

**SODIUM AND POTASSIUM CONCENTRATION RATIO IN
MANGROVE LEAVES AS SUBLETHAL INDICATOR
OF OIL STRESS IN MANGROVE TREES, TAKLONG
ISLAND NATIONAL MARINE RESERVE (TINMAR),
NUEVA VALENCIA, GUIMARAS**

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ABSTRACT

This study is in the second year of the five-year research that was assigned to UPV to monitor the effects of the oil spill in TINMAR. This research primarily focuses on the Sodium and Potassium ion concentration ratios in the leaves of the mangroves which will be used as sub-lethal indicators of oil stress in the mangrove trees. Specifically, this study determined the total amount of Sodium and Potassium ions present in the mangrove leaves using Flame-Atomic Absorption Spectrometer, compared the Potassium and Sodium ion concentrations among the different species and between sampling sites and determined the sensitivity of the species based on the changes in Na/K ratio. Results showed that the total Sodium concentrations were within the values under normal conditions except for *Rhizophora apiculata* and *Rhizophora mucronata* and the total Potassium concentrations were also within the values under normal conditions except for the *Sonneratia alba* species in Bagatnan. The Na/K ratio determined the sensitivity of the mangrove species studied to oils stress. A lower ratio of Na/K compared to the control area means that the mangroves trees were able to cope up with stress and an elevated Na/K ratio means the mangrove trees are still undergoing stress. The Control area, however, have elevated Na/K ratio because of high Sodium concentrations and very low concentrations of Potassium in the plant leaves tissues.