



# Media Release

2008  
Ref 08/

## Making Australian prawn farms more sustainable

A new science-industry research partnership is developing technologies to improve the sustainability and production efficiency of Australian prawn farms.

The technologies will transform prawn ponds into closed systems that recycle excess nutrients into a microbial food source for the prawns, thereby reducing feed and water treatment costs.

As feed is added to prawn ponds during the growing season, excess nutrients trigger the growth of micro-organisms such as phytoplankton and bacteria, reducing the oxygen available to prawns.

Project leader, CSIRO Marine and Atmospheric Research scientist Dr David Smith, says farmers manage this nutrient build-up by periodically replenishing small amounts of pond water. Excess water is treated in a costly remediation process to reduce its environmental impact.

"We aim to reduce the need for pond-water discharge by creating a closed-pond environment in which excess nutrients fuel the controlled accumulation of beneficial microbes that provide an additional food source for the prawns," Dr David Smith says.

The benefits of the technique, known as microbial flocculation, will include: efficiency gains through better feed use, more uniform prawn growth and reduced pumping; easier maintenance of good pond-water quality; and, reduced nutrient discharge and disease risk (due to reduced water transfer).

Matt West of Australian Prawn Farms Pty Ltd south of Mackay, Queensland – which has played a leading role in the project's development – says the research addresses a key industry priority: improving productivity while maintaining its reputation for world-leading environmental management.

"We hope this will lead to a replacement of imported prawns with increased supplies of clean, green, quality local product," Mr West says.

The project will focus on the production, maintenance and nutritional value of the microbial 'flocs' in ponds producing black tiger prawns, *Penaeus monodon*, the most widely-grown prawn species in Australia. It will:

- Monitor water chemistry and microbial development in five trial ponds of black tiger prawns at Australian Prawn Farms;
- Trial and evaluate microbe-management techniques such as the addition of appropriate carbon and nutrient sources; and
- Assess the nutritional benefits, environmental benefits and profitability of the system in a full-scale commercial trial.

The Australian Prawn Farmer's Association (APFA), Australian Prawn Farms Pty Ltd and the CSIRO-led Food Futures National Research Flagship have received funding for the three-year project from the Fisheries Research and Development Corporation.

*CSIRO initiated the National Research Flagships to provide science-based solutions to Australia's major research challenges and opportunities. The nine Flagships form multidisciplinary teams with industry and the research community.*

**Image available at:**

**Further Information:**

David Smith, CSIRO Food Futures Flagship  
Matt West, Australian Prawn Farms

07 3826 7239, 0488 782 446, David.M.Smith@csiro.au  
07 4950 3111

**Media Assistance:**

Bryony Bennett, CSIRO Marine and  
Atmospheric Research

03 6232 5261, 0438 175 268, Bryony.Bennett@csiro.au

**[www.csiro.au](http://www.csiro.au)**

If you would like to be removed from this mailing list please contact [CSIROMedia@csiro.au](mailto:CSIROMedia@csiro.au)