

## **ABSTRACT**

*The classification of tobacco quality is one of the crucial aspects in assessing the quality of tobacco before it is marketed in cigarette packaging. The objective of this research is to develop a tobacco quality classification system using the Gray Level Co-occurrence Matrix (GLCM) method for texture feature extraction and Support Vector Machine (SVM) as the classification model. This research classifies three types of tobacco, namely Podai, Temanggung, and Weleri, based on the quality standards of Shin Tobacco, a hand-rolled cigarette producer. The extracted texture features include contrast, homogeneity, energy, and entropy. The testing process was conducted using a combination of C and Gamma parameters; the C parameter controls the balance between a wide margin and the classification error rate, while Gamma determines how far a data point's influence extends in the model's decision-making. The research results show that the combination of  $C = 100$  and  $\text{Gamma} = 1$  provides the highest SVM model testing accuracy of 95%. Additionally, the system was tested with 10 new images, successfully identifying 100% correctly, according to manual classification results by tobacco blenders. The benefit of this system is that it can be used as an aid in classifying tobacco quality with high accuracy, thus supporting the automation process of tobacco blending classification in the Shin Tobacco industry.*

**Keywords:** *Tobacco Classification, GLCM, SVM, Tobacco Quality*