

# BARRAMUNDI FARMING STATUS REPORT 2009

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## SUMMARY

Farmed barramundi (*Lates calcarifer*) production (tonnes whole fish) increased by 13% in 2009. The combined production in 2009 from three pond-based farms was 616 tonnes, compared with 544 tonnes in 2008. The total value increased from \$4.3 million in 2008 to \$4.9 million in 2009.

Aquaculture and Berrimah Veterinary Laboratories (BVL) staff actively assisted the industry in addressing production issues related to aquatic animal health, particularly the toxic microalga *Prymnesium* sp.

## PROFILE OF THE FARMING SECTOR

### **Hatchery/Nursery Production**

Commercial annual fingerling production from the NT Government Darwin Aquaculture Centre (DAC) declined from 970 000 million in 2008 to 814 800 in 2009. One local farm also produced its own fingerlings. Only DAC sold fingerlings during the year. Approximately 39% of the fingerlings (320 000) were sold locally and 494 800 interstate. The size of fingerlings supplied to local farmers ranged between 50 mm and 130 mm, whereas those sold interstate ranged between 25 mm and 35 mm.

### **Farm Production**

Six Aquaculture licences were endorsed to produce barramundi. Only the following three pond-based farms marketed fish in 2009, Australian Barramundi Culture Pty Ltd (Humpty Doo), Arda-Tek (Berry Springs) and Wild River Farmed Seafood (Berry Springs). Pond production of fish increased from 544 tonnes in 2008 to 616 tonnes in 2009, continuing the trend of increased pond-based production over the last three years.

### **Impoundment Stocking**

Over 7300 excess fingerlings from DAC, ranging from 120-140 mm in size, were stocked into Manton Dam in 2009.

### **Translocation**

A zoning strategy covers health and biosecurity issues related to the importation of barramundi larvae or fingerlings and their movement within the NT. The strategy identifies disease control regions within the NT. Fish may be moved between, or within, zones of equivalent health status, but movement into zones of higher health status requires quarantine and health certification to ensure that diseases are not transmitted along with the stock.

### **Marketing**

In 2009 most of the fish produced on farms was sold either directly or indirectly to interstate markets. The majority of fish were sold as whole fish over 1.0 kg in weight. A small proportion (<5%) were sold either as whole fish <1.0 kg or as fillets.

### **Employment**

Permanent labour employed in the growout and hatchery/nursery sectors of the industry averaged 17.5 in 2009 compared with 19.8 in 2008; casual employment remained steady at eight.

### **Ecologically Sustainable Development/Environmental Management**

The Department of Natural Resources, Environment, the Arts and Sports supervises environmental assessments and approvals. As part of aquaculture licence conditions, all farms must have an approved Environmental Management Plan, which stipulates the environmental parameters under which the farm must be constructed and operated. Pond-based farms discharging into waters with declared beneficial uses are required to have discharge

licences. All farms are subject to environmental and aquaculture licence compliance audits.

## RESEARCH

In 2002, Marine Harvest P/L funded research to develop a bacterin against two pathogenic marine bacteria, (*Vibrio harveyi* and *Photobacterium damsela*) which affect barramundi fingerlings. The bacteria caused significant fingerling mortality at the DAC hatchery/nursery and at the Marine Harvest cage farm. The bacterin was used in bath immersions of all fish prior to transfer to Port Hurd. The use of the bacterin together with improved on-farm management of the fish were considered to have successfully reduced mortality due to the bacteria.

In 2006, an autogenous vaccine against one strain of *Streptococcus iniae* found in the NT which causes streptococcosis, the most devastating bacterial disease affecting farmed barramundi in Australia, was developed and produced commercially by Intervet Norbio, in collaboration with Marine Harvest and BVL. The vaccine was approved by the Australian Pesticides and Veterinary Medicine Authority for use in fingerlings destined for Marine Harvest's barramundi seacage farm.

From 2005 to 2007, DAC improved hatchery culture protocols to reduce the rate of fingerling deformity to less than 5%. Following further improvements, the deformity rate declined to around 1%.

In 2007, another autogenous vaccine was developed in collaboration with the barramundi pond-based farming industry. This time the vaccine included a second NT strain of *Streptococcus iniae* and was produced commercially by Allied Diagnostics.

### Recent Research

Together with BVL, DAC maintains an aquatic animal health program to assist the industry. In 2008-09 DAC helped the industry in investigating and developing controls for a number of disease

problems, such as the protozoan parasite *Amyloodinium*, and the potentially toxic microalga *Prymnesium* sp.

In 2005, funds were obtained from the Australian Research Council to study the causative agent of VER (viral encephalopathy and retinopathy), the most significant viral disease affecting barramundi hatchery and nursery production. Two PhD students, in collaboration with DAC, BVL, the University of Sydney and Marine Harvest, commenced research in May 2006. A new broodstock screening test (polymerase chain reaction) was developed and validated, which will help improve the understanding of the epidemiology of the disease.

The Fisheries Research and Development Corporation funded a project to establish a method to improve the rapid diagnosis of *Streptococcus iniae* strains, which could assist in the further development of appropriate vaccines against *S. iniae* for use on all barramundi farms. The project was completed in 2009.

DAC continues to improve the efficiency of barramundi production in the hatchery and nursery by continuously refining and reviewing culture techniques.

## INDUSTRY DEVELOPMENT

Commercial barramundi farming commenced in the NT in the early 1990s with support from the NT Government. Since then the level of barramundi production has varied, with some farmers turning to marine prawns in the mid to late 1990s and changing back from prawns to barramundi in recent years.

Australian Barramundi Culture Pty Ltd established a pond-based farm in 1993 and commenced full commercial operation in 1998. Marine Harvest established a seacage farming operation at Bathurst Island in 2000. The NT Government has supported industry development through the expansion of its commercial barramundi hatchery and nursery at DAC.

The NT Government also provides a disease investigation and certification service through BVL, which has assisted industry to develop and has helped to ensure that aquatic animal health issues are effectively managed.

## **Current Issues**

Further development of the barramundi industry will require continued and sustainable growth of existing farms over the short to medium term. Industry growth in the longer term is expected through the development of new inland and offshore farm sites. Industry growth will need to be accompanied by increased promotion and marketing to ensure that demand keeps pace with increased production.

## **Future Plans**

DAC is working to develop improved disease control systems and better hatchery and nursery production techniques to enhance the efficiency of barramundi production in the NT.

Australian Barramundi Culture Pty is exploring the use of large-scale, recirculating ponds, an automated growout feeding system and a semi-automated nursery to improve both production and sustainability.

The projected fingerling requirement, locally and interstate, for 2010 is approximately 750 000.

When Marine Harvest was in operation, the NT industry aspired to produce 10 000 tonnes within 10 years. Following the closure of the Marine Harvest operation, that target has been revised down to 5000 tonnes. Meeting this target is contingent upon continued expansion of the pond farming sector and the success of current activities by the Tiwi Land Council to find an alternative investor in seacage aquaculture at the Tiwi Islands. Barramundi production from the NT pond-based farms is projected to increase to over 1000 tonnes in the next couple of years.

## **Industry Liaison**

DAC regularly facilitates contact with all active aquaculture licence holders and encourages

open channels of communication with the industry. In addition, an Extension Officer is available for advice to farmers and who regularly visits the farms.

Barramundi farmers were able to raise issues of importance and be involved in aquaculture industry development generally through their representative on the Ministerial Advisory Committee on Aquaculture in the NT, which acts as a conduit between the industry and the government to address aquaculture issues. Aquaculture licensees were also represented on the NT Seafood Council through the Aquaculture Licensee Committee.

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