

Agarwood Oil Quality Classification Using One Versus All Strategies in Multiclass on SVM Model

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Abstract—Agarwood oil is one of the most beneficial oil to the world community with a high demand. However, there has been a lack of research on the development of agarwood oil because there is no any standard grading model of agarwood oil was implemented. With that, it is very important to come out with a standard of quality classification model for agarwood oil grading's. By continuing developing this standard, specific algorithm function has been used to make sure the ability of this model is totally not in doubt. Support vector machine (SVM) has been chosen as a main model and for the specific function algorithm was multiclass function. Then, in the function, the one versus all (OVA) strategies has been used. The analysis work has involving the data taken from the previous researcher that consists of four classes of agarwood oil quality's samples which are low, medium low, medium high and high quality. So, the output was the classification of quality between low, medium low, medium high or high quality while the input was the abundances (%) of compounds. The desk research has been conducted by using MATLAB software version r2020a for the simulation platform. The result showed that the model has pass the performance criteria standard. Based on that, the intelligent model has shown excellent performance with 100% of accuracy by producing 0.00 of error rate. The verdict in this research for sure will be valuable for the future research works of agarwood oil areas, especially quality classification part.

Keywords—Agarwood oil, multiclass, one versus all, support vector machine