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Determination of four Nutrients in Tomato with Near Infrared Spectrometry

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In this paper a fast non-destructive analytical method to measure various nutrients in the intact tomato---Near infrared Spectrometry NIRs was introduced Using this method the content of some organic acid, vitamin C, reductive sugar, and solid soluble were determined simultaneously. Screen out four wavelengths at 916nm, 1000nm, 1004nm and 832nm to present optimum four optical terms of $d^2 \log(1/R)$ with second derivative spectra treating data scanned under these wavelengths. The multiple correlation coefficients between these values and those obtained on chemical analysis were 0.983, 0.990, 0.987, and 0.994, espectively, and the standard errors of prediction (SEP) were 0.007, 0.440, 0.037, and 0.057, respectively. These results indicate that NIRs is comparable to chemical methods in both accuracy and precision and is reliable method for determination of nutrients in intact tomato.