EXPLORATION OF BIOAVTUR POTENTIAL OF FRANGIPANI (*PLUMERIA ACUMINATA*) LEAF EXTRACT THROUGH DISTILLATION PROCESS

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ABSTRACT

The purpose of this study was to determine the quality of bioavtur from frangipani leaf extract (Plumeria acuminata) through the distillation process and to determine the fulfillment of frangipani leaf extract (Plumeria acuminata) as bioavtur through the distillation process against SNI avtur. The research method used is an experimental method by extracting frangipani leaf waste using n-hexane, then purifying it using a catalyst to extract the unsaturated fatty acid content, after which the distillation process is carried out. The research indicators are flash point, freezing point, acid number, sulfur content, density, and viscosity. The results obtained were flash point of 25oC, freezing point of -56oC, acid number of 0.0528 mg KOH/g, sulfur content of 0.0064%, density of 686.3 kg/m3 and viscosity of 6,257 mm2 /s. There are three indicators that meet the SNI for aviation fuel, namely sulfur content, viscosity, and freezing point. And there is one indicator that is close to the SNI for aviation fuel, namely density and two other indicators, namely flash point and acid number, which are less close to the SNI for aviation fuel. The conclusion in this study is that frangipani leaf waste (Plumeria acuminata) has the potential to be used as raw material for making bioavtur through the distillation process and four of the six indicators of bioavtur research from frangipani leaf waste (Plumeria acuminata) through the distillation process, namely freezing point, sulfur point, density, and viscosity are close to the SNI standard for conventional aviation fuel. The suggestions in this study are that further research needs to be carried out using several chemicals in order to meet SNI avtur on flash point and acid number indicators.

Keywords : *bioavtur, frangipani leaf waste, distillation*