

## ABSTRAK

Pertumbuhan populasi dan ekonomi di Indonesia meningkatkan permintaan daging, namun produksi dalam negeri belum mencukupi sehingga diperlukannya impor daging, yang menyebabkan harga daging sapi dengan daging babi yang lebih murah, merugikan konsumen, terutama umat Muslim. Diperlukan teknologi yang cepat dan akurat untuk mengidentifikasi jenis daging.

Penelitian ini bertujuan mengklasikasikan daging sapi dan babi berdasarkan tekstur menggunakan metode *Gray Level Run Length Matrix* (GLRLM) dan algoritma *K-Nearest Neighbor* (KNN). Tahapan penelitian meliputi sstudi literatur, *preprocessing* citra, ekstraksi ciri tesktur dengan GLRLM, klasifikasi menggunakan KNN, dan evaluasi sistem dengan *confusion matrix*.

Hasil penelitian menunjukkan bahwa klasifikasi dengan KNN pada  $k=3$  memberikan akurasi tertinggi sebesar 93%, *precision* 94%, dan *recall* 93%. Metode GLRLM terbukti efektif untuk ekstraksi fitur tekstur, dan KNN mampu mengklasfikasikan jenis daging dengan baik.

**Kata kunci :** Klasifikasi Daging, *Gray Level Run Length Matrix* (GLRLM), *K-Nearest Neighbor* (KNN), Pengolahan Citra Digital.

## ABSTRACT

*The growth of population and economy in Indonesia has increased the demand for meat, but domestic production has not been able to meet the demand, necessitating meat imports. This results in lower-priced pork compared to beef, which disadvantages consumers, especially Muslims. Therefore, a fast and accurate technology is needed to identify different types of meat.*

*This study aims to classify beef and pork based on texture using the Gray Level Run Length Matrix (GLRLM) method and the K-Nearest Neighbor (KNN) algorithm. The research stages include a literature review, image preprocessing, texture feature extraction using GLRLM, classification using KNN, and system evaluation with a confusion matrix.*

*The results of the study show that classification with KNN at  $k=3$  provides the highest accuracy of 93%, precision of 94%, and recall of 93%. The GLRLM method proved effective for texture feature extraction, and KNN was able to classify meat types well.*

**Keywords:** *Meat Classification, Gray Level Run Length Matrix (GLRLM), K-Nearest Neighbor (KNN), Digital Image Processing.*