

ABSTRACT

The quality of freshness of fish does not continue to last, it can become un-fresh and even rotten so that it emits an unpleasant odor. An indication of the quality of fish freshness can be seen through changes in color on the fish fins or around the fin skin. The purpose of this study is to determine the red color changes in snapper skin using the discrete wavelet transformation method and Principal Component Analysis (PCA). In this research has run an experiment for 10 days and then taken a photo, the photo is used as a dataset. The discrete wavelet transform method is used to reduce the size of the image pixels by filtering with a level 1 matrix and so on until it is sharp. The Principal Component Analysis (PCA) method aims to find the number of components used for the equation to find the PCA value. With these two methods, snapper freshness research also adds a segmentation process, namely by extracting RGB (Red, Green, Blue) color characteristics and converting them to grayscale with the aim that they can be transformed into a discrete wavelet transformation method. After all stages are carried out, the KNN prediction model is run with the help of K-Nearest Neighbor training. The results showed that the value of each snapper image in image reduction entered into the neighboring value of 1. Then the accuracy results obtained using the two methods stated accurate with a value of 100% and 100% precision.

Keywords: Snapper freshness, discrete wavelet transform, PCA, KNN, accuracy.