

FISHING INDUSTRY RESEARCH TRUST ACCOUNT

REPORT ON PROJECT

1. Title of Proposal: Hatchery rearing of bivalve molluscs in Tasmania.
2. Name of Applicant: Department of Agriculture, Tasmania
3. Division, Department or Section: Fisheries Division
4. Proposal: To continue hatchery rearing of commercial scallops (Pecten meridionalis) (winter months) and to utilise the same facilities to rear Pacific oysters (Crassostrea gigas) for suspended culture (summer months).
5. Name of person responsible for project: Trevor G. Dix, Officer-in-Charge, Fisheries Research Laboratory, Tarooma
6. Qualifications of staff to be employed on the programme:
 Trevor G. Dix B.Sc (Hons), PhD
 Technical officer
 Technical assistant
7. Location of operations: operations were based at the Fisheries Research Laboratory, Tarooma. Fieldwork aspects of the project were conducted in Spring Bay, East coast and in D'Entrecasteaux Channel
8. Date project commenced: 1 July 1975
9. Completion date: July 1977 (although some growth studies are continuing using Tasmanian resources).
10. Report on Project:
 - a) Research
 - Hatchery work
 - Proposed objectives - to raise large quantities of scallops and oysters for on-growing studies - were not realised in the programme.

After initial success at producing relatively small quantities of spat* the latter part of the project sought to discover the reasons for lack of predictability in larval culture. As the programme developed it appeared that conditions at Tarooma were not ideal for mass larval production. An extensive series of bioassays using "standard" techniques developed in the U.S. and U.K. did not help resolve the problem. In fact the work highlighted deficiencies in existing bivalve larval bioassays.

Field

Despite lack of success in laboratory mass production of scallops and oysters, sufficient scallop spat were collected in the field to continue fieldwork aspects of scallop culture.

Spat collectors placed on 16 September 1976 yielded smaller catches than those of the previous year (mean number per collector up to 7.1 in 1976). Catches at the surface were lower than those in deeper water although little difference in catch rate was seen in 3 different collector types.

Sufficient scallops were collected to conduct further growth trials to clarify aspects of field studies from 1975 caught spat. Significant features include:-

a) 1+ and 2+ scallops grown in scallop houses were harvested in July 1977. Flesh weights in these were good (average 25g/scallop - each worth 9.7¢ at current prices). Growth checks appear to be induced by lifting the houses and measuring the scallops.

b) Mudworm (Polydora) infestation has been an unforeseen problem with the cultured scallops and although not proven, appears to be a major factor in mortalities.

* refer to Australian Fisheries August 1977 (Dix, T.G. Life Histories of Bivalve Mollusc Larvae).

c) 1976 caught spat in mini lantern cages grew faster than those caught the previous year and maintained in Nylex cages before transfer to lantern cages. Scallops stunted early in growth do not catch up with those grown in more favourable conditions.

d) Scallops do not grow as fast in southern areas (Margate and Apollo Bay in D'Entrecasteaux Channel) as at Triabunna. Mortality is also higher in southern areas.

An evaluation of all results will be made when 1976 caught spat are harvested in 1978.

Conclusions

Although results relating to original objectives were disappointing, efforts have provided some of the needed basis for further evaluation of both scallop and oyster culture.

As outlined in Australian Fisheries (March 1976 p15) work has suggested that the best method for developing culture of the commercial scallop would involve Japanese style collection of spat in the field.

Whether growing to commercial size in cages or growing to a size for release on the sea bed would be more profitable requires further evaluation. Adoption of either method would demand higher spat catches than those achieved during the current programme. A spat prediction programme with spat identification based on larvae raised in Taroom hatchery studies would be required.

Irregular spat supplies remain a major constraint to development of Pacific oyster farming both in Tasmania and more recently, South Australia. Further consideration of hatchery spat production is therefore warranted together with investigation of other methods (e.g. pond culture of larvae) of spat production. There is a need also to evaluate sites other than the Tamar River for Tasmanian spat collection.