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19 December 2004

Aquaculture System - Eco-Cell

A West Australian-based aquaculture technology company has taken seven years to provide their answer to fish shortages.



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BLANCH : While fresh seafood might be a favourite around the world, it's becoming increasingly difficult to deliver sufficient supplies from the dwindling wild stocks. This has resulted in an immense growth of aquaculture as an industry. A West Australian-based aquaculture technology company has taken seven years to provide their answer to fish shortages. Called Eco-Cell, it's a land-based re-circulating seafood production system where a fish breeder only has to add water and electricity for fresh seafood anywhere. Cell Aquaculture's Managing Director is Perry Leach and Perry, you say your technology allows seafood breeding to international standards, there's no use of chemicals or antibiotics or genetic modification, so is this what makes your system unique or different from others?

LEACH : It's certainly one of the main areas. I would think that the biggest item that we have developed is doing it on a modular basis where each of the units--and most of the dangers would come from human error, that if a human does make an error he doesn't wipe out your entire project or your entire stocks. He will only destroy whatever mistake he makes on the particular Eco-Cell, but also the other main thing is that our unit that recirculates the water 24 hours a day, cleans it to perfection. In fact, the actual water the fish are swimming in is to world health standards, so one of the classic things we do with people we're bringing in is have a glass and have a sip of water where the fish are swimming, so there is absolutely no pollution in the building, the water or the system.

BLANCH : So this is what separates your system from other aquaculture systems?

LEACH : Definitely the water purity and the simplistic way that we operate it so that anybody can run it, you don't have to be an aquaculturalist or a trained technical person to be an operator. It will run in any country because the whole essence of the Eco-Cell is to be able to place it next to the market so it has to be able to be ecologically friendly, so it has to go into cities--alongside cities to supply fresh fish straight to the market. The initial trial system we built was in a place called Karrinyup in Western Australia, which is right next to a large golf course and we got no complaints in three years, so it can actually operate inside a city without pollution of air, smell or noise.

BLANCH : Well, it's taken seven years and millions of dollars to develop Eco-Cell, what's the technology -- it's a lot of money is it -- but what is the technology that drives the system?

LEACH : What we had to do first was find out how the fish actually live. In the oceans, in sea pens they're all living in semi-natural environments -- we're taking them out of that environment and putting them into an artificial environment, so we had to find out what really made the fish relaxed and although that sounds easy, fish stress to a completely different way to pigs or chickens or other animals, so once we'd established what causes fish to stress, then we developed a system around that to clean the water. We've used Australian barramundi because of their acceptance worldwide of high quality flesh and ability to meet most tastes and all of our trials to date have been using these fish. We are also going to go into the hatchery side so we can control the breeding quality and disease-freeness of the product going in at the front end.

BLANCH : Well, you're exporting your aquaculture system as a package and you've just mentioned the hatchery side of it, but it's comprising quite a package, so what does it comprise of?

LEACH : Basically everything. We have a lovely little catchphrase called "hatch to despatch", so what we do is create the, and as I said, it's initially Australian barramundi -- we're going then into Australian Murray Cod and Australian golden perch, so there'll be a definite Australian

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flavour in the marketplace when we go to the various countries. We're going in our initial attack on the world – we're going to Europe, Asia and America and that will all happen in January/February. We will be supplying the baby fingerlings we call them, which are the baby fish, air freighted from Australia to our quality and being of a high quality they have less death rates, they have better growth factors and they're a better looking fish and always of the same quality which is very important. And they will be at a set time so that allows the operators to be able to produce fish on a regular basis so they just won't come out in one big lump of fish and then be at the beck and call of the market, they will be coming out regularly every month at equal numbers so they can target their markets and not be screwed down on price.

BLANCH : So you'd be doing some staff training would you for these people ...

LEACH : A lot!

BLANCH : ... that are living in Italy or some place?

LEACH : Ah well, initially we're going to the UK/Europe. Yes we've got a reasonable number at the moment of staff at Hamilton Hill who have all been trained up in the system to be trainers rather than to be operators and our technical people – once the plant is up and running, we bring the operator from the particular country down to Perth, train them in Perth and then put them back in again and if they need it, then we will also send our people across to help them through the initial few months where there could possibly be some minor hiccups.

BLANCH : So for someone who decides to take up your system, what do they need for the system to function, I mean land adjacent to water supply for instance or what, some kind of building or what?

LEACH : The whole system is based, as you said in the introduction, on the Eco-Cell which is a modular unit, but you need about 16 of the units to have an economical system which will produce 50 tonnes of fish per year. These cells can be put in any configuration within the building. Obviously in cold climates you'll either have an insulated building or you will get an old building and insulate it, but yes, there is no specific shape, size or configuration, it is totally geared to the environment in which we're placing it.

BLANCH : And you're exporting these native Australian fish, what's been the international reaction to Australian species of fish and other seafoods?

LEACH : We've done a lot of research and test marketing on this. I think we've had samples of product go to over 20 countries with 20-country feedback and it's been excellent. In fact the prices we've had indicated to us, in the particular areas we're going to, is in some instances double what we pay in Australia. We tend to undervalue our pristine beautiful fish – that's why we really can't grow it in Australia at this stage because the Australians don't pay enough for high quality fish.

BLANCH : Is this system suited to say a local fish in the Mediterranean Sea area?

LEACH : Yes we could do it to that, but we've made the conscious decision not to. We want to be at the top end of the market and we believe that Australia has a very, very good green image worldwide and a clean image – we're going to work on that and work with it so that all of our products that go to the international market will be labelled as such and will always be of prime quality.

BLANCH : So tell us about the development of Eco-Cell, this system, how did it all begin – I mean I have to say how was it spawned?

LEACH : I like that word. I'd retired to be honest, I was in the chicken and pig industry and my youngest son did aquaculture and then came like most sons to dad and asked him to help him get a job. After a lot of talking and looking around I felt that the industry was so far behind and I believed I could solve a few things, that I got in with a little bit, then a little bit more and just like running a boat, you just keep pouring more money in until there was no way out. The concept was to see if we could build a totally sealed environment and totally control the growth of the seafood. Four years later I'd almost given it away and we believed we'd then cracked it! And that's when we then went to the public for some extra help on money and with the help of a lot of mums and dads we're at the stage of seven years now we're about to hit the world market.

BLANCH : And what motivated you to export the product apart from saying that we're spoilt here in Australia?

LEACH : Totally spoilt – basically that. In looking at the world aquaculture industry I just believed that it was so far behind—we'll say the chicken industry that if one could develop a way of economically growing seafood at the market's doorstep, then this was a world market not just a one-off country or a particular market. Once we'd proven to ourselves that the system would work and it was risk-free, then it's a matter of then getting enough funds to go to the world in a fairly fast mode before competitors catch up with you. The only problem of course you've got is when you've got something new that is not, sort of, up and already running all over the world, people are naturally fairly cautious, so we're going in on joint ventures for the first four or five to show our faith in the system and, from those systems we then believe that it will just take off. It will be, you know, available to give fresh fish the same day right to the market.

BLANCH : Perry Leach, Cell Aquaculture's Managing Director with the Eco-Cell aquaculture system that is set to deliver fresh fish without first casting a fishing line.

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