

Thesis Title	Pesticide Trace Detection in Vegetables Using Laser Induced Fluorescence Technique	
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Abstract

The main purpose of this study was to investigate the trace of pesticide in vegetables. The laser used were N₂ laser at the wavelength 337nm and Nd:YAG laser at the second harmonic radiation at 532nm. These lasers were used to induce fluorescence (LIF) off un-doped vegetables and pesticide-doped ones at the same condition. The LIF spectra were detected by CCD spectrometer in conjunction with the IQ-300 data acquisition system controlled by a desktop PC. It was found from the experiment that the differences of the spectral intensities between un-doped vegetables and pesticide-doped ones in the range of 625 – 700 nm induced by N₂ laser and 535 – 560 nm by Nd:YAG laser. This technique certainly is a non-destructive technique and could be possible to be used as a pre-scan for any traces of pesticide in vegetables with known LIF reference spectra. In this experiment, it ensured the possibility of developing the LIF technique for any interesting spectrum with higher sensitive detector.

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