ABSTRAK

Penelitian ini bertujuan untuk menguji kemampuan ekstrak buah lerak sebagai reagen kolektor pengganti reagen kimia serta pengaruh variasi dosis kolektor dan *conditioning time* terhadap *recovery* emas. Sampel bijih emas sulfida rendah dari PT Antam Arinem Papandayan diuji menggunakan *Atomic Absorption Spectroscopy* menunjukkan kadar awal Au sebesar 0,1811 ppm dan uji *X-Ray Diffraction* mengidentifikasi mineral sulfida berupa pirit, kalkopirit, galena, dan sphalerite. Uji *Fourier Transform Infrared Spectroscopy* dilakukan untuk mengidentifikasi saponin dalam ekstrak buah lerak. Hasil bioflotasi menunjukkan *recovery* emas tertinggi sebesar 69,14% pada dosis kolektor 10 gr/kg dan *conditioning time* 7 menit serta *recovery* terendah 48,06% pada dosis kolektor 50 gr/kg dengan waktu yang sama. Analisis regresi linear berganda menunjukkan bahwa dosis kolektor dan *conditioning time* secara bersama-sama maupun individu tidak berpengaruh secara signifikan terhadap *recovery*. Sehingga variabel lain kemungkinan lebih berpengaruh dalam proses bioflotasi.
Kata Kunci: Bioflotasi, Dosis kolektor, Bijih emas sulfida rendah

ABSTRACT

This study aims to test the ability of lerak fruit extract as a collector reagent to replace chemical reagents and the effect collector's dosage variations and conditioning time on gold recovery. Low sulfide gold ore samples from PT Antam Arinem Papandayan that were tested using Atomic Absorption Spectroscopy showed an initial Au content of 0.1811 ppm and X-Ray Diffraction test identified sulfide minerals in the form of pyrite, chalcopyrite, galena, and sphalerite. Fourier Transform Infrared Spectroscopy test was conducted to identify saponins in lerak fruit extract. Bioflotation results showed the highest gold recovery of 69.14% at a collector dose of 10 gr/kg and conditioning time of 7 minutes while the lowest recovery of 48.06% at a collector dose of 50 gr/kg with the same time. Multiple linear regression analysis showed that the collector dose and conditioning time, combined or individually, have no significant effect on recovery. Therefore, other variables are the one who might be more influential in the bioflotation process.

Keywords: Bioflotation, collector dosage, Low sulfide gold ore