ABSTRACT

Beef cattle are livestock members of the Bovidae tribe and Bovinae tribe children [1]. Cows are kept as a source of meat, labour, and they are used for milk. Because of these many uses, cattle have been a part of Indonesian culture for a long time which has become a promising the field for doing business.

Cattle weight is a very important indicator as a consideration of productivity and to determine the success of cattle business [2]. One of many ways to find out the cattle weight is by using cattle scales. However, livestock scales remains inefficient in orde *to provide an easier and more efficient method. The problem can be solved by estimating the cattle weight by using the concept of digital image registration. The method used to separate the image of a cow with a background and disturbing objects is called fractal method. The result had shown the characteristics of the chest width and length of the cow body which was used in the calculation and classification process. The classification used in this study is K-Nearest Negihbor (KNN).*

The system has been designed in the application program to calculate the cattle weight demands input in the form of images or images of cows and produces output in the form of weights and also cows classification based on the obtained cows weight. The application program which is implemented to estimate cattle weight was designed in Matlab software and shown by a GUI (Graphic User Interface). Collaboration from fractal method and K-Nearest Neighbor classification can produced a system which has the highest value of 79,11% and classification accuracy of 85.71% with a computing time of 0.316 seconds.

Keywords **:** *Cattle weight, Digital Image Registration, Schoorl, Fractal, K-Nearest Neighbor*