

Pembuatan Biodiesel dari Ekstrak Minyak Larva *Black Soldier Fly* (*Hermetia Illucens*)

Biodiesel Production From Extraction Oil of Black Soldier Fly Larvae (Hermetia Illucens)

Dafit Ari Prasetyo, S.T., M.T. as chief counselor

Aji Tri Nurlaeli
Renewable Energy Engineering of Study Program
Department of Engineering

ABSTRACT

Biodiesel is an alternative fuel from transesterification process which made from animal fats. Black soldier fly larvae used in waste management of organic waste and rich in fats so it can be oil after the extraction using soxhlet extraction. The extraction process uses n-hexane as a solvent. The highest oil yield was 97% with an ingredients composition of 15 g larvae, a 159-minute extraction time, and a volume solvent of 225 ml. Extract oil of BSF Larvae reprocessing to biodiesel through transesterification process. In This study, production biodiesel from extract oil of BSF larvae by varying the temperature of transesterification reaction at 65°C and 70°C and also varying catalyst concentration that is 1% w/v and 2% w/v. The Highest biodiesel yield was produced by sample of A2B1 using temperature 70°C and catalyst concentration 1%. The characteristics of biodiesel product have density of 869,59 kg/m³, kinematic viscosity of 4,27 cSt, acid value of 0,32 mg-KOH/g, iodine number of 16,8 g-I₂/100g, 97,45% of FAME content, and Cetane number 44,25.

Key Words: *Biodiesel, Soxhlet extraction, Black soldier fly larvae*