

ABSTRAK

ANALISIS KADAR LOGAM BERAT Pb DAN Hg PADA SAMPEL RIMPANG JAHE MERAH (*Zingiber Officinale Var Rubrum*) DENGAN PERLAKUAN PENYIRAMAN AIR PDAM DAN AIR SUMUR

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Jahe sering ditanam di pekarangan rumah untuk pembuatan rempah dan obat tradisional, sehingga cemaran berupa logam berat seperti timbal (Pb) dan merkuri (Hg) harus diuji. Tujuan dari penelitian ini adalah untuk mengetahui kadar cemaran logam berat timbal (Pb) dan merkuri (Hg) pada sampel jahe merah dan tanah serta mengetahui pengaruh perbedaan perlakuan air PDAM dan air sumur terhadap kadar timbal (Pb) dan merkuri (Hg) menggunakan data analisis statistik *Independent Samples T-Test*. Pada penelitian ini menggunakan metode Spektrofotometri UV-Vis dengan hasil panjang gelombang maksimum, pada logam berat timbal (Pb) 473.0 nm dan merkuri (Hg) 501.0 nm. Berdasarkan hasil penelitian ini, kandungan logam berat timbal (Pb) pada sampel jahe merah sebesar 7.9095 ppm setelah penyiraman air sumur dan 4.4293 ppm setelah penyiraman air PDAM. Cemaran kadar logam berat merkuri (Hg) pada sampel jahe merah sebesar 2.3180 ppm setelah penyiraman air sumur dan 1.8884 ppm setelah penyiraman air PDAM. Hasil analisis statistik dari kandungan kadar logam berat timbal (Pb) jahe merah setelah perlakuan penyiraman air sumur dibandingkan air PDAM, diperoleh nilai $p > 0,05$ menunjukkan nilai tidak signifikan. Kandungan logam berat merkuri (Hg) dalam jahe merah didapat nilai $p < 0,05$ setelah perlakuan air sumur dibandingkan air PDAM, yang menunjukkan nilai signifikan. Hasil analisis uji statistik pada kadar logam berat timbal (Pb) dalam tanah, setelah perlakuan penyiraman air sumur dibandingkan dengan penyiraman air PDAM didapat nilai $p < 0,05$ menunjukkan nilai signifikan. Pada logam berat merkuri (Hg) dalam tanah, setelah perlakuan penyiraman air sumur dibandingkan dengan air PDAM didapat nilai $p > 0,05$ menunjukkan nilai tidak signifikan.

Kata Kunci: Jahe merah, tanah, timbal (Pb), merkuri (Hg), Spektrofotometri UV-Vis.

ABSTRACT

ANALYSIS OF Pb AND Hg LEVELS OF HEAVY METALS IN SAMPLES RED GINGER RHIZOME (*Zingiber Officinale Var Rubrum*) WITH THE TREATMENT OF PDAM WATER AND WELL WATER

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Ginger is often planted in home gardens for the manufacture of spices and traditional medicine, so that contamination in the form of heavy metals such as lead (Pb) and mercury (Hg) must be tested. The purpose of this study was to determine the levels of lead (Pb) and mercury (Hg) heavy metal contamination in red ginger and soil samples and to determine the effect of different treatment of PDAM water and well water on lead (Pb) and mercury (Hg) levels using analytical data. *Independent Samples T-Test statistics*. In this study using the Spectrophotometry UV-Vis method with maximum wavelength results, on the heavy metal lead (Pb) 473.0 nm and mercury (Hg) 501.0 nm. Based on the results of this study, the content of heavy metal lead (Pb) in red ginger samples was 7.9095 ppm after watering well water and 4.4293 ppm after watering PDAM. Contamination levels of heavy metal mercury (Hg) in red ginger samples were 2.3180 ppm after well water irrigation and 1.8884 ppm after PDAM water irrigation. The results of statistical analysis of the content of heavy metal lead (Pb) in red ginger after being treated with well water compared to PDAM water, obtained a p value > 0.05 indicating an insignificant value. Meanwhile, the content of heavy metal mercury (Hg) in red ginger obtained a p value < 0.05 after treatment of well water compared to PDAM water, which showed a significant value. The results of the statistical test analysis on the levels of heavy metal lead (Pb) in the soil, after the treatment of watering well water compared to watering PDAM obtained a p value < 0.05 indicating a significant value. For the heavy metal mercury (Hg) in the soil, after the treatment of well water sprinkling compared to PDAM water, the value of $p > 0.05$ was not significant.

Keywords: Red ginger, land, lead (Pb), mercury (Hg), Spectrophotometry UV-Vis.