

## Genetics delivers lower spat loss in Sydney Rock Oysters

The Sydney Rock Oyster (SRO) breeding program has delivered QX disease resistant oysters. The oysters have high survival during QX outbreaks (up to 100%), 50% winter mortality resistance, and also exhibit faster growth leading to a reduction in time to market of up to 12 months.

Further genetic gains are anticipated as the breeding program shifts to family selection through the creation of 60 oyster families using new pair mating protocols.

The association between QX resistance and phenoloxidase genotypes has been proven and opens the prospect for marker assisted selection to further boost genetic gains in QX resistance. A sensitive test for phenoloxidase genotypes has been developed so that the breeding program has a tool to genotype parents and large numbers of their progeny to assist breeding.

The three year Seafood CRC project: 2006/226 "Securing and Enhancing the Sydney Rock Oyster Breeding Program" has been completed.

The project developed a 'gene bank' for the breeding program. Protocols for cryopreservation of gametes have been developed and documented as a potential strategy to reduce Select Oyster Company's overall maintenance costs for the lines and increase genetic security.\*

The project also investigated alternative means of creating triploid Sydney rock oysters. To induce triploidy, temperature and pressure shocks were tested as alternatives to chemical induction. Although less effective at this stage, research continues with these non-chemical techniques with the aim of increasing their efficacy.

Field trials of 60 pair mated family lines, including 31 lines with differing phenoloxidase phenotypes, are underway. These families will be made available to SOCo for incorporation in the industry breeding program.

For further information contact: Dr Wayne O'Connor; Ph: 02 4916 3906

\* This technology has not yet been taken up



AUSTRALIAN  
SEAFOOD  
COOPERATIVE  
RESEARCH CENTRE

