PENENTUAN KANDUNGAN KIMIA DAN UJI TOKSISITAS MINYAK ATSIRI DAUN TANAMAN KUNYIT (*Curcuma longa* Linn.) DENGAN METODE BSLT

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ABSTRACT

DETERMINATION OF CHEMICAL COMPOSITION AND TOXICITY TEST OF ESSENTIAL OIL FROM TURMERIC (*Curcuma longa* Linn.) LEAVES USING BSLT METHOD

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Curcuma longa Linn. is a member of the *Zingiberaceae* family and is widely known as a culinary spice. In general, turmeric is used as a flavoring agent, traditional herbal remedy, and in folk medicine. Its leaves possess a distinctive aroma that indicates the presence of essential oils. Due to its abundant availability in nature, turmeric leaves are easy to obtain. Essential oil extracted from turmeric leaves has been reported to contain various bioactive compounds. This study aimed to isolate and identify the chemical components of the essential oil from turmeric leaves and to determine its toxicity potential. The isolation process was carried out using the hydrodistillation method, resulting in a pale yellowish-white oil with a volume of 1.5 mL and a yield of 0.2946% from 500 grams of fresh sample. Chemical analysis of the essential oil using *Gas Chromatography–Mass Spectrometry* (GC-MS) revealed 35 chemical components, with the three major compounds being γ-terpinene (19.31%), 2,4-dimethylhexane (9.30%), and eucalyptol (8.53%). Toxicity testing was conducted on *Artemia salina* Leach larvae using the *Brine Shrimp Lethality Test* (BSLT) method, yielding an LC_{50} value of 21.87 µg/mL, which falls into the highly toxic category. Compounds such as γ-terpinene and eucalyptol are suspected to contribute to the observed toxicity. This test provides a preliminary insight into the toxicity potential and serves as a screening tool for bioactive compounds with prospects for development as drug candidates.

Keywords*: Curcuma longa* Linn., essential oil, toxicity, *Artemia salina* Leach