EKSTRAK DAUN SERI (*Muntingia calabura* L.) SEBAGAI INHIBITOR KOROSI BAJA DALAM MEDIUM HCl 1 M

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INTISARI

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***Pembimbing**

Ekstrak daun seri (*Muntingia calabura* L.) diteliti sebagai inhibitor korosi baja dalam medium HCl 1 M telah dipelajari menggunakan metode *weight loss*, polarisasi potensiodinamik, analisis *Fourier Transform Infra Red* (FT-IR) dan karakterisasi menggunakan mikroskop optik. Pengukuran dengan metode kehilangan berat menunjukkan laju korosi menurun dengan meningkatnya konsentrasi ekstrak daun seri dan meningkat dengan peningkatan suhu. Nilai efisiensi inhibisi tertinggi sebesar 81,41% pada penambahan konsentrasi ekstrak 5 g/L pada suhu 30°C. Adsorpsi esktrak daun seri pada permukaan baja mengikuti jenis adsorpsi isoterm Langmuir. Pengukuran polarisasi potensiodinamik menunjukkan ekstrak daun seri merupakan jenis inhibitor campuran katodik dan anodik. Analisis morfologi baja menggunakan mikroskop optik menunjukkan perbedaan baja sebelum perendaman dan setelah perendaman dalam medium HCl 1 M dengan ada dan tanpa penambahan ekstrak daun seri.

Kata kunci: *Muntingia calabura* L., inhibitor korosi, adsorpsi, *weight loss*

ABSTRACT

SERI LEAF EXTRACT (*Muntingia calabura* L.) AS A CORROSION INHIBITOR OF STEEL IN 1 M HCl MEDIUM

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Leaf extract (*Muntingia calabura* L.) was studied as a steel corrosion inhibitor in 1 M HCl medium. It was studied using the weight loss method, potentiodynamic polarization, Fourier Transform Infra Red (FT-IR) analysis and characterization using optical microscopy. Measurement using the weight loss method showed that the corrosion rate decreased with increasing concentration of the leaf extracts series and increased with increasing temperature. The highest inhibition efficiency value was 81.41% at the addition of the extract concentration of 5 g / L at 30 ° C. The adsorption of leaf extract seri on the steel surface follows the Langmuir adsorption isotherm. Potentiodynamic polarization measurements showed that the leaf extract was a mixture of cathodic and anodic inhibitors. The morphological analysis of steel using optical microscopy showed differences in the steel before immersion and after immersion in 1 M HCl medium with and without the addition of seri leaf extracts.

Key words: *Muntingia calabura* L., corrosion inhibitor, adsorption, weight loss