

## AQUACULTURE & MARICULTURE

### 1. GREEN MUSSEL (*Perna viridis*) CULTURE PROJECT.

Experimental growth trials of the introduced green mussel (*P. viridis*) in Safata and Asau bays in early 1983 (refer to 1983 and 1984 Fisheries Division Annual Reports) by the Fisheries Division were very successful. High growth and survival rates as well as good meat content as shown by the mussels transplanted into these sites are indications of the possibility of this type of development, *in western Samoa*.

In its efforts to expand the culture range for this promising species for mariculture, the Fisheries Division in 1985 imported 60,000 spats (small mussels) and introduced them into Fagaloa Bay (refer to Report on Mussel Trials in Fagaloa Bay, dated 20 November 1985/*Results and comments*).

#### PLANS AND PROBLEMS

The 1984 Fisheries Annual Report records Mussel spatfalls in the Asau bay during that year. This is a positive indication of the viability of the project in this bay as mussel farming depends largely on natural spatfall. Plans include the re-introduction of spats to Asau bay with intention of establishing and increasing natural broodstock which in turn would establish a natural reproduction cycle. *At present, aid funds are being sought to initially introduce this type of farming to Women's Committees in the Asau area and then other organisations. This will gradually spread out to villages with suitable sites.* Efforts will also be put into surveys and growth trials in other possible sites for the mariculture of this bivalve and possibly *others too, other species*, like the giant clams.

At present, the major problem creating the slow development of this project, apart from funding, is the unreliable spat availability. It was envisaged that the reintroduction of mussel to Asau be conducted at the end of 1985 but unavailability of spats from Tahiti made it impossible. It is believed that since natural spatfall has occurred in Asau, more introductions of mussels would eventually lead to the establishment of a large enough natural broodstock for the production of natural spats to be used for transplanting into other sites.

### 2. GIANT FRESHWATER PRAWN (*Macrobrachium rosenbergii*)

The project at Solaua still remains as was reported last year, that is, no prawn post larvae were transferred to the grow-out ponds. The farm owner did not place any order in 1985 for juveniles but he has indicated that some outside companies as well as individuals have expressed interest in joint venture. Thus the farm at Solaua could soon start operating again.

The site at Solaua is believed to be capable of supporting about 50 hectares of prawn farm considering the relatively flat land and water availability. In the initiation of the project, only three ponds (totaling to about 1.9 acres) were operational. Work on the hatchery of ~~this~~ introduced prawn species at the Fisheries Division at present, is limited to broodstock maintenance and introduction, on a very small scale level, for backyard aquaculture.

The successful propagation as well as good initial growth rate of this species in Western Samoa indicates its potential as a foreign exchange earner especially when overseas markets are available.

### 3. BACKYARD FRESHWATER AQUACULTURE

Backyard aquaculture denotes aquaculture systems which are designed for operation on house or other small backyard land areas and which can be a productive, satisfying experience when practiced for subsistence (i.e. small family-run operation which supplements the farmer's food and possibly income needs) or recreation (e.g. interest and enjoyment).

During the year 1985, a few locals expressed interest in backyard aquaculture. One crop farmer from inland Salani Falealili requested for tilapia fry. He was supplied with fifty fry from the Fisheries broodstock ponds. Another local was also given 1,000 fresh water prawn post larvae from the Fisheries hatchery for trials in a stream which runs through his land.

### 4. FISH POISONING WITH CHLOROX

One of the most recent and rising problems as far as the reef environment is concerned is the usage of chlorox (household bleach) by fishermen to obtain fish. This poses a threat not only to the fish population (especially juveniles) but particularly the corals which are very susceptible to chemicals.

In efforts to establish an easy method of identifying chlorox-killed fish, the Fisheries laboratory staff conducted a series of experiments in the laboratory on the fresh-water fish, Tilapia. Although the results indicated possible visual characteristics which could be used for identification, ~~by~~ more experiments using marine fish and in situ are necessary.