

ABSTRACT

Sheep is one of livestock that is widely used by Indonesian and even the world. Carcass become one of the important parts that can be used in sheep especially sheep cattle. Carcass is the weight of cattle without head, tail, legs and internal organs. Nowadays, people using conventional scale to measure the weight of a sheep cattle, however this method still have some problems. The limited number of conventional scale that farmers have become a problem in the process of weight measurement. To overcome the problem, the solution that can be done is by applying using digital image processing to know the accuracy of carcass scales on sheep.

Digital image processing is processed using algorithms that can recognize an object. The process is expected to estimate sheep carcass weight to be more effective and efficient. This final project aims to design and implement applications through digital image processing techniques that can predict the weight of sheep carcass. The method used in this final project is Snake Segmentation and Learning Vector Quantization (LVQ) classification. The calculation of sheep carcass will be tested using Ardjodarmoko formula which is a refinement of the Winter formula.

This final project has sample of 310 sheep data with 175 image training data and 125 image test data. The best parameters used are ratio 0.4, iteration of snake is 100, hidden layer 30, and epoch 300. The combination of the Snake Segmentation method and the Learning Vector Quantization (LVQ) classification using digital image processing can produce a sistem that has an accuracy of sheep carcass weight estimation of about 76% with the Standard Deviation (STD) kilogram error is 1 Kg and computation time is 20.88 seconds.

Keywords: *Sheep Carcass, Learning Vector Quantization (LVQ) Classification, Snake Segmentation*