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Aquaculture Association of Southern Africa

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A Word from the AASA Chairman

Etienne Hinrichsen

Just when I thought we were as busy as can be in the preparations for the September 2011 conference in Malawi – BANG! I have been working with the City of Durban and the ICC in Durban for some time now around getting a large aquaculture event to South Africa sometime in the future. Well, the opportunity has come around much sooner than anticipated. To cut a long story short, we (AASA together with the City of Durban, KZN, the ICC in Durban and other parties) will be bidding for the 2017 Conference of the World Aquaculture Society during therefore forthcoming conference in Brazil during June 2011. Watch this space……

Arrangement for the September AASA Conference is going well. I realise that this conference is still more than 3 months away, but I urge all of you to get your planning for attendance done as soon as possible. Already the programme is filling up with only a few presentation slots left. Moreover, accommodation and travel arrangements need to be made and I therefor encourage you to contact Natasha (AASA Office) as soon as possible. This year's conference is certainly going to be a highlight given the location and given the presence of numerous Global leaders in our sector.

Aquaculture on the South African front seems to be gaining momentum. AASA will be meeting with the Department of Agriculture, Forestry and Fisheries early in June to discuss the relationship between AASA and Government. I trust that these discussions will lead to greater cooperation and ultimately to the benefit of our entire sector.

Now that we are well and truly into winter 2011, I trust that the trout farmers are making hay and the warm water farmers are taking a breather. If you have some time on your hands over these winter days, get your arrangements for Aqua-Africa in Malawi finalised.

The Editor's choice

Editorial

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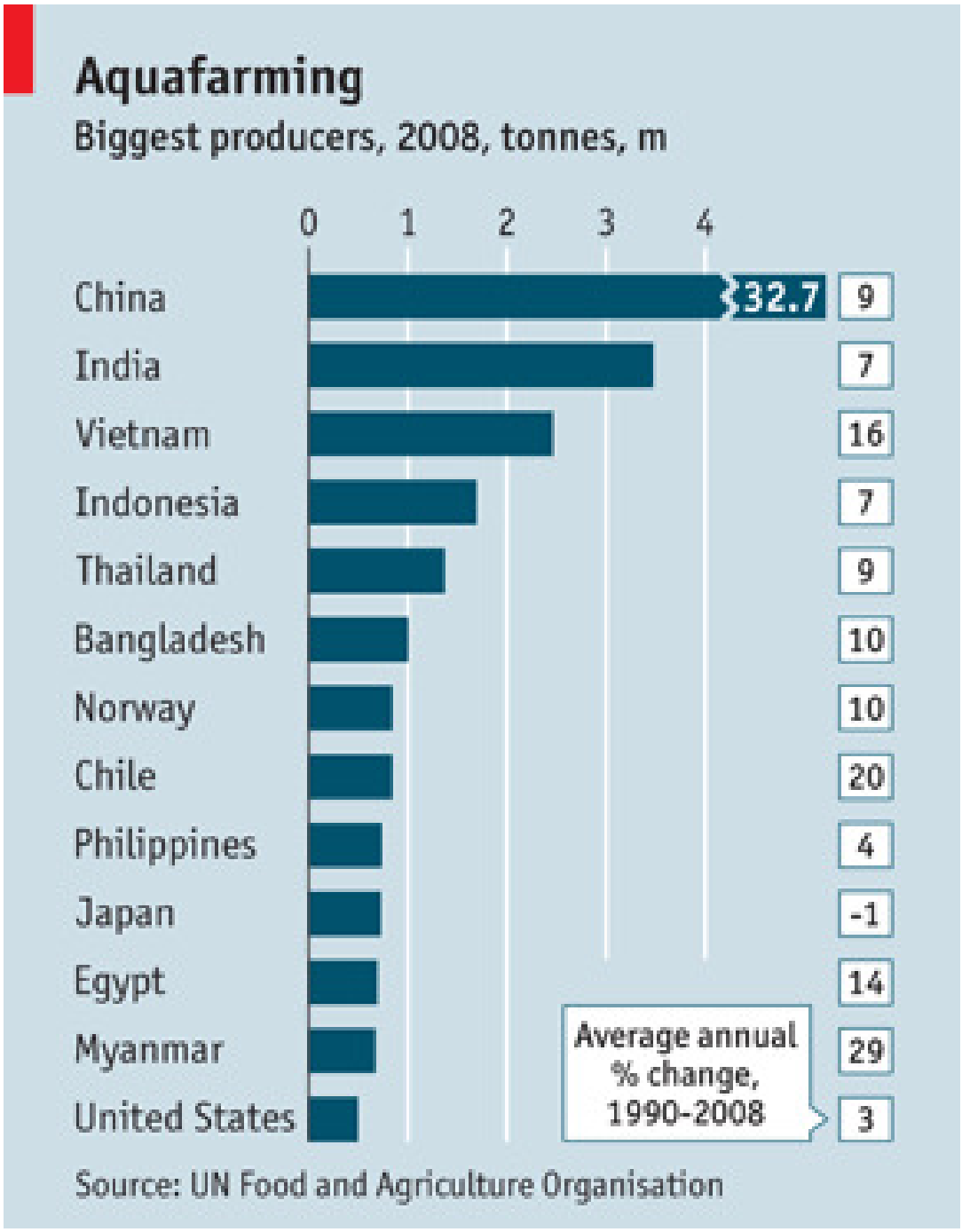
Aquafarming

Feb 3rd 2011 | from the Economist print edition

The Food & Agriculture Organisation, a UN agency, reckons that the world produced 145.1m tonnes of fish in 2009. About 38% of this came from aquaculture, or fish farming. The rest consisted of fish caught in the wild, mostly at sea. In 2008 over three-fifths of the world's farmed fish came from China. India was the second-largest producer, but its output was just over a tenth of China's. Myanmar produced only 7,000 tonnes of farmed fish in 1990; by 2008 its output of 675,000 tonnes made it the world's twelfth-largest aquafarming producer, with an output larger than America's. Japan and Taiwan are the only producers in the top 15 where output was smaller in 2008 than in 1990.



http://www.economist.com/node/18070334

Crayfish and Lobsters

Rock lobster reproduction success

Lobsters are hard to breed in captivity, but scientists have managed a breakthrough. Scientists at the Australian Institute of Marine Science (AIMS) in Townsville are the first to achive captive-raised lobster that successfully produced larvae. They have good reason to be happy with the achievement - it marks a major step forward in efforts to establish a lobster aquaculture industry.

AIMS principal researcher Dr Mike Hall says successfully breeding with captive-raised lobsters had proved impossible in the past and the institute had achieved a world first. "This is going to grab considerable interest around the world" he says. The development could help lead to not only large-scale captive breeding but also better looking and tasting lobster, he adds. "They are a truly domesticated species now and once they have been domesticated you can start selecting characteristics to breed for such as better taste and better colour," Mike says.

The growing prosperity of countries like India and China was leading to a massive increase in middle and upper class consumers who wanted luxury foods such as lobsters. "The demand is massive, no wild fishery can supply that," he says. "We already have to import into our country far more than we are able to produce domestically which is a terrible position to be in."

The development of aquaculture was vital if future generations wanted to be able to eat seafood.

"We can't really expect to feed the world's population on (wild fisheries) just as you wouldn't expect to feed the world on bush tucker." Mike says only a small percentage of larvae born in the institutes's tanks at Townsville would survive to adulthood and further advances were needed to make lobster aquaculture a viable industry. However, knowledge in the area was increasing fast and it was "technically possible" for up to 90 per cent of larvae to reach maturity in the future, he says. Given that each female can spawn up to one million eggs, lobster farms may eventually be able to produce thousands of animals for consumption using only a handful of breeders.

http://www.australiangeographic.com.au/journal/supermum-lobster-an-aquaculture-breakthrough.htm

Australian Crayfish in Israel

By Zafrir Rinat

A species of Australian crayfish is threatening the ecosystem of Lake Kinneret, according to Israeli scientists. Menachem Goren, a zoology researcher at Tel Aviv University, said the Australian red claw crayfish *Cherax quadricarinatus* could attack local fish and disrupt their breeding.

"It's enough for a crayfish like this to even so much as bother a female tilapia, which carries its eggs in its mouth during breeding season, and the tilapia will have to spit them out," he said. The crayfish was imported to Israeli fish breeding grounds 15 years ago. Already then, experts suggested raising it only in artificial pools in the desert, warning that otherwise they might escape into the wild. But the Agriculture Ministry eventually allowed fish breeders to bring the crayfish further north.

Today Israel raises millions of crayfish every year, both for the local market and for export to Europe.

"Even in Australia, they prohibit transferring this crayfish from one area to another," said Bella Galil, a senior scientist at the National Institute of Oceanography, one of the two scientists who announced several weeks ago that the crayfish had entered the Kinneret.

The specimen examined by Galil and Gregory Sanovsky, a scientist at the Agriculture Ministry's fishing department, was nearly 20 centimeters long. It was sent to the ministry several months ago by fisherman who caught it in the lake.

http://www.haaretz.com/print-edition/news/invading-australian-crayfish-threaten-kinneret-ecosystem-1.361977

Oysters & Mussels

Breeding better oysters

Much of the bounty of the ocean is, these days, far less plentiful than it used to be. Scarcity has made oysters expensive, turning this unattractive mollusc into a delicacy for the rich. That could change if researchers find a way to breed a faster growing and larger oyster.

As many gardeners and farmers know, crossbreeding two wimpy specimens sometimes produces strong offspring, an effect known as hybrid vigour. Hybrid vigour is common in plants and is found in some animals, though, some speculate, it may be lacking in European royalty.

Several years ago Dennis Hedgecock of the University of Southern California and his colleagues discovered that oysters can hybridise. If a tiny inbred strain called “oyster 6” is bred with the similarly puny “oyster 7”, the result is a large and fast-growing oyster—“oyster 6x7”—which is easy to open and produces tens of millions of eggs. The problem, though, is that when oyster 6x7 is bred with itself, the resulting offspring are puny again. The hybrid does not, in the jargon, breed true.

If new hybrids were easy to generate in quantity, that would not matter. But oysters 6 and 7 themselves produce only around a million eggs per adult, and their shells are hard to open. Oyster farms each need tens of billions of eggs to operate commercially. Constantly regenerating the hybrid is not a viable approach. To get around this problem, Dr Hedgecock and his colleagues took some other puny inbreds and created a second hybrid line, oyster 8x9. This is also big, fast-growing and easy to open, and, like oyster 6x7, it produces tens of millions of eggs. The trick is that although it too does not breed true itself, when it is hybridised with 6x7 to produce a super-duper 6x7x8x9 crossbreed, the outcome is just as large, fast-growing and tasty. The result of this two-stage crossbreeding process is that, though none of the hybrids involved breeds true by itself, a marketable hybrid oyster can nevertheless be turned out in large quantities. That is the hope, although the proof will come next year, when the hybrids are grown on a commercial scale.

Of course, it would help if more were known about what creates hybrid vigour in the first place. To this end, Dr Hedgecock has been looking at how hybrid oysters express their genes. He has done so by collecting and analysing the animals’ messenger RNA. This molecule, as its name suggests, carries genetic information from the DNA of a cell’s nucleus to the places where proteins are made under genetic instruction. If a great deal of messenger RNA for a particular gene exists in an animal’s cells, it may indicate that this gene is particularly active. So far, the work has revealed that 350 genes (of the 23,000 in the oyster genome) are expressed differently in the hybrid oysters than in the parent strains. The next step is to sort out what these genes do and which are responsible for large size and rapid growth.

If hybridisation works out, oyster farming could follow the same path as salmon farming, and turn a delicacy for the wealthy into the food of the masses. Unlike salmon, moreover, oysters are filter feeders that clean up the water column, making oyster farms healthy parts of the ocean. Salmon farms are environmentally controversial. Oyster farms should please consumers and environmentalists alike.

http://www.economist.com/node/15391210

Growing oysters in Virginia

It used to be a lousy business venture. Only the most ardent farmers could steer the Chesapeake Bay delicacy past diseases, predators and other obstacles into adulthood. That was before advances, most notably the creation of a genetically modified oyster, made cultivation easier… and profitable. Now everyone from watermen to real estate agents want part of the action. And the industry, after years of flying under the radar, is stirring controversy in Hampton Roads and beyond. Waterfront property owners worry their serene views will be fouled by the sights and smells of the seafood trade. Oyster growers are concerned the tension will prompt lawmakers to zone the bay, effectively limiting where they can work. That, they say, could hamper a business that many believe is the commercial fishery's only chance for survival. "The industry is growing very rapidly," said Thomas J. Murray, a seafood economist at the Virginia Institute of Marine Science in Gloucester Point. "There's a lot of delicate discussions taking place." Growing oysters, known as aquaculture, has been practiced in Virginia for more than a century.

The most common method was to transport wild harvested seed to privately leased grounds. The grower would dump the seed overboard and let Mother Nature do the rest. Oysters would be ready for harvest in three years. To the casual observer, it appeared no different from the hunter-gatherer approach employed by watermen for centuries. The method worked until a pair of deadly diseases, MSX and Dermo, spread throughout the bay in latter half of the 20th century, killing oysters before they matured. It is seldom practiced today, Murray said.

Scientists struggled for decades to combat the diseases, which, combined with overfishing and loss of habitat, depleted the bay's oyster population to 2 percent of its historic levels. The breakthrough came, oddly, as they developed an Asian oyster that some thought was the best way to revive the fishery. VIMS professor Standish Allen began creating a sterile Asian oyster in 2003. It grew bigger and more quickly than native Chesapeake oysters. More importantly, it was less susceptible to MSX and Dermo. The dalliance with the Asian oyster ended, however, in April 2009 when the U.S. Army Corps of Engineers scrapped the project. A foreign species may carry viruses harmful to humans and, possibly, outcompete native oysters, Corps officials said. The decision, while frustrating to Allen, the Virginia Seafood Council and other supporters, proved fateful. Instead of dumping oysters into the bay and waiting to see if they survived, growers isolated the Asian oysters in bags, floats, and cages to carefully monitor their growth. While labor intensive as the cages must be pulled from the water and cleaned of debris every few months, the approach yielded results.

Growers, such as John Vigliotta of Mobjack Bay Seafood in Gloucester County, began doing the same with sterile, native oysters. Because sterile oysters put their energy into growing, many reach market size in 12 to 18 months, before diseases can kill them. "They grow twice as fast, so it's a definite plus," said Vigliotta, who has been growing oysters since 1998. State officials and industry followed with another technique: spat-on-shell, the process of setting oyster seeds to shells in tanks before depositing them in the wild. Both methods worked and the success emboldened Virginia's largest oyster processors, who import Gulf of Mexico oysters to make up for the lackluster local catch, to invest in aquaculture. From 2005 to 2009 annual seed plantings more than quadrupled. The number of farmed oysters sold reached 12.6 million in 2009, a number expected to grow when 2010 numbers are released later this year.

"I still feel like the sky is the limit," said Doug McMinn, co-owner of Chesapeake Bay Oyster Co., which includes one of the state's largest oyster farms on the Rappahannock River.

http://www.dailypress.com/news/newport-news/dp-nws-cp-aquaculture-one-20110402,0,5529300.story

Shrimp and Prawns

Tilapia helps control Shrimp virus

By Analia Murias

Researchers at the Federal University of Santa Catarina (UFSC) have found that raising white shrimp, *Litopenaeus vannamei* and tilapia *Oreochromis niloticus* in the same pond promotes an ecological balance and a healthy development of both species, as well as preventing the death of crustaceans by the white spot virus. This initiative, by the aquaculture engineer Frederico Santos da Costa, consists of a polyculture system which originally had another purpose: that small farmers in Santa Catarina have an alternative income from tilapia farming if their shrimp production was lost due to white spot, reports Ciência Hoje.

This disease severely affected shrimp from the coast of Santa Catarina in 2004 and led to losses of USD 3.6 million for producers. "The coexistence of animals creates a balance that prevents the death of shrimp from white spot," said Santos da Costa. The experiments began in 2007 through a partnership between UFSC and the municipality of Barra do Sul.

While the white spot virus is not harmful to human health, it harms the marketing of shrimp because the virus carriers die before being harvested. "In two days, the shrimp is already in a state of decomposition, making it unfeasible for consumption," said the expert.

During tests, Santos da Costa found that shrimp would go down to the bottom of the tank while tilapia remained on the surface of the water, where they feed on various types of microorganisms that are harmful to the shellfish. That is, the tilapia act as 'environmental disinfectants', preventing the shrimp from becoming infected. Santos da Costa is now conducting tests to introduce a third species in to the same pond, the native oyster (Crassostrea brasiliana), a mollusk that acts as a filter in the marine ecosystem and also has good commercial value.

http://www.growfish.com.au/content.asp?contentid=15525&utm_source=Aquafeed+English+Newsletter&utm_campaign=6c33b6ce9a-aquafeed_nl_040711&utm_medium=email

Tilapia

American Tilapia market still growing

By Meridith Kohut in The New York Times

Americans ate 475 million pounds of tilapia last year, four times more tilapia last year than they did a decade ago, a vast majority of the fish harvested from pens or cages in Latin America and Asia. But at the Aquafinca fish farm here, a modern miracle takes place daily: Tens of thousands of beefy, flapping tilapia are hauled out of teeming cages on Lake Yojoa, converted to fillets in a cold slaughterhouse and rushed onto planes bound for the United States, where some will appear on plates within 12 hours, making this once obscure African native the most popular farmed fish in the United States. Although wild fish predominate in most species, a vast majority of the tilapia consumed in the United States is “harvested” from pens or cages in Latin America and Asia.

Known in the food business as “aquatic chicken” because it breeds easily and tastes bland, tilapia is the perfect factory fish; it happily eats pellets made largely of corn and soy and gains weight rapidly, easily converting a diet that resembles cheap chicken feed into low-cost seafood.

“Ten years ago no one had heard of it; now everyone wants it because it doesn’t have a fishy taste, especially hospitals and schools,” said Orlando Delgado, general manager of Aquafinca.

http://www.nytimes.com/2011/05/02/science/earth/02tilapia.html?partner=rss&emc=rss

According to industry group National Fisheries Institute, the average American ate 1.21 pounds of tilapia in 2009, making it the fifth-most-consumed seafood in the country. About 95 percent of that is made up of frozen fillets imported from eastern Asia (mainly China) or fresh fillets imported from Central and South America (mainly Honduras, Costa Rica and Ecuador), according to an estimate by University of Arizona environmental science professor Kevin Fitzsimmons, who researches tilapia farming. Twenty-five percent of the tilapia produced in the United States is grown in tanks filled with recirculated water, Fitzsimmons said. Blue Ridge Aquaculture has harnessed that technology with the help of farming research from Virginia Tech.

Tilapia has recently grown in popularity because of its flaky consistency, mild taste and versatility. Most consumers of live tilapia in the U.S. buy them out of glass tanks in ethnic grocery stores or restaurants.

Researchers helped the company breed white tilapia that would grow quickly without using hormones or antibiotics, build filters that convert ammonia from fish waste into nitrogen that can be safely released into the environment, and build a system to remove solid fish waste so it can be composted, said Tech food science professor David Kuhn. At the company's 90,000-square-foot plant, about 100 male and 200 female tilapia swim in pools inside a greenhouse, where every Wednesday workers collect the eggs from the females' mouths by turning them upside down into

buckets. In a separate room, the eggs are hatched in small bins. The young fish swim in small pools and later are moved to one of 42 57,000-gallon tanks in a warehouse, where they spend most of their eight-month growing process until they're harvested. The farm doesn't discharge into the local watershed because it reuses 99 percent of its water and pays the local public treatment plant to treat whatever water is wasted, said Steven Summerfelt, who has reviewed the company's process for The Conservation Fund's Freshwater Institute, a nonprofit group that researches sustainable water use.

"Blue Ridge Aquaculture demonstrates one of the best possible approaches for sustainable seafood production," Summerfelt said.

http://www.roanoke.com/business/wb/284961

Stirling strain of tilapia first to have genome sequenced

Researchers have made a breakthrough in sequencing the complete genome of the Nile tilapia, one of the world's most important cultured food fishes. Using DNA from a special line of tilapia developed in the Institute of Aquaculture at the University of Stirling, the sequencing was carried out by the Broad Institute. This is the first commercial aquaculture species to have its genome sequenced. The Nile tilapia *Oreochromis niloticus* is the most important cultured foodfish globally after carp, even outstripping salmon, and is closely related to the huge flocks of cichlid species in the East African Rift Valley lakes which are studied by evolutionary biologists.

Dr David Penman of the Institute of Aquaculture explained: "This tilapia line was developed to have two identical copies of every part of its genome (normally vertebrates show some differences between the genes inherited from the mother and father), which simplified the processing of the genome sequence data. "The sequence and associated data are now available to the scientific community worldwide, and should contribute to further advances in both basic science and aquaculture research. For example, this should help us to find important genes affecting traits such as disease resistance, growth rate and sex determination, allowing more precisely targeted selection to improve aquaculture performance." Professor Brendan McAndrew and Dr Penman have led research into the development of other lines of tilapia in the Tropical Aquarium facility at the Institute of Aquaculture, and these have been supplied to aquaculture operations around the world. These allow production of red tilapia, favoured in some markets, and nearly all-male populations, which prevents breeding in culture ponds before harvest. Developing such lines has taken years of research by students and staff at the Institute, with funding from a variety of sources including BBSRC and DFID.

http://www.worldfishing.net/news101/stirling-strain-of-tilapia-first-to-have-genome-sequenced

Trout and Salmon

A first generation integrated map of the rainbow trout genome

Coupling great interest in this species as a research model with the need for genetic improvement of aquaculture production efficiency traits justifies the continued development of genomics research resources. Many quantitative trait loci (QTL) have been identified for production and life-history traits in rainbow trout. An integrated physical and genetic map is needed to facilitate fine mapping of QTL and the selection of positional candidate genes for incorporation in marker-assisted selection (MAS) programs for improving rainbow trout aquaculture production.

This integrated map provides a framework for a robust composite genome map for rainbow trout which is needed for genomic analyses. It will facilitate comparative genome mapping with other salmonids and with model fish species. This resource will also facilitate efforts to assemble a whole-genome reference sequence for rainbow trout.

Provisional PDF available at http://www.biomedcentral.com/content/pdf/1471-2164-12-180.pdf

Potential of genetically modified fish for human consumption raises concerns

By Walter Gibbs

European salmon farmers and breeders who dominate global sales have a wary eye on transgenic American superfish that grow fast and might gulp part of the $107 billion-a-year aquaculture business. "We don't have any monster pigs in Europe, or monster cows, and there's no need for such a salmon," said Geir Isaksen, the chief executive at big Norwegian fish farmer Cermaq.

Genetically modified Atlantic salmon patented by biotech firm AquaBounty are widely billed as growing at double speed and could be approved by U.S. regulators as early as this summer, taking the global GM food fight to the fish counter. "This is a safe and stable construct," AquaBounty CEO Ronald Stotish said, explaining how technicians inject Atlantic salmon eggs with genes from Pacific Chinook and bottomdwelling ocean pout. Stotish said transgenics could help U.S. salmon, shrimp and tilapia producers compete in an industry pegged at $107 billion last year. The result -three species in one -would be the first GM animal approved for human consumption, joining GM plants like soy and corn altered to tolerate harsh herbicides.

Norwegian Atlantic salmon producers, led by Cermaq and Marine Harvest, provided 65 per cent of world supply in 2010, exporting for a record $5.9 billion as the big new middle classes of Asia and eastern Europe stoked demand. Salmon has become a global commodity whose prices could tumble if genetic tinkering boosts supply while puncturing demand in core markets like Europe, where sentiment runs high against GM food.

In an online Washington Post poll last autumn, 58 per cent of respondents said they would not eat GM salmon. A European Commission survey at the same time found that 77 per cent of Europeans opposed GM food of any kind.

A U.S. Food and Drug Administration committee has already said AquaBounty salmon are safe to eat and unlikely to damage the environment if raised in land-based tank farms permitting no contact with wild fish.

http://www.reuters.com/article/2011/04/22/us-food-salmon-idUSTRE73L1AA20110422

Other

Lake Victoria fishing ban – Nile perch

President Jakaya Mrisho Kikwete has stopped all fishing activities on the Tanzania side of Lake Victoria for the next three months. Speaking to the Ministry officials in Dar es Salaam during his working tour, last week, Kikwete said the order is meant to give a room for the fish species to increase after over fishing. He said fish had disappeared from the lake," he noted. The President told the ministry to conduct patrols on the lake to ensure that his order is effectively implemented.
"You must conduct patrols on Lake Victoria, and if the problem is fuel for your patrol-boats, tell us how much you need then we will give you," he ordered.

The major factor that has led to the over fishing along Lake Victoria was emerging European market for high-quality white fish meat, prompting the development of industrial fish processing capacity along the lake's shores in Kisumu, Musoma, Mwanza, Entebbe and Jinja. The export of Nile perch has since expanded away from the European Union (EU) to the Middle East, the United States and Australia, and now represents large foreign exchange earnings to the lake's riparian states. In Uganda, indeed, its export is second only to coffee in the rankings of export earnings.

In 2006, the total value of Nile perch exports from the lake was estimated to be US$ 250 million. The main market for the Nile Perch remains the EU, and the industry is, therefore, subject to the worries of EU health and safety inspectors. A few years ago, Ugandan authorities had planned to suspend fishing for at least two years but the idea was shelved after fish dealers protested

http://www.busiweek.com/11/news/tanzania/743-kikwete-suspends-fishing-on-lake-victoria#

Regional Roundup

Fish farming in northern Kenya improves with security

The Turkana tribe and their neighbours the Merille from Ethiopia have resumed fishing after reaching a peace deal so they could increase their incomes. "It is a new lease of life as fishermen return to the lake," said Mr Jack Obuo, the Turkana North District Commissioner. The agreement is the result of lengthy negotiations brokered by security teams, elders from the two communities and NGOs. The final meeting that brought the deal was reached at Todonyang' near the Kenya-Ethiopia border.

Mr Obuo said it was sealed by a 17-man committee of elders. "Cattle rustling and banditry has been the main set back to the socio-economic development of the two communities," he added. Most commercial fishmongers were forced to move from the lake because of recurrent attacks by raiders. The revamped fishing has had helped other areas around the lake as more businesses emerge, including transport, tourism and hotels."We stand to gain as more businesses are set to emerge," said Mr Ekuom Edong'ga, a Lodwar trader.

Seven people including an Administration Policeman and a Kenya Police Reservist were also killed in February last year near the lake by suspected Merille raiders who escaped with fishing gear, sparking further tensions between members of the community. But now, with the peace accord in place, fish farming is thriving again as more youths join the project.

They join an estimated 2,000 youths in the North Rift region who have moved from agriculture and dairy farming into fish farming. "Poverty levels are set to decline as most youths and farmers divert from traditional maize and wheat farming to more lucrative fish farming," said Mr James Kemboi, a fish farmer from Nandi North.

Fish farming generated more than Sh140 million to Kenya last year. An average of 1,012 metric tons of fish was produced from farming and the yield was expected to increase following an aggressive campaign by the Ministry of Fishes to encourage youths and farmers into the fish business. The government is to build 200 fish ponds in 140 constituencies for farming under the economic stimulus programme. The programme that has kicked off in some parts of the country is to cost the government Sh0.04 million.

"Aquaculture has proved to be a source of self-employment, income generation and therefore contributes towards the government overall goal of poverty eradication," stated a report by Moi University department of Marines and Fisheries.

The report says there is need to give this sector more prominence in the national plans.

http://allafrica.com/stories/201104280807.html

EU gives Sh6bn to 32 Eastern African fisheries projects

The European Commission has donated 3 million Euro (Sh6.3 billion) for implementation of about 32 national and regional fisheries projects in Eastern Africa.

The projects, eleven of which will be completed by May this year, are geared at achieving sustainable and equitable management of the fisheries industry in Africa, Caribbean and Pacific (ACP) countries. The projects are being implemented under the ACP Fish II programme. The beneficiary countries met in Kisumu last month to review the to review the progress of project implementation to date and plan for future tasks for the Eastern Africa Region. A statement released in Dar es Salaam by ACP Fish II Programme Regional manager for Eastern Africa Koane Mindjimbthe said the total funding for the programme is 30 million euro from the European Development Fund (EDF).

The programme has five components which deal with issues such as improved fisheries policy and management plans at regional and national levels; control and enforcement capabilities; national and regional research strategies and initiatives; regulatory framework and private sector investment; and knowledge-sharing on fisheries management and trade at regional level. “Component one is the cornerstone of the programme as devising sound fisheries policies and management plans, is critical in ensuring the sustainable utilisation of fishery resources and the development of value-added activities in the fisheries sector,” the statement said. The other components will result from the adoption of sound fisheries management instruments, primarily at national but also at regional level, the statement added. Tanzania is currently receiving support from the programme either singly or alongside other countries of the region through a number of projects for its fisheries sector management and development.

These include, support to preparation of a draft aquaculture policy, regional training on co-management, training for monitoring, control and surveillance on Lake Victoria alongside Kenya and Uganda and action planning for improved regional fish trade for sustainable fisheries management

http://thecitizen.co.tz/business/-/9915-eu-gives-sh6bn-to-32-eastern-african-fisheries-projects

Swaziland interested in commercial Aquaculture

By Winile Mavuso

Swaziland is on the move to commercialise fish farming after a number of investors declared their interest in the business. Agriculture under-secretary Bongani Masuku revealed this during a policy review workshop held at the Happy Valley Resorts. He disclosed that a market for fish was readily available, and that a local businessman had offered to buy fish produced by local farmers. “The challenge now is for us farmers to go out there and produce,” he said, adding that by December commercial fish farming should have taken place. He said expected a lot of ponds for commercial fish farming to be opened this year.

Fishing has been identified as one of the commodities that can contribute towards a turnaround of the economy. The policy that was being reviewed was to guide investors, but if it continues to be kept in the shelves, it would be as good as nothing. He challenged fish farmers to contribute meaningfully to the economy of the country. “Let us exploit its potential fully. We have dams like Maguga which if fully utilised, could harvest a lot of fish,” he said. Masuku also mentioned that a lot of farmers had backyard ponds and challenged them to move away from such backyard ponds into commercial farming.

Swaziland has over 50 fish species, but the ministry of agriculture has put emphasis on the farming of the Mozambican Tilapia Fish for commercial purposes. Senior Agriculture Officer for Fisheries, Freddy Magagula said they also wanted to farm Cat Fish. He mentioned that all the fish that was available in local supermarkets was imported from South Africa and Mozambique. “Production of fish in the country is too small and it is mostly done for consumption at the household level,” he said. Magagula also said they were pushing that at least this year commercial fish farming was established. He said the only challenge was money. He said fish farming did not need special attention, but could utilise the very same water that people drink every day. “Fish farming doesn’t even need running water, but a pond, and when it dries up you fill the water again,” he said.

It is estimated that there are currently some 1000 fish ponds in the country and that many of them are being managed by women. The draft policy on the Management and Growth of Swaziland’s Fresh Water Fisheries and Aquaculture sectors further estimates that with an initial stocking of 250 fingerlings, each pond has the capacity to produce more than 400kg of Tilapia fish annually. The Tilapia fish is sold domestically for approximately E15 per kilogram. Each farmer is, therefore, able to make E6 000 annually. The draft policy states that at present, Swaziland has invested substantially in supporting subsistence and small scale commercial agrarian farmers to expand into pond-based tilapia fish farming. The ministry has provided these farmers with 250 tilapia fingerlings and technical extension support services aimed at assisting the farmers to rear the fingerlings.
“The ministry is of the opinion that a number of these current subsistence fish farmers have the potential to expand their operations thus increasing production and income as well as establishing themselves as small-scale commercial aquaculture farmers,” states the draft policy.
The policy further states it is, however, recognised that by expanding the current subsistence based fish farming pond initiatives, the emerging small-scale commercial farmers will require significantly more technical support and perhaps access to finance to fund investments to build larger or additional ponds, purchase pumps to ensure proper water circulation, source appropriate feed for the larger numbers of fish and managing possible fish-related viruses.

The lack of protection of rivers and river catchments from degradation and pollution has been cited as one of the issues restricting the growth of fisheries in the country. In 2005, the National Food Security Policy (NFSP) declared that fisheries and aquaculture could play an important role in food security through production of food of a high nutritional value. According to the draft policy on the Management and Growth of Swaziland’s freshwater fisheries and aquaculture sectors, the NFSP acknowledged that the contribution of fisheries and aquaculture to food security in the country was very minor and identified among other challenges the inadequate promotion of fisheries and aquaculture. The document states that other factors that let down fish farming in the country were the lack of a policy on fisheries and aquaculture and the outdated status of the Protection of Fresh Water Act of 1937, lack of information on fish supply and demand, and limited integration of agriculture/aquaculture production systems. Also the identification of indigenous fish species suitable for aquaculture and fingerling supply as well as the lack of an appropriate investment climate for commercial fisheries and aquaculture, including value adding technologies and marketing have been cited in the document as hindrances to the farming of fish.

http://www.observer.org.sz/index.php?news=23463

http://www.observer.org.sz/index.php?news=23673

Feeds

Gene tech to grow Omega-3 canola

An alliance of Australian research organisations is hoping to use gene technology to develop a canola plant that is naturally rich in long-chain Omega-3. Long-chain Omega-3 is a nutrient which

is useful in maintaining heart and brain health. It is traditionally obtained from fish oils, but declining fish stocks mean the supply is limited.

Now a $50 million alliance, which includes CSIRO, will take the genes that produce Omega-3 from microscopic algae in the oceans and insert them into canola plants. The CSIRO's Bruce Lee says the research alliance hopes to be trialling the new canola in the next two years. "What we are trying to do is to produce an alternative source of long-chain Omega-3 that is sustainable," he said. "That will be in canola, and it will be a consistent supply that we can either use directly in supplements or that we can feed in aqua-feeds to the growing aquaculture industry of the world." Mr Lee says the research alliance is hoping the new canola variety will be commercially available by 2016. "What we are trying to achieve with this is to provide an alternative source for consumers," he said. "They can either take these directly from canola as supplements, the oils, or we can feed the canola meal to fish in aquaculture and then as consumers we would consume the fish and have an alternate source of Omega-3."

http://www.abc.net.au/news/stories/2011/04/12/3188580.htm?section=justin

Research matters, Reviews & Training

How safe are genetically modified plants in fish feed?

In a new publication, Norwegian researchers have reviewed numerous publications and have presented the current state of knowledge about the use of genetically modified (GM) plant ingredients in fish feed. The review focuses on fish performance and health, and the fate of DNA fragments from GM plants in the fish.

The researchers are from the National Institute of Seafood and Nutrition Research (NIFES), the Aquaculture Protein Centre's (APC), the Norwegian School of Veterinary Science (NVH), and the National Veterinary Institute (VI). The researchers base much of the review on experiments they have performed themselves.

DNA is present in all cells, so we eat it every day. Is there a reason to worry if we eat DNA from a GM plant?

"When a plant is genetically modified, it is quite random where in the plant's own genome, the new DNA, or transgene, settles. Therefore, some of the host plant's own genes might be affected and give so-called unintended effects, such as changing the level of nutrients or toxicants in the GM organism," says scientist Anne Marie Bakke from APC and NVH. "The GM plant as a feed ingredient might therefore have characteristics that we do not know of. It is also a concern that the new protein itself, produced by the plant from the transgenic DNA, can affect the animal eating it."

The following concerns were considered in the review:

Resistance to insects and herbicides

There are two traits that commercially available GM plants are modified for – tolerance to certain herbicides or resistance to insect attacks. Only a few differences were observed between herbicide resistant GM plants and conventional plants of the same species, such as certain soy, cotton and canola plants. Data on insect resistant plants are scarcer but some relatively pronounced differences between GM-maize and conventional maize have been observed. The researchers recommend that the effect of some insect resistant plants should be followed up, particularly in respect to growth and health parameters of the fish. In trials reviewed, there was little consistency from trial to trial for a specific GM plant, so drawing any general conclusions on the safety of using

GM plants in fish feed is difficult to do. “This may reflect genetic differences between each batch of GM plants, possibly due to random insertion of the transgene into the plant genome, or that there were variations due to differing environmental conditions that each batch of GM plant tested were grown under,” says Bakke. This is at least how the researchers can account for the variable results observed in the feeding trials with Atlantic salmon done by the APC with NIFES and VI since 2001 in two projects funded by the Research Council of Norway. “However, we did not see any dramatic effects on fish performance and health,” says Bakke.

What about DNA fragments?

DNA fragments in the diet, whether its transgenic DNA or DNA from a conventional plant, withstand feed processing and intestinal digestion. They can also be absorbed by the intestine and further distributed to tissues in the fish. However, researchers say they do not find any reason to worry about DNA fragments based on what they have studied. Transgenic DNA fragments don’t seem to be taken up more frequently in the intestine compared to the plants’ own DNA, and they don’t seem to cause any negative effects in the fish. Still, there are several gaps in the knowledge, such as the mechanisms and possible function of dietary DNA uptake, types of cells involved and potential consequences of the uptake.

Distribution:

Genetically modified plants were first grown commercially more than 20 years ago. Since then, the proportion of GM crops has increased rapidly. Estimates say that about three quarter of all soy produced globally is genetically modified. It is becoming increasingly difficult to attain non-GM plant ingredients for fish feed. The Norwegian scientists recommend more research on the effect of each GM ingredient before using the particular ingredient in fish feed.

The researchers behind the review article are Nini Hedberg Sissener, Monica Sanden and Gro-Ingunn Hemre from NIFES, Åshild Krogdahl and Anne Marie Bakke from APC’s Gut and Health group at NVH, and Lene Elisabeth Johannessen from VI.

Ref: Sissener et al. (2011). Genetically modified plants as fish feed ingredients. Canadian Journal of Fisheries and Aquatic Sciences (Can. J. Fish. Aquat. Sci.) 68, 563-574, doi:10.1139/F10-154.

Conferences, Upcoming events

AQUA 2012: Securing our future

The European Aquaculture Society (EAS) and the World Aquaculture Society (WAS) have announced that the AQUA 2012 event will take place in Prague, Czech Republic, from September 1-5, 2012. The AQUA events are co-organised by EAS and WAS every six years. The event comprises an international scientific conference, an international trade exhibition, workshops for aquaculture producers, forums organised by students and by the European Commission Directorate General for research and many other satellite workshops and meetings. previous AQUA events each attracted more than 2000 participants from over 50 countries, showing the global importance of aquaculture and specifically this event.

The theme “Securing our Future” has several aspects. It has obvious implication in global and regional food security and aquaculture trade, placing aquaculture products in the global fisheries market. It also refers to economic and environmental sustainability and the image of aquaculture activities. Our future is what we make of it now – how we alleviate poverty; how we manage our future resource needs and especially how we educate, train and manage knowledge for the next generation of aquaculture researchers, producers and other stakeholders.


AQUA AFRICA 2011
AQUACULTURE FOR A GROWING CONTINENT
EXHIBITION
Companies are invited to
participate in the trade exhibition of the
Aquaculture Association of Southern Africa's
bi-annual conference to be held from
13 – 16 SEPTEMBER 2011
at the Sun 'n Sand Holiday Resort
Mangochi, Lake Malawi
PROGRAMME AT A GLANCE
12 September 2011 : Exhibition Set-up
Conference Registration
13 September 2011 : Conference Day I & AGM
14 September 2011 : Field Trip
15 September 2011 : Conference Day II & Formal Banquet
16 September 2011 : Workshop
Disassemble Exhibition stand (1pm)
EXHIBITORS PACKAGE
Cost: R3 500 per stand for 4 days
Exhibition space: 5m x 5m
Electricity, table & 2 chairs provided
Exhibitors are responsible for their own signage/partitioning, if required.
Please contact the Conference Secretary
for exhibition opportunities
Questions/Comments? Email us at info@aasa-aqua.co.za or call +27(0)12 8076720
www.aasa-aqua.co.za
Aquaculture Association of Southern Africa

Other events

World Aquaculture 2011, Natal, Brazil - June 6-10, 2011.
With over 1000 abstracts submitted, the World Aquaculture 2011 event in Natal, Brazil seems to be very promising. Find the preliminary programme grid and more information on the plenary speakers on www.marevent.com

The updated floorplan of the exhibiton hall including the exhibitor list is mentioned on www.fenacam.com.br/estandes
.
For conference participation register online now on www.was.org
.

Aquaculture Europe 2011, Rhodos, Greece - October 18-21, 2011.

Things are shaping up very well indeed for our Aquaculture Europe 2011 event in Rhodes, Greece from October 18 - 21. Although the deadline for abstract submission has now passed, we are still accepting abstracts online at https://www.was.org/EasOnline/Abstracts/Default.aspx

Please however submit as soon as you can, as the moderators are already compiling their sessions and availability for oral presentations will be reduced the later you leave it.
We hope very much to have the first full programme grid online by the end of this month. The profiles of our Plenary invited speakers are also online www.easonline.org

ONLINE REGISTRATION is also now available at https://www.was.org/EasOnline/Registration/Default.aspx

Make sure that you get the best possible reduction on fees by registering before this date - and by joining EAS. The Early Bird deadline for AE2011 registrations is 30 June 2011 so please act now.

MORE UPCOMING EVENTS:

AQUACULTURE AMERICA 2012 - Las Vegas, Nevada USA Feb 28 - Mar 2

AUSTRALASIAN AQUACULTURE 2012 - Melbourne, Australia - May 1-5, 2012

AQUA 2012 - Prague, Czech Republic - September 1-5, 2012

AQUACULTURE 2013 - Nashville, Tenessee Febr 21-25

AQUACULTURE AMERICA 2014 - Seattle, USA - February 9-12, 2014

WORLD AQUACULTURE 2014 - Adelaide, Australia - June 7-11, 2014

AQUACULTURE 2016 - Las vegas, USA - Febr 22-26, 2016