

ABSTRACT

Phytoplankton is one of the organisms used to monitor the level of pollution of a water body. The level of pollution is determined based on the saprobity index through analysis of phytoplankton composition and abundance. Lhokseumawe City Public Port is a connecting port that has dense activities. The existence of dense activities can produce garbage and waste that can cause changes in water quality conditions and will interfere with the lives of organisms in the waters of the General Port of Lhokseumawe City. The purpose of this study was to determine the type of phytoplankton, phytoplankton abundance, water conditions and saprobity index in the waters of the General Port of Lhokseumawe City. This research was conducted in June - July 2024 at the General Port of Lhokseumawe City and at the Agroecotechnology Laboratory, Faculty of Agriculture, Malikussaleh University. The method used in this study was purposive sampling method. The number of phytoplankton obtained during this study was 20 species divided into 7 classes, which were dominated by *Thalassiosira* sp. and *Navicula* sp. The abundance of phytoplankton found in the waters of the General Port of Lhokseumawe City ranged from 780.00 ind/L - 973.33 ind/L. The results of water quality measurements include pH (7.8 - 7.9), salinity (33.33 - 33.67), DO (7.4 - 8.4 mg/l), temperature (29.2 - 30), brightness (71.5 - 307.67 cm), current speed (0.11 - 0.14 m/s) still in accordance with quality standards. Except for brightness at stations 2 and 3 do not meet quality standards. Phytoplankton saprobity index analysis results showed values ranging from 0.46 - 1.28. Based on the saprobity index value obtained in the waters of the General Port of Lhokseumawe City, it is classified as the saprobity level of β/α - Mesosaprobic waters - β -Meso /oligosaprobic with moderate to mild pollution level categories

Keywords: Lhokseumawe City Public Port, Phytoplankton, Phytoplankton Abundance, Saprobity Index, Water Quality.