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Validation of biodiesel quality of *Monodora myristica* and *Moringa oleifera* using regression and error analysis of UV absorption results

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ABSTRACT

The aim of this study was to discover a method for testing the quality of agricultural feedstocks (*Monodora myristica* and *Moringa oleifera*) for biodiesels production. The quality of the biodiesel was tested using UV absorption spectroscopy, regression analysis of the absorption index and error analysis. It was observed that the chromophore in the feedstock influences the

quality of the biodiesel. The best sampling method to determine the quality of the biodiesel from *Monodora myristica* is within wavelength combination 600 nm/500 nm and 700 nm/600 nm while the best sampling method for testing biodiesel from *Moringa oleifera* is within wavelength combination 800 nm/500 nm and 800 nm/700 nm. Results showed that regression and error analysis of UV absorption spectroscopy is reliable in determining both the structure of the chromophore and the quality of the biodiesel.

KEYWORDS:

Biodiesel, laboratory, *Monodora myristica*, *Moringa oleifera*, UV absorption, spectroscopy, biofuels, regression analysis, error analysis

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