

ABSTRACT

Cited from the official website of the Ministry of Marine Affairs and Fisheries of the Republic of Indonesia www.kkp.go.id in a press release, they said that the for fish consumption as food in Indonesia has exceeded the target set, which is around 55.95 kg/capita/year in 2019. KKP itself targeting the national fish consumption figure will increase from 56.39 kg / capita / year in 2020 to 62.50 kg /capita/year in 2024. Through this target, they hoped that it can improve the nutrition of the Indonesian people considering fish is a food source high protein. One example of this high protein fish is milkfish. For this reason, the selection of good and quality fish needs to be considered fresh so that the protein content is maintained. In general, to determine the freshness of the fish, you can see the physical form of the fish, starting from the color and condition of the eyes, skin, fins and fish gills and the smell of fish. If the fish's eyes begin to darken, smell fishy, and the skin starts to become slimy, it can be said that the fish is not fresh anymore.

In this final project, a system was built to detect the freshness of fish through eye color and part of the milkfish skin using the K-Nearest Neighborhood classification method. By using 144 training data consisting of 72 eye images and 72 skin images and 60 test data consisting of 30 eye images and 30 skin images, whether fresh or not milkfish is classified using the K-Nearest Neighbor algorithm. The results of this study indicate that the proposed method starts from the image input stage, preprocessing, feature extraction, and finally determines the status of the fish in fresh or not fresh condition and is able to classify eye images with 100% accuracy at $K = 3, 5, 7$, and 9. While the classification of skin images gets an accuracy of about 70% at $K = 3$ and 9, 63% at $K = 7$ and 60% at $K = 9$.

Keywords : *k-nearest neighbour, fish freshness, milkfish, image processing*