# ABSTRACT

Mangroves are plants that are able to grow and develop in tidal areas and muddy beaches. Mangrove ecosystems have roles and functions in terms of physical, socio-economic and ecological functions. Based on the physical function of mangrove ecosystems can be known how the effectiveness of mangroves in trapping sediment. This study aims to analyze the effectiveness of mangroves in trapping sediment between *Avicennia* sp. and *Rhizophora* sp. both in terms of density, sediment deposition rate and the relationship of sediment deposition rate with the density of *Avicennia* sp. and *Rhizophora* sp. in the waters of Lhokseumawe City. This study used a survey method with the determination of sampling points by purposive sampling. Sediment sampling is done using sediment traps installed in two different locations for 21 days and each station has 3 sampling points. The results showed that the highest mangrove density found in *Rhizophora* sp. (average 2400 ind/ha) and the lowest found in *Avicennia* sp. (average 1433 ind/ha), then the highest sediment deposition rate found in *Avicennia* sp. (average 0.04 gr/cm$^2$/day) and the lowest found in *Rhizophora* sp. (average 0.03 gr/cm$^2$/day). Overall, the highest relationship between mangrove density and sediment deposition rate was found in *Avicennia* sp. (coefficient of determination ($R^2$) of 0.5714 or 57.14%) and the lowest was found in *Rhizophora* sp. (coefficient of determination ($R^2$) of 0.0003 or 00.03%).



**Keywords:** Mangrove, mangrove density, sediment deposition rate