ABSTRACT

Indonesia is one of the biggest wood producer country, Indonesia's forest can increase the society wellbeing if it is managed well. The material of the wood that will be processed should have good quality without any defect to keep its durability, age and the quality of the product. Therefore, in order to increase the quality standard of the wood product domestically, it needs accuracy on the wood that will be processed. But, sometimes there are some inaccuracy so there are some woods which is identified has a defect into production process. Therefore, it designed automatic wood sorted system to minimize human error and to make the sorting process become more effective.

In this research, the writer design wood innacuracy detection system by using RGB colored image process which is transformed into HSV image by using SUSAN (Smallest Univalue Segment Assimilating Nucleus) method Edge Detector. SUSAN Edge Detector has function to detect the edge when there is wood inaccuracy. The results will be processed by using reaction of statistical feature and will be classified by using k-Nearest Neighbour in two classes; normal wood (without defect) and defect wood (knots or crack on wood)

According system test result which is already conducted, it can be concluded that system designed already able to detect defect wood with paramaeter; t = 0.1, mask size = 3, using second of extraction of statistical feature in angular second momment (ASM) feature, correlation, variance, and inverse different moment (IDM) and k = 1 by using euclidean distance method or city block which produce accuracy level in 90,67%.

***Keyword**: wood defect, image processing, K-nearest neighbour, SUSAN Edge Detector*