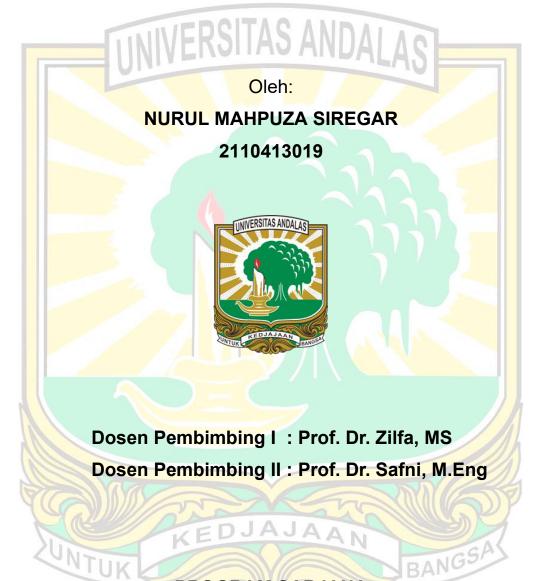
DEGRADASI RESIDU PESTISIDA CHERIZEB DAN EMACEL PADA AIR CUCIAN CABAI MENGGUNAKAN KATALIS CuO/ZEOLIT SECARA FOTOLISIS

SKRIPSI SARJANA KIMIA



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ABSTRACT

PHOTOLYTIC DEGRADATION OF CHERIZEB AND EMACEL PESTICIDE RESIDUES IN CHILI WASHING WATER USING A CuO/ZEOLITE CATALYST

by:

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Chili (Capsicum annuum L.) is one of Indonesia's leading horticultural commodities, playing an important role in both culinary culture and the national economy. The high incidence of pests and diseases in chili plants often drives farmers to repeatedly use synthetic pesticides, sometimes even mixing several types at once, <mark>su</mark>ch as C<mark>heri</mark>zeb and E<mark>mace</mark>l. A<mark>lthoug</mark>h eff<mark>ective</mark> in controlling pests<mark>, su</mark>ch practices leave pesticide residues that are difficult to remove through conventional methods such as washing or heating. These residues have the potential to cause toxic effects on human health and pollute the environment. This study aims to degrade pesticide residues in chili wash water using the photolysis method with a CuO/zeolite catalyst. The results showed that without a catalyst, the percentage of pesticide degradation remained very low—8.19% for Cherizeb (60 minutes) and 6.61% for Emacel (75 minutes). The use of CuO (0.0308 g) increased degradation to 71.46% for Cherizeb and 62.01% for Emacel, while zeolite (0.7692 g) achieved 42.26% and 38.71% degradation for Cherizeb and Emacel, respectively. The highest efficiency was obtained with a CuO/zeolite combination of 0.8 g, reaching 82.42% degradation for Cherizeb at 60 minutes and 71.18% for Emacel at 75 minutes. FTIR analysis of chili wash water samples before and after degradation showed shifts in wavenumbers, indicating the occurrence of degradation. Characterization of the CuO/zeolite catalyst using FTIR and XRD revealed no structural changes, <mark>co</mark>nfirming that the CuO/zeolite catal<mark>y</mark>st remained stable and could be reused.

