

CORROSION INHIBITION TEST OF LEMONGRASS'S EXTRACT (*Cymbopogon citratus*) ON IRON AS ELECTRONIC POCKETBOOK DEVELOPMENT MATERIALS ON REDOX REACTION

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Abstract: Corrosion is something that causes damage and degradation of metal quality and has many disadvantages. One of the environmentally friendly corrosion inhibitors is to use organic inhibitors. Lemongrass has potential as an organic inhibitor on iron. There are two methods in this research, the first is the experimental method, namely Weight Loss combined with a computational chemistry approach to determine the effect of soaking time and concentration on the corrosion rate of iron, and the second method is RnD (Research and Development) with the 4D model to produce teaching materials in the form of electronic pocketbooks. The research data were analyzed using the graph method to determine the result of a long immersion time and high concentration causing the corrosion rate to slow down. The fastest corrosion rate was obtained at a 24-hour immersion time and an inhibitor concentration of 400 ppm of $2,6 \times 10^{-4}$ grams/cm².hour. The inhibition efficiency obtained was at a concentration of 400 ppm with a 16-hour immersion time of 70.48%. Lemongrass extract compound with the ability to absorb electrons the highest absorbance value is z-citral compound to -135.11629170. The pocket book produced was analyzed with Asiken's V statistics and obtained a validation value of 0,81 with very valid category which means it is very feasible.

Keywords: Corrosion Inhibition, Lemongrass's Extract, Electronic Pocket Book, Redox Reaction