IMAGE CLASSIFICATION OF BEEF AND PORK USING PSEUDO K-NEAREST NEIGHBORS WITH COLOR CHARACTERISTICS AND LOCAL BINARY PATTERN

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ABSTRACT

Beef is a food ingredient that can be a source of high-quality protein and contains various other nutrients, including vitamins and minerals. The nutritional content of beef also has several health benefits and makes it one of the most popular food ingredients by the public. The high interest in beef consumption causes the price of beef to continue to increase, causing rogue traders to take advantage of the situation by mixing pork into beef. The pork was chosen because of the lower price of pork and pork's colour and texture, similar to beef. This finding worries most Indonesians, especially Muslims. One way to recognize beef and pork in the field of informatics is to use image processing. This study created a system for classifying beef and pork images using Pseudo KNN and colour feature extraction and LBP. The extraction of colour features used is RGB and HSV. In this study, the authors used a dataset of 300 images of beef and 400 images of pork. The sharing of beef training data is 210 images, and beef test data is 70 images. The sharing of pork training data is 280 images, and test data is 120 images. The research results obtained the best accuracy from the k = 1 value from the comparison scenario of HSV and LBP (LBP using the euclidean distance calculation method with a radius of 2 and 16 points), resulting in an accuracy rate of 95.238095%.

Keywords: Meat, Citra, Pseudo K Nearest Neighbors, Characteristics of Color, Local Binary Pattern.