



Name: Nick Robinson

Present position Senior Scientist

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Degrees

1992 Ph.D.

1985 HONs

1984 B.Sc.

Experience

Jan 2004-
Dec 2005 *Research Leader, Breeding and Genetics* at AKVAFORSK (Institute of Aquaculture Research AS), Norway.

Oct 1995-
Jan 2004 *Head of the Genetics Unit* at the Victorian Institute of Animal Science, Department of Natural Resources and Environment, Victoria, Australia.

Sept 1992-
Oct 1995 *Research Scientist* at the Victorian Institute of Animal Science, Agriculture Victoria, Attwood, Victoria, Australia.



Present research activities and fields of interest

Summary. Selective breeding and commercialisation of selective breeding programs. Simulation of selective breeding programs, particularly with the application of new technologies (eg. marker assisted selection, gene expression profiling) and their impact on aquaculture industries (genetic response, benefit-cost ratio, total added value etc). Particular focus on improvement of traits such as disease resistance and resistance to other stresses in the aquaculture environment. Working with species such as Atlantic salmon, Atlantic cod, abalone, carps, shrimp, barramundi and yellow-tail kingfish.

Specific project involvement

Development of a commercial abalone selective breeding entity for mainland Australia
Fisheries Research and Development Corporation Australia Tactical Response Fund 2009.
Principle investigator on project.

Improved disease resistance of tiger shrimp and rohu carp farmed in India: Developing and implementing advanced molecular methods, and streamlining access to and use of genetic resources

Norwegian Research Council and Department of Biotechnology, Ministry of Science and Technology, Government of India. 2008-2011. Principle investigator on project.

Scope and economic analysis of options for a nationally unified breeding program that provides significant economic benefit to the Australian abalone aquaculture industry.
Australian Seafood CRC 2008. Principle investigator on project.



Molecular Ecology Notes **6**, 740-746.

Mariasegaram M., Robinson N. A. and Goddard M. E. (2006) Quantification of cattle DNA using quantitative competitive PCR with sheep DNA as competitor. *Molecular and Cellular Probes* **20**, 18-20.

Loughnan S., Baranski M., Robinson N.A., Jones P.F., and Burrridge C.P. (2004). Microsatellite loci for studies of wild and hatchery Australian Murray cod *Maccullochella peeli peeli* (Percichthyidae). *Molecular Ecology Notes* **4**, 382-384.

Reports

Robinson N. and Li X. (2008). Scope and economic analysis of options for a nationally unified breeding program that provides significant economic benefit to the Australian abalone industry. Final report to the Australian Seafood CRC, Project No. 2008/722. South Australian Research and Development Institute.

Robinson N. (2008). Review of available software tools that can be used to support selective breeding programs in the Seafood CRC. Report to the Australian Seafood CRC. South Australian Research and Development Institute.

Knibb, W., Mair, G.C., Elizur, A., Robinson N. and Thomson, M. (2008). The development of a genetic management and improvement strategy for temperate marine finfish (SBT, YTK & Mulloway). Final report to the Australian Seafood CRC, Project No. 2008/703. Flinders University.

Robinson N., Hayes B., Goddard M., Austin C., McKinnon L., Li X. and Baranski M. (2006). Abalone aquaculture subprogram: Use of marker assisted genetic breeding to improve abalone and abalone products. Final report to the Fisheries Research and Development Corporation, Project No. 2002/202. Primary Industries Research Victoria, Attwood.

Other publications

Robinson N., Baranski M. and Hayes B. (2007). Design and evaluation of the use of MAS with selective breeding of abalone. *Aquaculture* **272**, Supplement 1, S304-305.

Baranski, M., Robinson, N., Loughnan, S., Rourke, M., Hayes, B., Austin, C. (2007). Detection of QTL for growth rate in abalone using selective DNA pooling. *Aquaculture* **272**, Supplement 1, S242-S243

Ingram, B.A., McPartlan, H., Rourke, M., Bravington, W., Robinson, N., Hayes, B. 2007. Genetic enhancement of Murray cod for aquaculture and conservation. *Aquaculture* **272**, Supplement 1, S271.

Baranski M., Rourke M., Loughnan S., Hayes B., Austin C. and Robinson N. (2004). Finding gene markers to enhance abalone aquaculture production in Australia. *European Aquaculture Society, Special Publication* **34**, 142-143.

Selected presentations

Conference papers

Robinson N. (2008) Business proposal for a selective breeding program to service mainland abalone farms. Australian Abalone Growers Association Annual General Meeting,



Brisbane, Australia.

Robinson N. (2008) Optimisation of selective breeding- benefits for the Australian abalone industry. Skretting Australasian Aquaculture, Brisbane, Australia.

Robinson N. and Hayes B. (2008). Use of modelling for optimising the genetic response and economic impact of selective breeding programs and for the effective integration of new technologies. Skretting Australasian Aquaculture, Brisbane, Australia.

Robinson N. And Hayes B. (2008). Use of gene expression profiles with selective breeding for improved disease resistance. Meeting on the realization of the Eurocarp project and Workshop on Molecular Genetic Methods in Aquaculture, Moscow, Russia.

Robinson N. (2008). Software tools for selective breeding programs. Leader of a working group session for the development of the Seafood CRC Genetics Theme Business Plan, Melbourne, Australia.

Robinson N. (2008). Workshop to scope a national selective breeding program for the Australian abalone industry. Melbourne, Australia.

Robinson N. (2008). Modelling selective breeding programs. Trait prioritisation, cost, benefits and profit. Workshop for Clean Seas Tuna, Port Lincoln, South Australia.

Robinson N. (2007). Development and commercialisation of a selective breeding company for abalone. Workshop for the Australian Abalone Growers Association, Adelaide.

Robinson N., Goddard M. And Hayes B. (2007). Can phenotype be predicted from gene expression data? Fish Breeders Round Table, Alesund, Norway.

Robinson N., Ingram B., Walker T., Hayes B. and Gooley G. (2006). Seafood biotech futures- II Biotechnology for genetic improvement. Agricultural Biotechnology International Conference, Melbourne.

Robinson N. (2006). Recent advances in molecular techniques for enhancing breeding programs. Australasia Aquaculture Symposium, Adelaide.

Robinson N., Baranski M., Austin C. and Hayes B. (2006). Application of marker assisted selection for genetic improvement of abalone. Australasia Aquaculture symposium, Adelaide.

Hayes B., Baranski M. and Robinson N. (2006). New technologies in aquaculture breeding programs. Havbruk Conference 2006, Norway

B. A. Ingram*, H. McPartlan, M. Rourke, W. Bravington, N. Robinson, J. Nheu, H King Ho and B. Hayes (2006) Use of genetic and reproduction technologies to conserve and exploit valuable fish resources: A case study featuring Murray cod. Australasia Aquaculture Symposium

Robinson N., Baranski M. and Hayes B. (2006). Design and evaluation of the use of MAS with selective breeding of abalone. International Symposium of Genetics in Aquaculture IX, June 2006, Montpellier, France.

Baranski M., Robinson N., Loughnan S., Rourke M., Hayes B. and Austin C. (2006). Detection of QTL for growth rate in abalone using selective DNA pooling. International Symposium of Genetics in Aquaculture IX, June 2006, Montpellier, France.

Ingram B., Hayes B., McPartlan H., Rourke M., Bravington W. and Robinson N. (2006). Genetic enhancement of Murray cod for aquaculture and conservation. International Symposium of Genetics in Aquaculture IX, June 2006, Montpellier, France.

Moen, T., Berg, P., Hayes B., Lien, S., Omholt, S., Robinson, N. & Våge D.I. (2005). Atlantic Salmon Research within the Centre of Integrative Genetics - CIGENE. International

Marine Biotechnology Conference 2005, juni 5-12, St. John's, Canada

Robinson N. (2005). Application of functional genomics knowledge and tools to selective breeding. Talk presented to an INRA/ AKVAFORSK workshop, Paris.

Våge, D.I., Berg, P., Hayes, B., Høyheim, B., Lien, S., Moen, T., Robinson, N. & Omholt, S. 2005. CIGENEs rolle i genomforskningen på laks. Husdyrforsøksmøtet, Quality Hotel Sarpsborg, Sarpsborg, 7-8 februar, 101-103.

Robinson N. A. (2004). The effective use of new technologies for genetic improvement- the Norway experience. **Keynote Invited Speaker**, Australasian Aquaculture, Sydney.

Ingram B. A., Lade J., Rourke M. and Robinson N. (2004). Genetic enhancement of Australian finfish for aquaculture and conservation: Murray Cod. Australasian Aquaculture, Sydney.

Rourke M., Robinson N., Taylor A., Lade J. and Ingram B. (2004). Use of microsatellite tests to evaluate genetic diversity in wild and captive Murray cod *Maccullochella peelii peelii*. Australasian Aquaculture, Sydney.

Ingram B., Rourke M., Lade J. and Robinson N. (2004). Genetic enhancement of Australian finfish for aquaculture and conservation. Australasian Aquaculture, Sydney.

Robinson N. A. (2004). Use of gene expression profiles as a tool for selective breeding. Fish Breeders Round Table, Håholmen, Norway.