

## **4.0 Consultancy and Services**

### **4.1 Community Services at Telaga Batin (Aquaponics)**

Institute of Tropical Aquaculture (AKUATROP) with the cooperation of Department of Fisheries Terengganu, Department of Agriculture Terengganu and the Kumpulan Rukun Tetangga (KRT) Kg. Telaga Batin has developed an aquaponic system at Kg. Telaga Batin. This system was built by Tuan Hj. Umar Salleh, from WHK Integrated Sdn. Bhd. He was a former UMT lecturer and have years of experience in the field of aquaculture.

Aquaponic system is a combination of culture and plant and fish in a Recirculating Aquaculture System (RAS) without using any soil. There are three important elements in the aquaponic system which is essential for success and they are fish, plants and bacteria. Fish feed provide most of the nutrients required for plant growth. Nutrients, which are excreted directly by the fish or generated by the microbial breakdown of organic wastes, are absorbed by plants. Fish waste metabolites are removed by nitrification and direct uptake by the plants, thereby treating the water, which flows back to the fish tank.

This system can produce a wide variety of leafy vegetables and fish. The fish commonly used in this system are catfish, tilapia, seabass, koi and gold fish. The vegetables grown are lettuce, basil, pak choi and tomatoes. In this system catfish was used and the vegetables grown are spinach and lettuce. This project will be operated by fishermen, taxi drivers, single mothers and village workers.



Site of Aquaphonic project at Kg. Telaga Batin



Discussion between KRT Telaga Batin and appointed contractor



Green House and Fiber Glass Tank



Medium: Small gravel in plant grow beds



Plant Grow Beds



Spinach grown in aquaphonic system

## 4.2 Community Service For Rompin Community Collage

On the 16 th till 18 th of August 2007 AKUATROP researchers led by Assoc. Prof. Dr. Abol Munafi Ambok Bolong conducted a sampling trip to Kuala Rompin, Pahang. This sampling trip was to fulfill the request from the Rompin Community College to collect data for the feasibility study for an aquaculture site. The administration of Rompin Community Collage had planned to study the feasibility of setting up an aquaculture farm if the condition and water quality in that area was suitable. The scope of the study included site survey and checking of water quality.



AKUATROP researchers and DoF Officers at the sampling site



Researchers collecting samples for water quality study

#### 4.4 Fish health diagnosis

AKUATROP researchers are also involved in giving fish health diagnosis service to aquaculturist, fish farmers and ornamental fish breeders. From 13<sup>th</sup> -15<sup>th</sup> July 2007, AKUATROP was involved in examination of fish from Tebrau Straits, Johor. Large numbers of fish were jumping out of the water and this was a sign of stressful behavior. It was stated that this was a normal phenomenon at the shore where the fishes have been leaping into the air. To investigate this phenomenon, Professor Dr. Faizah Shaharom assigned two of her research assistants to the incident site at Tebrau Straits. This project was collaboration between UMT and the Johor Department of Fisheries. A total of 30 fishes from three sampling sites were taken for the diagnosis. The investigation showed three types of ectoparasites and one endoparasite had infected the fishes.



Targeted species were caught using fishing net



*Caligus sp.* found in gills



Water quality checking at Investigation site



Milk fish (*Channos sp.*)



Fish diagnostic by AKUATROP research assistant



Researcher from Department of Fisheries

### 4.3 Service Lectures to Farmers and Small time entrepreneurs

AKUATROP lecturers are also involved in giving talks and lectures in their field of expertise to the surrounding community. For example, Dr. Zaleha Kassim has been actively giving talks to farmers and entrepreneurs in the field of leech biology and culture. The course covered topics on taxonomy, biology of leech and culture technique. The following table shows leech talk given by Dr. Zaleha recently:

No.	Course	Venue	Date
1	First Leech Culture Course	Malaya Hotel, Kuala Lumpur	27 <sup>th</sup> Dicember 2007
2	Second Leech Culture Course	De Palma Hotel, Kuala Lumpur	23rd February 2007
3	Third Leech Culture Course	Federal Hotel, Kuala Lumpur	31 <sup>st</sup> March 2007



5 inch leech



Leech with posterior and anterior sucker

#### 4.4 Ecology and Production carrying capacity Study in High Impact Project of *Perna viridis*, Sebatu Melaka

Apart from leech culture, Dr. Zaleha also has been appointed to be the project leader for Ecology and Production carrying capacity Study in High Impact Project of *Perna viridis*, Sebatu Melaka. The study was conducted to fulfill the request from Department of Fisheries Malaysia to determine the carrying capacity of the site and feasibility for green mussel culture. The scope of the study included field sampling, water parameter analysis, biomass identification, sediment analysis species comparison and diversity of phytoplankton, zooplankton and benthos. The study was carried out for three months from September to December 2007 and funded by Department of Fisheries Malaysia.

