. Then part of the Victorian abalone fishery collapsed this year after being invaded by a silent enemy, a herpes-like virus that turns beds of healthy molluscs into an underwater graveyard of empty shells and rotting meat. In months, the outbreak has infected most of the fisheries along Victoria's west coast. The fear is that it will spread to Port Phillip Bay, then eastwards. Worse, if it jumps Bass Strait, it threatens to wipe out the Tasmanian abalone fishery which, with New Zealand's, comprises the last great wild stocks on Earth. Tasmanian authorities have acted swiftly to contain what threatens to be one of the worst catastrophes to hit Australia's primary industries. Strangely, however, the Victorian Government seems to have ducked its responsibility to the industry and to nature by refusing to act in time to prevent the deadly virus spreading.

The overwhelming likelihood is that the virus, perhaps from contaminated fish food, was harboured on abalone farms and spread uncontrolled to the wild when effluent was carelessly pumped into

the open sea. Any semblance of routine quarantine precautions used on land to beat livestock epidemics such as anthrax, foot and mouth, avian flu would probably have shielded the nation's \$2 billion abalone industry from the threat. So why was nothing done? The answer to that, say those worst affected and some experts willing to challenge the official line, is that Victoria's Department of Primary Industries favours aquaculture and therefore turned a blind eye to looming catastrophe. If true, that is a damning indictment.

Welcome, Premier Brumby, to your first challenge.

Catfish



No submissions

Crayfish and Lobsters



New variety of Crayfish being traded as an ornamental

Local British crayfish have been up against their imported larger American cousins for 20 years, leading to a rapid decline in numbers. Now experts say the emergence of the new marbled crayfish presents an even grimmer future for the British freshwater crustacean, highly susceptible to the plague.



Trading of marbled crayfish is banned in EU countries because they carry the crayfish plague. But it is believed that private collectors on the continent have illegally imported them to put them in aquariums. The authorities became aware of a small number of collections in Britain after a woman from Southampton took some in to an

aquatic pet shop. Experts say the fish take their owners by surprise by the speed in which they reproduce - and that leads to dumping in rivers. Although the woman was quizzed by officials from the Centre for Environment, Fisheries and Aquaculture Science, CEFAS, she could not recall who supplied them to her. The woman in Southampton bought a female that was carrying eggs and then the next minute her small aquarium was overrun with juvenile crayfish. She handed them over to a pet shop and that is how we came to realise somebody had brought them into the country. This could be a one-off incident but it is suspected there are others here. The fear is that if these can reproduce then all of a sudden people don't know what to do with the juveniles and end up dumping them in the wild which is very bad news for our crayfish population. The crayfish are a brown-green colour and grow up to three inches long. They are larger and more aggressive than native varieties, giving them a competitive edge in the hunt for food.

Gerhard Scholtz, a German biologist from the Humboldt University of Berlin, has studied the marbled crayfish in the past. He said "This crayfish could become a menace to European freshwater ecosystems, as the release of even one into the wild would be enough to found a population that might out-compete native crayfish. As an American species, it is a potential

transmitter of the crayfish plague that almost caused the extinction of the native European crayfish and which still threatens wild and farmed populations." The red signal crayfish, *Pacifastacus leniusculus*, were imported to Britain in the 1970s to be commercially bred for food. When the live crayfish farming market collapsed during the mid 1980s, commercial stocks were abandoned or neglected and ended up colonising the waterways.

Eels



No submissions

Ornamentals



No submissions

Oysters & Mussels



Invasive Asian shellfish in the US

By Virginia Smith

They're green. They're alien. They've invaded.

Sometime in the early 1990s the larvae of Asian green mussels *Perna viridis*, a species native to the Persian Gulf, India and China, hitched a ride in the ballast water of ocean going ships. The mussels showed up in Jamaican harbours in the late 1990s, and by 1999 were established in Tampa Bay, clogging pipes and covering boats with giant, emerald-coloured clusters. In 2002 a lone green mussel was spotted on the East Coast of Florida, clinging to a Coast Guard buoy in Ponce de Leon Inlet.

Now its relatives are settling in on piers, docks and jetties from St. Augustine to Titusville. Some fear this species will become the marine equivalent of the infamous freshwater zebra mussels that, after being introduced from Eastern Europe in the 1980s, attached themselves to every surface and multiplied into vast mats, ruining fisheries and ecosystems in 19 states. Florida dodged the zebra mussel bullet with luck and vigilance, even passing a law against possessing them, only to get green mussels instead. And it's not doing much to control them.

Jon Fajans, a University of Florida fisheries biologist who studies green mussels, thinks they're here to stay, so we might as well make the best of it. "I've eaten lots of them," he said. "They're very good."

No nation invaded by green mussels has ever gotten rid of them.

Green mussels have a few evolutionary tricks up their sleeves. Unlike most mussels, they can drop the threads that bind them to fixed objects when they're dry, or the temperatures aren't to their liking. Instead of desiccating and dying on a rock, they just drop into the water and start over.

Outside their native range, with food abundant and competition scarce, green mussels are becoming enormous. Dayne Buddo, a scientist at the Institute of Jamaica's Natural History division, called their growth rate "alarming," and one of Fajans' specimens holds the world record at almost 7 inches. Florida's largest native mussel, the ribbed mussel, tops out at 5 inches.

Unlike barnacles and other native fouling organisms, which encrust in a single layer, mussels accumulate three-dimensionally, forming giant shoals on the bottoms of boats. In Tampa, green mussels build so fast on buoys that the Coast Guard has stepped up its maintenance schedule. In Jamaica, they've also flourished in mangroves, pushing out delicate native species and encrusting roots. "They displaced some of our native oysters and reduced the sponges and other invertebrates," Buddo said, "They're a very efficient competitor for food and space."

CAN'T BEAT 'EM? EAT 'EM !

The state is not funding green mussel control, and neither is the Environmental Protection Agency, which bankrolled the University of Florida's original research. Lately, Fajans is trying for a new grant, not to study controls, but their potential as food. If they don't harbor heavy metals, or red tide, or harmful bacteria, they could be considered candidates for commercial aquaculture in Florida. As it is, they're legal to take where shellfishing is allowed. "They're showing up in some restaurants already," Fajans said.

Prawns



Mozambique shrimp production

From Agencia de Informacao de Mocambique

The Mozambican government is studying ways to reduce the tax on diesel used by vessels fishing for prawns. Fisheries Minister Cadmiel Muthemba also noted that the problem for the fishing industry is not simply the tax on fuel, but also the fall in the price of prawns on the European market because of competition from aquaculture prawn producers in Asian and Latin American countries. They can sell cheaper prawns, because their production costs are lower.

In Mozambique, of the 13,000 tonnes of prawns exported in 2006, only about 1,000 tonnes came from aquaculture, in Beira, Quelimane and Pemba provinces. Adding to their difficulties, most Mozambican fishing companies hire their vessels and now face difficulties in paying the owners of the boats, because their profits are low. The semi-industrial fishing companies who use ice to preserve their catch also face the problem of not accessing the European market, because this technology does not guarantee proper conservation, and so falls foul of European Union health regulations.

Muthemba said that prawns represent about eight per cent of the country's exports earnings, bringing in more than 96 million US dollars in 2006.

Raising Shrimp with recycled heat in Holland

By Alix Rijckaert

With a start-up investment of €2.5-million, the Happy Shrimp Farm, which is supported by the Dutch ministries of agriculture and economic affairs and the Port of Rotterdam, is only the first stroke in a larger picture of sustainable development. "Our objective is to set up another 20 shrimp farms worldwide in the next five years," said Curtessi, who added he already had contacts in

Germany, the United States and Canada. "We need big cities where you can find both residual industrial heat and a consumer market for fresh shrimp," he said.

Full story at:-

<http://cooltech.iafrica.com/features/192236.htm>

Desert Shrimp culture in Arizona

By Vern Lamplot

Some of the best-tasting shrimp you can buy, according to its own surveys, comes from a shrimp farm in Gila Bend. Shrimp in the desert? Sort of takes the sea out of seafood. That's right, those tasty little crustaceans are harvested right here in Arizona using Earth-friendly practices. The farm raises "desert sweet shrimp," a product it shamelessly declares to be "the world's best-tasting shrimp." Gary Wood, whose family owns Desert Sweet Shrimp, said that in taste tests at fairs and exhibits, their shrimp wins 95 percent of the time. It is lower in iodine and contains less salt and no additives, he said. Shrimp is a good low-fat, low-calorie protein. Four ounces serves up only 112 calories and less than a gram of fat. An excellent source of selenium and several vitamins, shrimp is also the most popular seafood in the United States, according to the Environmental News Network, even if in this case it doesn't come from the sea. "There's probably no better place to grow them," said Craig Collins, the farm's manager. According to Collins, the desert heat speeds the shrimp's growth, and the calcium in the area's aquifer allows the exoskeleton to harden quickly, so they peel easily. "We offer the finest quality you can buy," he said while working on a customer's 100-pound order for a wedding in New York. "We sell mostly through the Internet," Wood said. The farm used to sell its shrimp to wholesale brokers and specialty markets such as AJ's Fine Foods, Whole Foods Market, and Sprouts, but was losing out to foreign suppliers. "The brokers tell us consumers don't know the difference," Wood said. So the farm cut back on the amount of shrimp it produces and eliminated the brokers in favour of direct marketing through its Website. The farm is hoping the brokers are wrong.

The Wood family farm is the last of four Arizona farms that raise shrimp. One of the four, a farm in Hyder, has had more success converting to tilapia, a popular white fish, Wood said. "We can't compete with the Chinese and Vietnamese on price." He said the Shedd Aquarium in Chicago buys his shrimp to feed its exhibit animals because the product is pure. Some animals practically demand the desert shrimp.

Desert Sweet Shrimp harvests shrimp from its ponds in mid-October and packs it in ice. Then the shrimp is trucked 60 miles to a Phoenix processing plant. Although Wood says shrimp with its head intact is one criteria of high quality, the plant processes his shrimp headless and deveined "because that's what customers want." Additives such as sodium tripolyphosphate (STPP), which is used to retain moisture and add weight, are not used. The shrimp is then packed in dry ice and delivered to customers by FedEx. Both Collins and Wood managed shrimp farms in Ecuador, but they said some of the techniques used at the time were damaging to the environment. Ten years ago, they started shrimp farming on the Wood family farm, partly to prove you could do it right. "Our niche is we're locally grown, and it's sustainable aquaculture," Wood said. "We don't ever discharge the water." The water from the ponds is used to irrigate other crops, alfalfa and olive trees. "We've shown the plants grow twice as fast with this system," Collins said. That led to two new products, a buttery-tasting olive oil, also sold on the Internet, and a thriving nursery trade in landscape olive trees.

The smart water system used on the farm was studied at the University of Arizona's Environmental Research Laboratory, where researchers, including Kevin Fitzsimmons, have been developing healthier shrimp stocks and eco-friendly production techniques. He said when farms such as Desert Sweet Shrimp use "best practices," farm-raised shrimp is better for consumers. The shrimp is fresher because it is processed immediately. Ocean shrimp may be dragged along in nets for hours and sit in the hold of a trawler that may be two days away from shore. Fitzsimmons claims environmental benefits as well. He points to the ecological damage from nets, the nonedible biological products caught along with the shrimp and the waste that it creates, and transportation costs and the hydrocarbons burned in pursuit of wild catch.



And you're probably eating more farm-raised shrimp than you think, even from our neighbour to the south. "Well over half the shrimp exported from Mexico to the U.S. is farm-raised," Fitzsimmons said

Tilapia



South African Company starts Fish Farming in Zambia

From World Poultry

Country Bird, a prominent poultry producer operating in South Africa, Botswana and Zambia, is venturing into fish farming. The company, which currently has about 10% of the poultry market, says that the demand for protein was strong, and that it was confident the growth trend would continue. CEO Kevin James says the company is investigating fish farming in Zambia, as well as another chicken operation in Namibia. The company is focussing on growing organically. James says that he hopes both facilities will be operational by the end of 2008. The company anticipates starting a Tilapia farm on the Zambezi in Zambia and a breeding, broiler and abattoir operation in Namibia.

Fish farming in Uganda up by 140%

By Joseph Olanyo in the Daily Monitor

Fish farming has now grown from 285 tonnes in 1999 to an estimated 40,000 tonnes in 2006, an official in the Ministry of Agriculture, Animal Industry and Fisheries has said. Addressing fish farmers during a one-day fish farmer's forum organised by the Danish Development Agency, Danida, in Kampala on July 10. The Head of Aquaculture Unit in the Ministry of Agriculture, Animal Industry and Fisheries, Dr Wilson Mwanja said the future of fish farming is very "bright."

"The future for aquaculture is bright. It is demand driven. The only disadvantage is that it is private sector-led," he said. Referred to as aquaculture, the dramatic growth has been attributed to the empowerment of the private sector and unfolding market opportunities. This has turned the sector into a huge potential for investment. On the national perspective, Dr Mwanja said the national production of fish now stands at 440,000 metric tonnes annually. He said most of the fish catch comes from Lake Victoria and Lake Kyoga, which produce on average 250,000 tonnes annually, 180,000 tonnes from Lake Victoria and about 75,000 tonnes from Lake Kyoga. At Shs2,000 for a kilo of fish, this translates to Shs880 billion.

In terms of foreign exchange earnings, Dr Mwanja said Uganda's exports to the premium markets of the European Union (EU), US, Japan and Middle East currently stand at \$150 million (Shs240 billion). Exports to the regional markets of South Africa, the Great Lakes Region states of Democratic Republic of Congo (DRC), Rwanda, Burundi and Sudan stand at between \$30million and \$40 million. This brings to \$190 million (Shs304 billion), Uganda's total exports to the premium and regional markets.

This increase is mostly Tilapia production – Ed.

Fair trade certification for African Tilapia?

By Helga Josupeit

Facing increasing competition from low-cost re-freshed product, African farmed tilapia producers have banded together to explore eco-credentials. Frozen tilapia and pangasius imports into Europe have skyrocketed in the past few years, and hit fresh tilapia's market share hard. Though the Chinese product is of inferior quality as it is often thawed and sold as fresh and, in violation of EU rules and treated with carbon monoxide. The fish is sold at upwards of € 2.00/kg cheaper than real fresh tilapia.

One African company, Lake Harvest, secured EU funding to explore the market for "fair trade" farmed fish - a concept that has so far not been applied to aquaculture. While free trade certifiers like the Fairtrade Labelling Organization and Max Havelar are interested, they are not clear on how to develop the concept. Other African companies agreed to form an association, which will be developing a formal entity, a code of practice, and possibly, a unified sales and marketing channel for the EU export market.

As a result of the strong demand, imports of tilapia into the USA again hit a new record in the first three months of the year. Some 47 300 tonnes of tilapia were imported, 35% more than during the corresponding 2006 period. The trend already observed during the past two years continued, with frozen fillet imports growing strongly, while whole frozen is stable. On the positive side for Latin American producers was the 20% increase in fresh fillet exports during the January-March 2007 period.

US total tilapia import – by product form (in 1000 tonnes)

	1999	2000	2001	2002	2003	2004	2005	2006	Jan-Mar 2006	Jan-Mar 2007
Whole frozen	27.3	27.8	38.7	40.7	49.0	57.3	56.5	60.8	15.2	15.4
Frozen fillets	5.0	5.2	7.4	12.3	23.2	36.2	55.6	74.4	14.1	25.1
Fresh fillets	5.3	7.5	10.2	14.2	18.0	19.5	22.7	23.1	5.9	7.1
TOTAL	37.6	40.5	56.3	67.2	90.2	112.9	134.9	158.3	35.2	47.6

Full report at: <http://www.globefish.org/dynamisk.php?id=4138>

Tilapia paper published in Aquaculture Research

Economic profitability of Nile tilapia *Oreochromis niloticus* (L)., production in Kenya

By Aloyce R Kaliba aloyce_k@yahoo.com Charles C Ngugi, John Mackambo and Kwamena K Quagraine

Abstract

Economic profitability of Nile tilapia production in Kenya was analysed using a model that simulated individual fish growth and took fish population dynamics in the pond into account. The results suggest that the currently practiced mixed-sex tilapia culture is economically unsustainable. It is suggested that research and extension efforts be geared towards developing monosex Nile tilapia production systems. Nile tilapia culture with African catfish predation should be viewed as an intermediate step towards all-male Nile tilapia culture. This will allow accumulation of both physical and human capital to support all-male tilapia culture. Under all-male culture, economic returns are high enough to justify investment in Nile tilapia culture using borrowed capital. However, the success of monosex culture will depend on the availability and affordability of quality fingerlings and low-cost fish feeds. The results have a wide application in Sub-Saharan Africa where mixed-sex Nile tilapia culture is common.

For the paper, see:- <http://www.blackwell-synergy.com/doi/abs/10.1111/j.1365-2109.2007.01772.x>

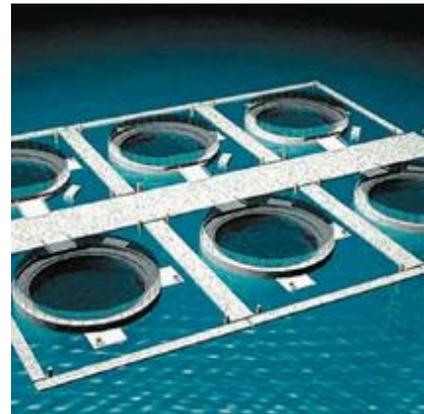
Trout and Salmon



Tests on closed fish pen technology

By Jeff Rud, in the Times Colonist

A special legislative committee recently recommended the salmon farming industry in British Columbia move en masse to closed containment pens, a technology that industry spokesmen argue just isn't there yet. But by this September, a Vancouver Island company plans to be testing precisely that technology on a commercial basis, with the first ocean-based, closed containment salmon tank. Richard Buchanan, president and chief operating officer of AgriMarine Industries of Campbell River, said the company will put out a contract next month for the construction of a 5,500 cubic metre aluminum tank that will be situated in Middle Bay, in Campbell River. Shown is a conceptual layout of a six-tank fish farm, showing waste collection and utility shed. "It will be ready to be installed in September," Buchanan said in an interview.



The Committee on Sustainable Aquaculture boldly called for the entire industry to switch to closed containment farming within five years. Currently, B.C. salmon farms use open-net pens, which environmentalists believe contribute to the spread of disease and sea lice, pollution from fish waste, and escapes.

Salmon farmers ripped the committee's report. "Unfortunately, closed-containment isn't there yet," said Alistair Houghton of Mainstream Canada, adding that such a move would be a "disaster in the making" for the industry. "The recommendations aren't realistic. They're not feasible to implement." The B.C. Salmon Farmers Association said commercial closed-containment technology is not in use anywhere in the world and that pilot projects by government and the industry "have raised significant concerns about fish health and the energy use required to mimic ocean conditions..." AgriMarine hopes to prove that the technology will work. Its first tank will be designed by Westmar and built in a Lower Mainland fabrication shop. The company plans to begin raising 100,000 Chinook salmon this fall. The tank will rise and fall with the tide and the water inside exchanged every hour using energy-efficient pumps. Waste from the bottom of the tank will be pumped to a barge, where the solids will be filtered out before the water is returned to the ocean, Buchanan said. He has been working on closed-containment systems for seven years. AgriMarine has been raising Chinook in closed tanks on land, at Cedar. But the ocean-based tanks will be far more efficient, Buchanan said, because they will require only a quarter of the energy costs. "You had to pump the water from the ocean up into the tank in the land-based system," he said. "And so 20 per cent of our costs were energy, which you can't tolerate." In the ocean-based

system, "the projected energy costs are less than five per cent of the production costs, so it's a significant reduction."

AgriMarine has received funding from the Gordon and Betty Moore Foundation in San Francisco to finance production of the first ocean-based tank. It has also applied for \$5 million from Sustainable Development Technology Canada. An announcement on that application is expected in June. The committee recommended the B.C. government also fund AgriMarine to develop closed containment. Government is studying the committee's report but has made no commitment. "The technologies aren't here but we need to demand them," committee chairman Robin Austin said. "I see this closed containment as a way for the aquaculture industry to grow once they've solved this problem." Buchanan believes the technology is already there but says the committee's five-year window for the B.C. industry to switch, "may be optimistic." Buchanan said the technology won't increase costs for the industry. "The operating costs will be as good or better than the current industry's, because there's no losses of fish," he said. "When you factor in their current losses of fish from predation or escapes or whatever, that all goes into the cost of production." While he acknowledges that more research needs to be done on whether this technology will curb potential sea-lice transfer, Buchanan said the location of closed-containment facilities would help. They would be located close to transportation systems and they would have to be on the hydro grid, he said. "They wouldn't be located where there are massive runs of wild salmon," he said. "Our systems would be located in coastal municipalities."

Other



Nile Perch exports fall as consumer tastes change

By Allan Odhiambo in Business Daily

Kenya and other Lake Victoria fishing nations could be forced to reduce dependency on the Nile Perch for foreign exchange earnings following a consumer shift to other species in key EU markets. A latest market report for July by the Food and Agriculture Organisation (FAO) showed that EU imports of Nile Perch fillets have been on a drop, continuing on a trend that was set two years ago. Only Tanzania has kept its export levels since 2005 while Kenya and Uganda have continued reporting substantial declines in exports. In 2007, however, prices declined somewhat. Some of these declines are due to a strong Euro currency, but a part of it is probably due to huge competition. Pangasius is now entering the EU market also in fresh form, thus competing directly with fresh Nile Perch fillets in the more sophisticated markets, such as Spain and Italy. For starters, Nile Perch and Pangasius are considered rivals in the market because they are both classified in a special category of fish with white meat. This renewed brilliant performance by Pangasius in the key market segments adds to the woes of the Nile Perch industry that also faces a bleak future due to declining catches and prices. This state of affairs has already triggered a major shake-up in the industry with Anova, the leading importer of Nile Perch into the European markets, moving to expand its interest in the Pangasius trade.

Lake Victoria fishing nations are well advised to strongly control fishing and fishing quotas of Nile Perch in the lake. In addition, they are moving into alternative species, which includes tilapia farming around the lake, said fishery experts.

FAO said Kenya, Uganda and Tanzania have a chance to maximise on alternative species such as tilapia because there are already existing industry structures and trade channels in Europe that would guarantee an easy entry into the market. Tanzania could however be forced to change its export rules to enjoy the fresh opportunities. For several years tilapia exports from the nation have remained banned to guarantee food security for the local population. Kenya, on the other hand is trying to reduce the dependence on Nile Perch for foreign exchange earnings. A grant worth

US\$7.82 million will be provided by the EU to Kenyan fishermen operating in Lake Victoria. The grant will be utilised for access roads in East Africa as well as enhance equipment for landing fish. But even with this second option for the East Africa states, players in the industry would have to strive to beat other emerging challenges because fish exports from Lake Victoria will be required to be compliant with international environmental standards.

Efforts have already begun in attaining such standardisation through a process known as eco-labelling in which the products would bear a logo that indicates they have been certified and produced within set standards. Discussions are underway to explore possibilities for eco-labelling Nile perch following an agreement at a stakeholders meeting last year organised by the German Development Agency in Nairobi. The meeting which brought together representatives from the fish industry, governments and development partners, provided the first steps in eco-labelling for inland fisheries with a consensus to work towards gaining a Marine Stewardship Council label for Nile Perch from the whole Lake Victoria.

It is envisaged that this would also help diminish the bad image of Nile Perch in the European market created by a controversial documentary, 'Darwin's Nightmare', that depicted earnings from the lake were being used to fuel armed conflicts in the Great Lakes region. The documentary also claimed that consumers in the EU were enjoying delicious supplies of Nile Perch fillets while million of people in communities around the lake were starving to death.

A market report on the Nile Perch at:-

<http://www.globefish.org/index.php?id=4176>

Barramundi farming is leading the growth of Queensland's aquaculture industry

From ABC News

Department of Primary Industries and Fisheries of Australia figures show Barramundi farming increased by 20 per cent in 2005/2006, while prawn farming increased by 11 per cent for the same period. The value of total fisheries production for the state, including fishing and aquaculture, dropped 9 per cent.

A senior lecturer in aquaculture at James Cook University, Dean Jerry, says Barramundi's fame is a large part of the farming success story.

"The thing about the Barramundi is it's an Australian iconic fish and generally most people when they come up into the tropics from the southern states they'll sit down and want to munch a barra burger or have a barra fillet on their plate and it's this identity that's really driving the increase in the market," he said.

Barramundi deal signed with top University

Under the terms of the agreement, the University will establish a new Centre for Marine Fish Seedstock Breeding that will provide Australia with technical and management services and large-scale barramundi fingerling supplies on an exclusive basis for an initial 5-year term. The aim is to produce 10,000 tonnes of barramundi annually by 2012. Full story at:-

<http://www.thefishsite.com/fishnews/4685/barramundi-deal-sealed-with-top-university>

Barramundi on sale at Harrods in London

Barramundi, an Australian fish, is being farmed in the UK and for the very first time is now available in Harrods. Article at:-

http://www.fishfarmer-magazine.com/news/fullstory.php/aid/1131/Barramundi_goes_on_sale_at_Harrods.html

Barramundi farming in Australia and Asia

How Barramundi is farmed in Australia. Report at:-

<http://www.abfa.info/farming.htm>

Feeds

Alaska hatchery Salmon fed tainted commercial feeds

Millions of Alaska hatchery salmon were fed food contaminated with the same substance behind a massive pet food recall across the country. The melamine-infused fish feed — which has been recalled by the distributor — is believed to pose no significant health hazard to humans or the fish, according to officials with the state Department of Fish and Game. Some hatchery operators might have to continue feeding the product to their fish for lack of substitute feed, said Patti Nelson, the state's deputy director for commercial fisheries. Nelson said "a number of hatcheries" were using the feed to raise pink and chum salmon fry, but she would not name the hatcheries. Many of the tiny fish are within days or weeks of being mature enough to be released to the ocean to grow to adulthood. Nelson, citing the U.S. Food and Drug Administration, said any melamine the fish consume is likely to pass out of their systems in days, won't accumulate in their bodies, and poses no danger to people who eat the salmon, which wouldn't be consumed until after returning from sea years from now. "We don't believe there's a human health concern, nor a health concern for the fish," Nelson said. Federal authorities launched an investigation and pet food makers launched product recalls recently after wheat gluten from China was found to contain melamine, which is used in plastics, fertilizer and flame retardants. Melamine has no food value, but it can make food products appear more protein rich. A major fish feed distributor, Skretting Canada, announced a voluntary recall earlier last week, saying "a very low level of melamine" was found in a batch of its Bio-Oregon brand fish feed. Nelson said the feed is widely used in Alaska, which has 34 fish hatcheries. Fish farms in Canada, Washington state and Oregon — which can raise fish to adult size — also were affected. In Alaska the feed is starter food for young fish. Among the hatcheries using it is Northern Southeast Regional Aquaculture Association Inc., based in Sitka. General manager Pete Esquiro said the hatchery might have to continue using a bit of it in coming days. The association is within days of releasing many of the chum salmon, Esquiro said. The feed hasn't appeared to do them any harm, he said. "They look perfectly fine," he said. The Department of Fish and Game and other state agencies will be testing hatchery fish for melamine contamination, according to Nelson. Hatchery operators plan their own tests,

Environment, Health and Disease issues

Disease in Zambezi river fish

By Moses Magadza in SciDev.Net

A deadly infection among fish in backwaters of the Zambezi River has been detected, sparking fears that the disease could be transmitted to humans. The infection could affect up to four out of every five fish caught in some parts of Africa's fourth largest river, which supports an estimated 40

million people. Fishermen in Katima Mulilo, Namibia, began reporting serious sores on fish in early October 2006, according to Nyambe Nyambe, a Zambian environment and development consultant to the government. The infection causes blisters and sores, and eats away at the fins and tails of multiple fish species, eventually killing them, although the fatality rate is unknown. There are fears that some villagers are eating infected fish. "Some fish parasites can be transmitted to humans," said Christopher Magadza, a fresh water specialist in Zimbabwe and former director of the University of Zimbabwe's Lake Kariba Research Station. He added that they can cause muscular cysts and intestinal worms.

"There are reports that some people who ate some affected fish fell sick and our officials are on the ground talking to medical staff who may have treated these people," said Charles Maguswi, Zambia's director of fisheries. He told us that the infestation was very serious, and called for experts in all affected countries to share information about the issue.

"I think this is a regional problem and we are thinking of a collaborative effort in dealing with it," said Shaft Nengu, Botswana's deputy director of fisheries.

Researchers have identified the disease as Epizootic Ulcerative Syndrome (EUS), caused by a fungal pathogen. Infected fish develop large sores and die from secondary infections. The researchers say this is the first known outbreak of the disease in Africa. But they still don't know how the pathogen got into the Zambezi, which flows through eight southern African countries. EUS also affects fish in Australia, the United States, and many countries in Asia. When EUS broke out in Asia in the 1970s, approximately 80 per cent of the fish population perished.

In December last year fishermen in Namibia reported finding sores on fish caught in the Zambezi. The government imposed a two-month ban on fishing to safeguard the public. A similar ban was imposed in Botswana, and was only lifted at the end of March this year. Shaft Nengu, a member of the research team and Botswana's assistant director of fisheries, said the spread of the disease downstream is inevitable. The research team has warned that the disease could become pandemic, damaging aquaculture, fisheries and aquatic biodiversity. "We do not have the capacity to establish the extent of the outbreak. We are trying to come up with a regional effort to respond to this outbreak and have written to all countries that share the Zambezi River to support this initiative," Nengu said the fungal pathogen does not pose any human health implications, but that fish exhibiting sores, which could harbour secondary infections, should still be treated with caution.

Zimbabwean microbiologist Percy Chimwamurombe said that it is "presumptuous" to say that people will not be affected, and a coordinated regional response is essential to determining the extent and effects of the outbreak. "There is need for a concerted public awareness campaign given the possibility of secondary infections, which can be terrible," he said.

Fish biologist Ben van der Waal, from the Integrated Management of the Zambezi/Chobe River System Fishery Resource Project and also a member of the research team, said there was nothing anybody could do to eradicate the outbreak now that it was in a natural setting. He warned that fish losses during the first few years of the outbreak may be colossal, and that it would take many years to adapt to the disease. "In Asia it took about 20 years for the outbreak to go down to endemic levels," he said.

The team of scientists included experts from the United Nations Food and Agriculture Organization, Thailand's Inland Aquatic Animal Health Research Institute, and the Network of Aquaculture Centres in the Asia-Pacific.

Research matters, Reviews & Training

Fish Genetic Resources are our future seedstock – are we taking care of them?

The United Nations Food and Agriculture Organisation (FAO) has called for better policies to conserve fish genetic resources and enhance global food security, warning that failure to do so would lead to adverse environmental and social consequences. "A lack of coherent management of the world's fish genetic resources is becoming a serious problem," the agency warned in Rome, at the beginning of the week-long meeting of the Commission on Genetic Resources for Food and Agriculture, the only global body dealing with all genetic resources in agriculture, forestry and fisheries. This year's session marks the first time the Commission, comprising 167 countries and the EU, will tackle the issue of how best to manage the genetic diversity of the planet's oceans, seas, lakes, rivers, wetlands and fish farms to safeguard their contributions to food production.

The rapid expansion of aquaculture, the cultivation of aquatic plants and animals, and the over-exploitation of many fisheries have created conditions where "irresponsible" use of natural resources can result in adverse environmental and social impacts, conflicts and unsustainability, according to a paper by FAO's Fisheries and Aquaculture Department. The paper argues that a successful transition to more responsible, sustainable and productive aquaculture and fisheries will depend largely on effective management of fish genetic resources.

According to FAO, most of the world's fisheries are already at least fully exploited or in decline and their production levels have reached a plateau. By 2030, an additional 40 million tons of fish per year will be needed to meet global demand, it says.

Basic HACCP Training in Fish and Fishery Products – Three day short Course

Presented by the Association of Food & Drug Officials and Seafood HACCP Alliance in conjunction with Louisiana State University Agricultural Center and Stellenbosch University

The primary purpose of this course is to assist processors of fish and fishery products in the development of their HACCP plans. Fish and Seafood processors will find information that will help them identify hazards that are associated with their products, and help them formulate control strategies. The training is consistent with the regulatory mandates for processing and importing fish and fishery products for commerce in the United States. Persons who complete the AFDO/Alliance basic HACCP course will receive Certificates of Course Completion from the Association of Food and Drug Officials.

Date: 14-16 August 2007

Cost: Registration fee per delegate: R2000
Includes all materials, snacks and lunches.

Presenters: Prof. Louw Hoffman, Dept. Animal Sciences, University of Stellenbosch
Mr. Allen Ranft, Consultant, Food Surveys, Cape Town
Ms. Suné Botha, Food Science, University of Stellenbosch
Prof. Micheal Moody, Food Science Dept, Louisiana University Agricultural Center

Contact Ms. S. Botha for registration forms at: sune@sun.ac.za

Tel: (021) 808 4739

Fax: (021) 808 4750

Management of Aquaculture development – Western Cape Survey and Mapping

A national benchmarking survey was conducted by AISA in 2006. Subsequently, the Western Cape Provincial Department of Agriculture, Animal Production Section and the GIS Section together with the Aquaculture Institute of South Africa decided to register a project, namely “Management of Aquaculture Development (Survey & Map)” that would, as a partnership between the Department and AISA, update the statistics every three years and that would map the relevant aquaculture information necessary to facilitate sustainable development

The objective of the survey is to update the aquaculture sector statistics in the Western Cape Province to provide reliable statistics to industry and government. A questionnaire based on the AISA benchmarking survey will be made available on the DoA’s website (www.elsenburg.com) as well as the AISA website (www.ai-sa.org.za). Industry is encouraged to download the pdf format of the questionnaire and fax it back to:

Refioe Thobejane, Department of Agriculture, Western Cape, Tel: 021 808 5325, Fax: 021 808 5074.

The objective of the map is to provide information on the location of roads, rivers, dams, nature conservation areas and existing aquaculture farms, both freshwater and marine. Ultimately this information could guide the relevant stakeholders as to where appropriate development for aquaculture can take place. The Department’s GIS specialists are currently working on loading this information which will be available on the DoA website referred to above.

For further information, please contact Ms Refiloe Thobejane (DoA) or Dr Lizeth Botes (AISA)

Regulatory matters

Marine Aquaculture workshop held in the Eastern Cape

Round-table talks on the development of marine aquaculture in South Africa got under way in Port Alfred in the Eastern Cape, South Africa, recently. Opening the event, Environmental Affairs director-general Pam Yako told delegates aquaculture held “a great potential to meet the challenge of poverty, and at the same time alleviate the burden of over-harvesting in our oceans”. Attending were representatives from the aquaculture and fishing industry, communities, labour and government. Key issues include training and skills development, the economics of aquaculture, technological needs and environmental protection. “In dealing with these, we are asking the simple question: what activities and actions are necessary between and among us to accelerate the growth of this industry in South Africa, which will have a significant impact in our economy,” Yako said.

The talks follow the release last month of government’s second draft of its marine aquaculture policy, which called for further input from stakeholders. The period for public comment ends on July 31.

And from Leslie Ter Morshuizen leslie@aquaafrica.co.za

The Department of Environmental Affairs & Tourism held a Marine Aquaculture Workshop at Port Alfred, with the primary focus of bringing the various role players together to agree on the best road ahead for developing aquaculture in the marine environment in South Africa. This follows on the roadshow by Marine & Coastal Management last year, at which they invited comment from interested and affected parties on the Aquaculture Bill being drafted, and heralds a new era of transparency and co-operation between government and the private sector towards the development of the Aquaculture Industry in South Africa. The mood at this Workshop was upbeat, as the various role players agreed that there is enormous scope within this industry to increase economic earning and employment.

A large number of conclusions were reached at the Workshop, foremost amongst which were:

- the importance of not over regulating the Industry
- the need for the state to play the lead role in promoting the growth of the industry through tax and other economic incentives, funding research, smoothing permitting, etc
- the provision of a one-stop-shop for aquaculture permitting
- funding needs to be provided for research into developing technology for new and existing species, and solving problems
-

It was also recognised that Aquaculture is a very diverse industry, with many different species, technologies and operational scales, making it inappropriate if not impossible to provide a one-size-fits-all set of regulations and incentives.

This Workshop demonstrated the benefits of private public co-operation, and we trust and fully expect that this will lead to the development of policies and action plans that will result in changes on the ground to grow our industry.

Announcements & Upcoming events

Conferences

Aquaculture Africa - Linking Resources to Markets through Technology

The Aquaculture Associations own Bi –annual Conference Oct 22, 2007 - Oct 26, 2007
Location: Cape Town, South Africa
Program: 8th Conference of the Aquaculture Association of Southern Africa (AASA) presented at the Cape Town International Covention Centre in concurrence with the Fish and Aquaculture Africa Trade Shows.

Contact: Natasha Marshall 0 (12) 8076720
info@aasa-aqua.co.za

Tilapia 2007 Kuala Lumpur, Malaysia August 23 to 25 2007

An international forum for industry leaders, policy makers and planners, aquaculturists and producers, export-processors and importers, investors and suppliers of inputs and services.

Contact: INFOFISH-TILAPIA 2007 Kuala Lumpur 603 26914466
infish@tm.net.my or infish@po.jaring.my

World Seafood Congress 2007

The 2007 World Seafood Congress takes place in Dublin, Ireland on September 25th to 27th 2007. The venue for the Congress is Croke Park Conference Centre, in Central Dublin. For full details on the Congress Venue, please click here.

<http://www.worldseafoodcongress2007.com/>

Employment

No submissions