FISH FRESHNESS IDENTIFICATION SYSTEM USING FEATURE EXTRACTION OF COLOR MOMENT AND K-NEAREST NEIGHBOR

ABSTRACT

Tilapia is a freshwater fish that is consumed by humans. Fish also have high protein and are important for the economy. The high protein factor and sales of tilapia are influenced by the freshness quality of the fish itself. To test tilapia whether it is still fresh or fresh, microbiological analysis can be used and it can also be done manually by the human senses, such as touching the flesh of the fish, seeing the physical appearance of the fish and smelling the fish. However, using microbiological analysis requires a relatively large amount of human labor, physical abilities that are relatively more prone to fatigue and relatively large costs. Meanwhile, if you use the manual method with the human senses, Only a few people can't identify it that way. Therefore the solution offered is to use a tilapia identification system using color moment feature extraction and the K-Nearest Neighbor classification method which is expected to be able to identify tilapia accurately and easy to use. In research to build a system for identifying tilapia freshness, it can be done by taking data first, making direct observations by taking photos of tilapia from 0 hours to 15 hours which later the data will be used as a dataset for system modeling. In the application of color moment feature extraction, 3 moments are calculated including the mean, standard deviation and skewness. For the application of the K-Nearest Neighbor method, the Euclidean distance is used and the best K value is from 1 to 50. Based on the results of the study, the freshness identification system of tilapia using the color moment feature extraction algorithm and K-Nearest Neighbor is able to classify fish freshness properly by using Euclidean distance calculation algorithm. The best K value test results from 1 to 50 are found at K = 7. The system gets an accuracy value of 100% at K = 7.

Keywords: Identification System, Tilapia, Freshness, Color Moment, K-Nearest Neighbor