

## Testing the ability of a handheld food scanner to predict primary nutrients in model mixtures

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With the globalization of food market and the increased awareness of consumers there is an emerging need of rapid and accurate analytical techniques that enable users to evaluate a products at any point of the production and commercialization. Handheld near infrared (NIR) spectrometers provide unique possibility for the identification of foods and quantification of components. An end-user type Enterprise Tellspec Food Scanner was used in this study to test its ability to detect primary nutrients in model food mixtures comprising pure starch, sucrose and powdered whole milk. The ingredients were mixed in various concentrations, resulting 27 mixtures (n = 30). Partial least squares regression (PLSR) was used to calibrate on the quantitative measures, and models were evaluated after cross-validation. Perfect models ( $R^2_{CV} > 0.96$ ) were achieved for the starch, sucrose and milk concentrations, highlighting the different spectral regions representing the components in the regression coefficient vectors. These results confirm the applicability of the used handheld NIR scanner in food inspections.