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FACT SHEET

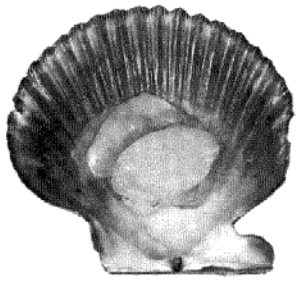
Potential for scallop aquaculture in South Australia

The farming of scallops is one of the largest producing aquaculture activities in the world, both in terms of volume and value of production. Several countries have successful scallop farming industries including China, Japan and Chile.

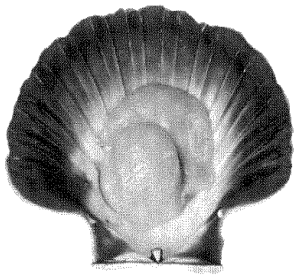
As a consequence of the success of the overseas industry, the farming of scallops has been attempted in one form or another on several occasions in South Australia.

South Australia has three species of scallops that have commercial value. These are:

- King scallop (also known as 'Commercial scallop') – *Pecten fumatus*
- Queen scallop – *Chlamys bifrons*
- Doughboy scallop – *Mimachlamys asperrima*



King Scallop



Doughboy Scallop

Each of the above species are taken by commercial divers and are available through the market in varying quantities. At this point few, if any, South Australian farmed scallops have reached market.

Currently, there are a total of 12 licensed scallop growers in South Australia. Growers attempting to culture scallops in South Australia are predominantly existing mussel and oyster growers that are seeking to diversify species production. Production capacity varies significantly between operators, and due to the extremely variable rate of wild spat collection it can be expected that total industry production will also vary considerably from year to year.

Culture technologies

The techniques for the production of scallops are well established in some overseas countries, and there is a view that for the industry to progress in South Australia then production technology must be sourced from one of those successful producing countries. One dilemma will be the selection of which country to access this technology.

Caution must be applied when investigating and accessing overseas technology. It can be expected that due to both obvious and cryptic biological differences between the South Australian and overseas species that technology cannot simply be transferred and successfully applied in South Australia.

Hatchery production

In order to operate a successful scallop venture, a plentiful supply of scallop spat must be available. At this stage commercial quantities of spat from King scallops have been infrequently produced in NSW and Tasmania with only moderate numbers of spat obtained from Doughboy and Queen scallops.

Spat can be obtained using two methods:

- Collection of spat from the wild
- Production of spat through onshore hatchery facilities.

The commercial availability of hatchery reared spat appears to be the major limiting factor in successful scallop culture in Australia. Currently, the industry is mainly reliant on collection of wild spat which can be extremely variable and therefore unreliable.

Ideally hatcheries should be located in close proximity to the grow-out sites as this allows for the easy transportation of spat to and from the hatchery, nursery and grow-out areas. A source of ripe, ready to spawn broodstock is also essential for routine hatchery production of scallop spat.

For hatchery reared spat to succeed in the open sea, it is recommended that there should be a nursery phase in the culture process which allows spat to become acclimatised to natural sea conditions. A nursery site would normally be relatively protected, but open enough to the elements to allow the spat to continue to grow and strengthen before they can be placed into open sea sites.

Grow out

Currently the majority of technology for scallops in South Australia has only obtained for King scallops. This is primarily due to the fact that there have no successful rearing of Doughboy or Queen scallops from spawning through to maturity. Also the dominant species in Australia is the King Scallop and consequently the great percentage of spat collected is from this species. Therefore specific scallop information presented in this fact sheet is mainly applicable to King scallops.

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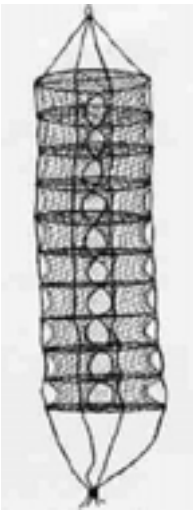
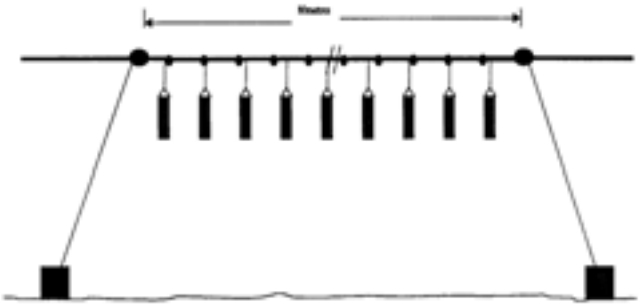
Currently the most common method for culturing scallops is using lantern nets. These nets comprise of a number of levels in which the scallops are placed. The lantern nets are then attached to rope that have been secured between buoys. The scallops are held within the nets throughout their grow-out cycle. This takes around 18 months depending on culture conditions until they reach a market size of around 60 to 70mm.

The fouling of equipment and farmed scallops is potentially one of the major constraints. This is due to the fouling organisms reducing access of water, feed and oxygen to the animals resulting in stress and thus poor growth rates and even mortalities. Equipment must be cleaned regularly and some farmers have moved towards using rigid nets in replacement of soft mesh lantern nets as they can be easily cleaned with high-pressure hoses.



Lantern Net



Longline with Lantern Net attached (Latern nets can also be secured to ropes on the bottom of the sea floor for extra support in rougher sea conditions)

Site selection

As for the majority of forms of shellfish culture, sites allocated for scallop farming must reach certain criteria in order to provide the optimum conditions for growth and survival. The Fact Sheet "Shellfish Aquaculture - Factors which can affect Site Suitability" examines some of these criteria.

As scallops are filter feeders, a site selected for scallop aquaculture must be classified under the Shellfish Quality Assurance Program (SASQAP). Further information on this program can be obtained by ringing the SASQAP Manager on 8683 2533.

Disease

Scallops, like any organism, are susceptible to disease. This susceptibility increases when factors such as stress are involved, and stress may be induced through factors such as poor water quality, excessive handling, crowding, damage through being exposed to rough conditions, 'biting', low oxygen levels etc.

Scallop diseases in aquaculture are not widely known in Australia, and through good management practices the risk of disease can be minimised. In South Australia there have been no written records of serious disease incidents in either farmed or wild scallop stocks although significant mortality of some scallop populations has been reported previously.

Development issues

Costs

The purchase of equipment to place on the off-shore sites and the subsequent placement of that equipment is potentially an expensive exercise. Equipment used for the farming of scallops is not yet readily available in Australia, and as a consequence of the relatively low level of demand, the cost of equipment may be high. The placement of this equipment into the sea is also an expensive exercise. Large vessels are normally required, as are skilled staff.

Rules and regulations

In order to farm scallops offshore in South Australia, a Fish farming licence and approval from the Development Assessment Commission (DAC) is required. If you wish to apply for an

offshore fish farming license you will need to fill out a form demonstrating your interest in a site. These forms and further information are available on the web site or can be obtained by calling PIRSA Aquaculture SA on 8226 0314.

Further Information

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