PRODUCTION OF LIQUID SMOKE FROM PALM FRUIT SHELLS AND ITS EFFECTIVENESS AS A BOTANICAL TERMITICIDE GROUND TERMITE (Coptotermes curvignathus) AND THE USE OF CHARCOAL BRIQUETTES AS FUEL

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ABSTRACT

So far, palm fruit shells (Arenga pinnata L) from palm fruit processing have not been utilized optimally and only a small portion has been used as plant fertilizer. Palm fruit shells can be pyrolyzed into liquid, tar and charcoal. Because the waste contains lignin, cellulose, hemicellulose, and other carbon compounds, which can be used as an antibacterial, antifungal botanical pesticide, and the charcoal as fuel. This research aimed to determine the effect of palm fruit shell liquid smoke as a botanical termiticide for subterranean termites (Coptotermes curvignathus) and determine the quality of the charcoal briquettes as fuel. This research was carried out at the UPTD Bojonggambir Agricultural Extension Center, Tasikmalaya Regency and the Plant Protection Laboratory at Siliwangi University from June 2023 to July 2023. This experiment was arranged in a Randomized Block Design consisting of six concentration levels, namely: 0%, 2.5%, 5%, 7.5%, 10% and 12.5% with four repetitions. The results of the research show that the characteristics of palm fruit shell liquid smoke have a yellow-brown color, pH 5, acetic acid content 1.44%. The results of testing the effectiveness of liquid smoke showed that liquid smoke concentrate treatment had a significant influence on the invation intensity of subterranean termite and reduced bait weight. Liquid smoke at a concentration of 12.5% provided an attack intensity of 9.35% and a decrease in bait weight of 7.59%. The higher the concentration of liquid smoke applied, the smaller the attack intensity and the decrease in the bait weight of subterranean termite. Meanwhile, the parameters measured for palm fruit shell charcoal briquettes were carbon content 44.82%, density 0.614 g/cm^3 and compressive strength 31.77 g/cm^2.

Keywords : bait weght, Coptotermes curvignathus, intensity of invation, liquid smoke, palm fruit shell