

Poseidon Marine Science News

Antifouling testing in small boats (India)

ANTIFOULING R&D

For further information,
please contact our New York
headquarters at:

Poseidon Sciences Group
122 East 42nd Street
Suite 1700
New York, NY USA 10168

1-646-341-7714

Email:
info@poseidonsciences.com
or poseidonnova@aol.com



IN THIS ISSUE:

- Small boat testing program launched
- Types of wooden boats in Tamil Nadu
- Methods of testing and evaluation of coatings



POSEIDON OCEAN SCIENCES (NY, USA)

April 5, 2009

Poseidon Sciences and SHMRC begins marine paint testing on small wooden boats in South India

Worldwide there are over 2 million motorized fishing boats in service and the vast majority are less than 15 meters in length. This fishing fleet is mainly concentrated in Africa, Asia and the Near East. Moreover, most of these boats are constructed out of wood. While there has been an increasing trend to use fiber-reinforced plastic, over 90% of small boats still use timber as the medium of construction (FAO Fisheries, 2008).

The marine biofouling challenges are even greater for wooden-hulled boats since they tend to spend more time near the shore and are exposed constantly to a wider array of fouling organisms compared to larger commercial fishing vessels that go farther out to sea. Thus, small wooden boats represent a sizeable market opportunity for marine paint companies because of the sheer number. However, price considerations are important, particularly since the end users are small fishing boat operators and artisanal fishermen.

The photograph on the right describes the fouling conditions in unprotected wooden boats

in South India. Hard fouling tends to be site specific and comprise mainly of mussels (*Perna sp.*), Tereido worms and barnacles.



Bottom side of the wooden hull

Long term damage to the hull and the cost of maintaining the boats are major issues for the fishing fleet. Lower cost and effective coatings are needed. Environmental awareness of the effect of toxic coatings on marine life is increasing, but maximizing boat performance is the primary concern for the coastal fisherfolks.

TEST LOCATION

The map on the left shows the test location of the Poseidon-SHMRC Program for small boat test. The small fishing boats travel the Gulf of Mannar which remains tropical on a year-round basis. The test facility is located in Tutuicorin (Toothukudi) where surface preparation, coatings application and inspections are carried out. More details regarding the testing program are described in the following page.



SHMRC Beach Laboratory

Wooden fishing boats remain a poorly tapped market opportunity for marine paint companies. Of the over 2.1 million fishing boats worldwide, over 70% are in Asia. And of these, about 90% are still made of timber. Development of marine paints that are ideally suited to support this market is needed .



Barnacle fouling (below) and mussel fouling (above) on wooden structures.



The wooden boats of Tamil Nadu, India

The Mannar Gulf is a rich fishing ground and has a correspondingly large artisanal fishing communities. The test area is located in the state of Tamil Nadu where boats can be classified into three main types:

- The first is called the kattumarams which are log crafts from 4.5 meters to 8.5 meters in length. There are about 35,000 of these boats in Tamil Nadu alone.
- The second type is the vallam which is about 9 meters long. There are 8,000 vallams in operation in Tamil Nadu.



- The third type are decked vessels made of wood which are 11 to 15 meters long, with diesel engines up to 120 HP. There are 12,000 mechanized fishing craft like this in Tamil Nadu.



Vallam

Testing marine antifouling paints in small fishing boats

The first phase of the Poseidon-SHMRC Programme on small boat tests will rely on the vallam as the test boat. The vallam is a versatile boat frequently used by fishing communities around SHMRC. Since they generally stay close to shore, the vallam operators typically go out to sea for fishing at 6 pm and return by 6 am to bring the catch to the market. This allows us to monitor the performance of the coating at anytime during the day when the vallams are at anchor or along the beach area.



Vallams at anchor along the beach

The environmental conditions in the Mannar Gulf is year-round tropical weather, with two short monsoons. The fouling pressure is heavy and a significant amount of time is devoted to manually cleaning the hull from algae, mussels and barnacle fouling. This environment is typical of South India and representative of the conditions that can be found in many other parts of Asia and Africa.

Features of the vallam and study specifications:

- All wood construction, with a small motor.
- Propellers are generally not protected by any coating
- Height is 3 m; length is 9 meters
- Total amount of bottom paint required is 4 liters.
- Total amount of paint above the water level is 8 liters.
- Total number of boats enrolled in the program is 50, with additional boats available for expansion.
- All boats in the test program are actively engaged in fishing
- Inspection schedule once a month or at project sponsor's specifications.
- Inspection by photography and by video assessment provided to project sponsor via electronic mail
- Project sponsor supplies the coatings and the specifications for application. Preferably, the project sponsor technician applies the paint to the boat.

To learn more details about this testing programme, please contact:

Jonathan R. Matias, Executive Director
POSEIDON SCIENCES GROUP
 122 East 42nd Street, Suite 1700, New York, NY 10168

Phone: 1-646-341-7714
 email: jrmatias@poseidonsciences.com