

Validation for Rapid Analysis of Oil Palm Bunch by Microwave Heating Combined with Multistage Solvent Extraction under Magnetic Stirring

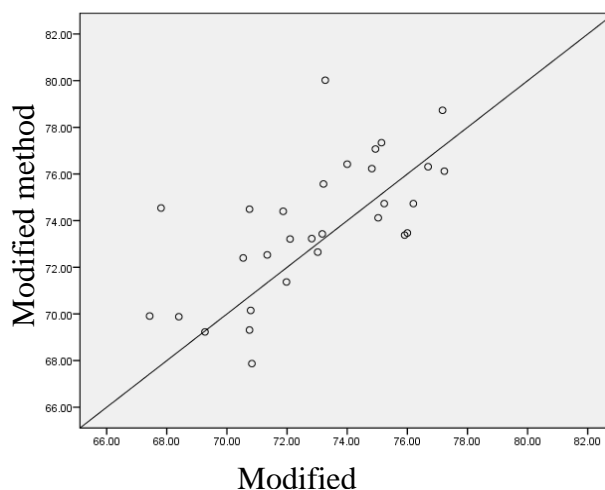
Rayakorn Nokkaew^{1,2}, Mallika Tapanwong² and Vittaya Punsuvon^{1,2*}

¹Department of Chemistry, Faculty of Science,
Kasetsart University, Bangkok, Thailand

²Center of Excellence Oil-Palm,
Kasetsart University, Bangkok, Thailand

*e-mail: fscivit@ku.ac.th

The purpose of this work was to validate of modified technique (the microwave heating combined the magnetic stirring with solvent) for replacing conventional technique (a hot-air oven combined with manual soxhlet instrument) which determined the oil content in oil palm bunch (OCB). The conventional spends 72 h for operation which it uses a long time. On the other hand, our technique used microwave heating combined with three-stage solvent extraction under magnetic stirring that could reduce the operation time to 37 min. In the experiment, thirty the oil palm bunches were validated and compared between the modified method and the conventional method. The statistic compared by mean of t-test method. The results showed that the both methods was not significance. So, the result indicated that the modified method was not different when compared the conventional method. That means it can replaced the conventional method and recommend for a rapid determination of the OCB.



Keywords: Validation; Microwave; Magnetic stirring; Oil content, Palm Oil bunch