

Evaluation of Non-Destructive Application to Detect Pesticide Residue on Leaf Mustard Using Spectroscopic Method

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Abstract : This study was conducted to evaluate the capability of spectroscopic methods to detect the presence of pesticide residues on leaf mustard. A total of 105 leaf mustard used were divided into five batches, four batches were treated with four different types of pesticides whereas one batch with no pesticide applied. Spectral data were obtained using visible shortwave near infrared spectrometer (VSWNIRS) which is Ocean Optics HR4000 High-resolution Miniature Fiber Optic Spectrometer. Reflectance value was collected to determine the difference between one pesticide to the other. The obtained spectral data were pre-processed for optimum performance. The effective wavelength of approximate 880 nm, 675-710 nm also 550 and 700 nm indicates the overtones -CH stretching vibration, tannin, also chlorophyll content present in the leaf mustard respectively. This study has successfully demonstrated that the spectroscopic method was able to differentiate between leaf mustard sample with and without pesticide residue.

Keywords : detect, leaf mustard, non-destructive, pesticide residue

Conference Title : ICEECS 2017 : International Conference on Education, Environment, Culture and Society

Conference Location : Kyoto, Japan

Conference Dates : April 27-28, 2017