ABSTRAK

Penelitian ini merupakan penelitian kuantitatif yang bertujuan untuk menentukan berapa volume penambahan air secara optimum yang digunakan sebagai air pengencer terhadap persen oil losses dan kadar air pada pabrik kelapa sawit. Hasil perhitungan variasi penambahan air terhadap persen oil losses dan kadar air yang dilakukan di PT. Eastern Sumatra Indonesia Bukit Maradja Kota Pematang Siantar. Data dikumpulkan dengan metode sampling kelapangan dengan jumlah data 12 yang dianalisis dengan metode regresi linier berganda pada SPSS 21. Variasi jumlah air yang ditambahkan ialah 0 ton/jam; 0,6 ton/jam; 0,9 ton/jam; 1,3 ton/jam; 1,6 ton/jam; 1,9 ton/jam; 2,2 ton/jam; 2,5 ton/jam; 2,7 ton/jam; 2,9 ton/jam; 3,1 ton/jam; dan 3,4 ton/jam. Berdasarkan hasil perhitungan antara variasi penambahan air terhadap persen oil losses dan kadar air diperoleh jumlah penambahan air optimum adalah 2,9 ton/jam dengan kadar oil losses ialah 2,1% dan kadar air ialah 2,92% . Dari hasil analisa data diperoleh bahwa pengaruh penambahan air di unit screw press berbanding lurus terhadap kenaikan kadar air dan berbanding terbalik terhadap persen oil losses pada CPO yang dihasilkan.

Kata-kata kunci: *Regresi Linier Berganda, Kadar Air, Persen Oil Losses, Jumlah Air.*

ABSTRACT

This research is a quantitative study that aims to determine the optimum volume of addition of water used as water diluent to the percent oil losses and water content in the palm oil mill. The results of the calculation of variations in the addition of water to the percent oil losses and water content carried out at PT. Eastern Sumatra Indonesia Bukit Maradja City Pematang Siantar. Data were collected by field sampling method with a total of 12 data which were analyzed by multiple linear regression method on SPSS 21. The variation in the amount of water added was 0 tons/hour; 0.6 ton/hour; 0.9 ton/hour; 1.3 tons/hour; 1.6 tons/hour; 1.9 tons/hour; 2.2 tons/hour; 2.5 tons/hour; 2.7 tons/hour; 2.9 tons/hour; 3.1 ton/hour; and 3.4 tons/hour. Based on the results of calculations between variations in the addition of water to the percent oil losses and water content, the optimum amount of additional water is 2.9 tons/hour with the oil losses content is 2.1% and the water content is 2.92%. From the results of data analysis, it is found that the effect of adding water in the screw press unit is directly proportional to the increase in water content and inversely proportional to the percent oil losses in the resulting CPO.

Key words: *Multiple Linear Regression, Moisture Content, Percent Oil Losses, Total Water.*