**Comparison of Different NIR Instruments for the Determination of Oil Content in Single Maize Kernel**

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Near Infrared Reflectance (NIR) spectroscopy is a user-friendly tool for analysing agricultural products. This tool currently uses a wide variety of purposes including single seed analysis. This tool is currently used to serve a wide variety of purposes, including single seed analysis. Single seed analysis is an important issue especially for plant breeders. Oil content determination is one of the most tedious analyses at the single seed level. NIR spectroscopy has a potential for this purpose, however there is a need for investigation of the best instrument and chemometric technique. In this study, two different NIR devices (a bench-top and portable instrument) were used to develop prediction models.we used two different NIR devices (a bench-top and portable instrument) to develop prediction models. Totaly, five hundred kernels were used as experimental material which have a wide range of oil content (2.54%-8.88%). Spectral models were developed and evaluated using the SelectWave application based on the support vector machine regression method. Results showed that there are important differences for prediction success between NIR instruments tested here. Bench-top NIR instrument gave more reliable results according to model evaluation parameters. This is due to differences between measurement specialties of the instruments used here. Overall, NIR spectroscopy had a considerable potential for analysis of oil content in a single maize kernel.

**Keywords:** spectrum, support vector machines, oil