

PENGOLAHAN CITRA DIGITAL UNTUK DETEKSI CEMARAN MIKROBA PADA PRODUK OLAHAN SUSU SAPI

*(Digital Image Processing For The Detection Of Microbial Contamination In
Processed Cow's Milk Products)*

Pembimbing (1 orang)
Zilvanhisna Emka Fitri, ST. MT.

Rexy Solehudin Abdi Holili
Study Program of Informatics Engineering
Majoring of Information Technology

Program Studi Teknik Informatika
Jurusan Teknologi Informasi

ABSTRACT

Harvesting of cow's milk by SPR breeders is generally still done manually, which greatly affects the quality of the milk obtained. To test the quality of cow's milk, one method is to test for microbial contamination using the Total Plate Count (TPC) method. The problem that arises during testing is that calculations performed by analysts manually still require a lot of time. The focus of this study is to calculate bacterial colonies using digital image processing (PCD) techniques which can shorten the time for testing performed by analysts. The stages in implementing PCD are image acquisition, preprocessing (cropping process and conversion of YCbCr color space), Image Enhancement (Combination of color space and addition of Brightness), Image Segmentation (Thresholding), Feature Extraction based on area (Channel Area Thresholding), and image classification process based on the TPC calculation method. The results of the research that has been carried out have an accuracy rate of detection of bacterial colonies which reaches 89% with an average detection error rate of 11.4%. Thus this system can assist analysts in performing TPC calculations automatically.

Keywords: *Cow's Milk, Digital Image Processing, YcbCr, Channel Area Thresholding, Total Plate Count*