

ABSTRACT

DESIGN ANDROID APPLICATION BASED OF SOMATIC CELL COW'S MILK COUNTER USING IMAGE PROCESSING APPROACH

Oleh

Cantonna Dading Banyu Bening 16102009

Milk is a livestock product used by the people of Indonesia. Its nutritional value depends on the demand for milk and the needs of the community. According to Statistics Finland (BPS), Indonesians consumed about 16.23 kg of milk per inhabitant per year in 2019. Poor milk quality leads to rejection by cooperatives or milk processing industries (IPS). Milk quality is an indication of the selling price of milk from cooperatives or industrial companies. One of the things that affects the quality of cow's milk is somatic cells. Somatic cells in cow's milk are a mixture of milk-producing cells and immune cells. These cells are released into the milk during milking and serve as an index to assess milk health and milk quality. Somatic cells are affected by cow productivity, health, parity, lactation stage and herd type. All changing environmental conditions, poor husbandry practices and stressful conditions greatly increase their numbers. The role of technology as an information medium is very important to provide fast and accurate information. Obtaining information quickly, accurately and precisely is not easy because in addition to the time needed to verify information, errors can also arise due to the negligence of the authorities. Therefore, a computerized system is needed to calculate the number of somatic cells in cow's milk. An android-based smartphone system that uses digital image processing is also called image processing. This application uses Android Studio and Java programming language, waterfall method for software development, and Python programming language with Flask framework. The steps or stages of the waterfall method consist of five steps, with the testing method being the last step before the application is presented to users with black box testing. The system testing stage with 40 data samples resulted in a calculation accuracy of 77.8%, while for blackbox testing itself resulted in the implementation and function of the application in accordance with the program created.

Keywords: Somatic cells, Cow's Milk, Flask, Image Processing, Black Box